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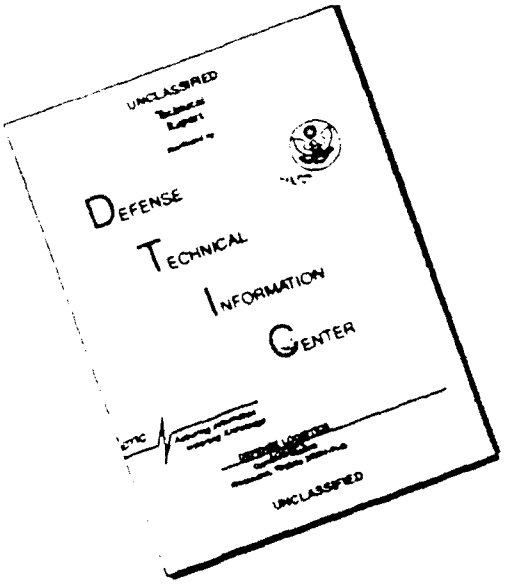

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FINAL REPORT

A REPORT OF ARCHAEOLOGICAL TESTING AT SITE 3CT263 WITHIN THE PROPOSED EDMONDSON WASTEWATER POND, CRITTENDEN COUNTY, ARKANSAS

GARROW & ASSOCIATES, INC.
SEPTEMBER, 1990

Final Report

A Report of Archaeological Testing at Site 3CT263 within the Proposed Edmondson Wastewater Pond, Crittenden County, Arkansas

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September, 1990

ABSTRACT

This report documents archaeological site testing of a small historic site (3CT263) located within the direct impact area of the proposed Edmondson Sewage Disposal Lagoon near the town of Edmondson, Crittenden County, Arkansas. At the request of the U.S. Army Corps of Engineers, Memphis District, field work at the site was conducted under contract to Gerald P. Smith (Purchase Order No. DACW6690MO992). The cultural resources background and literature search, the artifact analysis and the report preparation was completed under a separate contract by Garrow & Associates, Inc. (Purchase Order No. DACW6690M0994).

The site consists of a low density surface scatter of historical artifacts at the western edge of the proposed Edmondson Sewage Disposal Lagoon. Consultation of the Arkansas Archaeological Survey State site files, Crittenden County Library Arkansas History Room, Crittenden County Courthouse Tax Assessment Records, and C.H. Nash Museum site files show that no previously recorded sites were located on the project tract. A total controlled surface collection and subsurface testing recovered 25 artifacts. Ceramic and glass artifacts recovered from the site indicate a late nineteenth to early twentieth century affiliation. The number of kitchen related artifacts and the lack of architectural artifacts suggest the site represents a historical dump area. Testing did not recover significant archaeological deposits. Given the lack of potentially significant cultural resources at the site, no further work is recommended.

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I. INTRODUCTION

PURPOSE OF THE STUDY

This report documents archaeological testing of site 3CT263, a small historic artifact scatter located within the direct impact area of the proposed Edmondson Sewage Disposal Lagoon in the City of Edmondson, Crittenden County, Arkansas. At the request of the U.S. Army Corps of Engineers, Memphis District, field work at the site was conducted by Gerald P. Smith under Purchase Order No. DACW6690MO992. The cultural resources background and literature search, the artifact analysis and the report preparation was completed by Drew Buchner and Guy G. Weaver of Garrow & Associates, Inc. under Purchase Order No. DACW6690M0994.

The site was initially recorded during a reconnaissance survey of the proposed Edmondson Sewage Disposal Lagoon by staff archaeologists with the Memphis District, Corps of Engineers in May, 1990. The site consisted of a light scatter of historic artifacts in a fallow field with low vegetation. Given the possibility of significant archaeological resources at the site, it was determined that archaeological testing at the site was needed.

The purpose of the present study was to determine if the site was potentially eligible for nomination to the National Register of Historic Places. The testing was conducted in partial fulfillment of requirements of the National Historic Preservation Act of 1966 (P.L. 89-665), as amended; the National Environmental Policy Act of 1969 (P.L. 91-190); Executive Order 11593, "Protection and Enhancement of the Cultural Environment"; the Archaeological Resources Protection Act of 1979 (P.L. 96-95); and the Advisory Council on Historic Preservation, "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800).

PROJECT LOCATION

Site 3CT263 is located in Township 6 N, Range 7 E, Section 25, NE 1/4, SW 1/4, SW 1/4, in south-central Crittenden County, Arkansas. It is situated at the western edge of a triangular tract of land slated for the construction of a sewage lagoon. This area has recently been annexed by the City of Edmondson. The northeast corner of the old corporate limit of the City of Edmondson lies approximately 500 feet to the south of the tract. The tract is bordered by Fifteenmile Bayou to the north and east, and to the west by the half section line. The southern and western boundaries were

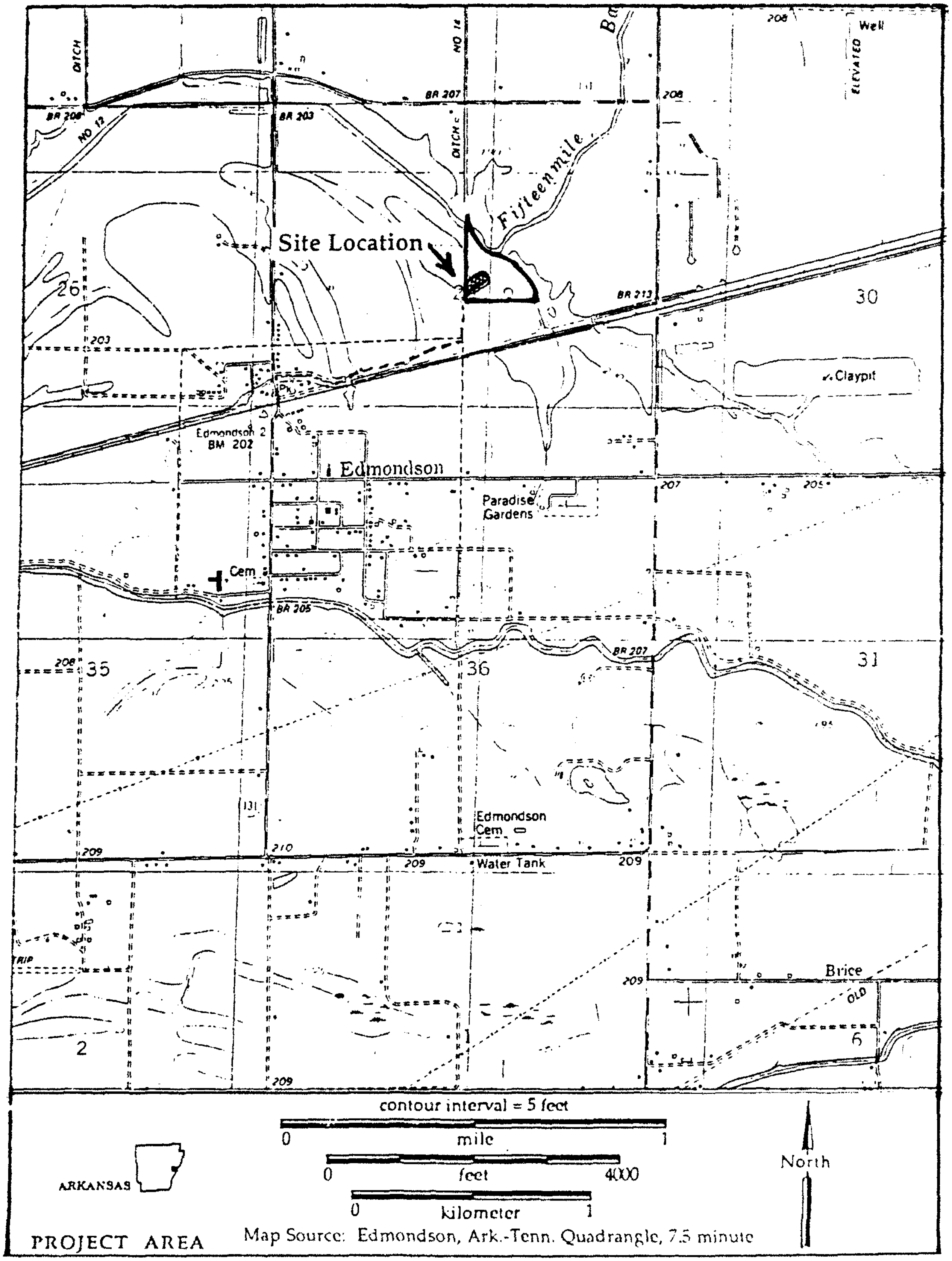
delineated by survey stakes. The project area is located on the Edmondson Ark.-Tenn. 7.5 minute series USGS quadrangle map (Figure 1).

OUTLINE OF THE REPORT

Background information on the property was gathered by the authors from the Arkansas Archaeological Survey state site files, the Crittenden County Public Library, Arkansas History Room, and from the Crittenden County Courthouse Tax Assessment Records. Records at the C.H. Nash Museum in Memphis, Tennessee were consulted as well to procure older topographic maps of the project area. Information was also gathered from reports of previous archaeological investigations in the area. No previously recorded sites were located within the area of the proposed sewage lagoon.

Archaeological field investigations were conducted on June 3-4, 1990. These investigations included complete surface inspection of the site, followed by a total controlled surface collection. Guided by the results of the controlled surface collection, a 1x1 m test unit was excavated to test for buried cultural deposits at the site. No significant cultural resources were located on or below the surface at the site. Based on these negative findings, no further archaeological work is recommended.

The following report documents the methods utilized to conduct this study and the results achieved. Chapter II presents a brief overview of the physical environment of the project area. Chapter III presents a brief overview of the cultural sequence for Crittenden County, as well as specific information pertinent to the project area. Also included in Chapter III is a discussion of previous archaeological investigations in Crittenden County and eastern Arkansas. Chapter IV discusses the general research design used to guide the cultural resources investigations, as well as detailed discussion of the methods employed during the literature and records search and the field investigations. The results of the survey are presented in Chapter V. Chapter VI summarizes the project findings and delineates the project recommendations. Appendix 1 and 2 contain copies of the Scope of Work for the field work phase and the analysis and report preparation phases of the investigations, respectively. Appendix 3 contains the resumes of the key project personnel.


Site Location
Fifteenmile
Edmondson
Edmondson 2
BM 202
Paradise
Gardens
Cem
Claypit
Well
Edmondson
Cem
Water Tank
Brice
26
30
35
36
31
2
6
contour interval = 5 feet
0
mile
1
0
feet
4000
0
kilometer
1
North
ARKANSAS
PROJECT AREA
Map Source: Edmondson, Ark.-Tenn. Quadrangle, 7.5 minute

II. ENVIRONMENTAL SETTING

CLIMATE

Southern Crittenden County is characterized by relatively warm summers and mild winters. The hottest month is July, with an average high temperature of 91.1° F. The coolest months are December and January, with an average low temperature slightly above freezing. Relative humidity averages about 70% throughout the year, with mid-May through mid-September being uncomfortably warm and humid. Rainfall averages 49.73 inches per annum. Fall is the driest season and winter the wettest. Thunderstorms are common in the summer. The growing season is long, lasting approximately 230 days (Gray and Ferguson 1974:3-4).

PHYSIOGRAPHY AND SOILS

All of Crittenden County is situated on bottom lands of the Mississippi River. Until ditch and levee construction was begun in the late nineteenth century, the entire county was subject to frequent flooding by the Mississippi River and its local tributaries. The surface alluvium exceeds 100 feet in depth and is derived from soil, rock, and sediment from throughout the upper Mississippi River Basin (Gray and Ferguson 1974:2). The topography of the county ranges from broad flats to areas of alternating ridges and swales.

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

The proposed Edmondson Sewage Lagoon site is located along the south bank of Fifteenmile Bayou. Such locations are typically backswamps or slack water areas. The elevation of the project area is 200 feet above mean sea level (AMSL)(U.S.G.S. 1981). There is less than one foot of relief within the project area.

The U.S. Soil Conservation Service has mapped the natural sediments in the area of the proposed Edmondson Sewage Lagoon as Sharkley silty clay, 0-1% slopes (Gray and Ferguson 1974: Sheet 41): This soil series is characterized as:

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

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

FLORA AND FAUNA

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

The dense hardwood forest supported a wide variety of wildlife. Native mammals included bison (*Bison* spp.), white tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), wolf (*Canis* spp.), bobcat (*Lynx rufus*), raccoon (*Procyon lotor*), opposum (*Didelphis virginiana*), red fox (*Vulpes vulpes*), grey fox (*Urocyon cinereoargenteus*), beaver (*Castor canadensis*), and squirrels (*Sciurus* spp.). The area also supports a diverse number of reptiles and amphibians. Turkey (*Meleagris gallopavo*) were an important source of food for the early inhabitants of the area, as were migratory mallard ducks (*Anas platyrhynchos*) and canadian geese (*Branta canadensis*). Fish from the larger streams, oxbow lakes and beaver ponds, were also an important food source for prehistoric and historic occupants.

III. CULTURE HISTORY

PREHISTORIC OVERVIEW

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

Paleoindian Period

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

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

Archaic Period

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

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

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

Woodland Period

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

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

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

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

where this development first emerged.

Mississippian Period

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

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

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

Protohistoric Period

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

HISTORIC OVERVIEW

Early Historic Period

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

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

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

The Jefferson Purchase of 1803 acquired Louisiana territory for the United States, and the area was finally open for American settlement. Arkansas Post was taken over by government traders. Quapaw, Delaware, Chickasaw, and Osage all traded there. Arkansas Post became the capitol of Arkansas territory in 1819. It then had a population of about 60 families. Little Rock became the capitol in 1820.

Crittenden County was created by act of the Arkansas Territorial Legislature in 1825 (Goodspeed 1890:390). The original area of the county included present day Cross,

Lee, and St. Francis Counties. In 1826, ferry service between Memphis and Hopefield was opened. It was also during this period that the Military Road from Memphis to Little Rock was being surveyed. Completed in 1829, the construction of the Military Road greatly facilitated immigration to Arkansas (Chowning 1954:7). The government used this route to move Choctaw and Chickasaw Indians from Mississippi to Oklahoma in the 1830s. Cherokee who were already living in Arkansas also ceded their lands and moved to Indian territory. The Quapaw had given up much of their territory as early as 1818, and ceded the final two million acres in 1824. The Native American population was essentially eliminated from Arkansas by 1840.

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

The Civil War and Reconstruction: 1860-1900

Early in the war, on June 5, 1862, Federal Troops landed at Mound City and captured Hopefield (Hale 1962). During the Battle of Memphis the next day, two Confederate rams were sunk in the shoals of the Mississippi River out from Hopefield. On February 13, 1863, Hopefield was burned by Federal Troops in retaliation for a raid by Confederate guerillas in which a steamboat and seven barges of coal were sunk.

After the war, Hopefield became a haven for gamblers and saloons (Hale 1962). Period documentation from the reconstruction period suggests the local white inhabitants of Crittenden County harbored much resentment against negro office holders and "carpetbaggers". Little was done to improve the railroads until 1868. The reconstruction period ended in 1874 with the adoption of new State constitution (Goodspeed 1890:392).

Crittenden County witnessed devastating damage in the major flood of 1882 and 1883. Prosperity was enhanced, however, when in May, 1892, the Frisco Railroad bridge over the Mississippi River was opened. It was the first bridge over the Mississippi at Memphis and, at the time, the third largest bridge in the world (Woolfolk 1967).

Modern Era: 1900-1990

Edmondson was incorporated in 1911, and is one of eight municipalities in Crittenden County (Crittenden County Historical Society n.d.). The Bethlehem Baptist Church was founded in Edmondson in 1870. This church erected a brick structure in 1917 and is still a prominent landmark. The structure was restored in 1975 as a part of American Bicentennial celebration.

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

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

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

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

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

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

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

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

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

IV. RESEARCH DESIGN AND METHODOLOGY

RESEARCH DESIGN

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

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

Settlement Studies

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

Major areas of diachronic change in settlement are expected when cultivation becomes a major subsistence strategy, when complex societies arise, when European intrusion causes dispersal and refugee strategies, when the conquering of the Indians opens the backcountry for European settlement, when major plantations cluster the population in rural centers, when family agricultural production becomes economically important, and when industrialization draws populations to

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

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

Stylistic/Ethnic Variation, Borders, and Mixing

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

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

Vernacular Architecture and Disappearing Structures

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

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

Site Formation and Preservation Factors

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

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

ARCHIVAL AND FIELD METHODS

Background and Literature Search

The background and literature search was conducted as a comprehensive examination of existing literature and records for the purpose of inferring the potential presence and character of cultural resources in the study area. Information on previous archaeological investigations and site locations was gathered from the Arkansas Archaeological Survey state site files. Information was sought on any sites within 3 km of the project area, and on previous archaeological investigations conducted in Crittenden County. Additional documentary research included a review of Crittenden County history at the Crittenden County Public Library, Arkansas History Room and a review of the Crittenden County Courthouse Tax

Assessment Records. Records at the Tennessee Division of Archaeology site files, housed at the C.H. Nash Museum in Memphis, Tennessee, were consulted as well, to procure older topographic maps of the project area. Information was also gathered from reports of previous archaeological investigations in the area on file at the museum. In addition, Garrow & Associates maintains extensive libraries in Memphis and Atlanta, which were also consulted.

Field Methods

The primary goal of the field investigations was to assess the significance of any archaeological artifacts and deposits located within the project area in order to determine the site's potential for nomination to the National Register of Historic Places. Field techniques were designed to allow determination of the existence, nature and integrity of any intact subsurface archaeological deposits which might be present, the horizontal extent the site, as well as to provide chronological and functional data for the site.

Site 3CT263 was initially recorded during a reconnaissance survey of the proposed Edmondson Sewage Disposal Lagoon by staff archaeologists with the Memphis District, Corps of Engineers in May, 1990. An on-site visit was conducted shortly after by the senior author and a representative of the Corps at which time the site was examined and the approximate site area delineated.

The field work took place on June 3 and 4, 1990 at which time the project area was a fallow field with patchy low vegetation covering portions of the ground surface. A metric site grid was established along the western boundary of the project area, with the southwestern corner property stake serving as a 0 m North/0 m East coordinate. Coordinates increased to the north and east. Reference points along the 0 East line were established with metric tape and marked by rebar rods.

The patchy nature of the vegetation afforded good surface visibility which was sufficient for the survey crew to delineate the site boundaries without shovel testing. The controlled surface collection was conducted utilizing a three person crew, who maintained 20 meter intervals while conducting a pedestrian walkover of the western half of the proposed project area. When artifacts were found they were marked by a pin flag. The area of artifact concentration was reinspected, with the survey crew maintaining closer intervals sufficient to provide complete coverage of the site area.

Using a plane table and alidade, an artifact surface distribution map was produced. The artifacts were collected and bagged at this time according to individually assigned field numbers (FN) which correspond to numbered positions on the plane table map.

Once the distribution of surface debris had been plotted, a 1x1 meter test unit was excavated in the area of artifact concentration. The southwest corner of the unit was established at 90 N/ 10 E by triangulating from points on the 0 East base line. An arbitrary assumed elevation of 100.00 m, corresponding to the height of the alidade, was established for vertical control. The test unit was excavated in 10 cm levels within natural strata. The entire unit was excavated to a depth of 20 cm below the artifact bearing zone. In the northwest corner of the unit, a 30x30 cm area was excavated to a depth 40 cm below the artifact bearing zone to test for deeper buried cultural deposits. All soils from the test unit were screened through 0.25 inch hardware cloth. Soils were described by texture, structure and Munsell color codes.

Laboratory Analysis

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

V. RESULTS

RESULTS OF LITERATURE AND RECORDS SEARCH

Arkansas Archaeological Survey State Site Files

Information on site locations within a 3 km radius of the project area was supplied by the Arkansas Archeological Survey. Nine sites are located within the 3 km vicinity. These include five sites (3CT72, 73, 74, 75 and 76) which are small scatters of prehistoric lithic and ceramic materials recorded during the survey of Ten Mile and Fifteen Mile Bayou (Smith 1975). Three sites, including the Pierce site (3CT32), the Young site (3CT10), and the Edmondson site (3CT33) are larger mound and village complexes dating from the Woodland and Mississippian periods. The Edmondson site was recently the focus of investigations associated with the proposed Edmondson sewage improvement project (Williams 1986). The remaining site within the vicinity of the project area, 3CT65, is designated a small isolated farmstead or small hamlet dating to the Woodland period.

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

1939 & 1954 Topographic Maps

The Tennessee Division of Archaeology records at the C.H. Nash Museum in Memphis, Tennessee, were consulted to procure older topographic maps of the project area. The oldest map available was a 1934 U.S.G.S. Edmondson, Arkansas, 15 minute series quadrangle map. This map showed that most of Section 25, including the site area, had been cleared of forest vegetation, while the banks of Fifteenmile Bayou were vegetated. No structures were noted on this map within the project area. A similar situation was recorded on the 1954 Edmondson, Arkansas 15 minute series quadrangle map.

Crittenden County Tax Assessment Ledgers

Crittenden County Tax assessment ledgers from 1866 to present were reviewed. Records prior to 1866 were not available for review. Ledgers prior to 1900 were in poor condition, and no ledgers from 1866 to 1883 could be located. Although the information is sketchy, it provides valuable insights into the land use and parceling during different periods of land tenure.

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Figure 2. Site Area. View towards the northeast.

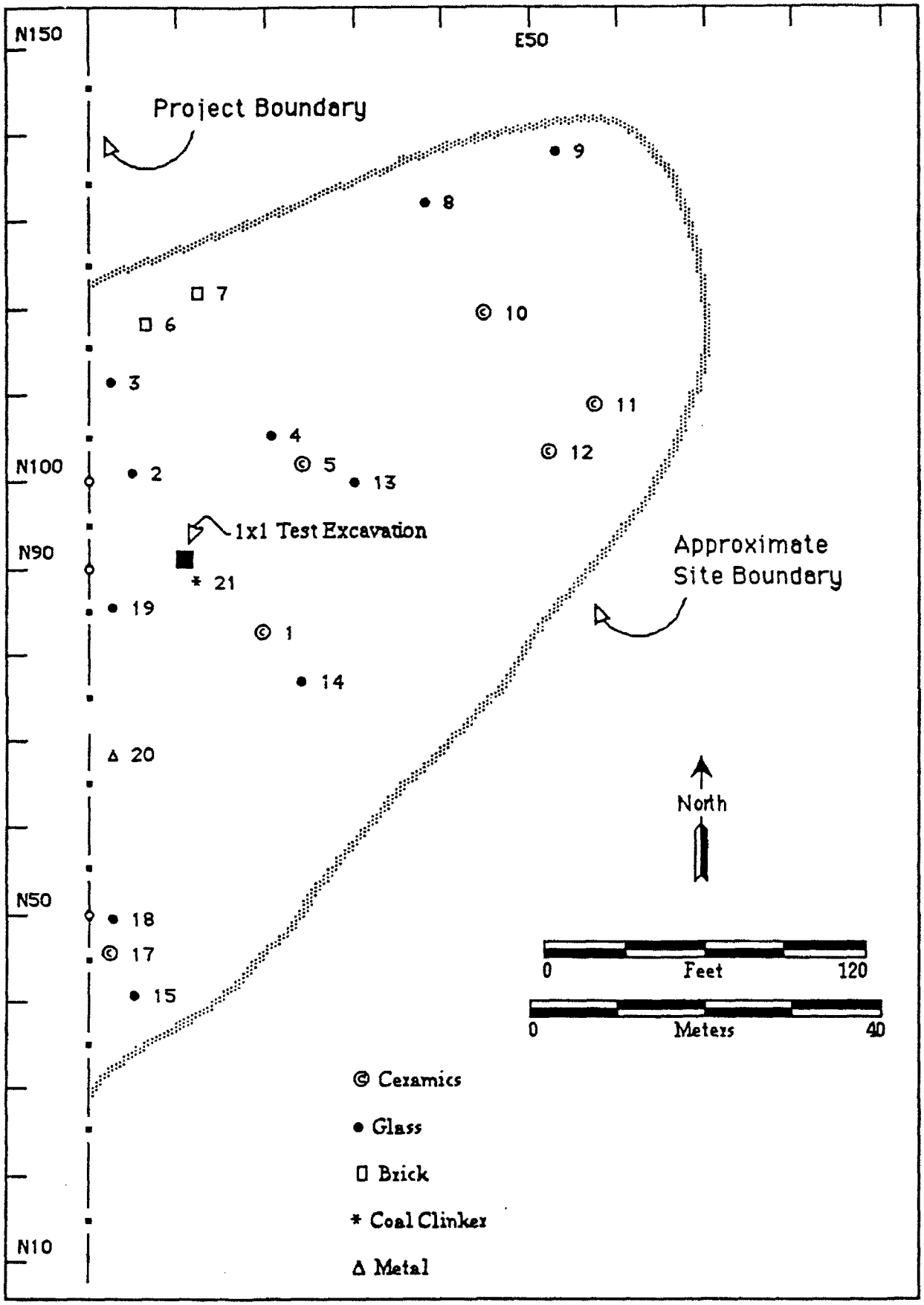

Figure 3. Map of Artifact Distributions and Site Area

Table 1: Artifact Inventory for Site 3CT263

Field Number	Count	Artifact Description
FN-1	1	Institutional Ironstone, with backmark "STAND...OTEL"
FN-2	1	Cobalt blue machine made threaded lip, bottle fragment
FN-3	2	Dark green machine made bottle glass
FN-4	1	Clear machine made crown bottle top fragment
FN-5	1	Institutional Ironstone
FN-6	1	Red brick fragment, unidentified, unglazed
FN-7	1	Red brick fragment, unidentified, unglazed
FN-8	1	Unidentified Amethyst bottle glass
FN-9	1	Clear machine made bottle glass
FN-10	1	Institutional Ironstone
FN-11	1	Institutional Ironstone
FN-12	1	Institutional Ironstone
FN-13	1	Clear machine made bottle glass
FN-14	1	Clear machine made bottle glass
FN-15	2	Clear machine made bottle glass
FN-16	1	Clear machine made bottle glass, with embossed lettering
FN-17	1	Buff Stoneware, Bristol exterior/Brown glaze interior
FN-18	1	Clear machine made bottle glass
FN-19	1	Clear machine made bottle glass
FN-20	1	Amber machine made bottle glass
FN-21	1	Coal slag/clinker

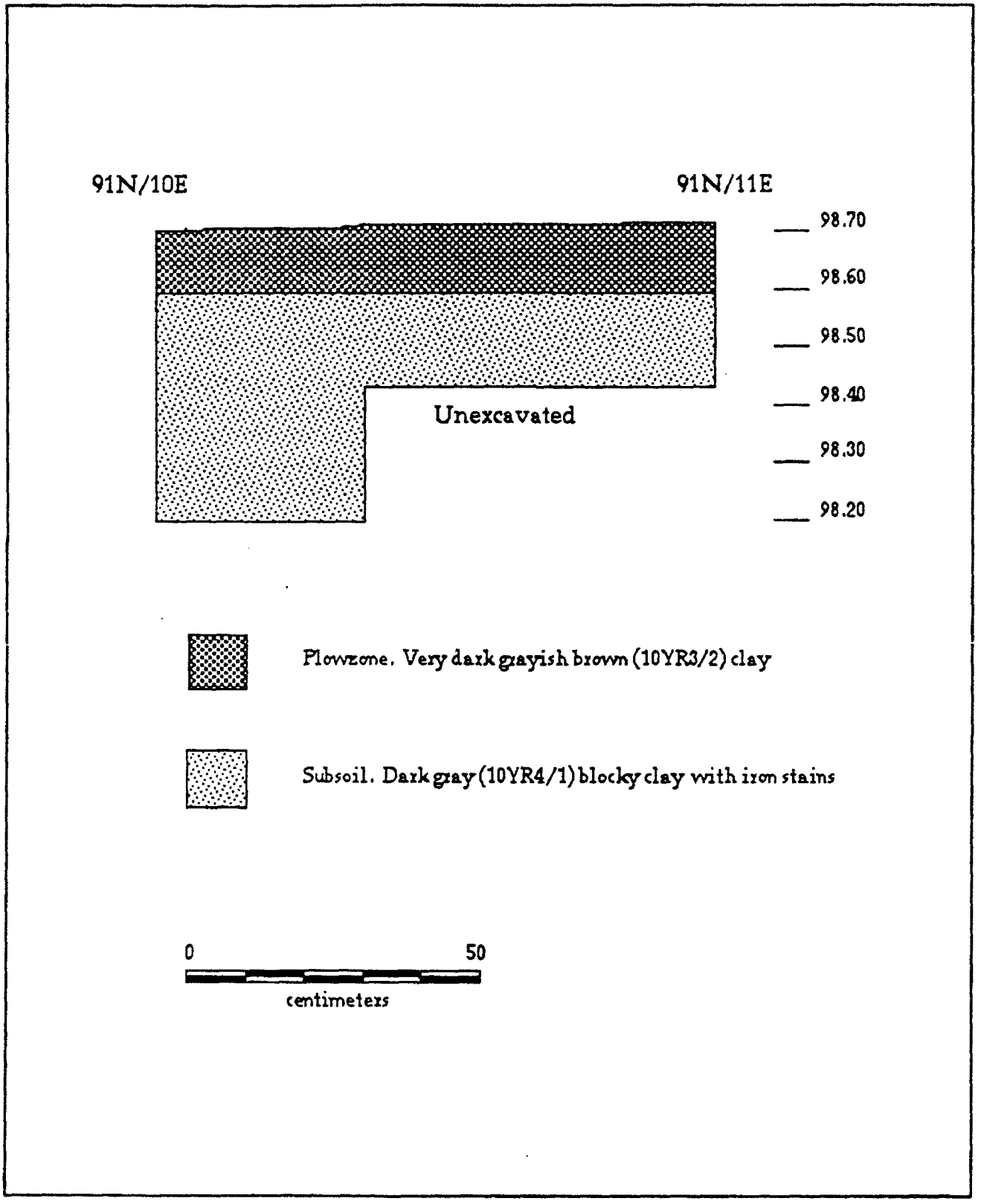

Figure 4. Test Unit 1 North Profile

Level 2 (10-20 cm) and level 3 (20-30 cm) were composed of dark grey (10YR4/1) blocky clay, mottled with reddish iron stains. No artifacts were recovered from these two levels. The blocky, moist clay was more difficult to screen than the clay in level 1.

At the base of level 3 the unit floor was 20 cm below the artifact bearing plow zone. A 30x30 cm section of the northwest corner of the unit was selected to be excavated to a depth of 40 cm below the artifact bearing plow zone. This section was also devoid of cultural features and artifacts.

Unit 1 produced no indication of cultural deposits. The only artifact recovered in the excavation, an unidentified piece of metal, was contained in the plowzone. Soils in this unit conform to published profiles for Sharkley silty loam 0-1% slopes.

Laboratory Analysis

The artifacts were analysed by Garrow & Associates, Inc. using a system based on South's (1977) artifact patterning concept. Four attributes for historic artifacts were recorded: Group (this refers to South's Kitchen Group, Architecture Group, etc.), Class (essentially raw material, such as ceramic, glass, metal), Type (a general artifact type, like pearlware), and Subtype (a specific artifact type, such as handpainted pearlware).

Kitchen ceramics are divided among three categories: earthenware, stoneware, and porcelain, with earthenware being the most commonly recovered historic ceramic from nineteenth-century occupations. The definition of nineteenth-century earthenware types is less readily accomplished than for earlier ceramics, however. Ceramic types which developed following pearlware are primarily characterized by a decrease in the degree of cobalt tinting and the eventual creation of "white" ceramics referred to in the archaeological literature as "whitewares." In 1813, C. J. Mason and Company of England introduced a new ceramic type known variously as "ironstone" or "stone china." This was an extremely high-fired ware which was normally vitrified, and thus technically a stoneware. However, vitrification did not always occur, and this characteristic cannot always be used with assurance to separate ironstones from other refined earthenwares. As archaeologist and ceramic historian George Miller has noted (1980:2), the distinction between the various white-bodied wares of the nineteenth century is difficult to accomplish. Research by Miller (1980) indicates that surface decoration, more than ware type, determines the relative socio-economic status of different historic ceramics, and following Miller many archaeologists are now focusing their analyses on decorative motifs and shying away from the creamware - pearlware - whiteware - ironstone debate. However, work by Garrow (1982) at the Washington Civic Center site suggests a

more accurate resolution to the difficulties in distinguishing whiteware from ironstone. Working with exceptionally large assemblages from tightly defined nineteenth century contexts, Garrow (1982) was able to define a refined earthenware ceramic with a cream-tinted paste and an opaque white glaze which was susceptible to crazing. He noted that the paste of this ceramic was more large-grained than comparable ironstones and decorated earthenwares, and Garrow defined this type as cream-colored ware, assuming it was the least expensive plain earthenware ceramic referred to in the price-fixing guides cited by Miller (1980). Cream colored ware (referred to in shorthand as CC ware by Garrow) is described as exhibiting the following characteristics: a yellow to ivory body cast; a grainy paste which was apparently not as well-fired as ironstone, and was hence lighter by volume than other ceramics; and a glaze which is susceptible to crazing. Following Miller (1980), Garrow divides white-bodied late nineteenth century ceramics into two categories: late refined earthenwares and ironstones. CC ware and the various decorative types found on nineteenth century earthenwares (e.g. hand painting, transfer printing, edging, sponging, etc.) are included in the Late Refined Earthenware category, while both plain and decorated ironstone are included in the ironstone group. The characteristics of ironstone recognized by Garrow (1982) include a refined, stark white, bluish, or gray paste; and a dense body and greater weight than comparable sherds.

A total of five ironstone sherds were recovered from the surface inspection at the site. No porcelains or CC ware sherd were evident. All the earthenware sherds recovered from the site exhibit a plain white glazed surface characteristic of American made institutional ironstone, or "Hotel" ware. One sherd (FN-1) has a partial printed backmark "STAND... ...OTEL". Referring to the identification of East Liverpool, Ohio ceramic marks collected by Gates and Ormerod (1982:247, Fig. 227c), this backmark can be associated with the Standard Pottery Company, in operation between 1886 and 1927. This particular mark was printed on ironstone Hotel ware between 1886 and ca. 1910.

While refined table wares contribute the majority of sherds from the assemblage, one stoneware sherd was also recovered (FN-17). Stonewares, generally employed for utilitarian purposes, were made throughout the United States. Four glaze types are prevalent on these wares: (1) Alkaline, a sand and ash glaze indigenous to the Deep South, and used from ca. 1820 until the 1890s; (2) Albany Slip, a clay slip glaze mined for the Albany, New York, region, and used from the early 1800s to the present; (3) Salt-glazing, which is one of the oldest known glazes applied to stoneware, and which had a focus in the northeastern U.S. but was found throughout the country; and (4) Bristol Slip, a chemical and clay slip glaze which was made popular in the U.S. after 1884 and was used almost always exclusively after 1920 (Greer 1981:211-212). The one sherd recovered exhibits an Albany-like brown glazed interior and Bristol glazed exterior. The combined use of Albany and Bristol glazes probably dates from the period between 1884 and 1920 (Greer 1981:212).

In addition to the kitchen ceramics, 12 sherds of bottle glass were recovered (Table 1). While most early glass was free-blown, mold-blown and machine made bottles became common during the nineteenth and twentieth centuries. Mold-blown glass occurs after ca. 1818. Machine made bottles were used in commercial production beginning in 1893, although fully automatic devices were not introduced until 1917 (Jones and Sullivan 1985:39). All of the identifiable bottle glass recovered from the Edmondson project area is machine made. Of particular note is the one piece of solarized amethyst glass (FN-8). "Sun colored amethyst", produced with manganese, was most common in the period including the last quarter of the nineteenth century until World War I (Jones and Sullivan 1985:13). Amethyst glass thus provides a *terminus ante quem* date of 1916 for the site.

The only other artifacts recovered from the collection include two small fragments of unglazed brick. The specimens were too fragmentary to identify method of manufacture. In general, the absence of brick, window glass, nails and other architectural artifacts suggests that this site consists of late nineteenth-early twentieth century kitchen refuse scatter, and that any possible structural remains are located outside the project boundaries.

VI. SUMMARY AND MANAGEMENT RECOMMENDATIONS

Archaeological site testing at 3CT263, a small historical site located within the direct impact area of the proposed Edmondson Sew ge Disposal Lagoon near the town of Edmondson, Crittenden County, Arkansas, wa conducted at the request of the U.S. Army Corps of Engineers, Memphis District. The field work at the site was completed under the supervision of Gerald P. Smith, and the cultural resources background and literature search, the artifact analysis and the report preparation was completed by Garrow & Associates, Inc.

The literature and records search included consultation of the Arkansas Archaeological Survey State Site Files, a review of Tax Assessment Records at the Crittenden County Courthouse, and documentary research into the history of Crittenden County at the Crittenden County Library Arkansas History Room. The C.H. Nash Museum in Memphis, Tennessee provided 1939 and 1954 USGS 15 minute topographic maps of the study area.

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

The archaeological field work included a controlled surface collection in which all artifact proveniences were recorded by mapping with a plane table and alidade. The distribution of the surface artifacts guided the placement of a 1x1 meter test unit.

Twenty-three artifacts were recovered from the controlled surface collection in an area approximately 70 m northwest-southeast by 100 m southwest-northeast. A cursory examination of the area west of the project boundary showed this area to be devoid of artifacts. The assemblage is reflective of the late nineteenth to early twentieth centuries. Subsurface testing recovered one artifact, an unidentified piece of metal from the plow zone, and demonstrated that the potential for significant subsurface cultural deposits on the site is very low. The absence of window glass, nails and other architectural artifacts in the assemblage, suggests the site represents a small kitchen refuse scatter, and that any possible structural remains are located outside the project boundaries.

Based on the findings from the archaeological testing and the literature and records search, it appears that the research potential of the site is very low, and the site appears to fail to meet criteria established for eligibility for nomination to the National Register of Historic Places. No further archaeological work is recommended.

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Thomas, Prentice M.
1986 Little Cypress Bayou Site (3CT50) Investigations. Arkansas Archeological Survey AMASDA Project File No. 1269. New World Research, Inc.

Waddell, David B.
1981 *An Archeological Survey of the Proposed Sewer Improvement Project Area for the City of West Memphis, Crittenden County, Arkansas.* Submitted to Bond Consulting Engineers, Inc. Arkansas Archeological Survey, Fayetteville.

Williams, Ishmael
1986 *An Archeological Survey of the Proposed Edmondson Sewer Improvements, Crittenden County, Arkansas.* Submitted to Eddie Brawley, P. E. Consulting Engineers. Arkansas Archeological Survey, Fayetteville.

Woolfolk, Margaret Elizabeth
1967 *Railroads Serving Crittenden County, Arkansas.* Ms. on file. Crittenden County Library, Arkansas History Room, Marion, Arkansas.

United States Geological Survey (U.S.G.S.)
1981 Edmondson Ark.-Tenn. Quadrangle, 7.5 minute series. U.S. Geological Survey, Reston, Va.

1954 Edmondson Ark.-Tenn. Quadrangle, 15 minute series. U.S. Geological Survey, Reston, Va.

1939 Edmondson Ark.-Tenn. Quadrangle, 15 minute series. U.S. Geological Survey, Reston, Va.

APPENDICES

APPENDIX 1: SCOPE OF WORK FOR FIELD INVESTIGATIONS

DESCRIPTION/SPECIFICATIONS

A CULTURAL RESOURCES SITE SURFACE
AND SUBSURFACE EVALUATION
WITHIN THE PROPOSED PERMIT AREA

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

a. A Cultural Resources Site Surface and Subsurface Evaluation Within the Proposed Permit Area.

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

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

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

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

1.3. Personnel Standards.

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

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

(1) Archeological Project Directors or Principal Investigator(s) (PI). Individuals in charge of an archeological project or research investigation contract, in addition to meeting the appropriate standards for archeologists, must have a publication record that demonstrates extensive experience in successful field project formulation, execution and technical monograph reporting. Unless otherwise directed by the Contracting Officer, it will be mandatory that at least one individual actively participating as Principal Investigator or Project Director under this contract, have demonstrated competence and ongoing interest in relevant research domains in the Southeast

Missouri Region. Extensive prior research experience as Principal Investigator or Project Director in immediately adjacent areas will also satisfy this requirement. The requirement may also be satisfied by utilizing consulting Co-principal Investigators averaging no less than 25% of Principal Investigator paid hours for the duration of contract activities. Changes in any Project Director or Principal Investigator during a delivery order must be approved by the Contracting Officer. The Contracting Officer may require suitable professional references to obtain estimates regarding the adequacy of prior work.

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

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

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

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

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

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

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

c. All operations shall be conducted under the supervision of qualified professionals in the discipline appropriate to the data that is to be discovered, described or analyzed. All contract related activities shall be performed consistent with the Secretary of Interior's Standards and Guidelines for Archeology and Historic Preservation, and the Society of Professional Archeology's Code of Ethics and Standards. Vitae of personnel involved in project activities may be required by the Contracting Officer at anytime during

the period of service of this contract.

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

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

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

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

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

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

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

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

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

1.13. There will be two categories of meetings between Contractor and Contracting Officer: (1) scheduled formal meetings to review contract performance, and (2) informal, unscheduled meetings for clarification,

assistance, coordination and discussion. The initial meeting may be held prior to the beginning of field work. Category (1) meetings will be scheduled by the Contracting Officer and will be held at the most convenient location, to be chosen by the Contracting Officer. This may sometimes be on the project site, but generally will be at the office of the Contracting Officer.

2. DEFINITIONS.

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

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

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

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

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

2.6. "Significance" is attributable to those cultural resources of historical, architectural, or archeological value when such properties are included in or have been determined by the Secretary of the Interior to be eligible for

inclusion in the National Register of Historic Places after evaluation against the criteria contained in 36 CFR 63.

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

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

3. STUDY AREA

3.1. Study Area

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

4. GENERAL PERFORMANCE SPECIFICATIONS.

4.1. Research Design.

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

4.2. Site Surface Evaluation

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

ground cover requires such techniques.

b. Care should be taken to avoid bias in collecting certain classes of data or artifact types to the exclusion of others (ex: debitage or faunal remains) so as to insure that collections accurately reflect both the full range and the relative proportions of data classes present (ex: the proportion of debitage to finished implements or types of implements to each other). Such a collecting strategy shall require the total collection of quadrat or other sample units in sufficient quantities to reasonably assure that sample data are representative of such descrete site subareas as may exist. Since the number and placement of such sample units will depend, in part, on the subjective evaluation of intrasite variability, and the amount of ground cover, the Contractor shall describe in the study report the rationale for the number and distribution of collection units. In the event that the Contract utilizes systematic sampling procedures in obtaining representative surface samples, care should be taken to avoid periodicity in recovered data. No individual sample unit type used in surface data collection shall exceed 36 square meters in area. Unless a smaller fraction is approved by the Contracting Officer, surface collected areas shall constitute no less than 25 percent of total site areas. No two surface collection units shall be adjacent to each other. Detailed results of controlled surface collections shall be graphically depicted in plan view in the report of investigations.

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

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

4.3. Subsurface Testing/Evaluation

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

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

c. Stringent horizontal spatila control of testing shall be maintained by

relating the location of all test units to the primary site datum either by means of a grid system (including those used in controlled surface collection) or by azimuth and distance.

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

e. If in situ human remains are encountered and all skeletal remains and associated cultural items cannot be properly removed and documented under the terms of the contract and delivery order, burials shall not be excavated but shall be carefuliy refilled in a manner which will afford maximum protection to the burial in the event of later excavation.

5. GENERAL REPORT REQUIREMENTS.

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

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

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

a. Title Page. The title page should provide the following information; the type of task undertaken, the study areas and cultural resources which were assessed; the location (county and state), the date of the report; the contract number; the name of the author(s) and/or the Principal Investigator; and the agency for which the report is being prepared. If a report has been authored by someone other than the Principal Investigator, the Principal Investigator must at least prepare a forward describing the overall research context of the report, the significance of the work, and any other related background circumstances relating to the manner in which the work was undertaken.

b. Introduction. This section shall include the purpose of the report, a description of the proposed project, a map of the general area, a project map, and the dates during which the investigations were conducted. The introduction

shall also contain the name of the institution where recovered materials and documents will be curated.

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

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

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

f. Recommendations.

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

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

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

synthesized interrelated corpus of data including those data generated in the present study.

g. References (American Antiquity Style).

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

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

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

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

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

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

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

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

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

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

5.14. Generally, all measurements should be metric.

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

used.

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

6. SUBMITTALS.

6.1. Unless otherwise stipulated in the delivery order, the Contractor shall submit 2 copies of the draft report, one unbound original and 5 final report. In the event more than one series of review comments is determined necessary by the Contracting Officer, additional draft copies may be required.

6.2. The Contractor shall include in the report, site drawings which show exact boundaries of all cultural resources within the project area and their relationship to project features.

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

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

6.5. The Contractor shall supply the appropriate State Historic Preservation Office with completed site forms, survey report summary sheets, maps and other forms as appropriate. Blank forms may be obtained from the State Historic Preservation Office. Copies of such completed forms and maps shall be submitted to the Contracting Officer within 20 calendar days of the end of fieldwork.

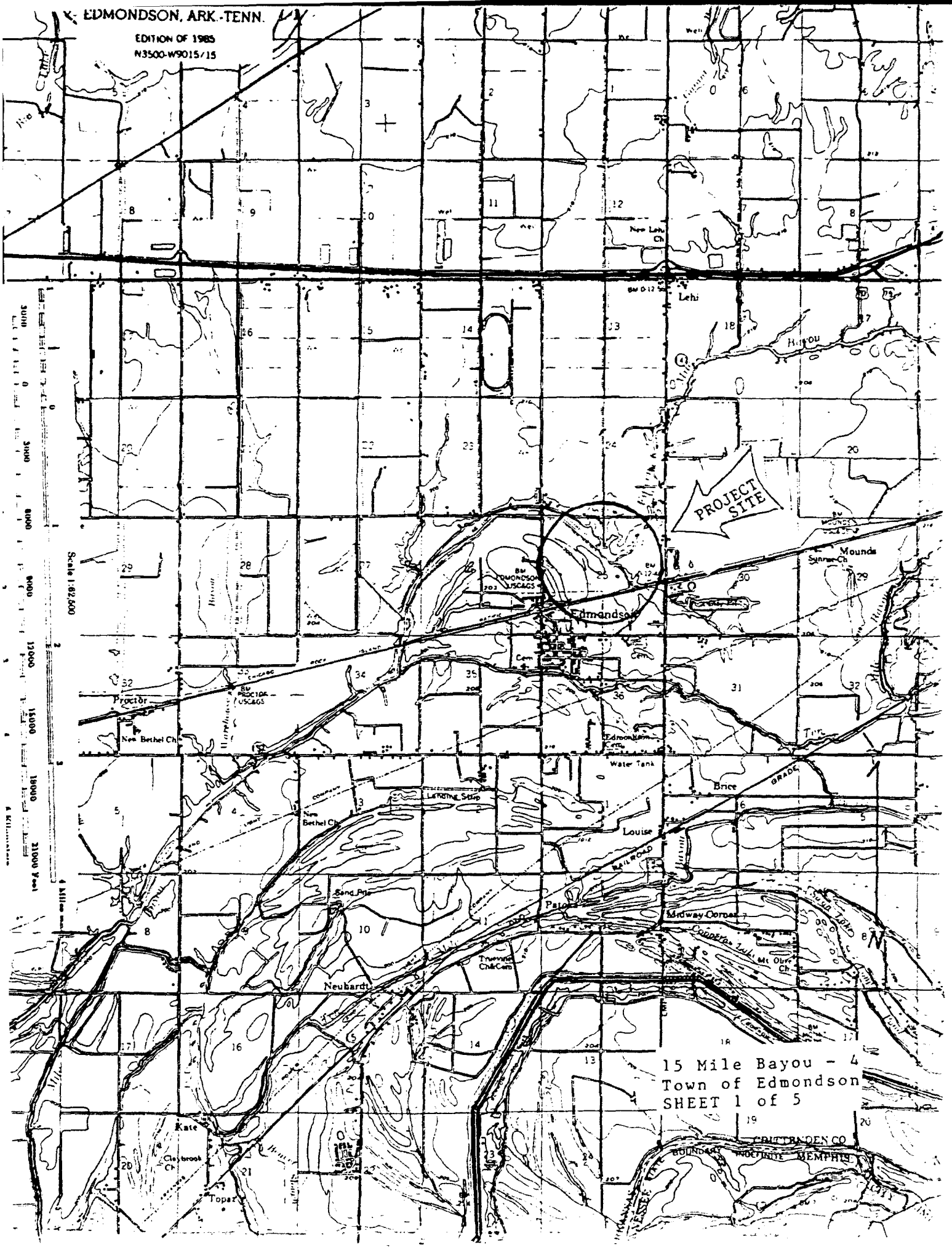
6.6 Documentation. The Contractor shall submit detailed monthly progress reports to the Contracting Officer by the 7th day of every month for the duration of the contract. These reports will contain an accurate account of all field work, and results in sufficient detail to allow monitoring of project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

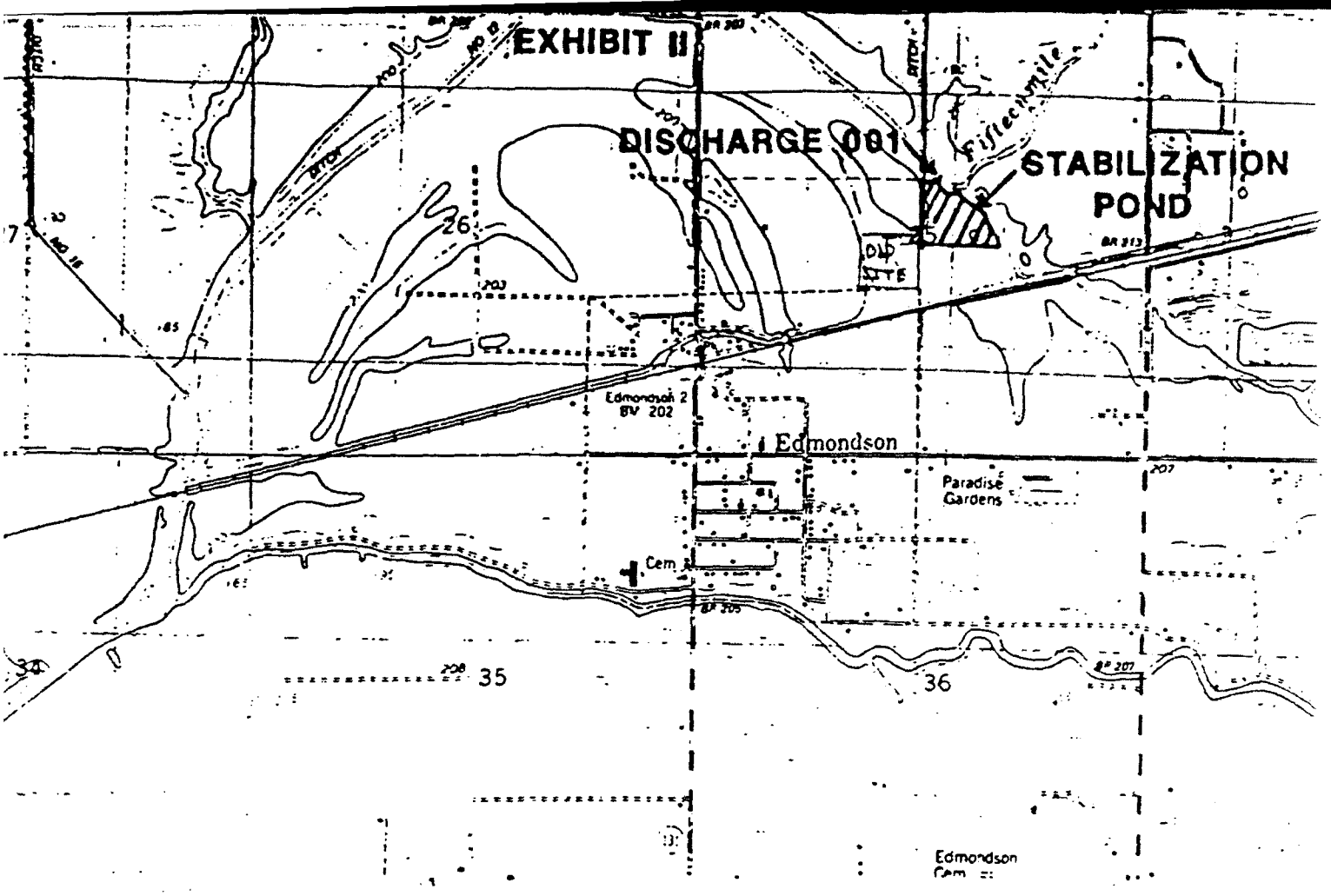
6.7. Additional submittals may be required.

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

7. Schedule.

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

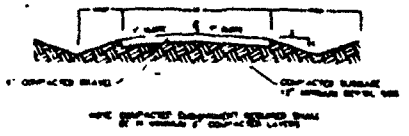

EDMONDSON, ARK.-TENN.
EDITION OF 1985
N3500-W9015/15
PROJECT SITE
Scale 1:62,500
Lehi
Edmondson
Proctor
Mounds
Brice
Louise
Neubardt
Kate
Topaz
MEMPHIS
CRITTENDEN CO
15 Mile Bayou - 4
Town of Edmondson
SHEET 1 of 5



LOCATION MAP
FROM U.S. GEOLOGICAL SURVEY MAP
EDMONDSON WASTEWATER POND
EDMONDSON, ARKANSAS

15 Mile Bayou - 4
Town of Edmondson
SHEET 2 of 5

BRAWLEY CONSULTING ENGINEERS, INC.
308 EAST BOND STREET
WEST MEMPHIS, ARKANSAS



SECTION
ACCESS ROAD

BRAWLEY
Consulting Engineers West M
SEWERAGE IMPROVEMENTS
ARMANDSON ADDITION
GENERAL PLAN

EFFLUENT LINE

FIFTEEN MILE BAYOU

PROPOSED LAGOON

T-6-N
R-6-E
25

MATCH LINE

MATCH LINE

PROPOSED LAGOON ACCESS ROAD

ST. LOUIS-SOUTHWESTERN R.R.

6" FORCE MAIN

FRONT

LATERAL "12"

N

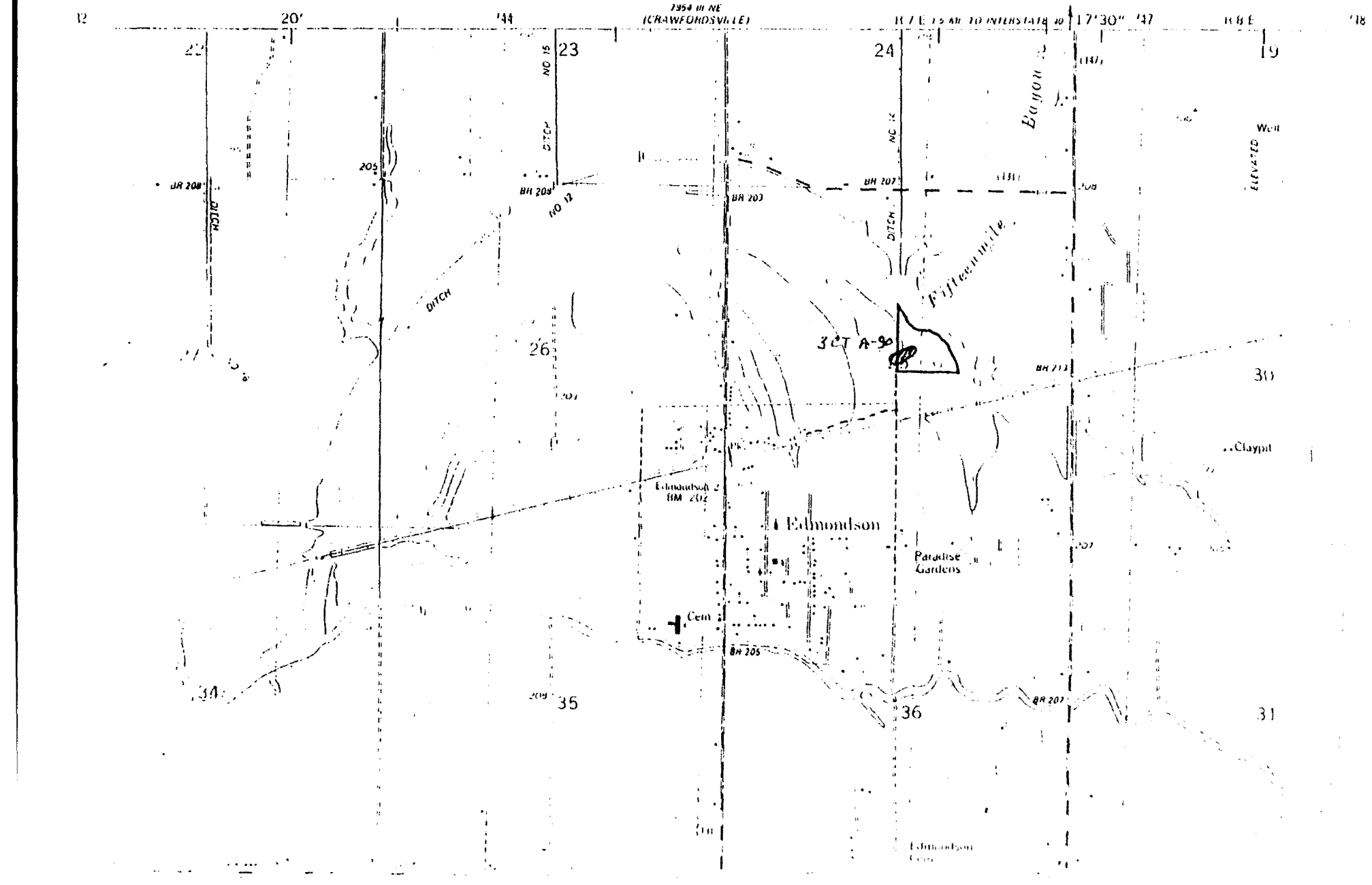
-LEGEND-

SANITARY SEWER GRAVITY LINE
SANITARY SEWER MANHOLE
EXISTING WATER LINES
EXISTING GAS LINES

NOTE: UTILITY LINES SHOWN ARE LOCATED FROM BEST AVAILABLE INFORMATION BUT MAY OR MAY NOT BE AS INDICATED. CONTRACTORS SHOULD VERIFY UTILITY LOCATIONS AND TYPES WITH LOCAL REPRESENTATIVES OF VARIOUS UTILITIES.

15 Mile Bayou - 4
Town of Edmondson
SHEET 3 of 5

7.5 M.W. QUADRANGLE



APPENDIX 2: SCOPE OF WORK FOR ANALYSIS AND REPORT PREPARATION

DESCRIPTION/SPECIFICATIONS

A CULTURAL RESOURCES SITE LITERATURE SEARCH,
ARTIFACT CLEANING, ANALYSIS AND CURATION PREPARATION
AND REPORT WRITING WITHIN THE PROPOSED PERMIT AREA

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

a. A Cultural Resources Background and Literature Searches, Artifact Cleaning, Analysis, and Curation Preparation and Report Writing Within the Proposed Permit Area.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

c. All operations shall be conducted under the supervision of qualified professionals in the discipline appropriate to the data that is to be

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

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

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

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

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

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

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

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

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

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

safety requirements relating to the deep excavation of soils.

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

2. DEFINITIONS.

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

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

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

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

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

roposed impact area.

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

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

.8. "Analysis" is the systematic examination of material data, environmental lata, ethnographic data, written records, or other data which may be rerequisite to adequately evaluating those qualities which contribute to their ignificance.

. STUDY AREA

.1. Study Area

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

. GENERAL PERFORMANCE SPECIFICATIONS.

.1. Background and Literature Search.

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

b. Information and data for the literature search shall be obtained, as ppropriate, from the following sources: (1) Scholarly reports - books, ournals, theses, dissertations and unpublished papers; (2) Official Records - ederal, state, county and local levels, property deeds, public works and other egulatory department records and maps; (3) Libraries and Museums - both egional 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 reservation Office, the office of the State Archeologist; (6) Consultation with ualified professionals familiar with the cultural resources in the area, as ell as consultation with professionals in associated areas such as history, edimentology, geomorphology, agronomy, and ethnology.

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

d. The background and literature search shall be performed in such a anner as to facilitate the construction of predictive statements (to be ncluded in the study report) concerning the probable quantity, character, and istribution of cultural resources within the project area. In addition, nformation obtained in the background and literature search should be of such cope and detail as to serve as an adequate data base for subsequent cultural esources work undertaken for the purpose of discerning the character and ignificance of specific cultural resources or for the constuction of research esigns undertaken in conjunction with future area cultural resources tasks.

.3. Laboratory Processing, Analysis and Preservation.

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

. GENERAL REPORT REQUIREMENTS.

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

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

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

a. Title Page. The title page should provide the following information; the type of task undertaken, the study areas and cultural resources which were assessed; the location (county and state), the date of the report; the contract number; the name of the author(s) and/or the Principal Investigator; and the agency for which the report is being prepared. If a report has been authored by someone other than the Principal Investigator, the Principal Investigator must at least prepare a forward describing the overall research context of the report, the significance of the work, and any other related background circumstances relating to the manner in which the work was undertaken.

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

c. Table of Contents.

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

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

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

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

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

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

j. Analytical Methods and Results. This section shall contain an

explicit discussion of analytical methods and results, and shall demonstrate how field data, environmental data, previous research data, the literature search and personal interviews have been utilized. Specific research domains and questions as well as methodological strategies employed should be included where possible.

k Recommendations.

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

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

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

l. References (American Antiquity Style).

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

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

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

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

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

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

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

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

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

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

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

5.14. Generally, all measurements should be metric.

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

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

6. SUBMITTALS.

6.1. Unless otherwise stipulated in the delivery order, the Contractor shall submit 2 copies of the draft report, one unbound original and 20 final report copies with professional quality binding. In the event more than one series of review comments is determined necessary by the Contracting Officer, additional final copies may be required.

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

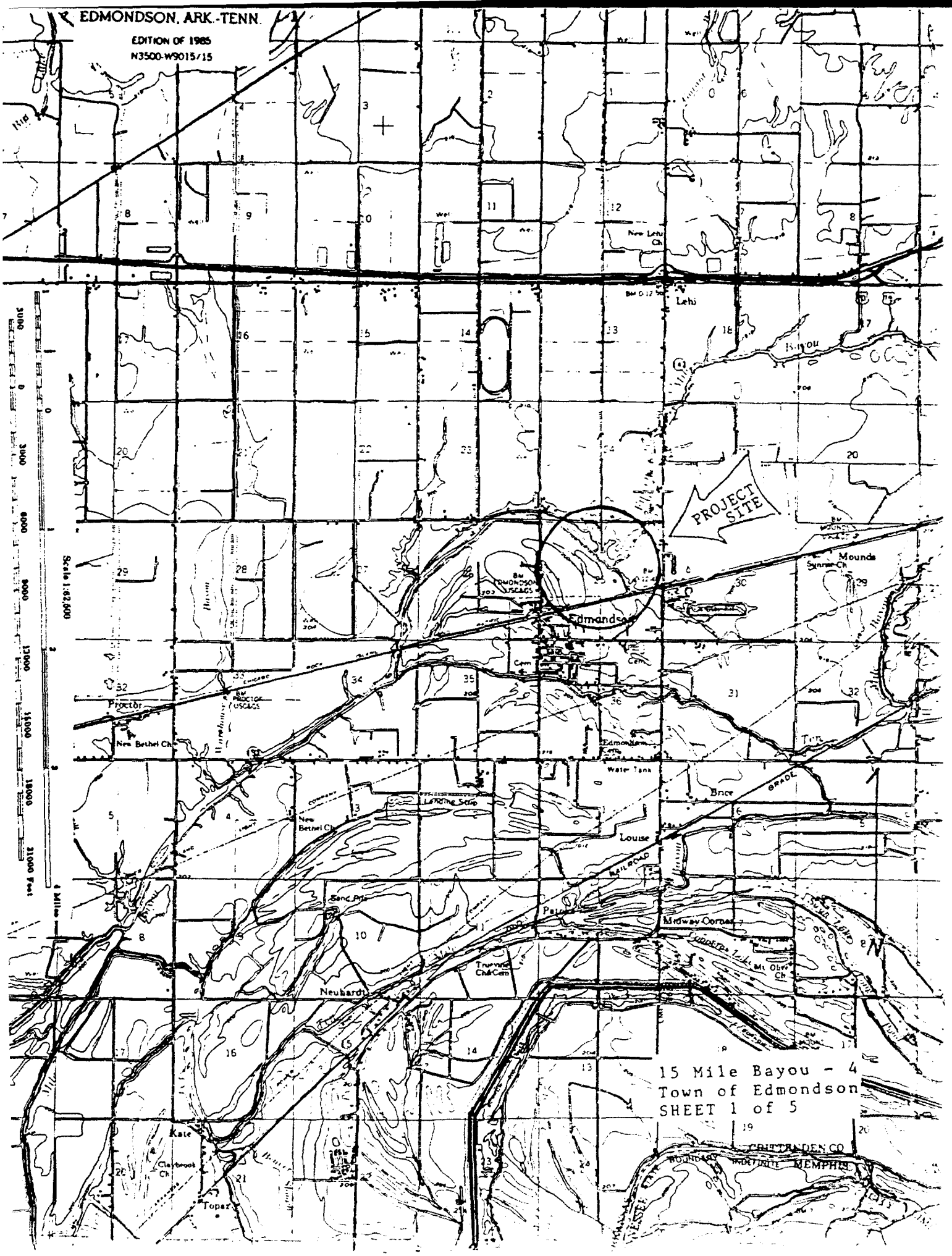
6.3. Documentation. The Contractor shall submit detailed monthly progress reports to the Contracting Officer by the 7th day of every month for the duration of the contract. These reports will contain an accurate account of all field work, laboratory procedures and results in sufficient detail to allow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

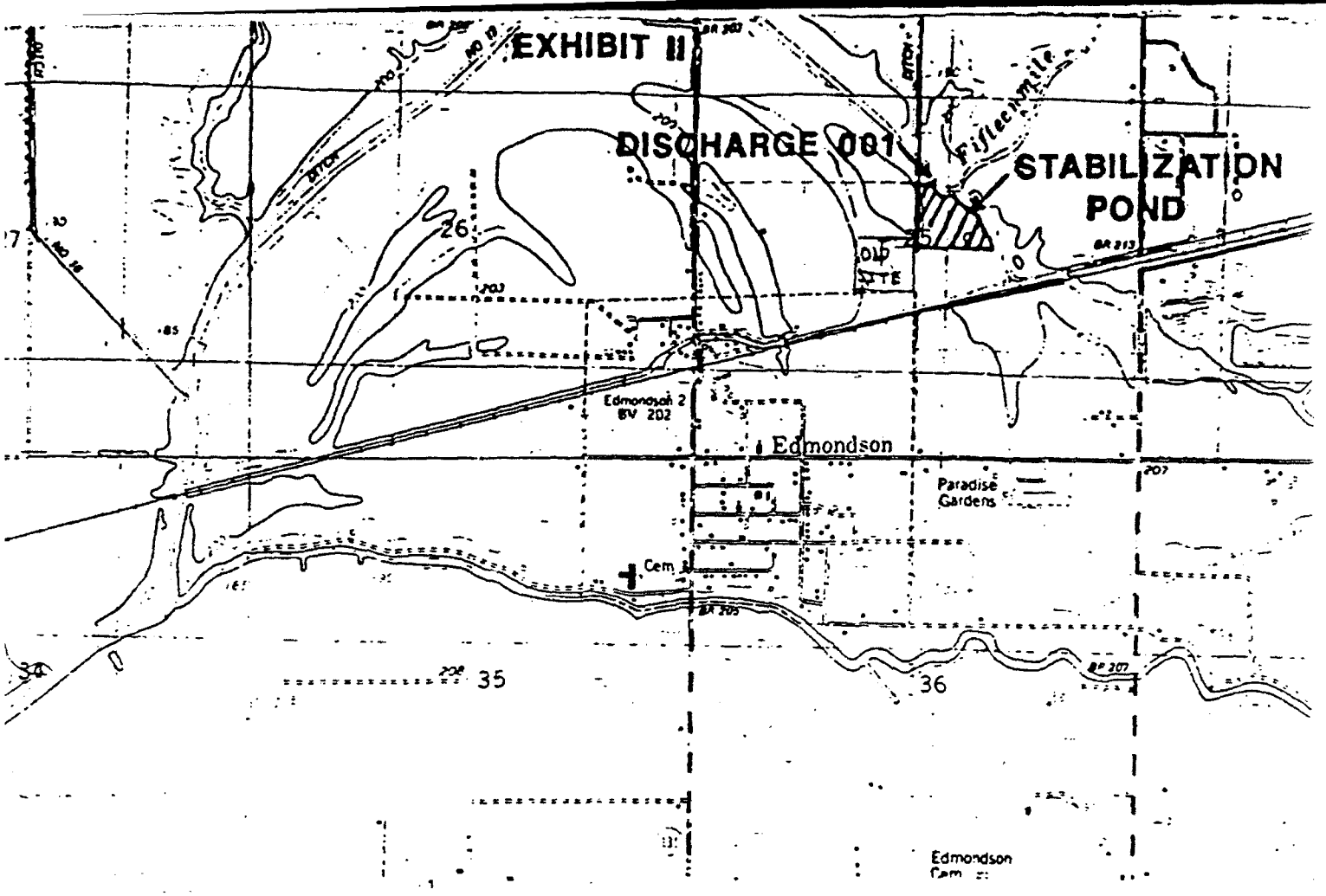
6.4. Additional submittals may be required.

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

7. Schedule.

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

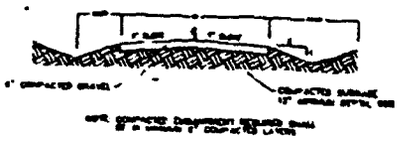

EDMONDSON, ARK.-TENN.
EDITION OF 1985
N3500-W9015/15
PROJECT SITE
Edmondson
Lehi
Mounds
Proctor
Brice
Louise
Neubardt
Midway Corner
Kate
Topaz
Scale 1:62,500
15 Mile Bayou - 4
Town of Edmondson
SHEET 1 of 5



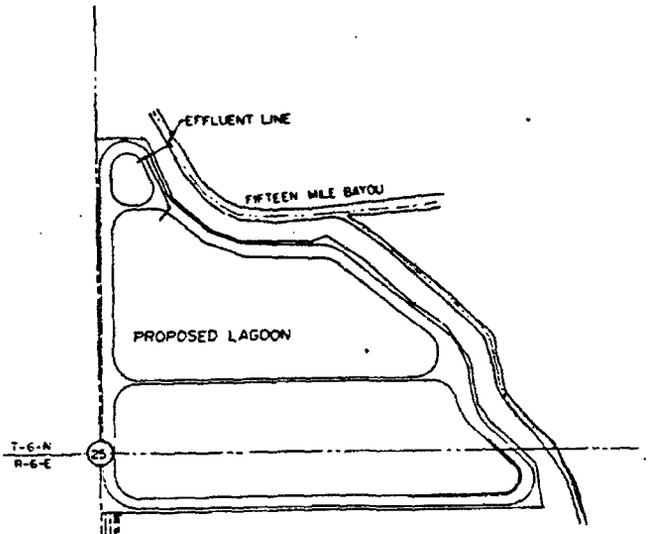
LOCATION MAP
FROM U.S. GEOLOGICAL SURVEY MAP
EDMONDSON WASTEWATER POND
EDMONDSON, ARKANSAS

15 Mile Bayou - 4
Town of Edmondson
SHEET 2 of 5

BRAWLEY CONSULTING ENGINEERS, INC.
308 EAST BOND STREET
WEST MEMPHIS, ARKANSAS



SECTION
ACCESS ROAD



MATCH LINE

MATCH LINE

PROPOSED LAGOON ACCESS ROAD

ST. LOUIS-SOUTHWESTERN R.R.

6" FORCE MAIN

FRONT

LATERAL "12"

- LEGEND -

SANITARY SEWER GRAVITY LINE
SANITARY SEWER MANHOLE
EXISTING WATER LINES
EXISTING GAS LINES

NOTE: UTILITY LINES SHOWN ARE LOCATED FROM BEST AVAILABLE INFORMATION BUT MAY OR MAY NOT BE AS INDICATED. CONTRACTOR SHOULD VERIFY UTILITY LOCATIONS AND TYPES WITH LOCAL REPRESENTATIVES OF VARIOUS UTILITIES.

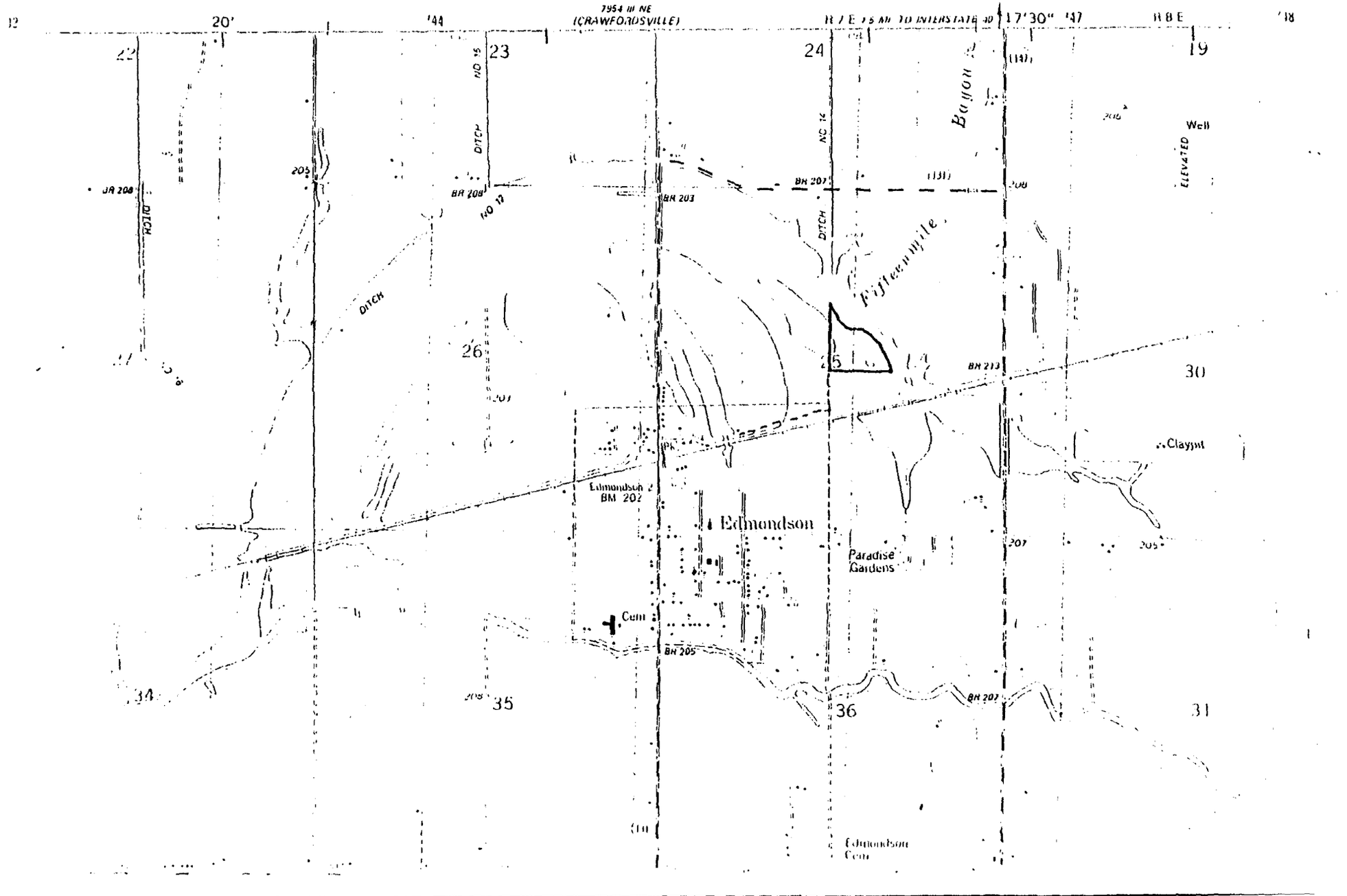
15 Mile Bayou - 4
Town of Edmondson
SHEET 3 of 5

BRAWLEY
Consulting Engineers West M

SEWERAGE IMPROVEMENTS
EDMONDSON AREA

OVERALL PLAN

7.5 MIN. QUADRANGLE



APPENDIX 3: RESUMES OF KEY PERSONNEL

GUY GORDON WEAVER
GARROW & ASSOCIATES, INC.

Education

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

Areas of Specialization

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

Professional Membership

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

Professional Experience

Academic Positions

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

Non-Academic Positions

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

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

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

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

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

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

Field Experience

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

Publications and Major Manuscripts

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

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

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

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

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

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

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

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

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

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

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

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

Weaver, Guy G.

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

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

Weaver, Guy G. and Herminio R. Rorríguez Morales

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

Coggeshall, John M. and Jo Anne Nast

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

Weaver, Guy G.

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

Weaver, Guy G. and Jonathan Bloom

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

Weaver, Guy G.

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

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

Cooperative, Inc., Breese, Illinois.

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

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

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

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

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Weaver, Guy G. and Mitch Childress

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

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

Weaver, Guy G. and David Bowman

1984 *An Archaeological Survey of the Proposed Area for Land Application of Waste Water, 201 Facility Plan, EPA Project No. C470-69-01-0, Oakland, Fayette County, Tennessee*. Report submitted to Gregory-Grace and Associates, Engineers, Bartlett, Tennessee.

Charles H. McNutt and Guy G. Weaver

1983 *The Duncan Tract Site (40TR27), Trousdale County, Tennessee*. The Tennessee Valley Authority Publications in Anthropology No. 33, Norris, Tennessee.

Charles H. McNutt, Guy G. Weaver, and Glenda Maness

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

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

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

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1979 *Archaeological Survey of the Proposed Franklin-Hartsville Transmission Line.* Report submitted to the Tennessee Valley Authority, Norris, Tennessee.

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1977 *An Archaeological Survey of the Proposed Piney Campground Expansion, Land Between the Lakes, Steward County, Tennessee.* Report submitted to the Tennessee Valley Authority, Norris, Tennessee.

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

Professional Papers

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

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

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

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

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

C. Andrew Buchner
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Education

M.A., Anthropology, Memphis State University - 1989
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Areas of Specialization

Prehistoric Archaeology of Southeastern United States, Mississippi Period Ceramics in the Central Mississippi Valley, West Tennessee Historical Archaeology, and Cultural Resource Management

Professional Memberships

1987 - Present Southeastern Archaeological Conference (Member)
1987 Vice President for Memphis Chapter of Arkansas Archaeological Society
1988 - Present Southern Anthropological Society (Member)

Professional Experience

1989-Present	Archaeologist II, Garrow and Associates, Inc.
1989-1987	Field Director, Teaching Assistant, and Crewmember, Memphis State University, Department of Anthropology

Field Experience

Participation in over 20 anthropological and archaeological field projects in Alabama, Arkansas, Mississippi, Missouri, Tennessee and the U.S. Virgin Islands; including sites from the Archaic, Woodland, Mississippian, Protohistoric, and Historic Periods.

Publications and Reports

Buchner, Drew, and William Turner

1990 *A Cultural Resources Reconnaissance of the Proposed Grand Bay Landfill Site Sestion 8, Mobile County, Alabama.* Report prepared for Waste Management , Inc. by Garrow & Associates, Inc.

Buchner, Drew and Guy G. Weaver

1990 *A Cultural Resources Intensive Survey of the Ensley Berm Construction Project, Memphis, Tennessee.* Report prepared for the U. S. Army Corps of Engineers by Garrow & Associates, Inc.

Buchner, Drew

1990 *A Cultural Resources Reconnaissance Survey of the Proposed East Tennessee Natural Gas Pipeline Loop and Lateral Expansions in Trousdale, Putnam, Blount, and Greene Counties, Tennessee.* Report submitted to East Tennessee Natural Gas, Co. by Garrow & Associates, Inc.

Buchner, C. Andrew and Charles H. McNutt, Sr.

1989 *A Phase I Reconnaissance Survey of the Proposed Forced-Main Sewer Line from the Bluff Road to the Mississippi River, Tipton County, Tennessee.* A Report submitted to the City of Munford, Tennessee.

Dye, David H. and C. Andrew Buchner

1988 Preliminary Archaeological Investigations of the West Mounds (22TU520), Tunica County Mississippi. *Mississippi Archaeology* 23(2):64-75.

Professional Papers Presented

1989 "Ceramic Analysis at the West Mounds (22TU520), Tunica County, Mississippi." Southern Anthropological Society, 24th Annual Meeting, Memphis.

1988 "Preliminary Archaeological Investigations of the West Mounds (22TU520), A late Mississippian/Protohistoric Site located in Tunica County, Mississippi." Southeastern Archaeological Conference, 50th Annual Meeting, New Orleans.

VITA

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EDUCATIONAL DATA:

Southwestern at Memphis, Memphis, Tennessee, B. A. (Anthropology) 1963

University of North Carolina at Chapel Hill, M. A. (Anthropology) 1965

University of Missouri, Columbia, Missouri, PhD (Anthropology) 1971

ACADEMIC HONORS:

Honorable Mention, Westinghouse Science Talent Search, 1959

B. A. degree with Honors in Anthropology, Southwestern at Memphis, 1963

Superior Performance in University Research Award, Memphis State University, 1984, 1985, 1988, 1989

PROFESSIONAL POSITIONS:

1962-63	Student Assistant, Chucalissa Museum, Memphis State University
1963-65	Research Assistant, Department of Anthropology, University of North Carolina, Chapel Hill
1965-66	Field Director, Hand Site Archaeological Project, Division of Archives and History, Virginia State Library
1967-68	Research Assistant, Department of Anthropology, University of Missouri, Columbia
1967-68	Site Archaeologist, Towosahgy State Park, Missouri State Park Board
1968-	Director, Chucalissa, Department of Anthropology, Memphis State University
1974-76	Acting Chairman, Department of Anthropology, Memphis State University, Summer
1980-81	Member, Tennessee Archaeological Advisory Council

PROFESSIONAL ORGANIZATIONS

American Anthropological Association
Society for American Archaeology
Southeastern Archaeological Conference
Plains Archaeological Conference
Society for Historical Archaeology
Mid-South Archaeological Conference
American Society for Photogrammetry and Remote Sensing

OTHER RELATED SKILLS

Photography: 35mm through large format technical and general; aerial photography (oblique and vertical), custom darkroom and restoration work.

Private pilot's license with instrument rating, single engine, land based

PUBLICATIONS AND REPORTS

1965 Archaeological Survey of the New Hope Reservoir Area, North Carolina. Master's Thesis, Univerrsity of North Carolina at Chapel Hill.

1967a Early Settlement, 1583-1667. Atlas of North Carolina, edited by Richard A. Lonsdale. University of North Carolina Press.

1967b Field Work in Missouri: Beckwith's Fort. Southeastern Archaeological Conference Newsletter, Vol. II.

1969a Ceramic Handle Styles and Cultural Variation in the Central Mississippi Valley. Memphis State University Anthropological Research Center, Occasional Papers, No. 3.

1969b "Architecture Use of Daub" in Two House Sites in the Central Plains, edited by W. Raymond Wood, Plains Anthropologist, Memoir 6.

1969c "Perishable Remains" in Two House Sites in the Central Plains, edited by W. Raymond Wood, Plains Anthropologist, Memoir 6.

1969d Field Work at Chucalissa. Southeastern Archaeological Conference Newsletter, Vol. 13.

1971a Protohistoric Sociopolitical Organization of the Nottoway. Ph.D. Thesis, University of Missouri.

1971b Archaeological Resources of the Mississippi River Drainage in West Tennessee. In Archaeological Resources of the Lower Mississippi Valley, edited by Hester A. Davis. University of Arkansas for the U. S. Army Corps of Engineers.

1971c Poverty Point Period Occupations in West Tennessee. Paper presented at Mid-South Archaeological Conference, August, 1971.

1971d The Late Archaic through Early Woodland Periods in West Tennessee. Paper presented at Southeastern Archaeological Conference, November, 1971. Bulletin of the Southeastern Archaeological Conference, Vol. 15:109-118.

1972a Archaeological Sotes located in Dam 3 Reservoir Site, in Nonconnah Creek Basin Environmental Directory, compiled by John W. Smith. Memphis State University for U. S. Army Corps. of Engineers.

1972b Archaeological Resources of the Mississippi River Flood Zone below Cairo, Illinois, in Tennessee, Miss ouri, and Kentucky. Subcontractor to Environtrol, Inc., for Mississippi River Commission.

1973a Chucalissa Revisited, Memphis State University.

1973b Archaeological Resources of the Eight Mile Creek Basin, Arkansas. Archaeological environmental impact study subcontractor for RAMCON, Research and Management Consultants, Memphis, Tennessee, for U. S. Army Corps of Engineers.

1973c Archaeological Resources of the Millington-Arlington Highway Study Corridor. Subcontractor to Harland Bartholomew and Associates, for Memphis and Shelby County Planning Commission.

1974a Summary of Current Anthropological Data in the Portions of the Forked Deer and Obion River Basins to be Affected by Corps Channelization and Proposed Reservoirs. For U. S. Army Corps of Engineers.

1974b Archaeological Reconnaissance of the Reelfoot-Lake No. 9 Project Impact Area, Fulton Co., Kentucky, and Lake Co., Tennessee. U. S. Army Corps of Engineers, Memphis District.

1974c Archaeological Resources of the Obion-Forked Deer Basin in Western Tennessee. U. S. Department of Agriculture, Soil Conservation Service.

1974d Archaeological Inventory and Assessment, Parcel No. 1, Monglewood, West Tennessee Tributaries Project. U. S. Army Corps of Engineers.

1974e Archaeological Resources of Shelby County, Tennessee. Memphis and Shelby County Planning Commission.

1975a Archaeological Investigations in the Reelfoot-Indian Creek Watershed, Obion County, Tennessee, and Fulton County, Kentucky. U. S. Department of Agriculture, Soil Conservation Service.

1975b Archaeological Resources of the Fifteen Mile Bayou Project Area, St. Francis and Crittenden Counties, Arkansas. U. S. Army Corps of Engineers.

1976 Investigation of Indian Mounds Area, Shiloh National Military Park. National Park Service, Southeastern Region.

1977 (With Lou C. Adair, Field Supervisor). Ft. Pillow State Park MSU Archaeological Field School Excavations, July 13-August 13, 1976. Memphis State University.

1978a Report of Archaeological Excavations, The Riverdale Site 3PO395, Poinsett County, Arkansas. GAI Consultants, Pittsburg. Memphis District, Corps of Engineers, Contract No. DACW66-77-C-0135.

1978b Survey of Archaeological Architecture, and Historical Resources for Item No. 1, Big Creek Enlargement and Diversion Project, Crittenden County, Arkansas. Science Applications, Inc. (SAI), Huntscille, Alabmam. Memphis District, Corps of Engineers, Contract NO. DACW66-78-C-0052.

1979a Cultural Resources Inventory of Hatchie National Wildlife Refuge, Haywood County, Tennessee. Interagency Archaeological Services, Atlanta.

1979b Archaeological Surveys in the Obion-Forked Deer and Reelfoot-Indian Creek Drainages: 1966 Through Early 1975. Memphis State University Anthropological Research Center. Occasional Papers, No. 9.

1982a The Rock Creek Archaeological Project, Natchez Trace Parkway, Colbert County Alabama. Memphis State University Anthropological Research Center. Occasional Papers, No. 11.

1982b (with Charles McNutt) Salvage Excavations at Adams and Riverside Drive, Memphis, Tennessee. Tennessee Anthropologist 7:151-175.

1984a Excavation at the Hand Site, Southampton County Virginia. Virginia Archaeological Society Special Publication II.

1984b An Archaeological Overview and Management Plan for the Mississippi Army Ammunition Plant, Hancock County, Mississippi. Woodward-Clyde Consultants (Ruthann Knudson, WCC Principla Investigator) under National Park Service contract CX-5000-3-0771 for U. S. Army Development and Readiness Command.

1984c (With Kenneth Hartsell) An Archaeological Overview and Management Plan for the Tarheel Army Missle Plant, Alamance County. North Carolina. Woodward-Clyde Consultants (Ruthann Knudson, WCC Principal Investigator) under National Park Service contract CX-5000-3-0771 for U. S. Army Development and Readiness Command.

1984d (With Kenneth Hartsell) An Archaeological Overview and Management Plan for the Milan Army Ammunition Plant, Gibson and Carroll Counties, Tennessee. Woodward-Clyde Consultants (Ruthann Knudson, WCC Principal Investigator) under National Park Service contract CX-5000-3-0771 for U. S. Army Development and Readiness Command.

1984e (With Guy G. Weaver, Jr.) An Archaeological Overview and Management Plan for the Radford Army Ammunition Plant, Montgomery and Pulaski Counties, Virginia. Woodward-Clyde Consuiltants (Ruthann Knudson, WCC Principla Investigator) under National Park Service contract CX-5000-3-0771 for U. S. Army Development and Readiness Command.

1985 Fort Germantown Historic Park, Historic Background, Archaeological Investigations, and Recommendations. Report prepared for city of Germantown, under contract with Buchart-horn, Consulting Engineers & Planners, Memphis.

1986a Reconnaissance Survey of the Nonconnah Creek Parkway Corridor, Memphis, Tennessee. Report prepared for Fisher-Phillips-Arnold Engineers, Memphis.

1986b Cultural Resources Review of Spring Creek Watershed, Carroll, Henry, and Weakley Counties, Tennessee. Report prepared for U. S. Department of Agriculture, Soil Conservation Service, Purchase order no. 43-4741-6-214.

1986c Fort Germantown Historic Park: Season 2 Archaeological Excavations. Report prepared for City of Germantown, Tennessee.

1986d (With Richard Walling) Phase II Testing on Archaeological Site 40GL28, Giles County, Tennessee. Report prepared for Tennessee Department of Transportation.

1987a Preliminary Archaeological Testing on the Nelson-Kirby Farm Site, Germantown, Shelby County, Tennessee. Prepared for Walter Douglass Wills, III.

1987b (With E. Raymond Evans) Archaeological Investigations of the Tiptonville Levee Project Area along Old Graveyard Slough in Lake County, Tennessee. Report prepared for Memphis District U. S. Army Corps of Engineers, under contract No. DACW66-87-M-1302R.

1988a (With Richard A. Weinstein) Cultural Resources Survey, Without Testing of the Nonconnah Creek Project, Shelby County, Tennessee. Coastal Environments, Inc., Baton Rouge, LA, for Memphis District U. S. Army Corps of Engineers, under contract No. DACW66-87-D-0025.

1988b Excavations and Architecture on the Main Mound at Chucalissa. Paper presented at 50th Southeastern Archaeological Conference, New Orleans.

1988c (With Charles McNutt) Poverty Point Trade and Influence in Western Tennessee. Paper presented at 50th Southeastern Archaeological Conference, New Orleans.

1988d Cultural Resources Assessment of the Horn Lake Creek and Tributaries Project, DeSoto County, Mississippi. Report prepared for Memphis District, U. S. Army Corps of Engineers.

1989a Cultural Sequence of Western Tennessee. Paper presented at Southern Anthropological Society Conference, Memphis.

1989b Archaic Cultures of Western Tennessee. Paper presented at Midsouth Archaeological Conference, Memphis.