PHASE I CULTURAL RESOURCES SURVEY OF THE PROPOSED LeFLEUR LAKES, HINDS, MADISON AND RANKIN COUNTIES, MISSISSIPPI

Report prepared for

Waggoner Engineering, Inc.
Jackson, Mississippi

Vicksburg District.
U.S. Army Corps of Engineers

and

Mississippi Department of Archives and History

Report prepared by
Archaeology Mississippi, Inc.

Report by

Mary Evelyn Starr
James May
Daniel Allen
James Lauro
Kristen Kinsella

James Thomas Lauro

James T. Lauro, M.A., Principal Investigator

May 2006

REDACTIONS DONE BY RANKIN-HINDS PEARL RIVER FLOOD AND DRAINAGE CONTROL DISTRICT

Acknowledgements

There are many people who have contributed to making the Lefleur Lakes project a reality. Many thanks to Mike Goff of Wildlife Technical Services, Inc. of Vicksburg, Mississippi and Engineers at Waggoner Enginering, Inc. in Jackson, Mississippi including Bill McDonald, Steve McMahan and especially Barry Royals who have been very helpful. Barry was supportive of all our efforts and always encouraging to talk to. Barry was very helpful in keeping the logistics of such a large project fully functioning. As has been the case over the years, Wildlife Technical Services, Inc. and Waggoner Engineering, Inc. have always stood behind us. Special thanks to Mr. Gary Walker, Project Manager, of the Army Corp of Engineers, Vicksburg, Mississippi. Archaeologist, Mike Renaker, of the Army Corp of Engineers, Vicksburg District, assisted us in every phase of this large project. Mike attended numerous Archaeology Mississippi, Inc. staff meetings always ready to hear what our plans were and offer his encouragement. We have had many discussions about the role of archaeology in general and of historic archaeology in particular. Mike's comments have helped make the section on local Jackson history more concise. As well, Mike has made himself readily available, and this has been a big help.

We are appreciative of the help given to us by the Mississippi Department of Archives & History since the beginning of the project in 2004. Cliff Jenkins, former Mississippi Department of Archives & History Staff Archaeologist, as well as Staff Archaeologist, David Abbott, have offered their insights not only on the project research design but also on the general activities associated with this project. A special thanks goes to Scott McCoy and Jim Woodrick for their help in review & compliance issues as well as the role of local civil war history. Special thanks also goes to Tom Waggoner, Review & Compliance Officer, and Pam Lieb, Chief Archaeologist. These people have been readily available and very helpful. Finally, it goes without saying that Sam McGahey, former Chief Archaeologist of the Mississippi Department of Archives & History, has supported Archaeology Mississippi, Inc. and myself, in particular, all through this long and difficult project. As of this writing, Sam in semi-retired and has turned the reigns of Chief Archaeologist over the Pam Lieb. Sam was especially helpful in viewing collections dating to the early Archaic Period from the project area.

The 2004 to 2006 Archaeology Mississippi archaeology crew deserves much of the recognition for the success of this project. Mary Evelyn Starr has served as Project Director and has been primarily responsible for the overall survey effort. Her knowledge of southeastern archaeology is impressive and her experience is extensive. Mary Evelyn's standards are very high, and she demands good work from the people who work for her. Thank you for keeping everything headed down the track. Thanks to Dr. Dan Allen for his section on local Jackson history and Dr. James May for his section on the project geomorphology. Christen Kinsella has done a great job editing Dr. Allen's section and Kristen's contribution makes for easy reading of that section of the report. Dr. James May's understanding of floodplain geomorphology has been extremely valuable in his ability to suggest potential locations for buried Late Pliestocene and Early Archaic deposits.

The field crew worked diligently sometimes under rather difficult conditions. Special thanks go to Pete Hawkins, (M.A., Anthropology, University of Southern Mississippi), Kris Underwood (B.S. Anthrolpolgy, Mississippi State University),..Nash Harris (B.A. Anthropology, Millsaps College) and Ryan Hardy (B.S. Anthrolpology, Mississippi State University). Special thanks to Matt Barrett (B. A. Millsaps College) as well as Shawn Millett of Chalmette, Louisiana. The two Starnes brothers have been very helpful throughout the length of this project. James Starnes (B.S. Geology, Millsaps College) and his brother Michael Starnes (B.S. Computer Science, Mississippi State University) worked in the field, and their understanding of computers and GPS systems were invaluable. Special thanks go to Mr. Mark Orsbun and Mr. Steve Glasgow, two crew members with many years of cultural resource experience under their belts. A joint effort of all these people have made this project a success. We are appreciative of all the landowners who allowed us access to their property. A special thanks goes to Mr. Jeff Mayo of International Paper of Morton for allowing us access to large tracts of land owned by International Paper on the Rankin County side of the project from the Ross Barnett Spillway south to Lakeland Drive. Finally, a special thanks to Mary Evelyn Starr, Margaret Lauro, Bill Starr, Sherry Russell and Kent Smith for the tireless hours dedicated to the compilation and completion of this report.

Table of Contents

List of Figures

List of Tables

I. Introduction

This document was prepared by Archaeology Mississippi, Inc., of Jackson, Mississippi. Our report will describe the results of archaeological investigations within an estimated 5000 acre area in the Pearl River floodplain in the vicinity of Jackson, Mississippi, in Hinds, Rankin and Madison Counties (Figures 1, 2). The report was prepared for Waggoner Engineering, Inc. of Jackson, Mississippi, and the Vicksburg District, U.S. Army Corps of Engineers. The cultural resources assessment is to be reviewed by the Mississippi Department of Archives and History (MDAH) in consultation with Vicksburg District archaeologists.

This cultural resources work is required as part of the planning for recreational/residential development and flood control structures to protect the Jackson metropolitan area from the danger of occasional seasonal flooding. The "Twin" or "Lefleur" lake structure is proposed to begin at the existing Ross Barnett Reservoir dam and to closely follow the existing meander belt and artificial levee system of the Pearl River downstream about 13 air miles, where a second dam would be built. The Pearl River in the metropolitan area consists of a meandering channel that is channelized in the lower or southern half of the area. Pearl River is the city of Jackson's water source (buildings at the Jackson Water Works Facility, which may be impacted by the proposed work, is considered by the MDAH to be eligible for the National Register), and it is crossed by numerous highway bridges and rail trestles (Figure 3). The survey tracts were most often heavily wooded ridge and swale terrain with many cypress and gum brakes (Figures 4, 5). The means of confinement of the lake are not shown on the plans available to Archaeology Mississippi, but dredge spoil disposal/fill areas are shown on preliminary plans.

The river was channelized in 1976 after the last major flooding in 1973. As noted, the project boundary in large part follows the existing levee system in Rankin County. The bluff lands along the west side of Hinds County will confine the lake on that side. However, there are numerous creeks and smaller streams that flow into the Pearl, as well as floodplain meander features. Most creeks in Jackson have already been channelized or otherwise modified (Figure 6-9). These include most importantly, Purple Creek, Hanging Moss Creek, Town Creek and Lynch Creek on the west bank and Pelahatchie Creek, Hog Creek, Prairie Branch, and Neely Creek on the east bank. A system of levees with control structures in these creek/drainage ditches are implied in any plan for such a lake. There may also be modification or addition of downstream levees, but no levee modifications are included in this survey.

The upstream Ross Barnett Reservoir is a broad, shallow impoundment that, while it controls water levels on the upper Pearl River, does not and was not intended to provide significant flood protection for Jackson. Very little is known about the archaeological resources that were inundated by this 1950s-1960s project (Rands 1958a, b), but one of the mound sites recorded in our 2004 survey is probably Rands' 22-Md-517).

[redacted]

[redacted]

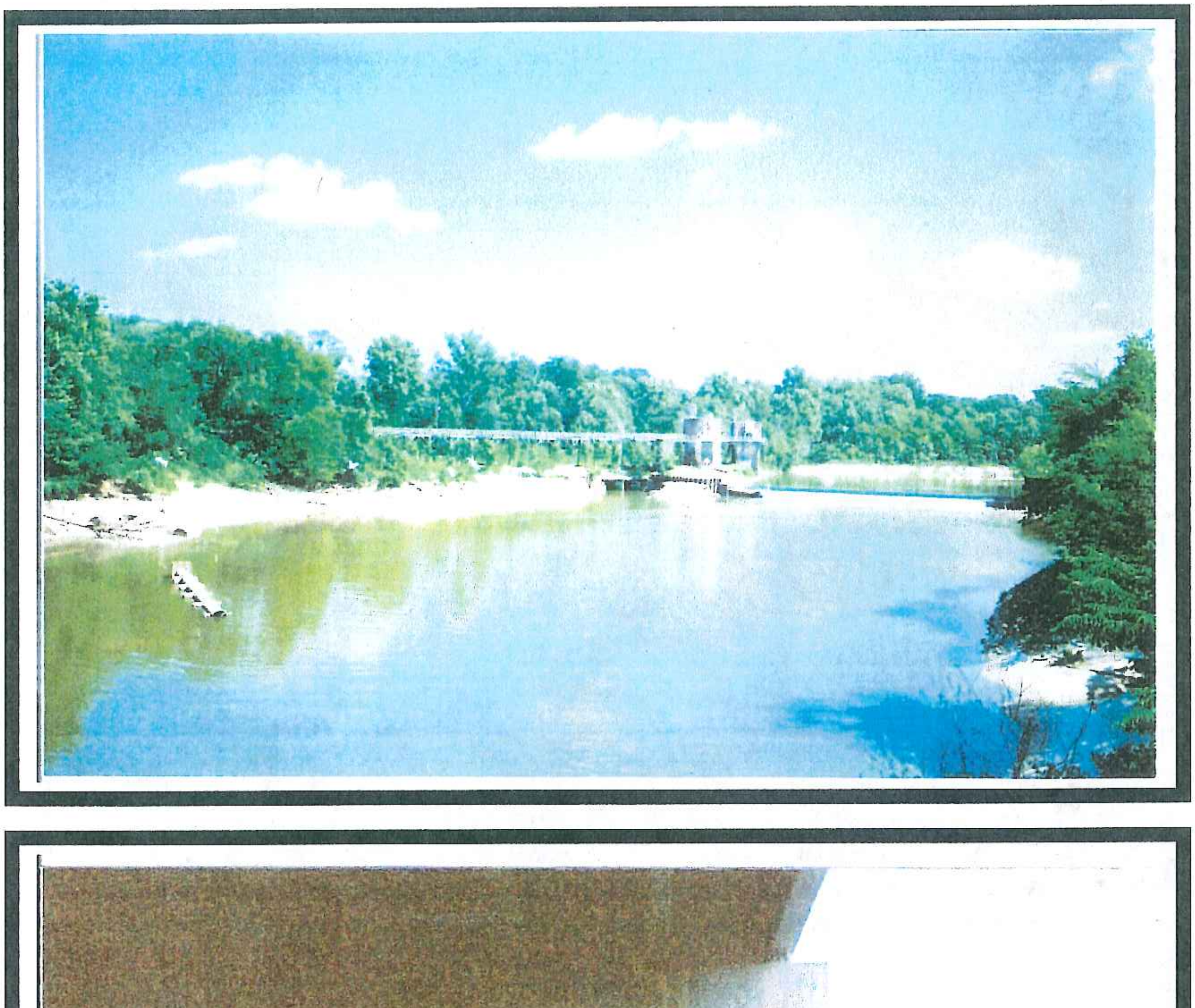


Figure 3. a. city water intake facility, b. Highway 25 bridge and revetment.

Figure 4. a. general view of Pearl River in Harris Lake/Prairie Branch vicinity, b. general view of Pearl River at end Barrett transect 16.

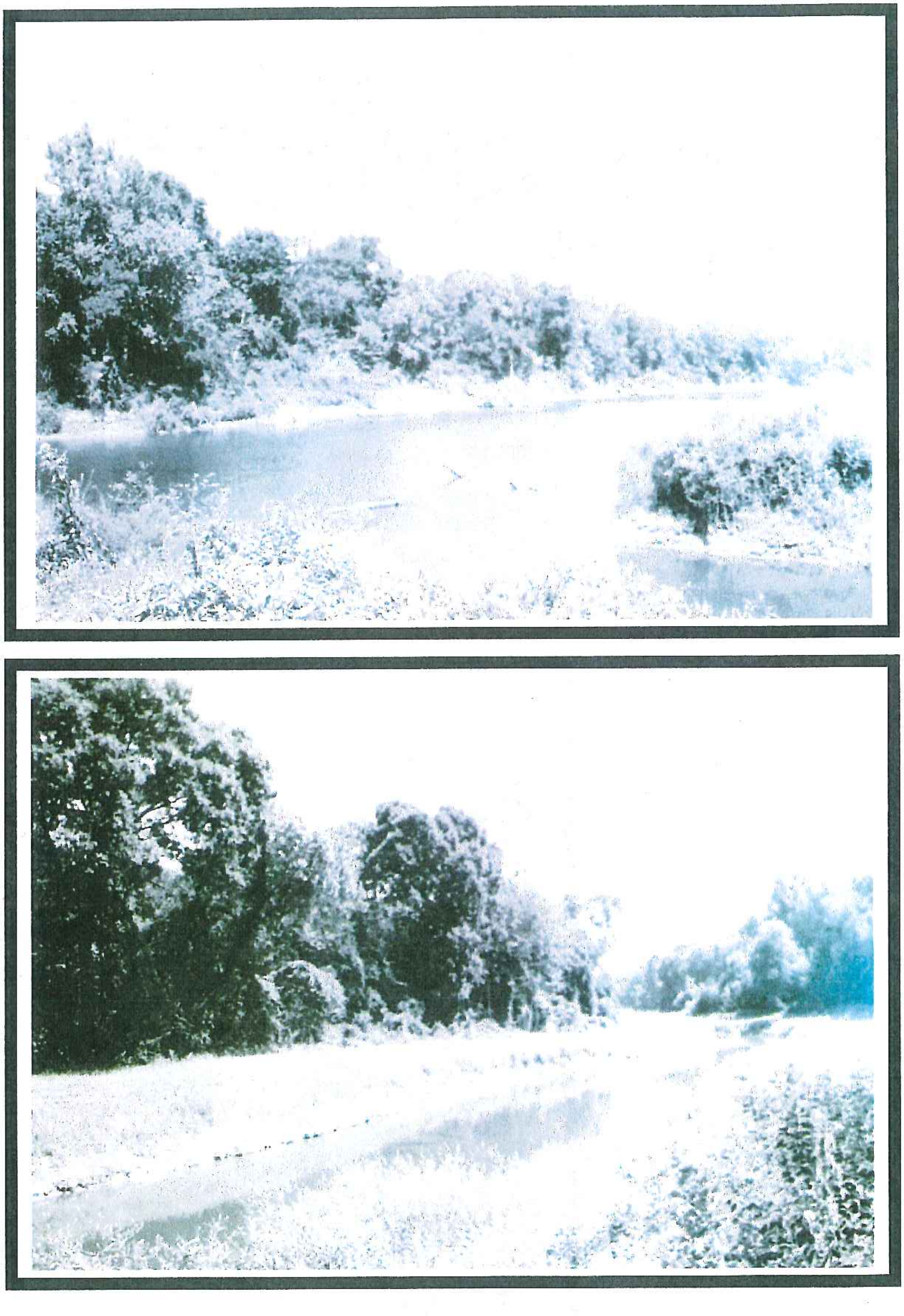


Figure 5. Prairie Branch drainage canal in Rankin County a. view west at Pearl confluence, b. view east.

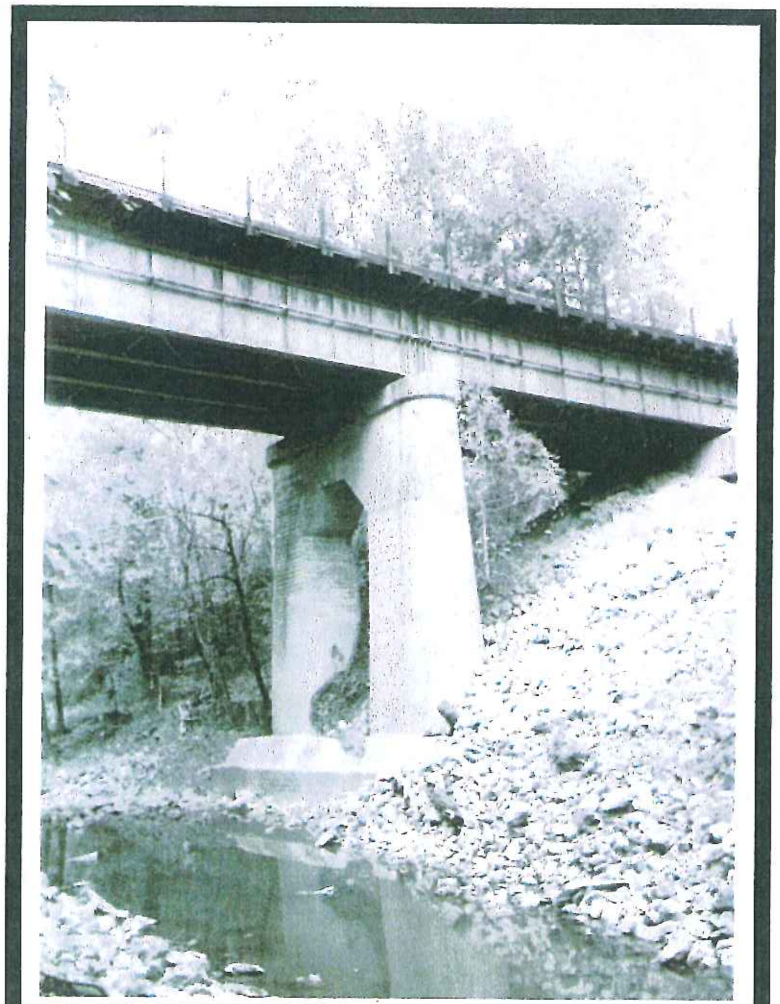


Figure 6. Lynch Creek
a. trestle abutment,
b. rip-rap and revetment.

Figure 7. Lynch Creek in south Jackson a. refuse and railroad trestle, b. gravel bars with historic debris.

Figure 8. Caney Creek below Savannah Street sewage lagoons a. abandoned railroad trestle, b. steep and eroding bank line.

Figure 9. Harris Lake cypress and tupelo swamp.

Our project is one of several alternatives being considered to mitigate the impact of flooding in the Jackson area. A preliminary cultural resources investigation has been conducted by Goodwin & Associates, Inc. (1990) to consider the cultural resources potential of a plan entailing the raising or addition of around 25 miles of levee as part of the existing system. Three earlier cultural resources records reviews with limited archaeological testing reports have been prepared, as general Pearl River overviews. Cultural resources have also been considered in the geomorphological work done for the proposed Shocco seasonal impoundment proposed as an upstream flood control alternative. The actual fieldwork for all these reports has been minimal or nil given the size of the proposed impact area under any plan. Little is known about the archaeology of the Pearl River in the metropolitan area. Likewise, the Jackson Prairie physiographic province and the wider Pearl River basin have seen very little archaeological work relative to other areas of the Southeast or even the state of Mississippi. Therefore, many archaeological sites in the project area have the potential to provide significant new knowledge about prehistory.

The principal investigator is James Lauro (M.A., Florida State University). The principal investigator served as the contact party for the project sponsors, determined general conditions and dates of work, and is the legally responsible representative for the project's accuracy and validity. The fieldwork was directed by Mary Evelyn Starr (M. A., Memphis State University). The field director trained the workers, led one survey party on a daily basis and was in occasional contact with the two other field parties. Starr is also the senior author of this report. Ryan Hardy (B. A., anthropology, Mississippi State University) and Kris Underwood (B. A., anthropology, Mississippi State University) served as field assistants, and part-time student workers include Matt Barrett, Nash Harris (B. A., anthropology, Millsaps University), Michael Starnes and Sean Millet. Steven Glasgow and Mark Orsbun served times as crew chiefs. James Starnes (B. S., Geology, Millsaps University) and Pete Hawkins (M. A., University of Southern Mississippi) worked identifying and revisiting sites on the east (Rankin County) side of the river in tracts that had previously been surveyed. The study commenced along the foot of the dam in Madison County and extended into Hinds and Rankin counties. We focused on thoroughly transecting at 30-m intervals as large an area as the available labor allowed; coverage of previously surveyed tracts was limited, but adequate to demonstrate the need for thorough coverage of these tracts. As expected, arduous conditions were encountered, as the area is bottomland hardwood forest in the active floodplain. These conditions have dissuaded previous investigators from conducting surveys using modern methods.

Some background research, including a review of previous investigations, was done prior to the commencement of fieldwork. Lab work began while fieldwork was ongoing. Field technicians worked on rain days and one evening per week on the bag list and washing artifacts. After the conclusion of fieldwork, Mary Evelyn Starr conducted artifact analysis, drafted figures and prepared this report, with the exception of chapters by James May (geomorphology) and Daniel Allen (urban history). She was assisted part-time by James W. Starr in processing soil samples (pH and particle size) and architectural rendering; Kent Smith of Tech-it-Out, Inc., Oxford, in preparing graphs; and Sherron Russell in weighing and rebagging artifacts.

This report presents the contracted-for chapters by Drs. James May (geologist) and Daniel Allen (economic historian). May's chapter focuses on fluvial geomorphology and presents a reconstructed sequence of stream meanders. The primary objectives of this study were to: a) map the geomorphic features, b) define the geomorphic processes, c) reconstruct the geomorphic evolution of the study area to aid in the evaluation of surface and buried cultural resources, and, d) determine the archaeological significance of the geomorphic features as an aid in locating previously unknown cultural sites. Allen's chapter focuses on the economic history of the city of Jackson. The report also presents the descriptions of sites, tabulation of artifacts and assessments of significance and recommendations for significant and potentially significant sites.

Margaret Lauro has prepared tables and done much of the work of compiling the report. The principal investigator, James Lauro, is the main editor. The report will be submitted on acid free paper. No curation agreement has been obtained, but artifacts and project records will probably be turned over to MDAH.

A recommendation of "not eligible" (NE) or "potentially eligible" (PE) is made for each site. This report will also make specific recommendations for avoidance or additional work at the potentially significant sites in the concluding chapter. Recommendations are summarized in Table 1.

Table 1. Summary of Site Data and Eligibility Recommendations.

Site Number	Site Type/Components	Eligibility	Comment
Madison 1 22-Md-768	Sandy terrace remnant, Late Paleo/Early Archaic (San Patrice point and uniface tools) and later components, including Gulf Formational, Woodland and Mississippian ceramics	PE	Perhaps 22-Md-680?
Madison 2 22-Md-769	Three conical mounds with Woodland occupation, Late Paleo (Ft.Payne endscraper and other tools), Late Archaic/Woodland (Gary point), Wodland ceramics	PE	Probably 22-Md-517, perhaps 22-Md-680?
Madison 3 22-Md-770	Small and damaged find, Marksville Incised sherds	NFW	Across bayou from Madison 2
Madison 4/5 22-Md-771	Shallow and sparse, Gulf Formational, Woodland and Mississippian ceramics	NFW	
Madison 6 22-Md-772	Unspecified, single component lithic scatter	PE	
Madison 7	Gulf Formational/Early Woodland ceramics	NFW	Isolated find
Madison 9/10 22-Md-773	Middle-Late Woodland ceramics, Late Woodland (Collins point)	PE	
Madison 8	Mississippian ceramics	NFW	Isolated find
Madison 11 22-Md-774	Gulf Formational and Woodland ceramics, Late Woodland (Collins point)	PE	
Madison 12 22-Md-775	Archaic?, lithics only	NFW	
22-Hi-672 City Mound	Rectangular platform mound with associated Woodland occupation,	NRHP	Enlarged boundary and corrected location

	Marksville and other Woodland and Mississippian ceramics		
22-Hi-780 Sophisticated Playhouse	Extensive light lithic scatter	NFW	Enlarged boundary
Hinds 1 22-Hi-818	Marksville ceramics	NFW	Associated with 22-Hi-672
Hinds 2/3 22-Hi-819	Gulf Formational, Marksville and other Woodland ceramics	PE	Associated with 22-Hi-672
Hinds 4 22-Hi-820	Middle Archaic (Denton), Gulf Formational and Woodland ceramics	PE	Associated with 22-Hi-672
Hinds 5	Early-mid 20th century dump	NFW	
Hinds 6 22-Hi-821	Middle-Late Woodland ceramics	NFW	Associated with 22-Hi-672
Hinds 7 22-Hi-822	Shallow Late Paleo/Early Archaic (lanceolate base) and Middle-Late Woodland ceramics	PE	Associated with 22-Hi-672
Hinds 8 22-Hi-823	Large, dense, multicomponent, Late Archaic-Woodland (Pontchartrain-Flint Creek points), primarily Woodland, ephemeral early 19th cen.,	PE	
Hinds 9/11 22-Hi-825		NFW	
Hinds 10 22-Hi-824	Marksville and other Woodland ceramics	NFW	
Hinds 12	Ephemeral 19th century	NFW	
Hinds 13 22-Hi-826	Late Paleo/Early Archaic **or** Protohistoric (endscraper), low0density lithic scatter, mid 20th century house	NFW	
Hinds 14 22-Hi-827		NFW	
Hinds 15		NFW	Isolated find
Hinds16		NFW	Isolated find
Old City Ferry Landing and Woodrow Wilson Bridge 22-Ra-671	Late 19th and early 20th cen. debris and architectural remains	NRHP	Listed bridge no longer exists, replica in place
Flowood Mound 22-Ra-502	Rectangular platform mounds?, associated occupation areas, Woodland ceramics, early-mid 20th cen. Farmsteads	E	
22-Ra-565 (Rankin 12)		NFW	
22-Ra-594	Woodland ceramics	NFW	
Rankin 1 22-Ra-672		NFW	Destroyed
Rankin 2	Coal, clinker, rust; steamboat or logging camp ?	NFW	Destroyed
Rankin 3	Flake	NFW	Destroyed
Rankin 4/5 22-Ra-673		PE	
Rankin 6 22-Ra-674	Woodland ceramics	NFW	
Rankin 7 22-Ra-675	Late Archaic/Woodland (Gary point), Woodland ceramics	PE	
Rankin 8/9 22-Ra-676	Late Archaic (Pontchartrain point), Woodland and Mississippian ceramics	NFW	
Rankin 10/11 22-Ra-677	Woodland ceramics	NFW	
Rankin 13 22-Ra-678		NFW	
Rankin14 22-Ra-679	Woodland ceramics	NFW	

Rankin 15 22-Ra-680		NFW	
Rankin 16		NFW	
Rankin 17 22-Ra-681	Late Archaic (Shumla point), Woodland ceramics, Late Woodland (Collins point)	PE	
Rankin 18 22-Ra-682		NFW	
Rankin 19 22-Ra-683	Mississippian ceramics	NFW	
Rankin 20 22-Ra-684	Middle Archaic (Denton point)	NFW	
Rankin 21 22-Ra-685		NFW	
Rankin 22 22-Ra-686		NFW	
Rankin 23 22-Ra-687		NFW	
Rankin 24 22-Ra-688		NFW	
Rankin 25		NFW	Isolated find
Rankin 26 22-Ra-689	Woodland and Mississippian ceramics	PE	
Rankin 27 22-Ra-690	Woodland ceramics	NFW	
Rankin 28 22-Ra-691		NFW	
Rankin 29		NFW	
Rankin 30 22-Ra-692	Late Paleo/Early Archaic (exhausted Dalton point), Late Archaic (Macon, Pontchartrain-Flint Creek points), Woodland and Mississippian ceramics	PE	Probably same as 22-Ra-506/545)
Rankin 31 22-Ra-693	Woodland	PE	
Rankin 32 22-Ra-694		NFW	
Rankin 33/34/35/36 22-Ra-695, 22-Ra-696	Large, linear, on terrace edge and along creek, multiple components including Late Archaic (Pontchartrain points), Woodland ceramics	PE	Needs delineation and testing
Rankin 37 22-Ra-697	Woodland ceramics	NFW	
Rankin 38 22-Ra-698	Small, Woodland ceramics	PE	Needs deliniation
Rankin 40 22-Ra-699	Lithics, historic sherd	PE	Needs delineation
Rankin 41 22-Ra-700	Mound	PE	Needs testing

In general, the sites discovered are well-preserved, as they have not been cultivated nor damaged by pine plantations, which fact alone makes them highly unusual in Mississippi. A number of mound sites are involved in the proposed project area, and several others have already been destroyed. It is highly likely that all of the mounds/mound groups are eligible for the National Register. Most probably, they also contain human remains. Some have already been listed or determined eligible for nomination to the NRHP by the MDAH.

Based on our sample of the project area, it seems that additional archaeological survey and testing associated with the proposed dam project as a whole has the potential to contribute to research topics of national, regional and local significance. These are, firstly, concerning the Late Paleo/EarlyArchaic period, Dalton culture, and secondly, the Middle Woodland period, Marksville culture, florescence. Numerous later Archaic and less-specifically Woodland components were also identified. Mississippian and Historic remains were unusually rare, but these sites also have some potential significance. Evidence of 19th century use was sparse and epemeral; 20th century use was as predicted largely limited to recreational use.

If the proposed lake is to be built, it should be after an extensive archaeological program, on the order of a modern, multi-disciplinary Tennessee-Tombigbee waterway-style research program. The unusually well preserved nature of the sites is again emphasized and will be detailed in the site descriptions. In the final chapter we will outline the needed additional research in this 13-mile stretch of the Pearl River.

II. Environment

Chapter II includes discussions of the physical and biological environment. MDAH guidelines state that consultation with a geological or soils scientist is "encouraged if the principal investigator is not trained in or familiar with the geomorphology of the area." The field director, Starr, has considerable experience in alluvial settings and has taken numerous undergraduate and graduate classes in geology and soils. James Starnes, who served as a part-time technician, is a geologist with the Mississippi Department of Environmental Quality. Chapter III, which presents the detailed geomorphological study, is by James May, Phd., geologist with the Waterways Experiment Station, retired.

The 8,700 square mile Pearl River basin includes land above the proposed reservoir in Choctaw, Attala, Winston, Noxubee, Madison, Leake, Neshoba, Kemper, Hinds, Rankin, Scott and Newton counties (Figure 10). About half of this watershed is forested. The 33,000 acre Ross Barnett Reservoir, immediately above the proposed new impoundment, provides much of the urban area's drinking and industrial-use water (Hartley 2004:32). This restricted drainage basin makes the Pearl River anideal place to study localized effects of world climate changes. The Pearl River floodplain swamp lies below 300' amsl and is at times up to 3 miles wide (Priddy 1060:22, 27). Until the early 20th century it was primarily a bottomland hardwood forest little impacted by cultivation. Much of the Big Black River floodplain also remained bottom land hardwood forest until the ca. 1900 timber boom. Today, almost all of the project area (outside parts highly impacted by the 1976 channelization and levee borrow pits) remains commercial hardwood timberland with occasional pine or mixed hardwood and pine stands.

Geologic Structure

The location of the Jackson Prairie bio-physiographic province is influenced by the Jackson structural dome, with a southward extension of prairie (marl) soils in the metropolitan area. The Pearl River runs over the center of the Jackson dome, so the local uplift of strata over the Jackson dome also means that the dividing ridge between the Pearl and Big Black rivers is significantly closer to the Pearl than the Big Black (Moore 1965: 33, Priddy 1960:22). Slopes in western Hinds county are more gentle to the west of the divide approaching the Big Black and steeper and more dissected on the east side of the ridge overlooking the Pearl River floodplain.

It took less than a century to discover and then work out the economic significance of the Jackson dome. As early as 1860 Hilgard had found the Eocene Moodys Branch marl and Cockfield formation far south of where they were elsewhere in the central part of the state (Figure 11). His finds were in fact where the Pearl flows over the top of the dome (Moore 1965:34). The Eocene Yazoo clay sediments are also observed in outcrop at exposures in and along the Recent Pearl River alluvium. The dome can be seen on geologic maps as a dip in the Eocene and Oligocene-Miocene Vicksburg strata, and a narrowing of the Jackson Prairie in soils and consequent biota (Priddy 1960: 26-28). In 1916, Hopkins recognized that such anticlines trap oil and gas. The Jackson

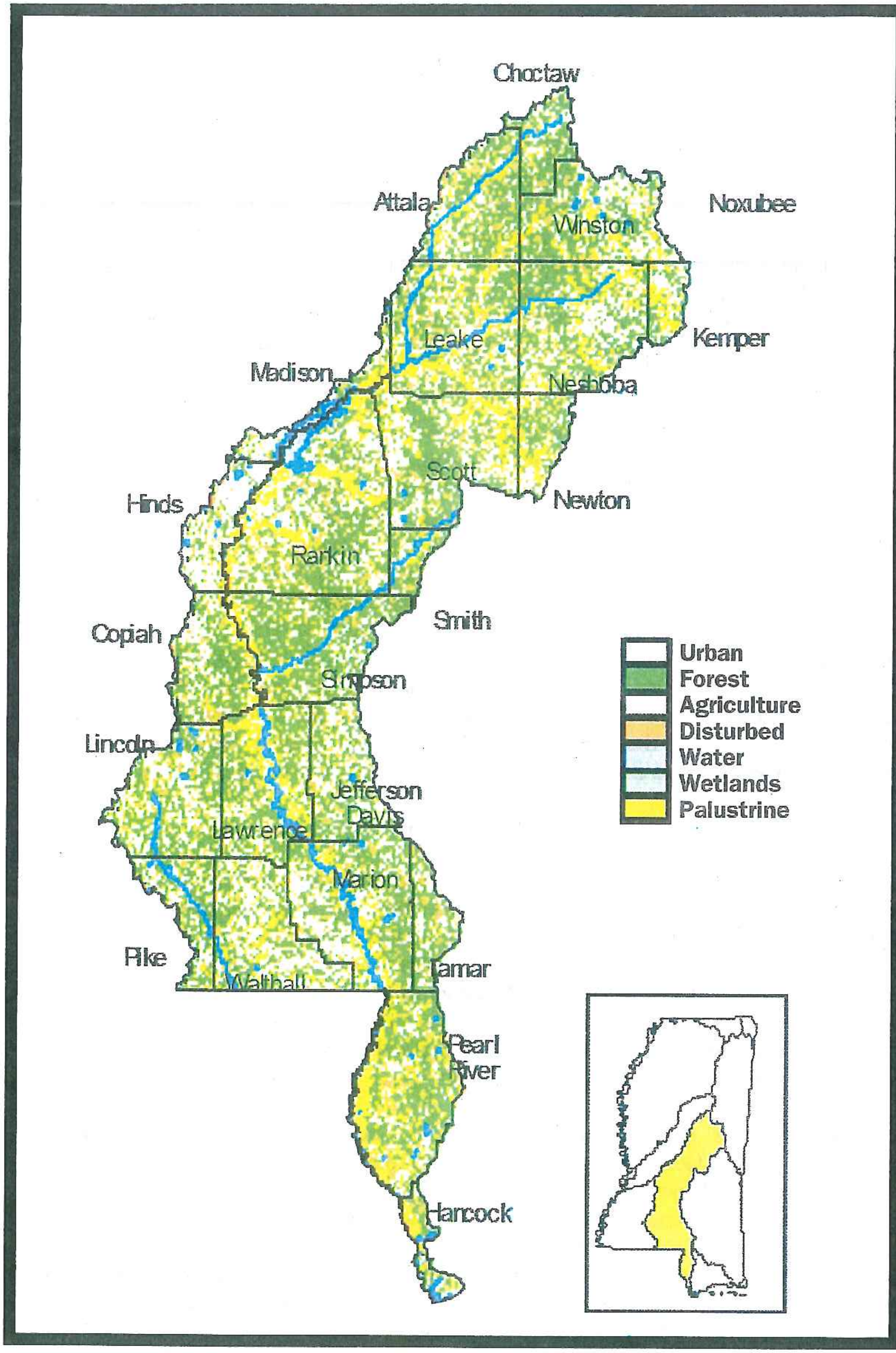


Figure 10. Pearl River drainage cachement (Hartley 1994: 32).

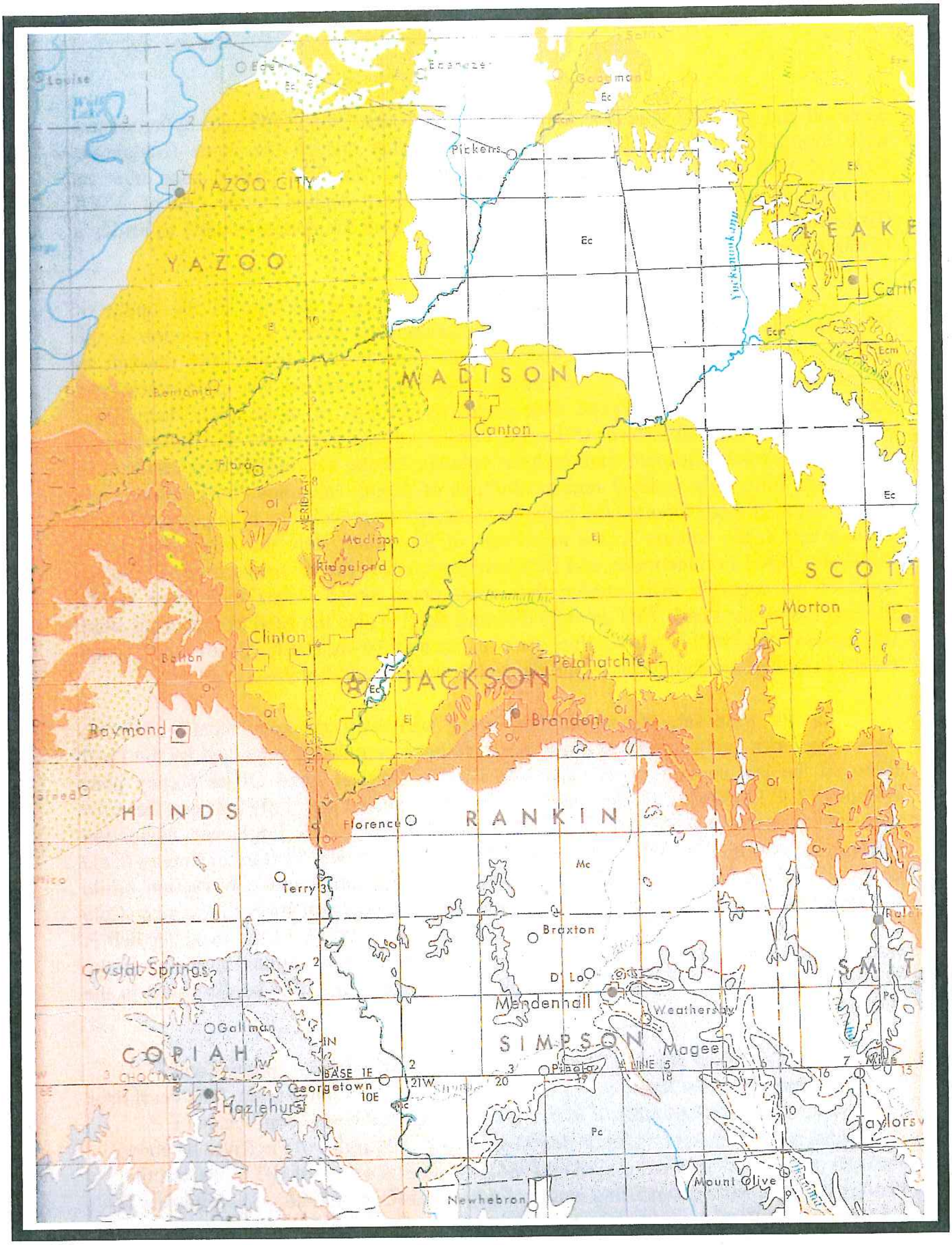


Figure 11. Jackson area surface geology (Bicker 1969). Eocene: Ek-Kosciusko formation, Fcm-Cook Mountain formation, EC-Cockfield Formation, Ej-Jackson group; Oligocene: Of-Forest Hill formation and Red Bluff clay, Ov-Vicksburg group and Chickasawhay limestone; Miocene: Mc-Catahoula formation.

dome oil and gas field was discovered in 1930 (Moore 1965:25). These hydrocarbons were intruded during the Jurassic igneous event that created the dome (Baughman 1971:142-143). While there is still some production, the field peaked soon after its discovery (Figure 12), in the 1930s, and was in sharp decline by the end of WWII (Baughman 1971:143). The depleted field was being used for storage as early as Priddy's (1960) report.

The southernmost extension of the dome in local geology is the updip of Oligicene Vicksburg group/Chickasawhay limestone and Forest Hill formation at the southern end of the project area. Otherwise, the Pearl in this vicinity runs through an upland landscape with a basis in the Miocene Catahoula formation. Except in exceptional cases, these bedrocks are capped with extensive shallow, or more rarely deep, loess (Pleistocene) or alluvial terraces (Pliocene, Pleistocene and Holocene). In Hinds County, the rolling Grenada silt loam shallow loess uplands, having seen nearly two centuries of cultivation, have only isolated remnant hilltops of deeper Memphis and Lexington silt loams. Some of these topographic highs have springs or gravel. The high point of Hinds County lies in the country a few miles east of Raymond. Here the Mississippi basin Tallahala, Terrel-Fourteenmile, and Baker-Snake-Lindsey-Smith creeks head. These are some of the county's main creeks; they areas noted above longer than those creeks flowing east to the Pearl. This gravelly dividing ridge is also the head of numerous short tributaries of the Pearl in and south of Jackson, such as Town, Hardy, Caney, and Trahon creeks as well as the somewhat larger Big and Rodes/Rhoads-Robinson creeks.

In our proposal, we stated that initial laboratory research should focus on separating older landforms from those that have been completely reworked by the Pearl River in the last century or so. The 1820s-1840s General Land Office survey plats (Figures 13 & 14) show that the course of the Pearl changed very little between that time and the planned cut-offs of the 1970s, despite Corps of Engineers navigation improvements from the 1880s to the 1920s. The 1976 air photos for Rankin County (Cole et al. 1987) show high water with the Pearl River straightening under construction, while a second series of 1976 air photos used as the Hinds County soil survey base map (Cole et al. 1979) shows the project completed. Considerable stability of the meander belt is indicated, so historic and late prehistoric sites might be expected almost anywhere in the project area. The initial interpretation of the channel sequence will be discussed in the following chapter.

The Pearl River drains 8,760 square miles in 23 Mississippi counties and 3 Louisiana parishes. The Basin is 240 miles long and up to 50 miles wide. The Pearl rises in Winston County in Red Hills of 650' amsl and is formed by the confluence of Nanawaya and Tallahaga Creeks in Neshoba County. 130 miles of the River lie above Jackson and 233 miles below it (Cotten 1986;15). This is a total of 303 miles, but the unaltered course has a meandering length of 440 miles (Cotten 1986; 18). Sinuosity is 1.6, making the Pearl a moderately meandering river. Bank heights are 12-40' between Edinburg and Jackson, and 20-90' between Jackson and the head of the outlet channels. This indicates entrenching of the floodplain, with low water levels 70-30' below the floodplain surface being common. Entrenchment can result from lowered base (sea

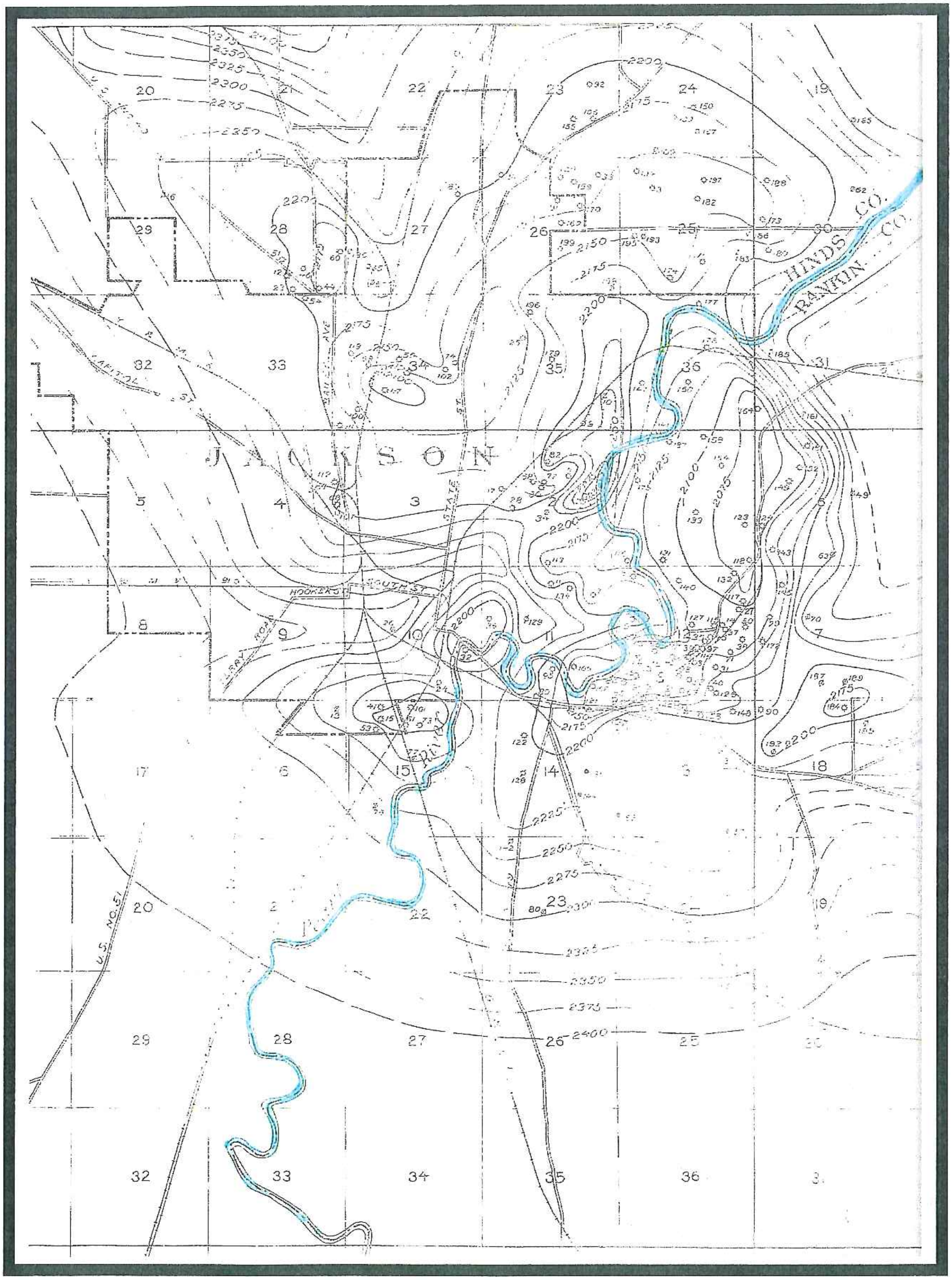


Figure 12. Subsurface structure map of Jackson gas field showing wells at and after peak production (Monroe and Toler 1937 Frontis piece).

THIS PAGE LEFT INTENTIONALLY BLANK

[redacted]

[redacted]

level) levels or change in discharge. The average gradient of the river is 1.1'/mile (Figure 15). The relationship of the modern to ancient gradients has been studied by Cotten (1986); he concludes that the similar ancient and modern gradients indicate that the ancient hydraulic regieme was similar to the modern, particularly for the most recent T1, T2, T3, and T4 (Cotten 1986; 22-23). Cotten's study begins immediately downstream from our project area (Figure 16). He notes that paired terraces are (terraces at same height on either side of stream valley) result from periodic or rapid entrenchment and are evidence of eustatic sea level changes of tectonic uplift, while unpaired terraces result from slow, continuous rejuvenation that leaves terrace development uneven across a valley, and are indicative of no change in style of fluvial process. The Pearl T1 shows some pairing particularly in the Jackson area. The T2, T3, and T4 are less well preserved and less continuous, but are associated with low bluffs above the floodplain (Cotten 86; 37). T2 immediately below the project area corresponds approximately to 160' amsl.

These lower terraces are unpaired, but have gradients similar to the modern river. The T5 and T6 terraces, well away from the project area in Rankin County, but forming the east side of the proposed lake in Hinds County, have slightly lower gradients; but levels above T5 are poorly preserved and were thus difficult to correlate in longitudinal profile, but a "much differently" (Cotten 1986; 45) fluvial system is indicated prior to the formation of T5. The terraces below T6 are relics of significant down cutting events, related to uplift and warping of southeastern Mississippi. Cotten (1986; 45) proposes that the entrenchment of the Pearl below T1 may "be the direct result of deforestation with the basin, combined with the effects of the tectonic uplift of the region." Cotton (1986; 45) further proposes that the causes of uplift are 1) salt dome migration in the Mississippi Salt Basin, 2) loading and subsidence in the Louisiana depocenter causing no more uplift or 3) reactivation of buried features of the Paleozoic rocks of the Oachita Front. Eustatic change is considered a less likely cause of inland fluvial terrace formation because of the time lag between coastal and inland channel degraduations and observations of the lower Pearl indicated coastal drownding. Measured warping of southeast Mississippi is 1m/50,000 years, dating the T5 to approximately 1.9 million years ago (Piocene/Pleistocene boundary).

Source Lithics for Stone Tools

Citronelle Gravels. The commonest raw material used throughout most of prehistory in central Mississippi is the residual or secondary Citronelle gravel, which is ultimately derived from a wide range of Midcontinental, primarily Mississippian, limestones. The material forms a sheet of variable thickness from Texas to Florida, and it is widely mined as road material and concrete aggregate. Being so extensive areally, it has been referred to by a variety of names including Lafayette gravel and Plio-Pliestocene gravel. While not present in the Pearl River meander belt itself, Citronelle gravels would have been widely available in creeks flowing into the Big Black in western Hinds and Madison counties, as well as in the uplands of southern Rankin County. No major gravel-bearing creeks were noted in this survey, but many small chert and quartz pebbles were found throughout many soil profiles. The Citronelle gravel stone source is rounded, highly weathered cream, tan or grey chert with a thick cortex. It also contains a much smaller

[redacted]

[redacted]

amount of quartz and quartzite. Two source areas are recognized: the pre-loess creek gravels along the loess bluffs and the sheet gravel of the Piney Woods exposed on the uplands; Stallings (1989:38) combines these as a single class of material.

Stallings (1989) has examined samples from Long Creek in Panola County. He collected a total of 160 cobbles from 7 spots, with minimum samples of 15 cobbles per location, with a wide intentional range in cortex qualities (color and texture) being included, but with only knappable size and condition cobbles/pebbles being accepted (Stallings 1989:41). The Panola County sample was 89% chert and 11% quartzite (Stallings 1989:51). Munsell colors (including bands and mottles) of cortex and interior were recorded; the interior texture was ranked as fine (slick, waxy), medium (visually smooth, dull or fine grainy to touch) or coarse (large grain evident visually); and inclusions (fossils, oolites and quartz) were noted (Stallings 1989:42, 44). The most common interior colors were pale brown, brownish grey and brownish yellow and the stone was most commonly solid colored and medium texture without inclusions, but great variability was documented (Stallings 1989:54). Assessment of the results of heat treating was made by heating 36 randomly selected decortication flakes in an electric kiln to 375 degrees C and then removing further flakes for comparison with the parent mass. All heated samples had some alteration towards red/pink (Stallings 1989:49-50), but there was no consistent correlation between initial and altered color (Stallings 1989:53, 54-55). Stallings (1989:54) suggested that comparison of archaeological samples selected by the prehistoric people to the generalized stream samples may show what characteristics were actively selected for. Such an analysis would entail additional sampling for the region. A comparison of Big Black River basin creek gravel (pre-loess) to the upland sheet gravel might prove valuable. The macroscopic methods used by Stallings should be easily implemented. McGahey (2002) has given considerable general consideration of the variability of size, suitability for heat treatment, and other knapping characteristics of this most abundant and widespread resource, based on archaeological and flintknapping experience across the state.

Tallahata Quartzite. This is a very coarse grainy metaquartzite that weathers badly in the soil. Flake scars on debitage and bifaces are often poorly preserved, presenting major typological problems. In some cases, the artifacts may crumble on handling, hence the popular term "sugar quartz." The material outcrops on high ridges in south Mississippi and Alabama and is macroscopically and stratigraphically closely similar to the Oligocene Catahoula Sandstone of northwest Louisiana and east Texas (Spearing 1991:94). This was the first Miocene-Oligocene quartzite to receive significant archaeological attention in Mississippi. In the 1980s the MDAH and Mississippi State University conducted excavations at quarries and a biface reduction site in Lauderdale County. Since that time, the material has been subdivided and additional outcrops closer to the project area have been identified, including the related Kosciusko quartzite. This is a low-quality stone resource, although its knapping quality is better than might first be expected when it is obtained from "wet" or buried nodules. Small amounts of weathered orthoquartzite debitage were recovered, along with a single biface, perhaps a Woodland period Bakers Creek point/knife.

Novaculite. This fine grained, white grey or pink, translucent material is highly distinctive. Novaculite has a highly limited source area in the Oauchita Mountains of west-central Arkansas. Many novaculite quarries have been identified in Montgomery, Garland, Hot Spring, Polk and nearby counties. Some of the material also outcrops to the west around Broken Bow and Atoka, Oklahoma. The material is still mined for honestones on a massive industrial scale. Novaculite is also found in a limited area of west Texas, where the western end of the Silurian-Devonian Oauchita strata is exposed in the Marathon Uplift. Texas Caballos novaculite is macroscopically indistinuishable from Arkansas novaculite and it is also used as whetstones as well as being one of the only high-quality knappable stones of the region west of the Edwards Plateau escarpment exposures of high quality grey chert (Spearing1991:280, 281, 286; MacLeod 2002:43, 53-55, 68).

The Arkansas Archeological Survey has recently (Trubitt et al. 2004) published an explicit and detailed research plan for the Oauchita National Forest quarries. Oauchita novaculite is characterized as Devonian and Mississippian in age and interpreted as silica precipitated from a marine environment, possibly from volcanic sediments, altered by diagenesis and metamorphism during the formation of the Oauchita Mountains. This description should also apply to Texas novaculite. Prehistoric people used both outcrop quarries and stream-bed cobbles (Trubitt et al. 2004:18). The AAS research program proposes to address the use and distribution of this distinctive stone resource. The Pearl River project has the potential to contribute to a number of the AAS research questions, including:

What was made from novaculite? How were novaculite objects used? Trubitt et al. (2004:24) note that this is a material commonly found on the adjacent portions of the Gulf Coastal Plain as a utilitarian material, but that further afield it "may have been used prestige objects for display and exchange [*sic*]. If this is the case, novaculite artifacts may have ended up in special kinds of deposits at sites far from the Oauchita Mountains (Trubitt et al. 2004:25)." They cite Brookes' (1999, 2000) examples of large Middle Archaic Benton points of novaculite as examples of "exchanges that both created social alliances and dispersed lithic raw material (Trubitt 2004:25)." Our finds are late-stage (biface thinning) debitage, concentrated especially at the occupation areas near the City Mound. No cores or bifaces of novaculite were recovered.

What is the overall demand for novaculite through time and space? "It seems to be 'common knowledge' among archeologists working in the Lower Mississippi Valley and Western Gulf Coastal Plain regions that novaculite use was greatest during the Middle and Late Archaic periods, both in volume and geographical distribution" (Trubitt et al. 2004:25). An attempt will be made to offer a date for novaculite-producing sites in the Pearl Basin, but it must be acknowledged that this is problematic as diagnostic bifaces may be lacking.

What is the geographical and temporal distribution of novaculite? Trubitt et al. (2004:42) note that novaculite is "occasionally" found in Mississippi. It is the impression of this author, based mainly on Delta sites, that novacultie could better be characterized as "consistently found in small quantities" in western Mississippi. Bifaces and late stage debitage are expected. The find here in central Mississippi is not unexpected yet no uncommon

Paleoclimate

Gunn (1997) discusses a new framework for the Middle-Late Holocene climate transition and links this ca. 4500 BP event to worldwide turning points in landscape/culture evolution (Figure 17). He considers the effects of orbital variation and consequent insolation as well as volcanism. The sustained elevated solar emissions of the Middle Holocene were followed by lower levels in the Late Holocene (Gunn 1997:143). As summer/winter rotational tilt was 7% greater during the earlier period, summer days were longer and brighter and winter days shorter and dimmer. A monsoonal climate resulted on the Atlantic Coastal Plain, accompanied by increased wildfire that led to the establishment of pine-dominant forests. Subtropical climates moved north earlier and faster in the year, so there was little of what we now recognize as spring weather. A similar impact should be expected in the Gulf Coastal Plain. In the Tombigbee basin, pollen studies indicate a rise of oak scrub savannah; the West, dune fields were active; in the East, Carolina bay blowouts were being formed. Some river valleys on both sides of the Apalachians show that streams were choked with sediments and vegetation. These gallery forests would have been highly attractive to wildlife and hunter-gatherers. Conversely, long, cold, snowy winters allowed for recharge of locally perched water tables, which would have allow occupation of upland locations during the early summer while springs were flowing. Relatively low levels of volcanism reduced high particulate protection from the sun, amplifying these effects in both summer and winter, so "given the differences in energy imputs, Middle Holocene landscapes could have differed substantially from those of the Late Holocene" (Gunn 1997:143-145).

Sea levels rose during the Middle Holocene, and then dropped abruptly at the Middle-Late Holocene transition (in the far Southeast, this coincides with the shift from MALA cluster to the Savanah River broadspear tradition; Gunn 1997:144). The 4800-3000 BC high stands coincide with Morrow Mountain occupation concentrating on Piedmont hilltops around springs at the same time that significant population concentrations are first noted along the Gulf Coast. Middle Holocene river channel stability (8500-4500 BC) collapsed abruptly and was accompanied by the biotic changes noted above (Gunn 1997:135). Raised base level and increased sedimentation at the Middle-Late Holocene transition (2500 BC calendar years/3300 BC calibrated radiocarbon years; Gunn 1997:134-135) had pronounced impacts on many streams and this should also be the case on the Pearl River.

The Transitional Late Holocene, or the collapse of the Altithermal climate, resulted from more eqitable insolation as earth axis tilt was reduced. At the same time volcanic and solar emissions variations were also pronounced. This was apparently a step-wise or punctuated rather than gradual climate shift (Gunn 1997:145). Sea levels dropped around 3000 BC and stayed low until around 2000 BC, due to increased ice accumulation in polar and mountain regions. Now-submerged late Middle and early Late Archaic sites have been documented along the Atlantic seaboard from this period. As

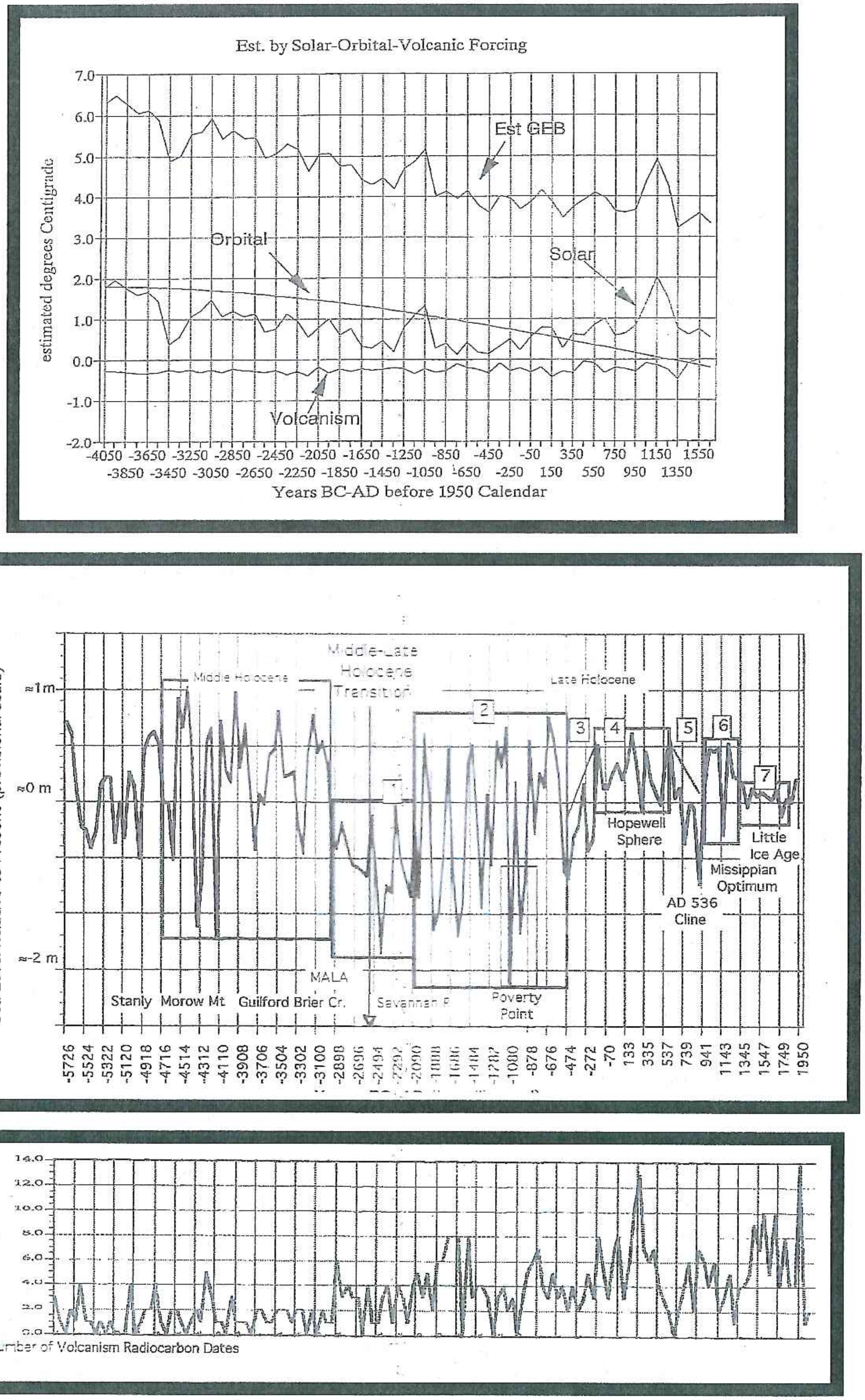


Figure 17. a. Middle-Late Holocene solar, orbital and volcanic effects. b. sea level results. C. volcanism frequency (Gunn 1997, Figures 4, 5).

ocean heat was depleted, the tropical storm frequency of the Middle Holocene monsoonal climate decreased, allowing for more permanent population concentration in Southern coastal zones (Gunn 1997:146). Likewise, "it was in most regions an unusually moist and populous period. There was shift from the upland mast harvest preoccupation of the Middle Holocene to a riverine subsistence orientation." Jackson and Scott (2001) in their consideration of Middle Archaic faunal exploitation in Louisiana note that a shift from mixed oak-pine to pine dominated environments impeded a deer-focused subsistence strategy, at the same time that more-or-less permanent riverine settlement was permitted by mixed and opportunistic fishing and hunting. We should expect such conditions to have prevailed in the project area as well, as "...stream and river valleys, large and small, would have provided refugia for nut-bearing oaks, hickories, and pecans and probably supported higher animal populations, than the uplands. At the same time, floodplain stabilization would likely have increased productivity of river systems" (Jackson and Scott 2001:194).

By the Early Late Holocene (2000 BC-600BC), oceans were depleted of the heat accumulated in the Middle Holocene (such world sea events take around 1000 years), so the ocean could no longer serve as a buffer for shorter-term (ca. 100 year) insolation- and volcanism-driven troposphere temperature shifts. In this cold/dry period, glaciers were starved and world climates were increasingly erratic and unstable. Cultural adaptations may be seen in instability in cycles of civilization in the Egypt-Mesopotamia-Indus interaction shpere. In eastern North America, base level rises had impacts upstream, such as the Atlantic Early Woodland abandonment of coastal shell middens for more interior territories, perhaps in response to renewed increases in tropical storm frequency. This is also the period of the Southeast-wide trading/gifting interaction best-known from the Poverty Point area (Gunn 1997:146). Little (2003) has further considered Late Holocene climate changes, primarily through the proxy measure of shell midden deposition for sea level fluctuation during the last 4000 years (Figure 18). The strength of association is unclear. In the Tennessee River valley, shell deposition decreased when sea level was at or below modern stands, but in the Tombigbee River valley, deposition decreased when sea levels stood higher than at present. This author suggests that this is possibly related to the varying impacts of base level on a shorter stream emptying directly into the Gulf (Tombigbee) as opposed to a longer, interior secondary stream (Tennessee) where the effect of base level change could be expected to be less pronounced. The variation may also be due, as Little (2003:10) suggests, to local changes in fluvial runoff and the local effects of few-century duration climate changes between cool/dry and warm/wet conditions, which Gunn as cited above explains as the effect of the loss of ocean heat buffering of solar, axial and volcanism effects. This once again highlights the need for many local-level studies rather than the acceptance of paleoclimate modles derived from even near-adjacent regions. Little (2003:10) also considers the impact of Atlantic sea level fluctuation on coastal plain and piedmont settlement, documenting the coincidence of higher sea stands with a cultural focus on interriverine (upland) settlement, with high stands at 4200-3700 BP, 3100-2850 BP, 2250-1750 BP, and 1600-1000 BP and low stands at 3100 BP and 2695-2330 BP.

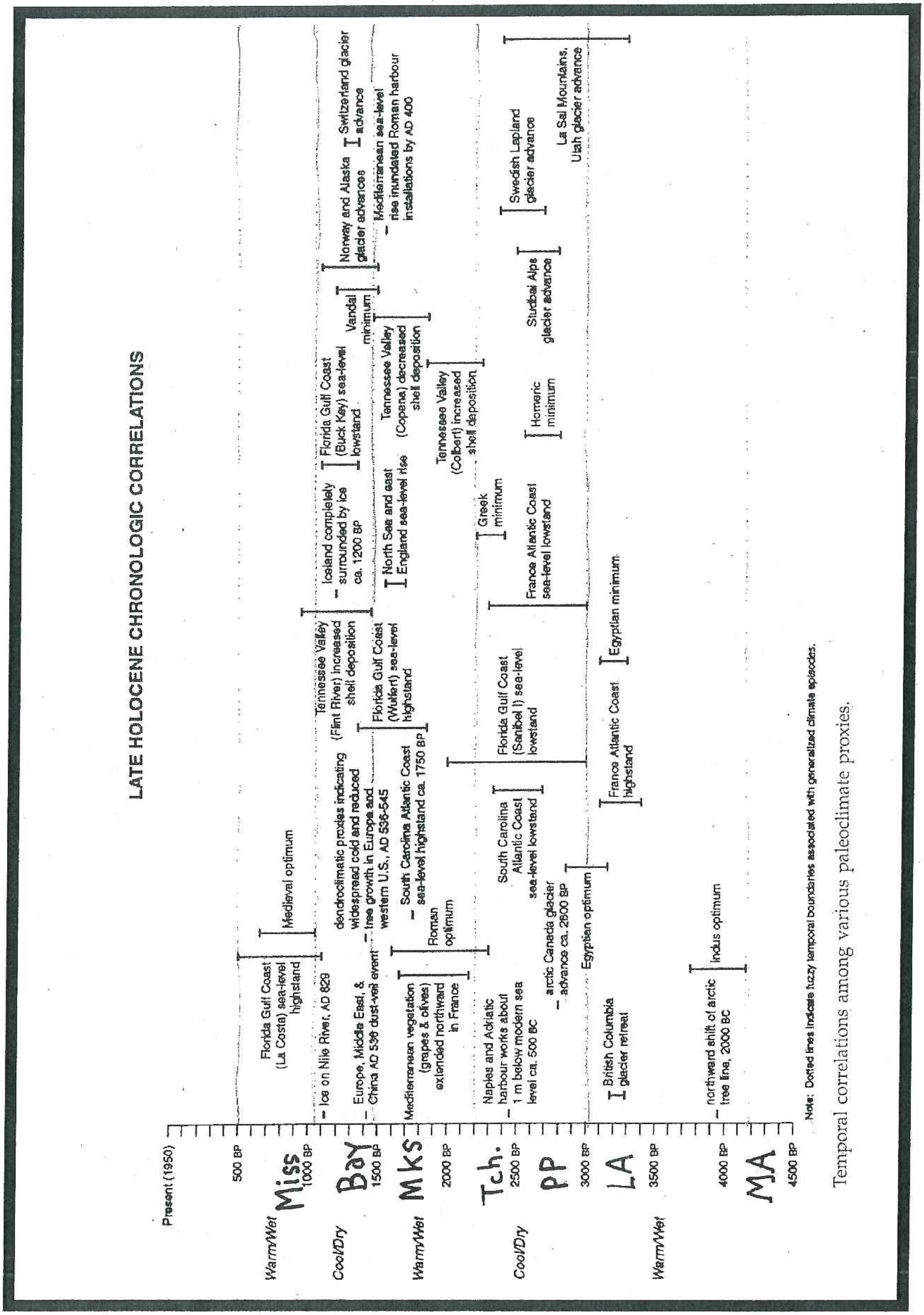


Figure 18. Holocene climate, sea level, and cultural effects (Little 2003: 24).

The Late Holocene saw relative sea level stability. The connection with massive carbon release into the atmosphere is unclear, but this was a period of world-wide deforestation for smelting, brick-burning, and plaster/cement production (Gunn 1997:146). In the Southeast, there was a pronounced emphasis on valley occupation that was real "settlement" as witnessed by great reliance on ceramics as opposed to readily portable and perishable skin or cane containers. The Roman Optimum (300 BC-AD 200) had conditions comparable to the middle 20th century (Gunn 1997:140). This is the period of increased exchange and ritualism of the Middle Woodland (Havanna-Hopewell interaction sphere, and, locally, Marksville culture). Gunn and others have also investigated the world-wide effects of the AD 537 event (probably a meteor that threw large amounts of dust into the atmosphere, resulting in historically documented year-long winters and resultant famines).

Soils

Most of the area reported on here has been mapped at various times as swamp (Figures 19,20). The Pearl River floodplain swamp lies below 300' amsl and is at times up to 3 miles wide (Priddy 1060:22, 27). A wide swathe of this floodplain, with mixed cultivation and forest cover, was inundated by the construction of Ross Barnett Reservoir. The proposed upstream alternate, the Shocco dam proposal, would establish a "greentree" reservoir or seasonal impoundment with flood-tolerant hardwood species in the impoundment itself.

The General Land Office survey plats (see Figures 13,14) and notes are a valuable resource for environmental reconstruction at the time of settlement and land claiming in the area. These records, located in Jackson, have been consulted by Dan Allen. As noted above, the plats from these GLO surveys indicate that the Pearl River has moved very little since the 1820-1840 land surveys.

There are early 20th century soil surveys for Hinds and Rankin counties (Kocher 1918, Wildemuth 1926; Figures 21,22). These provide descriptions of land use and forests as well as of physical characteristics, and will be described in the following section. The later 20th century soil surveys are less important from a historical and interpretive perspective, as they do not map the floodplain in detail. The early descriptions are adequate for comparison of the shallow profiles recorded in shovel testing, and these will be given below.

Calhoun silt loam. This soil was found in large flats and slight depressions on terraces of Pearl River, particularly in the northern part of Rankin County, where the terraces border the uplands. Calhoun sl has 2-3" of dark grey, grey or mottled blueish-grey and rust brown silt loam grading into light grey or pale yellowish grey mottled silt loam which was underlain at 18-20" by compact or tight silt loam, silty clay or heavy clay with abundant concretions. In many places buckshot concretions were found on the surface and throughout the soil. The flat to basin-like soil was poorly drained and compaction hindered internal drainage and aeration. Water often stands on the surface for some time

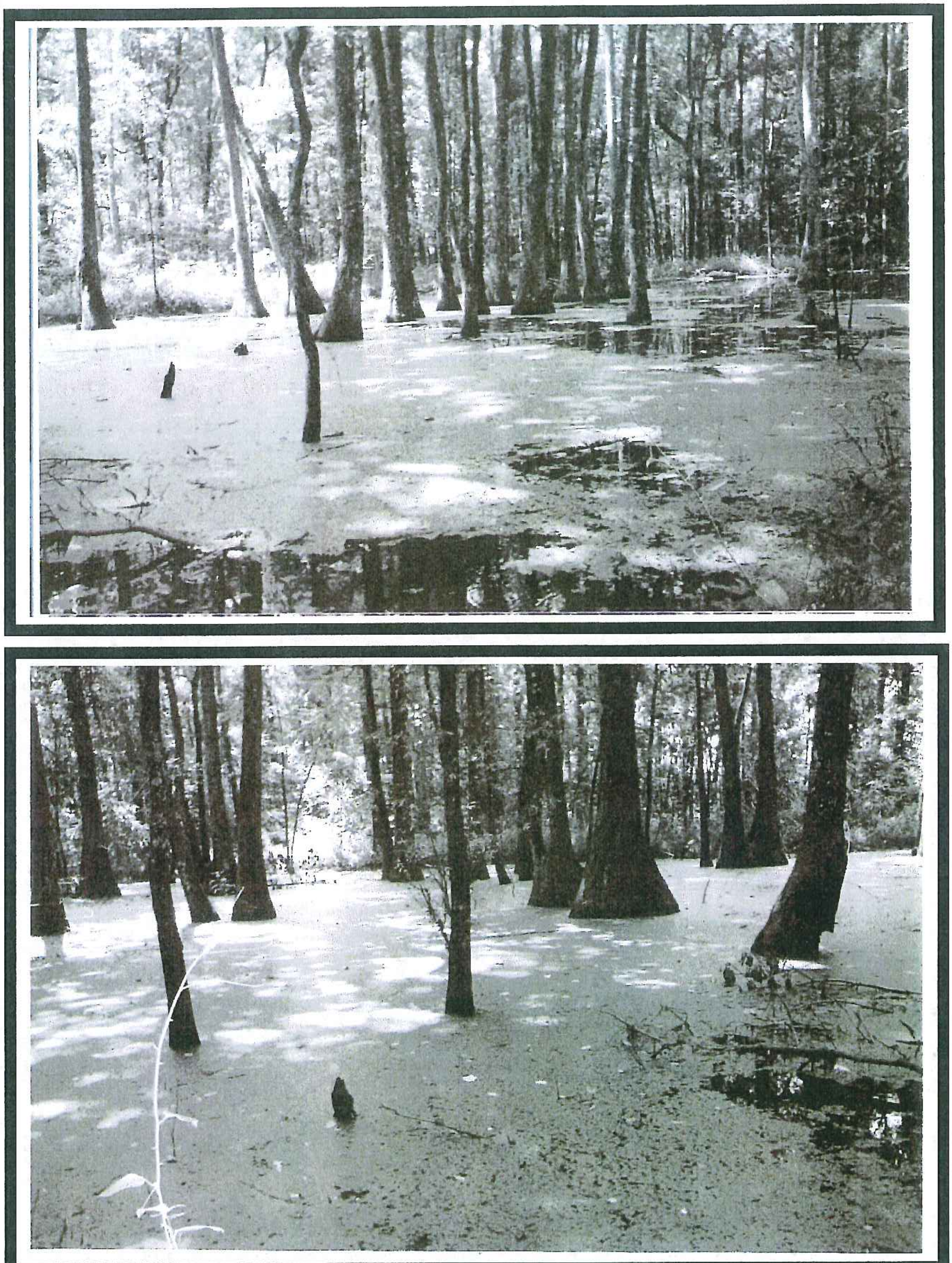


Figure 19. a., b. views of gum pond in Madison County, east of Madison 2 (22-Md-769) and 3 (22-Md-770).

Figure 20. a., b. views of cypress brake in old river channel in Madison County, south of Site 4 (22-Md-771), Site 5 (22-Md-772), Site 9/10 (22-Md-773), and Site 11 (22-Md-774).

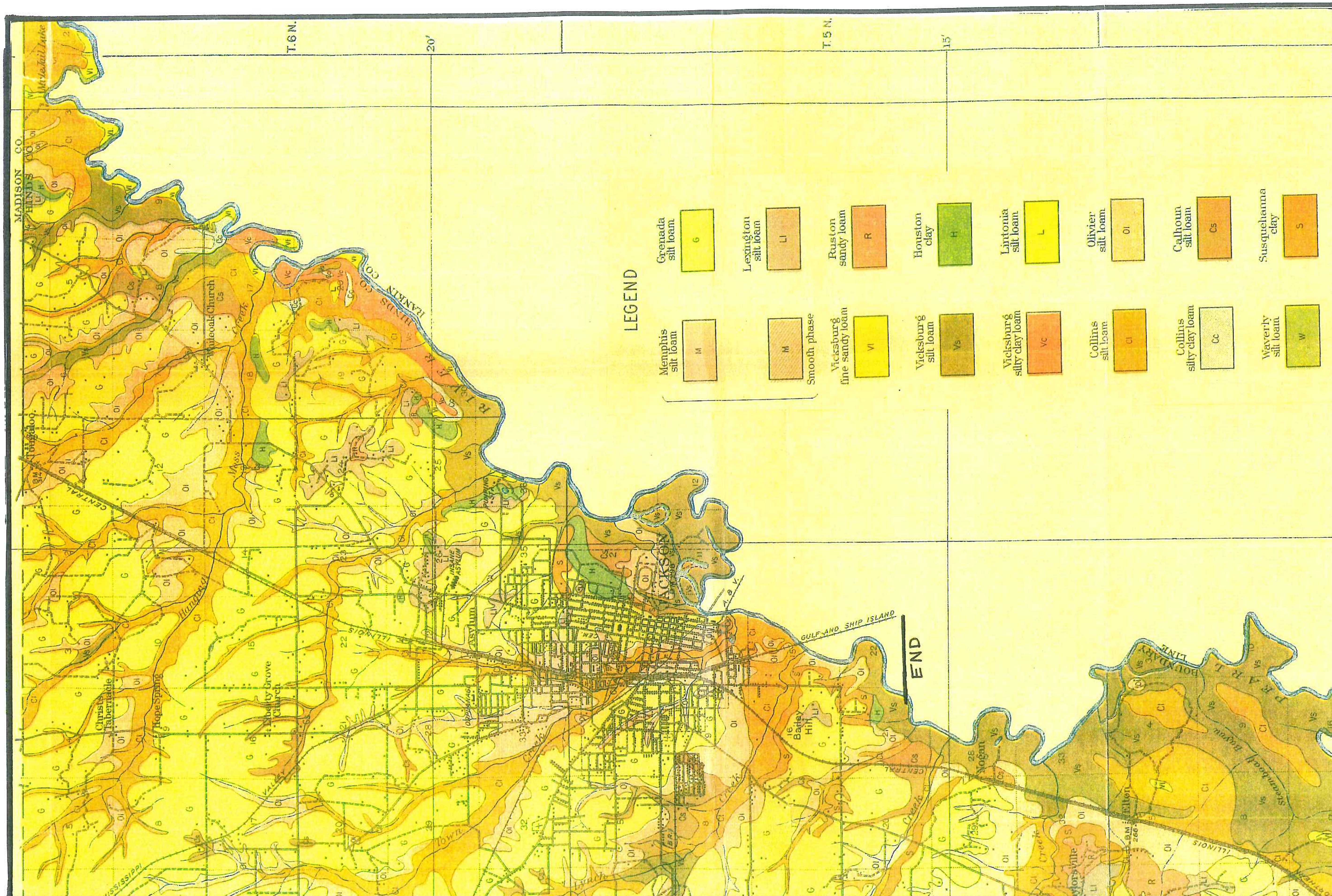


Figure 21. Hinds County soil survey map (Kocher 1918)

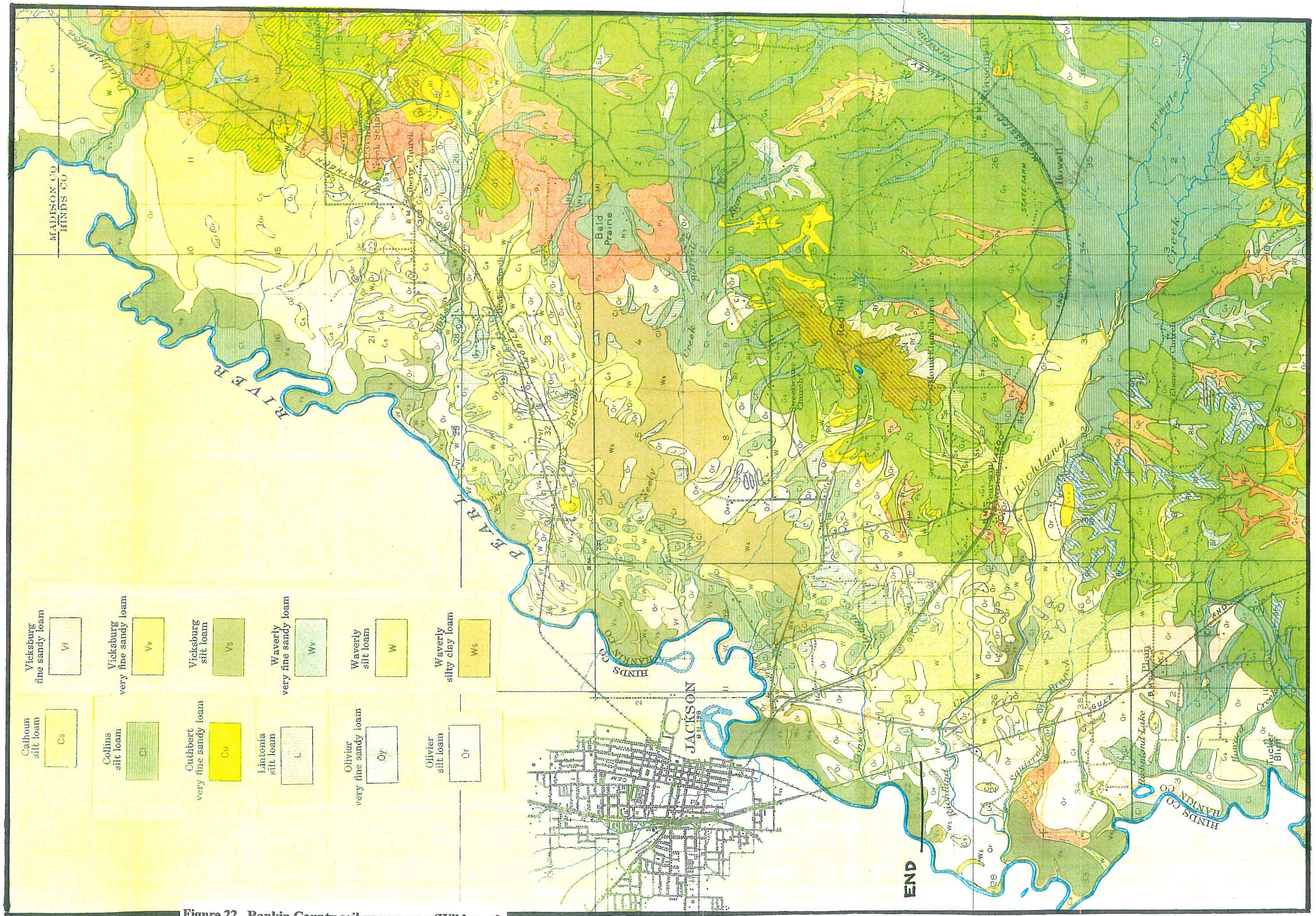


Figure 22. Rankin County soil survey map (Wildemuth 1926)

after rain. The soil is acid and low in organic matter. Very little Calhoun sl was cultivated in the early 20th century, and it was deemed most appropriate to keep it in timber, woodlots or pasture. It produced willow, oaks, elm, sweetgun and black gum. Small areas bordering Olivier soils were cultivated for corn and cotton, but production was poor and uncertain, although on some better-drained areas, lespedeza sometimes made an adequate crop (Wildemuth 1926:31-32).

Collins silty clay loam. This soil is a brown silty clay loam 10-12" deep, plastic and sticky when wet but friable and granular when dry. The subsoil is mottled grey and rusty brown. There are common black iron concretions throughout the profile. Small areas, mixed with Waverly silty loam, were found in narrow strips along the Pearl bottoms north of Jackson. Collins scl is found in low flat areas and is one of the first soil types overflowed as it is the soil of swamps and cypress brakes. In high water, these areas might be under as much as 20' of water. Given the impervious materials, the soil remains cold and wet in the spring, and so was of no importance to agriculture, although given its natural fertility, with improvements the soil bureau believed it could be converted to corn land. The forest cover consisted of water, white and red oaks; sycamore, gum and cypress. "Practically all of it is also covered with a dense stand of cane, which is utilized in wintering cattle (Kocher 1918:36)." Land with this soil type sold at $8-15/ac.

Collins silt loam. This soil was found on the first bottoms throughout western Rankin County, where there was overflow, sometimes in bands a mile wide. In Hinds County, it is the most extensive bottomland type, particularly along the Big Black and the larger interior creeks (Kockher 1918:34). The land slopes smoothly. The initial decription is of 8-12" of brown to grayish brown mellow silt loam with a grey or mottled grey and rusty brown plastic silt loam or silty clay loam subsoil to at least 36" (Kockher 1918:34). The more detailed 1926 description is of a 4-5" thick surface layer of sometimes mottled brownish grey or grey silt loam grading into pale yellow, brownish yellow or light brown silt loam underlain at 15-18" by red and yellow mottled light grey or grayish yellow heavy silt or silty clay loam. When dry the upper horizon often appeared whitish and was composed of recently deposited silt. In places the lowest horizon was impervious clay hardpan. There was admixture of colluvium near the Rankin County uplands. The Collins silt loam lay only 4-20' above the normal stream elevation, on level surfaces, subject to annual overflow, "though in occasional years the higher areas escape inundation (Kockher 1918:34)." Lack of surface relief and compaction of the lower part of the soil hinder percolation of surface water. Concretions were most numerous where drainage was poorest. In 1918, three-quarters of the type in Hinds County was cultivated (primarily in the Big Black bottom and along creeks), and some formerly cultivated lands had been converted to lespedeza/Bermuda/native grass pasture. The soil was used for cotton, corn, sorgum and sugar cane, but the boll weevil had reduced yields to 1/5-1/2 ba/ac. The primary forest cover was oaks, gum, hickory, beech, magnolia and some pine. Lands with this soil type were selling at $12-40 in 1918, based on forest or cultivation and distance to towns and other facilities. The soil is acid and so needs lime and organic material (the soil bureau recommended plowing in clover, cowpea or other legumes) as well as extensive ditching and drainage tile (Kockher 1918:35).

In 1926, most of the Collins silt loam in Rankin County was forested and used only for pasture. About 15% had been cleared. The timber included willow oak, water oak, sweetgum, beech, holly, ironwood, ash, and hickory. The small cleared areas along the upland margin produced corn, sorgo, sugarcane, and cotton with fairly good yields. Collins sl needed ditching, limeing, incorporation of humus crops and the application of commercial fertilizer (Wildemuth 1926:36-37).

Cuthbert very fine sandy loam. This soil occurs in narrow strips along streams around Pelahatchie in Rankin County. A small area was identified south of the railroad between Prairie Branch and Neely Creek. It has good drainage but a tight clayey layer beneath the surface horizon. The grey or dark brown surface layer is 2 or 3" deep, grading into a lighter grey or brownish grey vfsl to 10-12", where the abrupt change to reddish or mottled red and grey fine crumbly tight horizon begins. Cuthbert vfsl has chert and quartz gravel in places. It is suited to corn, cotton, sweet potatoes, sugar cane and legumes such as lespedeza. It responds well to tillage and manure, but the steeper and rolling pedons are better suited to remain in timber (Wildermuth 1926:27).

Lintonia silt loam. This soil occurs in scattered areas on the high bottoms of Pearl River and on the highest and best-drained parts of its terraces. Most pedons were small ridges or knolls but some larger flats were also found. The soil has a brown or grayish brown mellow silt loam surface horizon 2-3" thick, grading into brown or yellowish brown friable silt loam which is underlain at 8-12" by reddish brown or yellowish brown heavy silt loam or silty clay. Nearly all of Lintonia soil was under cultivation in the early 20th century, and the surface layer was lighter in color in these cultivated areas. Compaction of the clayier substrate was a problem, evidenced by grey mottles and concretions.

In Hinds County, Lintonia silt loam was one of the most productive types identified and most of it was under cultivation, ¾ of it in cotton and the rest in corn. Some small areas had been converted to clovers for beef pasturage. Before the boll weevil, this was one of Mississippi's most productive soils for cotton, with a bale or more of 30-cents-a-pound long-staple being expectable. It was thus valuable and sold at $15-50/ac, which made drainage tile a feasible investment (Kickher 1918:37-38). In Rankin County, the soil was also considered productive, and gave satisfactory yields of corn, cotton, sorgo, soybeans, and lespedeza where properly tilled and fertilized. Corn yields were around 30 bu/a (Wildemuth 1926:31).

Olivier silt loam. This soil is found primarily in the western part of Rankin County, on the high bottoms or terraces of Pearl River and its main tributaries, at about 10-25' above the present floodplain. In Hinds County, it is the most extensive terrace soil, lying as much as 40-50' above stream level, and is found along almost all streams, where it is mostly free of all but exceptional overflow. It is generally nearly level but in areas faintly undulating. Surface drainage is good, but under drainage poor. In the still-wooded areas Olivier sl had 3-4" of grayish brown or dark grey silt loam grading into yellowish brown or yellow friable silt loam mottled with grey and rust. An underlying heavier grey horizon, 12-18", is mottled with yellow or blue. In cultivated areas, the surface horizon was modified to grayish brown or yellowish brown. The impervious layer keeps the soil saturated for long periods, resulting in concretions and mineral concentrations in many areas (Kockher 1918:38, Wildemuth 1926:29).

In Hinds County in 1918, ¾ of the Olivier silt loam was in cultivation. Shortly before that time, ¾ of that cultivated acreage had been in cotton, but with the appearance of the boll weevil which reduced yields to 1/5-1/2 bale/acres, some of the cotton land had been seeded to lespedeza for beef cattle, and corn planting had increased. Olivier type soils sold at $20-50 near towns and railroads and $10-20 if several miles away (Kockher 1918:39). Half of the Olivier silt loam in Rankin County had been cultivated since early settlement, and was still in cultivation in the early 20th century, producing cotton, corn, oats, sorgo, cowpeas, sweet potatoes and lespedeza. Yields were fairly good with good management, except where the type grades into the less productive Calhoun silt loam. Long-term cropping has depleted much of the soil's area. Some worn-out fields had profitably converted to lespedeza hay. Additional problems were low organic content and the need to improve drainage by tillage and ditching. Olivier sl also needed lime for improved yields. Some areas along Pearl River were still in virgin timber, but were rapidly being cut out. The native growth consisted of longleaf pine, shortleaf pine, slash pine, hickory, sweetgum, beech, ash and oaks (Wildemuth 1926:29).

Olivier very fine sandy loam. This soil was found in small areas mainly along the second bottoms and terraces of Pearl River and Pelahatchee Creek. The soil is almost flat or very slightly undulating. It has good drainage except in low areas. The soil has a grayish brown or brownish grey vfsl surface horizon grading into a pale yellow or grayish yellow faintly mottled second horizon. At 15-20" the soil becomes clayey, but still friable. As this lower horizon is tight, concretions are found throughout the soil. The soil is easily worked to good tilthand a loose mellow seedbed, but productivity could be improved with liming, ditching and the incorporation of organics. The main early 20th century crops on Olivier vfsl were cotton, corn, oats, sugarcane, vegetables and lespedeza. Corn was the main crop, yielding 10-30 bu/a. Oats produced 15-30 bu/a. Cane produced 250-300 gallons/acre (Wildemuth 1926:30).

Vicksburg silty clay loam. This soil was most common along the Big Black but was also found in small areas along Pearl River in Hinds counties. It frequently overflows and so was of minor importance to agriculture. It is found on low flats frequently broken by former channels of streams. The surface layer is 10-12" of brown to reddish brown silty clay loam with the subsoil to 36" or more being compact brown to reddish brown plastic silty clay loam or silty clay. As it was heavy and sticky when wet, it was more difficult to work than other valley soils, and it was slow to dry in the spring. About half the area was in corn or cotton in 1918, with the rest covered with pine, oak, gum and wild cane, with many cypress brakes and swamps. It had formerly been widely used for long staple cotton, but with the arrival of the boll weevil its wetness and consequent late planting date rendered it generally unprofitable, with yields reduced to1/5-1/2 ba/a. It had thus been converted to corn and pasture forage crops for cattle and hogs (lespedeza, clover, Bermuda), which was yielding around 25-45 bu/a. In 1918 in Hinds County, well-cultivated fields sold at $30-$40/a and woodlands at $10-$25/a. Almost all of the type was in need of artificial drainage (Kocher 1918:33).

Vicksburg silt loam. The initial description of Vicksburg silt loam is a brown, mellow silt loam often without major changes throughout a 3' profile, or passing to a brown or reddish brown silty clay loam at 10-15" found with a uniformly smooth surface broken by small winding channels of minor streams and ponds that held water several days or weeks after floods. As it lay from a few to 20' above normal stream level, all of its extent was subject to overflow. Mottling due to poor drainage was rare. This Big Black and Pearl River bottom soil was variable in its characteristics based on its landscape position:

> Stream action has caused the formation of many winding abandoned intermittent channels and bayous and has built up hummocky ridgy areas along the sides of the river. In some places successive narrow level benches rise one above the other from stream level. In these ridges, depressions, and hummocks it is not feasible to separate the soil variation and phases that have been developed. The narrow tortuous channels and intermittent ponds consist mostly of Waverly silt loam or Waverly silty clay, with someCollins silt loam. The narrow bottoms along meandering streams are often flooded by backwater from the river. These consist of drab brown silt loam grading within a few inches into brown silt loam underlain by light-brown silty clay loam or heavy silt loam containing dark stains and blueish-grey mottles. On slightly higher elevations the soil is in many places brown silt loam grading into a yellowish-brown subsoil heavier in texture than the surface layer. Some of the highest ridges, which are seldom flooded even in times of exceptionally high water, have fairly well-developed profiles. Here brownish-yellow mellow silt loam 2 or 3 inches thick grades into brown silt loam extending to a depth ranging from 6 to 9 inches. This is underlain by dull brownish-yellow heavy silt loam or silty clay loam which grades into moderately light-yellow silty clay loam mottled somewhat with grey. In these areas the soil resembles Olivier silt loam. Some small areas of the sandy soils of the Vicksburg series are included with this soil (Wildemuth 1926:34-35).

Vicksburg silt loam was of doubtful value for farming due to danger of flooding. The deep and loose sand structure underlain at depth by impervious clay allowed it to withstand even sever drought without harm to crops. The highest ridges that would have been more valuable for cultivation were often too difficult to access because of the many ponds and bayous. In 1918, about half of the Vicksburg sl in Hinds County was cultivated, although more had been before the advent of the boll weevil. Prior to the boll weevil, it was expected to produce a bale or more per acre, but afterwards, it yielded 1/5-1/4 ba/a. Corn yielded 25-45 bu/a, or up to 75 bu/a under the best conditions and practices. It was especially well suited to sugar can, producing 200-400 gallons/acre. The land was prepared for cotton or corn in the spring, with plowing with one-mule light plows beginning around 1March. It was bedded in high ridges by throwing 6 furrows together, and then re-ridged or harrowed across the tops of the ridges before planting if rains had been heavy to break the crust. Cotton was planted with one-row walking planters and corn was dropped by hand and covered with a light turning plow. Sometimes large areas of corn and cotton were damaged by late spring or early summer overflow. As it was level and with a clayey subsoil, it was slow to dry. The wetness of the type and the consequent lateness of planting meant that boll weevils were particularly bad on Vicksburg silt loam, so most of the acreage had been converted to corn or pasture by 1918. The USDA recommended ditching to allow earlier planting as a possible means of getting the crop made before the worst late summer weevil infestations could be established.

In Hinds County, about a third of Vicksburg silt loam was still in heavy forest of oak, hickory, pine and gum, with wet areas covered in cypress, in 1918. The remainder of the uncultivated area was generally in good pasture of lespedeza, clover, Bermuda and other sown grasses, with beef cattle pastured on the grasses and on wild cane in the forests. Due to the uncertain production of cotton, the labor of ditching, and the need for lime, fertilizer and green cover/humus crops including oats for winter pasture, it was deemed most suited to cattle production. In 1918, Vicksburg silt loam sold at $10-12 up to $50 per acre depending on its condition, overflow and location in relation to towns, roads and railroads. In 1926, much of the soil in Rankin County was still wooded but quickly being cut out. The Rankin County timber included oaks, sweetgum, pines, holly, ironwood and beech. Vicksburg sl had limited grass because of the overflow, but in some cleared areas there was good grazing on carper grass and lespedeza (Kocher 1918:30-32; Wildemuth 1926:34-35).

Vicksburg very fine sandy loam. This soil was found in narrow strips scattered along such creeks as Steen and Richland. It was hummocky, with higher areas less mottled than the low-lying areas. The 5-10" surface layer of brownish or light brown vfs was underlain by light brown or yellowish brown silt loam or fine sandy loam grading into mottled soils. In wide bottom areas with a silty clay loam substrate mottling was pronounced. Some areas back from creeks that were less frequently overflowed were cultivated for cotton, corn and sugarcane, but the main use for Vicksburg vfsl was pasture, hay and woodland. The vegetation included slash pine, sweetgum, black gum, holly, beech, cypress, magnolia, hickory, ironwood and laurel (Wildemuth 1926:34).

Vicksburg fine sandy loam. This soil was found in Rankin County along the banks of Pearl River in narrow flats and on rounded ridges separated by narrow elongate depressions. In Hinds County, the small areas of this soil were found in very narrow strips along the immediate bank of Pearl River, particularly northeast of Jackson. The sandier river bank natural levees, being higher, were not as frequently flooded as lower ridges. Frequently flooded areas with continual overbank deposition of sand and silt were included. In Hinds County, most of the soil lay 6-20' above the normal water level, but all was subject to seasonal overflow. On stream banks, this soil was characterized as having 2" of brownish yellow fine sand underlain by light brown slightly sandy loam to 10-12", grading at 20-25" to light brown fine sand. Away from the main natural levees, the profile differed, having 8-10" of brown fine sandy loam grading into yellowish brown heavy fine sandy loam then ay 14-20" brownish yellow or yellow fine sandy clay or silty clay. Only a small part of Vicksburg fsl had been cleared for cultivation. It produced cotton, corn, vegetables, sweet potatoes, peanuts, watermelons, soybeans and sugarcane. The few small areas cultivated in 1918 produced corn and cotton. It was more easily tilled than heavier soils and did not suffer drought. Regular overflow rendered cultivation risky, and it was considered better suited for timber production. The native vegetation was oaks, beech, sweetgum, ironwood, dogwood, magnolia, and ash (Kocher 1918:29-30; Wildemuth 1926:33-34).

Waverly silty clay loam. This soil occurs in the worst drained parts of the first bottoms, generally those backswamp/rimswamp locations adjacent to the uplands. It was commonly called "crawfish land." The largest areas were found along Pearl River north of the Yazoo & Mississippi Valley Railroad and along Pelahatchee Creek. It is described as having a mottled brown and grey scl surface layer grading into red or yellow mottled bluish grey or light grey scl tough impervious clay or silty clay. In depressions and basins the surface layer was only a thin covering over the heavy clay subsoil with well-developed concretions. Small hummocks of Collins soils were included in the mapping of Waverly scl. The soil was of little agricultural importance early in the 20th century. Most of it was still wooded and/or pastured. The heavy texture, low fertility, acidity and poor drainage indicated that it should be maintained as forest (Wildemuth 1926:38).

Waverly silt loam. The type occurs in Rankin County mostly along the Pearl bottoms and in the bottoms of larger creeks such as Richland Creek as well as some smaller creeks and branches. In Hinds County, only narrow strips along streams were indentified. Areas of Waverly sl are level with many wet depressions and swamps along Pearl River. The initial description Kocher 1918:34) is of 10" of grey silt loam with yellowish brown or rusty colored iron stains overlying mottled grey and yellowish brown compact silty clay loam to 36" or more. Wildemuth (1926) refined the definition of this soil as having a surface layer 1-4" thick of dark grey or yellowish brown silt loam overlying grey or whitish fine silt loam extending to 8-20", where there is a transition to rust mottled light grey silty clay loam. The lowest horizon of blueish-grey or light grey compact or impervious silty clay or clay is also mottled with yellow and rust brown. Concretions were found on the surface and throughout the profile. Crawfish chimneys were common in many places. The soil is frequently flooded and in Rankin County produced white oak, slash pine, sweetgum, persimmon, red haw, ash, and hickory. Under 10% of the type was cultivated in Hinds County in 1918; cotton and corn gave low yields. The heavily forest areas produced white oak, water oak, red oak, gum, elm and hickory. "Practically all the uncultivated areas support a dense growth of wild cane....[which] furnished winter feed for beef cattle (Kocher 1918:34)." A very small amount that was cultivated in the early 20th century in Rankin County produced low average yields of corn and cotton, but in favorable seasons sometimes fair corn yields could be obtained. The soil was best suited for rice, moisture-loving grasses, pasture and forestry (Kocher 1918:34; Wildemuth 1926:37-38).

Project Area Flora

Field technicians and crew chiefs are instructed to note plant and animal species and communities noted, particularly as they pertain to methods, probability, and interpretation (Figures 23,24). The results of these instructions were variable, but a list of species observed or potentially present in the project area has been prepared. These are presented below as lists of trees, understory and herbaceaous plants and faunal species. Potential cultural uses of the various species are emphasized, along with pertinent environmental indicators.

Figure 23. a. hollowed base of Tupelo gum, Rankin County. Kris Underwood and Michael Starnes b. typical ground cover of poison ivy, *smilax* briars, grapevine and snake.

Figure 24. typical conditions and wildlife, box turtles and water moccasins.

Project area trees

Ash (*Fraxinus sps.*), including green or swamp ash (*F. pennsylvanica*) carolina or water ash (*F. caroliniana*) and white ash (*F. americana*). White Ash is a large straight tree up to 80' (24m) high and diameter up to 2'. The flower clusters appear before the leaves; there are separate male and female trees. Leaves are opposite pinnate compound. The clusters of keys appear in late summer/fall. The tree prefers deep well-drained loam on valleys and slopes. The wood is of commercial value for tools and sporting equipment. Carolina, Water or Popash sometimes has multiple trunks often enlarged at base. It is smaller than whiteash but flowers, leaves and keys are similar. Carolina ash is better adapted to wet swamp and seasonally flooded soils. The wood is of little value. Green ash, also known as Swamp or Water ash, has a similar structure and vegetation to other ashes. It is widely found on stream banks in floodplain forests. It will also grow rapidly in less favorable settings such as Plains wind breaks and mine spoil dumps (Little 1995: 647-652).

Straight, flexible poles of ash were used structurally in prehistoric houses and for tool handles. Lorenz (1996:185) reports ash charcoal in all old Hoover mound (22-Ho-902) contexts except from the small sample from the bottomland (Big Black River) camp. It is overall one of the most common charcoal types. In Choctaw, the ash is *shinap* (Byington 1909).

Beech (*Fagus grandifolia*). This large spreading tree reaches 60' to 80' high and has trunk diameters up to 2 ½'. It is remarkable for its smooth light grey bark and leaves that remain on the tree all winter until new growth pushes them off. The male and female flowers appear with the leaves. Beech occurs frequently in pure stands as the tree propagates from root shoots. It favors rich valley soils in uplands or well-drained lowland soils. The small nuts are contained in a ½" – ¾" prickly burr that cracks open in the fall. The beech nuts are edible (Little 1995:380-381). The fruit matures September to November. Beechnuts are a favorite food of squirrel, bear, coon, quail, wood duck, turkey, dove, flying squirrel, chipmunk, crow, blue jay, woodpecker, nuthatch, titmice, grossbeak and purple finch. The vegetation is browsed by deer, and beaver sometime eat the bark (Hunter 1989:48).

In Choctaw, the beech is *hatombalaha*; the beechnut is *hatombalaha ani* (Byington 1909:392). The French *Hetre* is applied to the European and American beeches. It has limited commercial use because larger trees tend to be hollow. *Hetre* is more valuable as a wildlife food. *Hetre* is seldom used as an ornamental because it is difficult to transplant, and it is decreasing in abundance in many areas as it is culled by foresters (Holmes 1990:71-72).

Birch (*Betula nigra*). This generally small waterside tree was occasionally observed in the project area and is reported in the GLO notes. Small amounts of birch charcoal are reported by Lorenz (1996:185) at the Mississippian Old Hoover Mound (22-Ho-502). In Choctaw, the birch is *opahaksun*, the same as the word for fossil oyster shells; *opi* means to helve or haft, *hakshup* refers to all forms of skin, bark or shucks; the tree is noted as growing on riverbanks (Byington 1909:306, 394).

Bodoc, osage orange, hedge or horse apple (*Maclura pomifera).* This medium, thorny tree is related to the mulberries. The milky sap is slightly toxic and thorn punctures often fester. The very durable tough wood is red to orange and yellow; roots also have orange inner bark. There are separate male and female trees. The large compound green fruit (hence the name Osage "orange" or hedge "apple") has many nutlets and a dense flesh. The "apples" like the milky sap are considered toxic and are rarely eaten by animals, but some seeds are eaten by squirrels, quail, finches (Hunter 1989: 66). In contrast to Hunter (1989), Holmes (1990: 97-98) considers it a valuable wildlife food. The bark and roots have been used for dye (yellow or olive drab) and it was once widely cut for army uniform dye. The fruit can be used as an insect repellent.

The bodoc is not native to the mid-South, and evidently it had a very limited range in east Texas ca. 1600-1700. It is one of the best North American bow woods; the common name comes from a corruption of the French *bois d' arc*. *Bois d' arc* wood is very hard and very difficult to work but extremely springy. It makes very powerful bows, even when short, so it was widely traded to Plains tribes. The tree was widespread in the Pleistocene and apparently had a decreasing range after the extinction of the Pliestocene North American horse and ground sloth; but began to spread with the reintroduction of Spanish horses (Little 1995: 429-430). Arkansas Archeological Survey archaeologist Frank Schamback has created an elaborate interpretation of late prehistory based largely on the Caddos' apparent control of this vital resource. Allely and Hamm (1999:74-79, 92, 94-95, 96-99) report bodoc bows from the Creek, Yuchi, Chickasaw and Choctaw. They note that their illustrated Mississippi Chickasaw bow was brought by deportees to Oklahoma. In the nineteenth century, the tree was widely introduced to provide fencing on the treeless Plain as wellas throughout the South; in the South, fence posts planted often take root and grow into hedge rows. Bodoc is not shade tolerant, so its presence in dense forests is an indication of former clearance.

Catalpa (*Catalpa bignonioides (South) or Catalpa speciosa(North)*). This small tree was also called Indian bean for the long (10-15") fruit. No name for catalpa was collected by Byington (1909), but the Choctaw *katapa*, to divide, split, separate, is a good description for the way the catalpa bean opens. The "cigarlike" bean splits to spread many small winged seeds. This tree has a short trunk and irregular spreading branches. The flowers are large, flagrant, and white so the tree while not otherwise elegant in form is often planted in yards. The Catalpa prefers moist soil in openings such as suburbs and roadsides. The northern, hardier, variant grows somewhat larger, but is of similar form and habitat (Little 1995: 663-665). Northern catalpa (*c. speciosa)* is distinguished from southern (*c. bignonioides)* by the small flowers and lack of unpleasant odor of the former. Catalpa is of minor importance as deer browse (Hunter 1989: 168). The French name *bois puant* used throughout southern and central prairies means "stinking wood." It is believed that the flowers and even inhaled odor of *C. speciosa* is poisonous to some people. The catalpa sphinx moth larva or "worm" which strips the leaves is considered a prime fish bait (Holmes 1990: 38-39).

Cypress *(Taxodium distichum)*. This often huge (100-120' tall; 3-5' diameter) deciduous needle-leaf tree is remarkable for the "knees" or aerial roots that allow it to grow in stagnant water. The knees generally do not form if the trees grow on dry sites. The fibrous bark, which easily peels off in long strips, had various prehistoric and historic uses including roofing, packing, and twining. The tree reproduces by round, tarry cones that shed in fall and decay into angular seeds. Cypress is a highly valuable timber that often occurs in pure stands. The heartwood in particular is decay resistant and has traditionally been used for piles and sills, as well as interior paneling (Little 1995: 302-303).

Cypress is monoecious (male and female flowers on the same tree). It pollinates February through April; the cones mature September through November. The 1" diameter balls or cones are eaten by cranes and a few other birds. The needles are occasionally browsed by deer. In addition to being rot-resistant, the wood cleaves easily and is easily worked (Holmes 1990: 4-5), making it of special importance to Stone Age cultures. The Dalton adze indicates that dugout canoes may have been made as early as the end of the Pliestocene. This large water-growing tree, highly decay resistant especially in wet uses, easily worked or riven, was used especially for canoes and large timbers. Prehistoric and historic dugout canoes were generally made of cypress, and it is also used in wet locations such as piers, structural foundations and other boats. Other uses of the lumber include shingles, cooperage, railroad ties, pallets and caskets (Hunter 1989: 26). Allely and Hamm (1999:70-73) report a Seminole bow made of cypress wood. This seems an unusual use. Most of the highly valuable wood has been harvested throughout South, Central and North America. The Acadian term *cypre* comes from French *cypres.* A cypress swamp is termed a *cypière;* the knees are called *boscoyos* or *boscuillots.* The Choctaw for cypress is *sha^{n}kolo* (Byington 1909).

Cottonwood *(Populus deltoides virginiana)*. Called Carolina, Eastern, or Southern Cottonwood, it is related to the poplars, aspens and willows. This tree grows very large (100' high, 4' diameter). It is remarkable for deeply furrowed ropy bark, rapid growth and leaves that yellow and rattle in the fall. The twigs are resinous. Cottonwood has separate male and female trees. The chains of seed capsules open in late summer and release tiny fruit with cottony covering to aid dispersal on the wind. Cottonwood favors stream banks and pioneers sand bars and bare floodplain settings. It is one of the rare trees of the plains states, and a good indicator of the presence of water; in the southern floodplains, its rapid growth and soft, fibrous, white wood makes it useful for plywood, pulpwood, cross-ties, boxes and lathe-work (Little 1995:322-323). Some cottonwood was observed along the Pearl River. This soft, fast-growing tree has not traditionally been managed as a major timber species, although the wood is suitable for pulp and other industrial uses. Cottonwood spreads by its downy airborne seeds. A small amount of cottonwood charcoal is reported by Lorenz (1996:158) in the occupation area surrounding the Mississippi Period old Hoover Mound (22-Ho-502) in the nearby Big Black basin. The Latin name derives from the triangular leaf form. The fluffy "cotton" carrying the seed is released in late spring. Male and female catkins occur on separate trees. Beaver favor cottonwood bark as a food source. Some birds eat the seeds, and twigs are browsed by deer. Flowers form March through May, and seeds mature May-June (Hunter 1989: 34). French Colonial *cotonnier* is also used for the sycamore. *Liard* is more common; it appears to come from the Maine-Anjou dialect for "poplar." The Choctaw for cottonwood is *ashumbala* (Byington 1909:61). Indians sometimes used the cottonwood for canoes as it grows large and is easy to hollow. The soft weak wood has few commercial uses, besides pulpwood (Holmes 1990: 121).

Elm (*Ulmus sps.*); winged elm (*U. alata*) and American elm (*U. americana*). (Also known by Creek name wahoo in the east). Winged elm is a small to medium tree with saw tooth elliptical leaves and distinctive thin brown bark with broad corky wings on twigs. The clusters of green flowers appear early in spring and the round keys or samaras also mature early in spring. This hardwood forest species is common in old fields on dry uplands as well as in wetter valley soils. In the 18th and 19th century, the bark was twisted into rope for baling cotton. American elm is a larger tree, often with a swollen base and drooping branches. It grows to 100' in contrast to around 50' for winged elm. The bark is similarly furrowed but lacks the distinctive wings on smaller growth. Flowers and keys are similar. This was once a very common tree, particularly in floodplain forests and for urban planting, but has been largely destroyed by a fungal disease introduced from Europe ca. 1930. Young trees still sprouting from old stumps are still found. American elm was a valuable tree for paneling and lathe-work such as in furniture (Little 1995: 418-419). Elm has frequently been recovered as a structural member in prehistoric houses. Elm was primarily observed as a minor understory species in wet locations. Elms bloom in late winter. Species are distinguished by characteristics of the samaras. These are eaten by song birds, quail, turkey and wood duck. Squirrels eat elm buds in the spring and deer, rabbit and muskrat browse the plants (Hunter 1989: 62-64). The Choctaw for red elm is *tohto* (Byington 1909:354).

Hackberry (*C. occidentalis*) or sugarberry, sugar hackberry (*Celtis laevigata*). Hackberry is one of several North American *Celtis* species. This fast growing tree is common in pastures, old fields and urban wasteland. It grows to 80' high and 1 ½' in diameter. The thin, grey bark is marked by large corky warts. The male and female flowers appear under the new leaves in spring. The fruit is 1/4" red or purple one-seed drupe with a tart, sweet taste widely consumed by birds. This species grows on clay and marl soils, and can be found in pine or mixed hardwood stands in floodplains. The wood is cut for plywood and furniture (Little 1995:412-413). Hackberry and Sugarberry are distinguished by the seration of hackberry leaves; sugarberry leaves are also longer and more slender. Many birds consume the fruit. Squirrel and fox consume hackberry fruit to a limited extent; deer browse the twigs and beaver eat the bark. The wood of both species is used for crates, boxes, veneer, plywood, pallets and some furniture (Hunter 1989:62). Hackberry/sugarberry is a soft and fast-growing tree. It produces many small nutlets that are eaten by many wildlife species. The Colonial French name *bois connu* comes from the Norman dialect, and refers to the warts or "horns." This fast growing wood is used for cheap furniture, posts and boxes (Holmes 1990: 131). Hackberry wood is not distinguishable from other elms in archaeological collections of charcoal.

Hickories, including pecan (*Carya illinoensis*), bitter pecan (*C. aquatica*), bitternut hickory (*C. cordiformis*), pignut hickory (*C. glabra*), shagbark hickory (*C. ovata*), mockernut (*C. tomentosa*) and black walnut (*Juglans nigra*). There are any species; all have edible nuts, variable quality and difficulty of processing. Nuts were crushed and boiled to produce hickory milk, a cooking oil. Hard burned nut hull fragments are some of the most durable plant remains, commonly recovered even on Archaic sites. Walnut hulls were used to produce a black dye for materials such as cane basketry splints as well as fish poison. In contrast to the thin cultivated Old World walnut, black walnut shells are particularly thick and hard. The *Carya* species produce flexible very strong poles. The bark of some species are suitable for ties when young. Hickory is very common in the Pearl River floodplain. Its modern dominance as a canopy as well as understory species may be because it is not considered as valuable a timber species as oaks, and because the nuts are more viable after timber cutting than oak acorns. Hickories were the most commonly observed species in the Pearl River floodplain. Like other hickories, it grows large and has leaves that turn yellow in the fall. Pignut has thick hulls and small meats. It is more indicative of higher and drier locations. Hickory is a preferred wood for tools but otherwise is of little commercial value. It is also popular for smoking meat, and formerly, had other industrial uses, such as wheel spokes.

"Hickory" is said to derive from "*paw cohiccora*", one name for the oily food made from pounded nuts boiled and skimmed. The oil was used, among other things, for cooking cornbreads and hominy. Shellbark or Big Shagbark hickory is rare; it has more pairs of leaflets and a round, thick-hulled, edible nut meat. It prefers a moist or wet environment. Scaly bark, Shellbark or Shagbark hickory (*C. ovata)* is found in floodplain and upland settlings. The nut is diagnosed by its angular form and thick hull. The bark has been used for a yellow dye (Little 1995: 344-353). Hickory, mockernut or white hickory (*C. tomentosa)* has less markedly ridged or separating bark. The thick hulls cover a thick-shelled nut that can only be practically used for hickory oil or milk. This very common species is used for furniture, flooring, veneer, and tools, as well as charcoal/cooking wood. Squirrels are the main consumers of the very thick nut. Black walnut (*Juglans nigra*) grows into a large tree. The slow-growing species produces a highly valuable timber for furniture, veneer, and gun stocks. The nuts are thick but produce high quality nut meat. The thick hull does not split open and has been used for black-grey dye as well as fish poison (Little 1995:355-357, 358-359). Walnut is commonly planted in yards. Nuts of most hickories are ready by July/August. They are widely consumed by squirrels, chipmunks and bear. Deer also browse the twigs. Water Hickory/Bitter Pecan (*C. aquatica),* Bitternut (*C. cordiformis)* and Sweet Pecan *(C. Illinoensis)* are used for flooring, paneling, furniture, wedges, boxes and cabinet work. The other true hickories have tougher wood and are used for tool handles, outdoor furniture, basketry, walking canes and similar uses. Water Hickory/Bitter Pecan provides food for squirrels, ducks and a few other wildlife species. It occurs in overflow lands with overcup oak. The wood is of poor quality. Bitternut is of limited value as wildlife food; it is also found on low, moist sites. Pecan can grow into huge trees. It has been developed into many cultivars that are widely planted from Georgia to New Mexico. Wild pecans have smaller nuts with thicker shells. Pecan provides food for many species including turkey, most game and fur bearing animals, crow, cardinal, bluejay, woodpecker, grackle, wren, titmice, chickadees, nut hatches, and it also provides browse for deer. Shell bark/kingnut (*c. laciniosa)* has 2 ½" fruits with very thick, smooth hulls and yellow, sweet kernels. It is also a floodplain species. Shagbark Hickory *(c. ovata)* is the most widespread southern Hickory; young trees have smooth bark in contrast to the light grey, long, loose plates of older trees. It is more of an upland species. Mockernut *(c. tomentosa)* has thick nut shells, hence its common name, but its meat is sweet. It is widely fed on by woodpeckers. Black walnut has distinctive very hard, dark wood. Squirrels eating walnuts can be noted by the black "mustache" stains around their mouths. It is not important to deer, but some songbirds eat cracked walnut nuts. Besides gunstocks and high-value furniture, walnut is used in veneer, paneling, flooring, cabinetry and musical instruments. The slow growth of the tree limits its value in commercial planting, so its price continues to rise (Hunter 1989:40-44).

The French *noyer* refers mostly to walnut but sometimes to other hickories. Its use as a yard tree is limited by its tendancy to limit the growth of other plants, especially tomatoes and peppers. *Ikr,* or *Ikre'* is more commonly used for hickories. It apparently derives from the same Algonquian word *pawchoiccora,* which also produced "hickory." As Holmes (1990: 77) notes, "The hickories are a very difficult group" and the typical forms seem to intergrade in practice. The French Colonial term for pecan *pacanier* (tree) and *pacane* (nut) derives from an Algonquian name; bitter pecan *(pacanier amer)* is also called hog pecan *(pacanier d' cochons)* and it is not known to be used as a human food source. (Holmes 1990: 76-79). Byington (1909:358) records numerous Choctaw words for the hickories and their products: *Oksuk* or *uksuk api* refers to the tree, *uksak foni* is the nut shell *(foni*, bone), *uksak hata* is the white hickory nut and *uksak hahe* is a walnut (*haha api*, walnut tree), *uksak nipi* is the nut meat *(nipi*, meat), *uksak ulhkomo* is hickory milk and *uksak atlhanta* is hickory mush. Hickory is widely reported as a bow wood. Allely and Hamm (1999: 74-79, 82-83, 96-99) illustrate Tuscarora Yuchi, Creek, Catalba and Choctaw bows of hickory.

<u>Hornbeam, (blue beech, ironwood or water beech (Carpinus caroliniana)).</u> This small tree or shrub has angular trunks and fluted slender spreading branches. It grows up to 30' high but when observed was commonly much smaller. The common name blue beech comes from the smooth blue-grey bark color in contrast to the brown bark of the Eastern Hophornbeam *(Ostrya virginiana).* Male and female flowers appear early in spring and the paired, elliptical, hairy nuts enclosed in a leaf-like scale, appear in late summer. This hardwood understory plant is common in moist rich soils, particularly along streams. The wood is extremely tough, hence, the common name (shared with the highly similar hop hornbeam) ironwood. The "beech" names allude to leaves very similar to those of the beech, but the bush is more closely related to birches. Commercial use is almost nil, but, it may have been used prehistorically for ax or other tool handles. It is a favored deer browse, and quail and other ground birds eat the nuts. (Little 1995: 372-373). This generally small tree has very dense wood. It has no modern economic uses, but is common along stream banks. Choctaw for ironwood is *itukawiloha/itukahioha* or *iyanabi*, the latter also denoting witch hazel (Byington 1909:217, 482).

<u>Ironwood/Blue Beech *(Carpinus caroliniana)*</u> is often described as "muscular." It is a monoecious plant. Leaves stay on the plant during winter and turn pale and papery like beech leaves. The nutlets are eaten by squirrel, quail and some other birds. The leaves

and bark are eaten by rabbits, beaver and deer (Hunter 1989: 46). Industrial use is limited to cases where very hard handles or moving parts are needed. The fruit matures from May to October.

Locust (sweet, honey or thorny locust, *Gleditsia triacanthus).* Locust is a large spreading tree with large, stout clusters of thorns. Locust is a legume and produces a large flat brown pod filled with sweet edible pulp surrounding bean-like brown seeds. These are eaten and thus spread by cattle, coyotes, and other animals. This old field and pasture species is found from dry limestone uplands to moist floodplain. It is used for fence posts, and for hot-burning firewood. Locusts are related to other leguminous trees such as red bud, mesquites, and Kentucky coffee tree (Little 1995: 523-524). The fruit is eaten by deer, rabbits, squirrels, small mammals, birds such as quail as well as cattle. The leaf lets are browsed by deer. The pods mature September through December (Hunter 1989: 108). French Colonial names are *piquant amourelle* ("thorn of transient love") or *piquant morte raide* (thorn causing tetanus) which refers to the badly festering wounds, fever and stiffness or hardened flesh caused by thorn punctures. The Choctaw for honey locust is *kati* (Byington 1909:493). Locust is a major honey plant. The thorns have been used as nails and pins. Indians reportedly ate the sweet pulp of the young pods; they become bitter when mature. The pulp has also reportedly been used to produce alcoholic liquor (Holmes 1990: 87-88). Locust is widely reported as a bow wood. Allely and Hamm (1999: 74-79, 87-91) illustrate Creek and Oklahoma Cherokee bows made of black locust. Little locust was observed in the project area, but it was occasionally noted along the upland edges of the floodplain. This species has commonly been used as fence posts and was favored as a hot-burning cook-stove wood. The large thorns make it resistant to browsing, so it often is found in pastured land.

Magnolia. The commonly planted southern magnolia was the only magnolia species noted in the project area. Most are upland species and those observed in the project area are probably derived from planted specimens. The smaller sweet bay/swamp bay/swamp magnolia (*M. virginiana)*; cucumbertree or pyramid magnolia (*M. pyramidata)*; and big leaf or silver leaf magnolia (*M. macrophylla*) are to be expected in this area as well.. In the GLO records, magnolia is referred to as 'bull bay.' The magnolia is a dense conical evergreen known for its highly fragrant large white flowers. The tree can grow to 60' to 80' high and 2 to 3' diameter. The cone-like fruit contains many red two-seeded fruits. Magnolia favors moist valley and upland soils and occurs mixed with other hardwoods. It is spread by birds consuming the fruit. The Southern Magnolia, like Chinese species, has been spread worldwide as an ornamental, and there are variously horticultural varieties and hybrids. The wood has some use in furniture, cabinet work, doors and boxes (Little 1995:437-445). French Colonials used magnolia branches in place of palm branches on Good Friday processions, hence, it common Gulf Coastal name *rameau* or *bois de rameaux.* The decay resistant wood has been used as crossties (Holmes 1990: 93-94). The Choctaw for bay or magnolia is *kothlaha*; the rattling of the leaves gives the verb/gerund for rattling or rustling, *kotlhahachi* (Byington 1909:237, 495).

Maples: Boxelder (*A.negundo)*; red, scarlet or swamp maple (*A. rubrum);* silver, soft or white maple (*A. saccharinum)* There are several species, and they are often early colonizer of new wetlands soils. Several dense pure stands of maple were noted on new, silty land. Maples are generally small to medium deciduous trees. Boxelder is distinguished by the pinate compound leaves although it has paired keys as other maples. This is a weedy species although valuable on the plains as a fast growing but short-lived shade/widebreak tree, and formerly used as other maples to produce syrup from sap. Boxelder as other maples prefers wet to moist settings, particularly along streams, and colonizes wasteland and roadsides. Red maple is a large tree with the typical lobed leaf of other maples. The reddish flowers appear in late winter and the paired keys mature in the spring. This species favors swampy sites but can be found on drier uplands. It is widely planted in yards. Ink and dye have been made from the bark. Silver maple is a straggling, soft, brittle tree. The sap yield is lower than northern species. The flowers are greenish and the keys have matured in springtime. This is a stream bank, floodplain and swamp species. Better (harder) maples have various industrial uses, particularly veneer, where burl and birdeye wood is highly valued (Little 1995: 570-581). Boxelder flowers in April or May and the keys mature from June through early winter. The seeds are eaten by grosbeak, finch and some other birds and squirrels. It also provides deer browse and bark for beavers. This softwood is used for boxes, crates, pulpwood, cross-ties, furniture and woodenware. It favors low sites near water (Hunter 1989: 126). French colonials and Acadiens referred to *Acer rubrum* as *Erable*, standard French for maple (Holmes 1990:28-29). Byington (1909:112) notes that the Choctaw distinguished between hard maple (*chukchu chito* or *chukchu imoshi*, *chito*, big; *imoshi*, uncle) and the more common soft maple (*chukchu*); he also recorded *chukchu hapi champuli* (*hap*i, salt, *champuli*, honey, sweetness) for maple sugar. Red and silver maple provide deer and rabbit browse. Squirrels eat the seeds and beaver the bark. Some birds eat the seeds. As soft (silver maple) grows fast and develops cavities used for nests by owls and squirrels as well as coon, and possum (Hunter 1989:126-128). Small amounts of maple charcoal are reported by Lorenz (1996:158) from testing Mississippian contexts at and near Old Hoover Mound (22-Ho-502).

<u>Mulberry (*Morus sps.*).</u> There are common introduced mulberries, particularly white or silkworm mulberries (<u>*M. albus)*</u>, but the main native species of the eastern U.S., the red mulberry, is a medium-sized spreading tree with rough, hairy leaves and fissured bark. The cylindrical dark red/purple fruit is sweet and juicy. It ripens early in summer and people, animals and birds eat the fruit, which may ferment on the tree, and make birds drunk. The wood has been used for fence posts, furniture, paneling and tools. Choctaws made cloth from the fibrous inner bark of shoots (Little 1995:432-433). The standard French *murier* (mulberry tree) is less common in the Gulf South than *éronce*. The name *mure* refers to mulberry fruit as well as dewberry. Byington (1909:88,504) records *bihi api/bihapi* as the Choctaw for mulberry tree. The berry can be eaten fresh or made into jellies and jams but it is little used by humans. The light and durable wood has been used for fenceposts and barrel stares. It was an important fiber for native cloth weaving (Holmes 1990:98-99). Red mulberry (*Morus rubra*) in the project area appears to be largely escaped from intentional lawn plantings. The fruit is very sweet and similar in appearance to blackberries. Many birds flock to the trees to feast on the ripe fruit. Many mammals also eat them, and deer will browse the leaves and twigs. Beaver eat mulberry bark (Hunter 1989:66).

Oaks (*Quercus sps.*). Many species indicative of a wide range of habitats were noted, they are difficult to identify to the species level from small charred specimens. The Quercus species are generally divided into white oaks (white oak (*Q. alba*), overcup oak (*Q. lyrata*) and cow or swamp white oak (*Q. michauxii*)) and red oaks (water oak (*Q. nigra* or *aquaticus*), willow oak (*Q. phellos*), Nutall oak (*Q. nuttallii*), laurel oak (*Q. laurifolia*), cherrybark red oak (*Q. pagoda*), and Shumard red oak (*Q. shumardii*)). Also: post oak (*Q. stellata*), bur oak (*Q. macrocarpa*), chinkapin oak (*Q. muehlenbergii*), black oak (*Q. velutina*), red or Spanish oak (*Q. falcata* or *flacata var. pagodafolia*), pin oak (*Q. palustris*), blackjack oak (*Q. marilandica*). Some oaks produce acorns edible by humans, although they require various forms of processing to remove tannins. They may have been a major prehistoric food source, along with hickories. Acorns are a main fall food source for deer and turkeys, and in historic times, cattle and hogs were also fattened on acorns. These hardwoods are the main modern economic resource of the project area.

White or stave oak (*Q. alba*) is the main timber species in the white oak group. This is a large (100' high, 3' to 4' diameter) typically straight tree with a 1 to 3 cm. long oval acorn with a shallow cup. It can be found in pure strands, but it is diminished to the favor of hickories by selective cutting. The white oak can be found on uplands or lowlands and is a high-grade lumber species. The common name, stave oak, comes from its use in whisky and wine barrels. This was once an important ship building tree. (Little 1995: 382-383). Southern red oak (*Q. falcata*) was once commonly called Spanish oak and it often occurs in GLO records under this name. It is also called swamp red oak. Its common habitat is on sand or clay loam soils, although it is more common on uplands than better drained low lands. Cherry bark oak is considered a variant or southern swamp oak, Red oak (*var. pagodifolia*). The lumber is marketed with other red oaks. The tendency to broad, furrowed ridges and plates is more pronounced on the bark of cherry bark oak. The small nuts (½") are elliptical and 1/3 or more enclosed in a cup; they take 2 years to mature. Overcup/Swamp Post/Waterwhite oak (*Q. lyrata*) is the main oak of southern swamplands. It tolerates poorly drained wet day soils. Overcup oak acorns are completely enclosed and mature in one year. The acorns are large (1/2" to 1"). Swamp chestnut/basket/cow oak (*Q. michauxii*) produces the sweetest of the white acorn; it is edible raw and the large (1" to 1 ¼" acorn) is one-third to one-half enclosed in a hairy cup; it matures in one year. The wood was valuable for cotton basket splints; it splits easily and fibers were sometime woven for other purposes. It was also favored as cattle and hog forage. Water oak/spotted oak/possum oak (*Q. nigra*) is a large, straight-growing oak with small (3/8" to 5/8") acorns that are round, with a shallow cup, and take two years to mature. As the main common names implies; it favors moist to wet soils in low lands, swamps and along streams and often occurs with sweetgum. It grows fast but is short-lived and is widely planted as a shade tree. Nuttall oak/ Red oak/Pin oak (*Q. nuttallii*) is a favored tree for wetland planting as it produces large crops of nuts for deer and turkey forage. Nuttall oak is marked by its swollen base and open crown with drooping branches. The ¾" to 1 ¼" acorns are oblong, striped and ¼" to ½" enclosed by a broad cup; it takes two years to mature. Nuttall naturally forms pure strands on wet clay soils. Willow oak/Pin oak/Peach oak (*Q. Phellos*) is a large, conical tree with a 3/8" to ½" round acorn with a shallow cup; it takes two years to mature. Willow oak grows in wet floodplains and along streams, sometimes in pure strands. It is widely planted as a shade tree and is an important source of food for squirrels, deer and turkey (Little 1995: 382-405).

The French *Chene* is used for all oaks; an oak grove is known as a *cheniere*. White oak is known as *chene gris* (Holmes 1990:70-71). White oaks provide annual crops of sweet acorns. Squirrel, deer, bear, turkey, quail and other large birds feed on White Oak acorns. It is also an important plant for deer browse. Overcup oak acorns are eaten by ducks in overflow areas, and deer browse young plants. Swamp chestnut oak also provides acorns for turkey, deer, bear and squirrel. It is a major indicator for the fine, textured soil on bottomland terraces. Red oaks have bitter acorns that are generally small and take two years to mature. The Southern Red or Spanish Oak produces acorns for deer, bear, squirrel, turkey, bluejay, thrasher, sapsucker, woodpecker, chipmunk and flying squirrel. Cherry Bark Oak (*Q. falcata v. pagodifolia)* has longer leaves with more lobes than Spanish Oak (*Q. f.v. facata)* and is one of the better quality red oaks for timber. Water Oak (*Q. nigra)* and Willow Oak (*Q. phellus)* are similar in habitat and timber uses. The small acorns are widely eaten by ducks, as well as squirrel, deer, coon, turkey, quail, dove, grey fox, bear and many large birds. Willow Oak favors drier sites than Water Oak. Both are widely planted as shade trees (Hunter 1989:50-58). The Choctaw distinguished among the various oaks. Blackjack is *chiskilik*, overcup oak is *bashto*, post oak is *chisha*, Spanish oak is *chiltpatha*, white oak is *baii*; other forms were recorded without specific attribution; an acorn is *nusi* (*nusi*, asleep, dormant) (Byington 1909:287, 382, 508). Acorns were recovered at Old Hoover Mound (22-Ho-502) and its associated terrace hamlet and upland farmstead, and oak charcoal is also common at these Mississippi Period sites (Lorenz 1996: 158).

<u>Persimmon (*Diospyros virginiana*).</u> This small tree produces a fall fruit, bitter until after the frost. It was a major prehistoric food resource for humans and the animals they hunted. Bread made from the fruit can be stored. Persimmon produces a good wood for smoking meat. The hard, large seeds are commonly carbonized and well preserved even in Archaic and Woodland contexts. Lorenz (1996:159) reports numerous persimmon seeds from a pit at hamlet on a terrace near the Hoover Mound (22-Ho-502). The tree grows 20' to 70' and 1' to 2' in diameter. It is often shrubby and is common in pastures and old fields. Coyotes and deer spread it by consuming the fruit. There are separate male and female trees which flower in spring. The orange fruit is not considered edible by humans until after heavy frost, when the astringent tannin is reduced and the fruit becomes soft. Persimmon tolerates a wide range of conditions, including moist alluvial soils and clearings or roadsides. Historic tribes use the fruit in puddings, drinks, and as a bread with a long storage life as well as drying the fruit for winter/spring use. It is also an important food source for other mammals especially deer, coon, possum, skunk, fox and coyote, as well as many birds. Its commercial uses are limited to furniture veneer and it was formerly highly prized for golf clubs and weaving shuttles. "Persimmon" derives from an Algonkian language (Little 1995:635-636). In Choctaw, persimmon is *u^{n}kof* (Byington 1909:517). The Texas/Mexican variant is smaller and black; the cultivated Chinese variant produces large orange fruit. The berry has a high food value. Fox, skunk, deer, bear, coyote and other mammals and birds such as kinglet, catbird, cedar waxwing eat the fruit (Hunter 1989:152). The French Colonial name for the tree

plaqueminier and its fruit *plaquemine* comes from the Illinois name *piakimin*. The dried fruit was made into flour by Indians. The seeds have been used as a coffee substitute and as buttons (Holmes 1990:67).

Pine (short leaf, short straw or southern yellow pine, (*Pinus echinata*). This is a large (70' to 100' tall, 1 ½' to 3' diameter) tree with a broad, open crown. The cones open at maturity to release winged seeds, but remain attached to branches. Short straw pine tolerates a broad range of conditions. It is an early colonizer of old fields. At the time of the GLO surveys, it was common in the Rankin County portion of the Pearl River floodplain. This is a major timber species and many fast-maturing cultivars have been developed for commercial plantations. It is used as lumber, plywood and pulpwood. Slash, yellow slash or swamp pine (*P. elliottii*) has needles 7" to 10" long in contrast to the 3" to 4" needles or short straw pine. Its cones drop at maturity. Slash pine is native to the lower Gulf Coastal Plain, but is widely planted further north. Its name comes from its habit of growing in low areas such as ponds and sloughs (slashes), flatwoods and swampy floodplains, as well as uplands and old fields. It was once widely cut for turpentine production, and is now a fast-growing lumber species. Longleaf yellow pine/southern yellow pine with 10" to 15" straw (*P. palustris*) occurs south of the project area and favors sand hill environments (Little 1995:287-292). While pine is generally considered an upland species, it can grow in floodplains in the lower southeast. It is well attested east of the Pearl in the GLO records. Short leaf/yellow Pine and Loblolly Pine. The pollen cones of both species put out large amounts of yellow pollen in early spring. The seed cones take two years to mature. Pines are often barked by beaver but are not a main food source. Deer generally browse pine only when other food is limited. Quail, turkey, dove, meadowlark, bluejay, blackbirds, woodpeckers, small songbirds and rodents consume the seeds. Squirrels tear the cones apart scale-by-scale to eat the seeds which mature in fall and winter. Besides many lumber, pole, and millwork uses, pine was a favored tree for log houses. The name loblolly refers to its preference for wet sites (Hunter 1989: 24).

The French applied the term *pin* to short straw, long straw and loblolly pines; a pine woods is called a *piniere*. The Choctaw name for pine, *tiak* (Byington 1909:348) occurs in many place names such as Teoc in Carroll County. There are numerous distinct forms: *tiak fa*^{n}*ya*, longleaf; *tiak hobak*, yellow pine (*hobak*, coward, gelding); *tiak nia*, pine tar/pitch (*nia*, fat); *tiak pi*^{n}*kshi/po*^{n}*kshi*, pine knot (*po*^{n}*kshi*, knot, gnarly,bulb, knob,gall, toadstool).

Sassafras (*Sassafras variifolium*) or (*S. albidum*). This small tree or shrub is marked by three different leaf shapes that turn yellow orange or red in the fall and by green twigs. All parts of the plant are aromatic. The leaves are powdered for file´ to thicken okra stews and the roots are boiled for a tonic tea; however, modern research discourages its use as it appears to be a mild carcinogen. The tree ordinarily produces male and female flowers on separate trees. The small (3/8") fruit are elliptical and blue-black with a red cup and stalk. It prefers sandy or loamy but moist upland soils and was only found occasionally on stream/bank ridges in the project area. It is a major old field species. This member of the Laurel family was used by Native Americans as well as English, French, and Spanish colonials (Little 1995:450-451). This small tree has hard red wood suitable for use in smoking meat. While it is not a technologically superior bow wood, sassafras has been used for bows. Allely and Hamm (1999: 92) illustrate a historic Yuchi bow of sassafras wood. The fruit is eaten by over 20 song and game bird species as well as bear. Birds usually harvest the entire seed crop within a few days of ripening in July or August (Hunter 1989:78). Holmes (1990:80-82) describes the process of manufacturing *file' (gombo file', sassafran)* from sassafras leaves. The leaves should be collected in August before they begin to change color and preferably after rain has washed the natural dust off. They are dried in a dark location and crushed in a *pile'* (stump mortar) with a *pilon* (pestle) and then sifted. The tonic tea is reputed to be a non-specific "blood thinner"; safrole is reportedly a carcinogen so the plant is no longer used for "root beer." The leaf used for *file'* does not contain safrole. The bark has been used for a yellow cloth dye. It is a good wood for fence posts, but is difficult to transplant. It is however easily grown from seed (Holmes 1990: 80-82). Byington (1909:228, 546) records *kafi* for sassafras and for coffee.

Sweetgum/Red Gum (*Liquidambar styraciflua*). This is a large aromatic tree with a typically straight trunk 60' to 100' tall and 1 ½' to 3' in diameter at maturity. Leaves, twigs, and bark are resinous. Male and female flowers are borne on the same tree. The distinctive fruit is a spiny ball each section of which contains one or two winged seeds, which remain on the tree until the winter. This tree is particularly characteristic of wet soils; it is a pioneer species forming thickets after logging in abandoned fields or pastures. Timber-sized specimens are used for furniture, cabinetry, veneer, plywood, pulpwood and containers. The gum which can be obtained by barking the tree was considered medicinal as well as being used as a rudimentary chewing gum (Little 1995: 453-454). The sweet, fragrant gum has been considered medicinal. The tree is very resistant to flooding. The bark is a favorite food of beavers, but it is of low value for deer browse. The seeds provide food for over 20 species of game and song birds as well as squirrels (Hunter 1989:86). This soft wood has few economic uses. It warps badly. It is generally an environmental indicator of poorly drained soils, and was frequently noted as an understory species in pine plantations. The Spanish name *copal* was adopted by French colonials; it derives from Aztec *copalli* which refers to its resin. "Copal balsam" has been used to treat wounds and various diseases, in soap, and as an adhesive. The lumber is sometimes called "satin walnut." It is important ornamental because of quick growth, long life and vivid fall colors (Holmes 1990:73). *Hika* is the Choctaw for sweetgum or the resin (*hika nia*, Byington 1909:150).

Sycamore (*Platanus occidentalis*). Soft wood, fast-growing wetland tree. This is one of the largest Eastern American trees with an often massive enlarged base and often crooked massive limbs. It grows to 100' tall and 2' to 4' diameter. The bark is distinctively smooth and mottled white and grey with large peeling flakes exposing brown or green underbark. The tree bears male and females flowers on the same tree; the fruit is a ball on a long stalk composed of many narrow nuts with hairy dispersal tufts. The sycamore is found in wet locations and is a dominant crown species in mixed forests. It is a fast-growing pioneer species; record examples of 11' to 15' diameter have been noted; these are generally hollow and form homes for bats, birds, and wintering insects. It is used in the furniture industry, pulpwood, fiber board and similar uses. Its great density makes it valuable for flooring and butcher block. The massive hollow trunks of senescent trees once provided bear dens and homes for chimney swifts. It is a minor deer browse, but the nutlets are eaten by finch, chickadee, and juncos (Hunter 1989:86). Holmes (1990: 109-110) notes that hollow-trunks have also been used as corncribs and smoke houses. Some Indian tribes made syrup from sap. The common Louisiana name *cotonnier* is shared with cottonwood. Byington (1909:121) records *bihi holba* (*bihi*, mulberry, *holba*, like) and *sini* (buttonwood) as well as the Sixtowns variant name *fanikoyo*, "squirrel does not climb it.". Small amounts of sycamore charcoal were recovered from Mississippian contexts at the Old Hoover Mound (22-Ho-502) in the adjacent Big Black Basin (Lorenz 1996: 158).

Tupelo gum, Water Tupelo, Cotton gum (*Nyssa aquatica*). Tupelo is a tall (100') aquatic tree with a swollen base and large oval leaves. Male and female flowers are typically on separate trees. The fruit or berry is dark greyish purple and elliptical, with sour pulp and a winged stone. It often forms pure strands in swamps or seasonal standing water. The wood is spongy and of limited commercial use, but it was once used for house blocks and, when hollow, for bee hives and troughs (Little 1995:618). They become hollow with age. Tupelo has been used for canoes. The fruit is eaten by a few bird species. It matures in fall and early winter. The flowers are a honey source in March and April (Hunter 1989: 146). Tupelo or Cotton gum is referred to in Colonial French as *olivier* as its fruit resembles an olive. The soft outer pulp is very bitter. Hollowed Tupelo Gum logs were used to make *piles* or mortars for grind corn, *file´*, and red pepper (Holmes 1990: 62-63).

Willow (*Salix sps.*), especially black willow. The main southern willow is the black or swamp willow *(S. nigra)*, which is similar to the brushy sandbar/coyote/narrowleaf willow (*S. exigua*) of the more northerly and westerly regions, but larger, reaching heights of 60'+. It typically has multiple trunks. Larger specimens are harvested for furniture, doors, cabinetwork, containers and pulpwood. Black willow has chains of seed capsules maturing in late spring; these are similar to the related cottonwood pods, but contain hairless seeds. Willow is particularly adapted to wet locations on floodplains and the banks of streams and ponds. It is often found in pine stands or as an understory with cottonwood. It is valuable for stabilizing banks; willow mats and stakes were widely used to stabilize cut banks and man-made levees. It was also formerly the main source of charcoal for gunpowder, and its spring flowers are a main source of honey. Because of industrial uses such as basketry, there are many introduced Eurasian species that can be considered naturalized (Little 1995: 327-338). Ward's /Coastal Plain Willow (*Salix caroliniana)* is small and shrubby like sand bar willow. It has been observed to naturally hybridize with Black Willow. Coastal plain willow is typically less than 1' in diameter (Hunter 1989; 36). Willow bark is a favorite food of beavers which often cut down large stands and stack branches for later stripping. Muskrats, rabbits and squirrels eat new buds, and deer often browse will stands (Hunter 1989:38). Soft, fast-growing, often brushy, willow prefers sandbars and waterside habitat. Flexible rods from new growth are used for structures and containers. The willow has commonly been used to make wicker furniture and in other applications where strength is not of concern (Holmes 1990:122). The standard French *gaule* is used for all willows; the bitter bark of *savlenoir* (*Salix* *nigra)* was used for fevers. Byington (1909:606) reports *takoi*^{n}*sha* or *tikoi*^{n}*sha* for willow. Small amounts of willow charcoal were recovered from all Mississippian site types tested by the Old Hoover Mound project except the upland farmstead (Lorenz 1996: 158).

Understory and Herbaceous Species

Amaranths/Chenopods or pigweed (*Amaranthaceae* and *Chenopodiaceae*). Large stands of pigweed were noted in overflow areas. Pigweeds were a major prehistoric starch and oil source, and both wild and domestic forms were used. It is also a major food source for birds. Pale seed amaranth (*Amaranthus hypochondriacus*) is now considered a weed, it was the form once cultivated in some areas of North America as a food crop, and it is a valuable wildlife food. Amaranth stands were observed on sandbars and in other areas of seasonal high water. Sumpweed (*Chenopodium berlandieri*) was also collected and in some cases cultivated in prehistoric times.

Berry briar (*Rubus* spp.). Briars were encountered in some old clearings/clearcuts. These are an important seasonal foodsource forbirds, some animals, and were undoubtely used when ripe by prehistoric occupants.

Beauty bush, French mulberry (C*allicarpa americana)* is a shrub up to 5' tall. It is a common understory in project area oak-hickory-sweet gum woods. The plant produces clusters of purple berries that are eaten by a dozen songbird species, quail, coon, possum and fox. Deer browse the vegetation in summer and fall and also eat the late summer and fall berries. Beautybush is adaptable to many environments (Hunter 1989: 160). Gulf Colonial French termed this small, many stemmed bush *chassa pareille* from the French *salsepaveille* for greenbriar; it is also known as *cherche pareille* (Holmes 1990: 130).

Bluestem (*Andropdon* spp). This widespread and common grass is the most common material identified as thatch of Mississippian houses.

Bullvine/cowitch/trumpet creeper (*Campsis radicans*). This dense vine has large orange flowers and produces a large bean. It is characterized as "undesirably aggressive" (Thieret et al. 2001). It is related to another common member of the *Bigoniaceae*, the catalpa and is sometimes planted by foolish people as an ornamental.

Burning bush/Strawberry bush/ Brook Euonymus (*Euonymus americanus)* is one of several members of the Bittersweet (*Celastraceae)* family. The project area variety may be *G. americanus* rather than *E. atropurpuveus*. The fruit is eaten by many birds and is a favored deer browse; deer appear to be a major factor in thinning burning bush thickets. The fruit appears in the fall (Hunter 1989:124) Eastern Wahoo or Euonymus (*Euonymus atropurpuveus)*. This shrub or small tree has highly distinctive red/purple 4-lobed, warty, leathery seed capsules. It was noted on higher/better drained locations, particularly around City Mound and Flowood Mound. The early summer flower and seed coats are also dark red. Burning bush prefers moist soil and can form thickets in valleys and along forest edges. The powdered bark was used as a Native American and early Euro/Afro American purge (Little 1995:566-567).

Cattail (*Typha latifolia*). Cattail is a very usefull plant. The roots of catttail are an important prehistoric food source as tubers and flour, and the long and supple leaves are of major industrial importance for matting. The spikes can be eaten and the pollen can also be gathered as a food. The dense stands spread by the creep of the roots. It is the favored habitat of the red-wing blackbird and muskrat (Thieret et al. 2001:809-810).

Cockelbur (*Xanthium strumarium*). This coarse woody weed is a major cropland pest. The small burred seeds are abundant and will germinate over several years. They can spread by contact due to the bristles or spikes covering the seed pod. Stands of cockelbur were noted in seasonal sloughs. The cocklebur is a 2-3' tall weed with a taproot. The vegetation is coarse and the plant derives its name from the spiney seed capsule. It is a major colonizer of old fields, disturbed ground and wastelands. It was observed in dense stands on overflowed land. The Acadien term *herbe a'coquin* or "rouge plant" alludes to its undesirability. Cockleburs have been noted as impressions in prehistoric daub (Holmes 1990: 47). Byington (1909:413) records *pa*^{n}*shtathli* for this weed.

Dodder (*Cusuta gronovii*). This unusual appearing orange, leafless, parasitic vine forms dense clumps that bear down its host. It is a member of the *Convolvulaceae*, or morning glories. Some are introduced from Europe as they parasitise the clovers (Thieret et al. 2001:484).

Dogwood (Eastern flowering dogwood, *Cornus florida*). This small tree or shrub can reach 30' high and 8" diameter but is typically a small, sprawling, irregular crowned bush. The dogwood is marked by its reddish bark which forms square plates. The white or pink petal-like bracts surrounding tiny yellow flowers appear before most forest vegetation. The elliptical, shiny, red fruit have a thin bitter pulp surrounding a hard stone; it matures in the fall and is a major wildlife food source. Dogwood is more typical of uplands, but can be found in moist valley soils, and it is widely planted as an ornamental and spread by birds consuming the fruit. The wood is tough and formerly harvested for weaving shuttles, spools, pulley blocks, and mallets. Indians used the aromatic root and bark against malaria. A red dye can be made from dogwood roots. (Little 1995: 615-616). This large bush or small tree has a weak and spindly form. It was a common wood for North American arrows. The seeds attract birds. The drupes are eaten by many birds as well as deer, bear and small mammals, and the low vegetation is a favored deer browse. The fruit matures in the fall (Hunter 1989: 144). The common name is said to derive from the English practice of making daggers from the genus. It was favored arrow wood in North America. The Colonial French *bois bouton* refers to the button-like winter buds. The roots were used by Indians to dye quills, feathers and cane splints. Besides use for malaria and other fevers and chills, the plant has been used as an astringent for hoarseness and as a general tonic. Dogwood also has the colonial Louisiana name *bois de fl'eche* as it was used for arrow shafts (Holmes 1990:61-63). Allely and Hamm (1999:100) illustrate Caddo dogwood arrow shafts. Byington (1909:433) records *hakchupilhko* for this bush.

Ferns. The new heads of the common fern are edible by humans. A climbing fern, perhaps introduced, was also observed.

Goldenrod (*Solidago* spp.). This late summer blooming weed is an important food source for birds' fall migration.

Grapevine or muscadine (*Vitis sps.*). This large, climbing woodland vine produces a late summer fruit commonly used by prehistoric and historic inhabitants of the mid-South. Vines are sometimes noted as being used for tieing timbers in prehistoric structures. Grapevines include muscadine/scuppernong *(Rotala rotundifolia)* which prefer moist but well drained locations. Cat or Red grape (*V. palmata)* which grows in wet sandy areas, grayback/winter/downy grape *(V. cinerea)* a small sweet grape of moist areas and summer or possum grape (*V. aestivalis)*. Leaf shape is highly variable within the 5 species and similar between species. All are important food sources for birds and small mammals. It is also a preferred deer browse. Deer and bear also eat fallen grapes (Hunter 1989:136-138). Colonial French refers to the muscadine vine as *liane de soco*, apparently from a Choctaw word *soco* for the grape. (Byington (1909:504) has the variant *suko*). Besides being an important wildlife food source muscadine is widely gathered, and sometimes cultivated for wine and jelly (Holmes 1990: 137). Lorenz (1996: 185) reports grape seeds from a tested hamlet site on a terrace near the Mississippi Period Old Hoover Mound (22-Ho-502).

Greenbriar, Bullbriar or Deerbriar (*Smilax bona-nox.*). Several varieties of this member of the lily family have been defined. The leathery leaves can be triangular or lobed, wide or narrow. The underground tubers are knotty and spiny. The black fruit is eaten by cat bird, mockingbird and other birds in the fall and winter (Hunter 1989:28). Catbriar/green briar (*S. glauca)* has a bright green triangular leaf and weaker thorns. The knotty tubers often occur in stream-like tubers and contrast to the spiny masses of *S. bona-nox*. The dark blue/black fruit are eaten by quail, turkey, cedar wax wing, cardinal and other birds. Common greenbriar (*S. rotundifolia)* is marked by large, round clusters of black berries eaten by turkey, quail, songbirds, fur bearers and bear. This is one of the most common forms of greenbriar, particularly in disturbed places such as thickets, fence rows, old fields and roadsides. The roots are thick and the leaves broad and rounded (Hunter 1989: 30). This tough thorny green vine is a major understory species. It is extensively browsed by deer, and the new shoots are a minor food source in the spring. Colonial French termed all *Smilax* species *Cantague*. The large knotty rhizomes were used as food by Indians and early settlers by powdering and mixing with meal or flower. The French term comes from a Choctaw name (Holmes 1990: 23-24). Byington (1909:400) reports *kantak* for brier and *kantak paska* for brier-root bread.

Green dragon (*Arisaema dracontium*) and other arums. These plants were widely observed as a ground cover. Other forms were more common that the easily identidied gree dragon. The rootstocks are considered poisonous raw but can be treated to produce an edible flour in some species (Thieret et al. 2001).

Hanging moss or Spanish moss (*Tillandsia usneoides*) is an epiphite colonizing several species of floodplain trees. The French called *mousse/moss "barbe espagnule"*, "Spanish beard", while the Spanish called it "*perruque a la Francais*" or "French wig." Collection of moss for mattress and upholstery stuffing was once an important industry across the Gulf Coastal Plain. It was also used as a fibre to strengthen mud in French tradition wattle-and-daub (*bousillage).* This plant is said to be threatened by a fungal disease. Jackson is at its current northern limit of reliable survivability, as it is not resistant to ice or heavy frost. Moss is a folk remedy for diabetes (Holmes 1990:8-9). The Choctaw for tree moss is *iti shumo* (iti, tree or wood, *shumo,* thistle down as used for blowgun dart fluff, Byington 1909:335).

Hawthorns: red haw (*Crataegus*). Hawthorns are of the highly diverse Rose family which includes service berries/shad bush, apples, plums, cherries and mountain ashes. Hawthorns are highly diverse in form, with 30 known eastern U.S. species. Hawthorns are small trees or bushes, generally thorny, with small white spring flowers and small, edible, but often dry, fruit ripening in early summer through fall. Various species are distinguished by leaf, twig/bud, fruit/seed forms. Some are planted as ornamentals, and they are widely spread by birds consuming the fruit.

Potential south/central Mississippi lowland species are May/Apple/Shining Hawthorn (*C. gestivalis),* Barberry/Bigthorn Hawthorn (*C. berberifolia);* Cockspur Hawthorn/Hogapple (*C. crus-galli)*; Biltmore/ Thicket/Allegheny Hawthorn (*C. intricata)*, Parsley Hawthorn (*C. marshallii)*, Downy Hawthorn (*C. opaca)*, a preferred culinary species, Washington Hawthorn (*C. phaenopyrum)*, Little Hip/Small Fruit/Pasture Hawthorn (*C. spathulata)* and Green or Southern Hawthorn (*C. vividis)* (Little 1995-458-489). Hunter (1989: 88) writes "The genus *Crataegus* is a difficult one, even for professional botanists. Some authorities have recommended that similar forms be regrouped to reduce the large number of species – over 1,000 proposed for the eastern United States according to some interpretations." Holmes (1990:115-116) also notes that "the genus C*rataegus* is large and one of the most confusing in North America." *Crataegus* are an important food source for wildlife, for birds as well as bear, coon, deer and small mammals. The thorny vegetation and twigs are avoided by deer, but beaver eat the bark of some species. Various haw fruits mature practically throughout the year, May-February (Hunter 1989:88-94). The Colonial French name *cenellier* comes from the standard French for a similar plant, *cenelle* or *senelle.* The Choctaw for haw or black haw is *chanafila/shanafila* (Byington 1909:468).

Holly (*Ilex opaca)*. Holly has dioecious flowers. Vegetation is variable, and various hollies hybridize in the wild. The 3/8" berries are eaten by birds which scatter the seeds, as well as coon and possum. It is also browsed by deer. Native holly is shade tolerant and though it can form large trees, it is often an understory species (Hunter 1989: 122). Holly is a densely covered evergreen tree with pale, smooth mottled bark. The spring flowers are small and white. The small red or orange bitter berry appears in late fall/winter and is eaten by many birds, as well as some mammals. It is indicative of moist or wet but well-drained soil in uplands, and of better drained floodplain locations. It is primarily an understory species. The fine grained wood has been used for inlay and parquetry, cabinetwork, handles, carving and similar small work; it accepts many stains. Many culivars have been developed from the active wild holly (Little 1995:564). Some native wild holly was noted along the developed edges of the project area. This is more commonly an upland species. Yaupon (*I. vomitoria*) was not noted; evidently the Jackson Prairie is north of its range. The Choctaw for holly tree is *iti hishi halupa* (*hishi*, hair, blade, leaf; *halupa*, sharp, pointed; Byington 1909:472).

May apple/mandrake (*Podophyllum peltatum*). Early summer insipid fruit is the main cultural use of this small ground cover. Johnson et al. (1983) report maypop seeds from Gordon Mound (22-Je-501). Lorenz (1996: 159) reports a may pop seed from pre-mound contexts at the Old Hoover Mound in the Big Black basin in nearby Holmes County. Choctaw for may apple or mandrake is *fala imisito* (Byington 1909:498). The root was used as a cathartic by some native peoples (Thieret et al. 2001).

Mistletoe (*Phoradendron setotinum*). Mistletoe is an evergreen parasite that colonizes certain hardwoods from which it obtains water and minerals. It has male and female flowers on separate plants. The round, sticky, white berries are eaten by birds and some animals; this is apparently its mode of dispersal. The fruit ripens October-January (Hunter 1989:68). The standard French *qui* is used in Colonial America, but mistletoe is more commonly called *couronne de chene* or "crown of the oak" as it affects water oak in particular and can eventually kill trees. The method of dispersal appears to be the fruit sticking to birds (Holmes 1990:89-90). The Choctaw *fani shapha* means "squirrel flag."

Palmetto, dwarf palmetto (*Sabal minor*). This fanned-leaf shrub grows from an underground rootstock. The flower/seed stalk can reach 5' high, with black ½" berries that mature August through October. It is a major indicator of low, wet flats (Hunter 1989: 28). A coarse fiberous shrub of swamplands of the Lower Mississippi Valley, it was used as thatch and cordage. Central Mississippi is the local northerly limit of this tough, low plant. The French colonial name *latanier* comes from an Indian name. Besides thatch and formerly, fans, the plant has no known uses (Holmes 1990: 25). Byington (1909:339) gives *tala* as the Choctaw name.

Pawpaw (*Asimina triloba*). This shrub forms dense thickets as it spreads from root sprouts. It is remarkable for its large (7-10" long, 3-5" wide) leaves with an unpleasant odor. The distinctive flower has 3 brown-purple petals in early spring; the small (3-5") fruit is banana-like. Its soft pulp is edible and contains shiny brown oblong seeds that are spread by coyotes and other animals eating the fruit. Pawpaw is a major understory plant in the project area hardwoods and is a typical southern floodplain species. Possum, coon, squirrel and birds readily eat the fruit; it was noted as a native wild food by the DeSoto Expedition. The name comes from the Arawakan name for the unrelated papaya tree; many related species of *Annonaceae* (custard apples) are important native foods in South and Central America (Little 1995:446-447). Many small animals and birds eat pawpaw fruit. It is also browsed by deer and barked by beaver. The fruit is ripe July – September (Hunter 1989:74). The French *afiminier* and the genus name *Asimina* derive from an Indian work *arsimin* or *assimin*. The Choctaw word for pawpaw or custard apple is *umbi* (Byington 1909:359, 515). The banana-like fruit are ripe when soft and yellow. They are eaten raw or cooked as desserts. The beans can cause vomiting and are reported to have a depressing effect on animals. The inner bark is very tough and was woven into cloth by various tribes; early settlers also stripped the bark for rope. The bark is also considered medicinal (Holmes 1990:35).

Peavine or Wild Bean. This was one of the main ground cover and weak vine species observed in the project area, where it was observed to grow prolifically and produce large seedpods as well as tubers.

Poison Ivy (*Toxicodendron radicans*) Poison ivy, a dioecious plant, was found throughout the project area, as a dense ground cover or sometimes as a small tree. The small, waxy, white berries or drupes ripen in the fall. Quail, turkey, woodpecker, cedar waxwing, chickadee, catbird, flicker, ruby-crowned kinglet, sapsucker, downy woodpecker and many other birds eat the berries. The vegetation considered toxic to most humans is eaten by deer in spring and summer. The Louisiana French term is *herbe `a la puce,* probably because its leaves turn dark red in fall. The term is also applied to Trumpet creeper/bullvine/cow itch (Holmes 1990: 33-34).

Pokeweed. (*Phytolacca americana*). Poke is a weed that grows up to 10' tall. The large root stock is poisonous. It is common to wastes and disturbed places. The Colonial French name *chow gras* (fat cabbage) indicates that the young leaves have been eaten as a pot herb. Dyes are made from the dark purple berries. They are not poisonous, but the seeds may be. The berries have been seeped in whiskey as a supposed rheumatism tonic, and the root is also considered as a medicinal treatment for livestock (Holmes 1990: 108-109). Leaves of this coarse weed can be eaten in spring. Seeds are eaten by birds and have been used as purple stain, dye or ink. Byington (1909:522) reports the Choctaw word *koshiba* for pokeweed.

Sumac (*Rhus* spp.). Extract used for black dye (Jakes and Ericksen 2001). Asian lacquer uses a related plant, and it is likely that it was used in prehistoric times in the Mid-South. Byington (1909:574) reports the Choctaw *bashukcha* or *bati* for sumac. Sumac can also be used for smoking and the berries can be chewed to relieve thirst or make "lemonade".

Snowbell or Storax (*Styracaea*). These small trees have a distinct white flower. Theye are included in the geomorphic modle as "styrax.". The most likely project area species are snowdrop (*Halesia diptera*) or bigleaf or snowbell storax (*Styrax grandifolius*). They are both indicative of swamp/stream margin environments, with *Styrax* being somewahat more of an upland species.

Switch cane (*A. tecta*)/giant cane (*Arundinaria gigantea*) and River cane. Switch cane is the only woody native grass. This is the popular cane for fishing poles. Only a small percentage of the mature plants bloom each year. Flowering is very irregular, but generally occurs in the spring. The young shoots are eaten by beaver and swamp rabbits (Hunter 1989: 28). Lorenz (1996: 159) reports *Arundinaria gigantea* from various contexts at Hoover Mound and associated hamlets, apparently as an architectural material. Cane is generally an indicator of the better drained ridges in floodplains. It was a plant of major economic importance in prehistoric times, being used for basketry and structures as well as tools and weapons. Whole or woven split cane is commonly recovered in houses as wattle and as beds, benches and boxes. Cane impressions are commonly found impressed on baked daub wall plaster in Mississippian contexts throughout the Mid-South. In the early historic time, cane brakes provided a major source of winter pasture for cattle. A not commonly known use of cane is as bows and even bow strings, but Allely and Hamm (1999:96-99) illustrate the bow Pushmataha carried in 1812: it has a cane string wrapped on the bow. Cane was used by the Chickasaw for quivers and other containers (Allely and Hamm 1999: 94-95). In Choctaw, cane is *oski* or *uski*. The paucity of stone in the Gulf Coastal Plain led the prehistoric ancestors of the Choctaw, like the peoples of Southeast Asia, to be highly reliant on cane for many uses.

Other species noted,but not described in detail include:

Coral bean (*Erythrina herbacea*)
Indian pink (*Spigelia marilandica*)
Knotweed (*Polygonum erectum*)
Laurel or bay
Mallow/wild cotton (Malvaceae)
Maypop/Passionflower (*Passiflora incarnata*)
Nightshade (*Physalis heterophylla*)
Partridge berry (*Mitchella repens*)
Prickly ash/devils' walkingstick
Ragweed (Ambrosia spp.)
Red rice
Red vine
River oats
Supplejack (*Berchemia scandens*)
Teaweed

A number of introduced species were also noted. Most important of these from a numerical standpoint are the tallow tree and privet. Tallow tree is a Chinese plant, used as the name implies, for oil. It may be the "pride of China" tree noted in the 1821 GLO notes as forming a dense stand near a well immediately west of where Jackson now stands. It is easily spread by wildlife and by overflow. Other invasive Asian types introduced as ornamentals and commonly found escaped in the project area are privet, Japanese and Amur honeysuckle (*Lonicera japonica* and *L. maackii*, the later being the worst invaisive), kudzu, wisteria and nandina ("sacred bamboo"). The scrubby or weedy plant commonly called "mimosa" is *Albizia* spp. is introduced from the region of Iran-Central Asia. The extent of environmental modification by these Old World plants cannot be over emphasized. There are many other non-local species present but not specifically identified, particularly European weeds such as mullien and plantain and pasture/hay plants such as the legumes (lespedeza and clovers) and grasses (Bermuda, rye)

As decribed above, the bodoc, while a Southern tree, apparently had a very limited prehistoric range, and may have been a valuable cultural property of the Caddo, who traded bows made of it widely in the Mid-South and Plains region. Its introduction dates to the 19th century as a living fence material for restraining hogs, cattle, and, according to many legends, fleeing slaves and sharecroppers.

Faunal Species Observed

A brief listing of the wildlife observed in the course of the project area follows. Reports of wildlife were based on witnessing or on their signs (scat, tracks, digging, feathers, calls). This is in no way a complete listing of project area fauna. It is limited by several factors. Large species seen in daytime of having commonly recognized tracks are well represented. Insects with an annoyance value (of course mosquitos are the most commonly reported of any species) are more commonly reported than innocuous types such as the very many types of spiders and butterflies observed. Soil dwelling species of reptiles and amphibians were often found in digging tests. The crew, many of whom had never spent much time in the woods, was fascinated by the many types of snakes, and the vigorous population of water moccasins in particular. Several races or color phases of moccasin were noted, varying from clouded dark brown to solid grey to olive with pale throat. Other black water (*Nerodia* spp.), pine (*Pituophis melanoleucus*) or coachwhip (*Masticophis flagellum*) snakes, more difficult to identify (but lacking swollen jaws and "cat" eyes) were also commonly observed. Surprisingly given the large snake population no king snakes or canebrake/timber rattlers were reported. Small passerine birds do not appear to have been particularly abundant in the woods during the mid-summer-early fall fieldwork, but aquatic species are common along the main channel and woodpeckers and barred owls were very commonly heard.

<u>Invertebrates</u>: various mussels and snails; crawdads; damselflies, deerflies, butterflies (especially the grey and black swallowtail that feeds on pawpaw vegetation), buffalo gnats, honey bees, mayflies, mosquitos, spiders, yellow jackets

<u>Amphibians and Repiles</u>: bullfrogs and tree frogs, salamanders (especially the large and long-lived spotted *Ambystoma maculatum* and the closely related marbled *Ambystoma opacum* and the slimy spotted *Plethodon glutinosus*); collared snake (tan with yellow neck band, hatched from eggs, *Diadophis punctatus*), copperhead (*Agistrodon contortrix*), cottonmounth/water moccasin (*Agkistrodon piscivorus*), garter snake (checkered tan and brown and striped tan/brown/yellowish brown), rat/corn snake (grey *Elaphe obsoleta* and mottled grey-green-pale *E. guttata*), ribbon snake (brown-yellow *Thamnophis* spp.), soil or earth snakes (pink, found in a cluster in a stumphole) and an unidentified small brown snake; alligator (*Alligator mississippiensis*), blue-tail/five-line skink (the bull with salmon head is the same specie(s) *Eumeces faciatus* or *inexpectatus*), chameleon, fence lizard; box turtles, cooters, mud turtles, red-eared turtles, snapping turtles and sliders

<u>Birds</u>: barred owl (*Strix varia*), buzzards, Canada geese, coots, crows, egrets, herons, summer duck/squealer/woodie, turkey, woodpecker (reputed red cockaded), yellowhammer/sapsucker

Mammals: beaver, black bear, bobcat, coyote, deer, fox, opposum (*Didelphis virginiana*), rabbits (swamp and cottontail), raccoon, squirrel (grey and fox)

The red fox is an Old World species; as the fox was observed only from tracks. It is not certain if it was a red or native grey fox. Armadillos, a recent arrival, but having Pliestocene/early Holocene antecedents in the region, were also commonly noted. In some places, their activity appears to be a major factor in site disturbance. The prehistoric range of the coyote is also debatable, but it is widely recognized that coyote numbers and the extent of their range have increased with the extirpation of the somewhat larger red wolf. The coyote, like the coon and deer, appears to adapt well to urban/suburban settings. Cattle egrets are African natives introduced to the New World in the 20th century. Surprisingly, no wild hogs were seen, but they are reported by Big Woods Hunting Club members, and are present in significant numbers slightly below the project area.

Chapter III. Geomorphic Investigation

The purpose of this geomorphic investigation was to assist archaeologists in locating and evaluating cultural resources in the LeFleurs Lake Study Area. Geomorphology, a branch of geology or physical geography, is the study of the earth's surface and the changes that occur there. This investigation relied extensively on the Shoccoe Dam geomorphic investigation conducted by Dunbar and Coulters, 1988. The Shoccoe Dam geomorphic study covered a 120 square mile area from 22 miles northeast of Jackson, Mississippi to Carthage, Mississippi. The conceptual geomorphic model and associated geomorphic surfaces and depositional environments developed for the Shoccoe study were useful in defining the geomorphology in the LeFleurs Lake Study Area. This report will give archaeologists a better understanding of the paleogeomorphic surfaces and environments that early man traveled and lived on and the geomorphic processes that controlled these features through time. It will provide a geomorphic model or framework to define the landforms in the area and their relation to known archaeological sites and help predict the location of unknown and buried sites.

Study Setting

The study area is along the flood plain of the Pearl River from the Ross Barnett Reservoir to just blow I-20. Figure 25 is a location map showing the area of interest. The Pearl River east of Jackson, Mississippi meanders across a wide sediment-filled valley underlain by Tertiary Formations. The Tertiary Formations beneath the alluvium and forming the valley walls include the Yazoo, the Moodys Branch, and the Cockfield. The Moodys Branch and the Cockfield Formations would not be exposed at the surface in the study area except for the existence of a deep-seated structural dome called the Jackson Dome. The Jackson Dome is an igneous intrusion located in Hinds and Rankin Counties. The term igneous refers to a type of rock associated with volcanic activity. The Dome pushed underlying geologic beds upward and caused the Moodys Branch and the Cockfield Formations to be exposed at the surface. The dome is a broad structural uplift approximately 25 miles wide. The City of Jackson is located on the area of the highest relief over the dome (Moore 1965). The Jackson Dome influenced the development of the Pearl River flood plain as well as the later cultural development of the Jackson area. As the igneous intrusion pushed the overlying sediments into the form of a dome, gas was trapped in the highest part of the dome. Hot groundwater springs overlying the dome probably attracted prehistoric inhabitants to the area and was a key factor in the initial discovery of the dome. The production of gas from the top of the dome added to the economic development of Jackson.

The Eocene age Yazoo Formation underlies much of the study area and is composed of blue-green, fossiliferous clay that weathers to greenish-yellow. The Yazoo clay is an expansive clay that has costly impacts on houses and roads in the Jackson area. When the clay is exposed to water it swells and exerts tremendous forces on building and road foundations. The Yazoo clay was deposited in an ancient sea and its well-preserved fossils are found in museums across the U.S. and in other countries. The Moodys Branch and Cockfield Formations are only exposed along a three- mile section of the Pearl near the center of the project area. The Eocene age Moodys Branch is a calcareous, fossiliferous sand and sandy marl deposited in a shallow sea. Like the Yazoo, the Moodys Branch is known worldwide for an abundance of well-preserved marine fossils. The Cockfield is a gray, silty, carbonaceous, micaceous, and non-marine deposit containing thin beds of lignite. A stratigraphic column is shown in Table 2. The current Pearl River fluvial system has developed in response to tectonism and climate change over the past 2 million years.

Table 2. Geomorphology of the Pearl River Basin Project Area (After Dunbar, 1988)

SURFACE	LANDFORM - FORMATION	AGE*	GEOMORPHIC PROCESS**
Flood Plain	Point Bar	H	LA
	Pont Bar overlain by Swamp	H	LA-VA-BT
	Point Bar overlain by Lacustrine	H	LA-VA
	Abandoned Course	H-P	VA-LA
	Abandoned Channel	H	VA-LA
	Tributary Alluvium Undiff.	H	VA-LA
Terrace	Abandoned Flood Plain	H-P	SF
Valley Slopes	Alluvial Fan	H	LA
	Yazoo Fm.	T	E-SF
	Moodys Branch Fm.	T	E-SF
	Cockfield Fm.	T	E-SF
	Cook Mountain Fm.	T	E-SF

* **H = Holocene, P = Pleistocene, T = Tertiary**
** **VA = Vertical Accretion, LA = Lateral Accretion,**
BT = Bioturbation (organic mixing by vegetation and organisms), SF = Soil Forming Processes (Pedogenesis). E = Erosion

Pleistocene and Holocene fluvial sediments make up the Pearl River flood plain. These deposits consists of fining upward alluvial sequences ranging from coarse sand and gravel in the lower portions to silt and clay near the surface. Older flood plain surfaces now elevated above the present flood plain form bench-like terraces on one or both sides of the current flood plain. Erosional remnants of these older terraces are found within the flood plain and were favorite sites for occupation by prehistoric people.

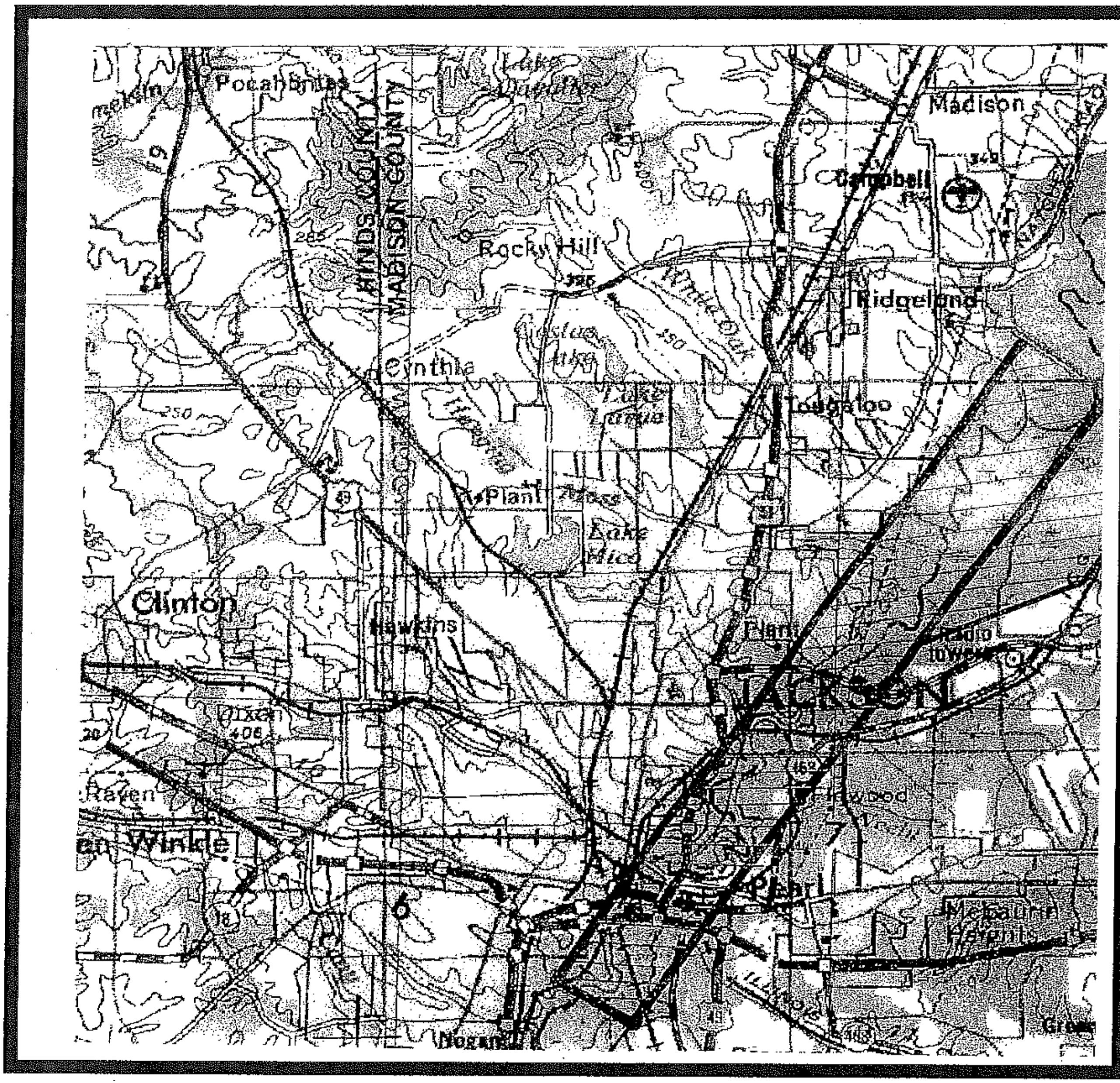


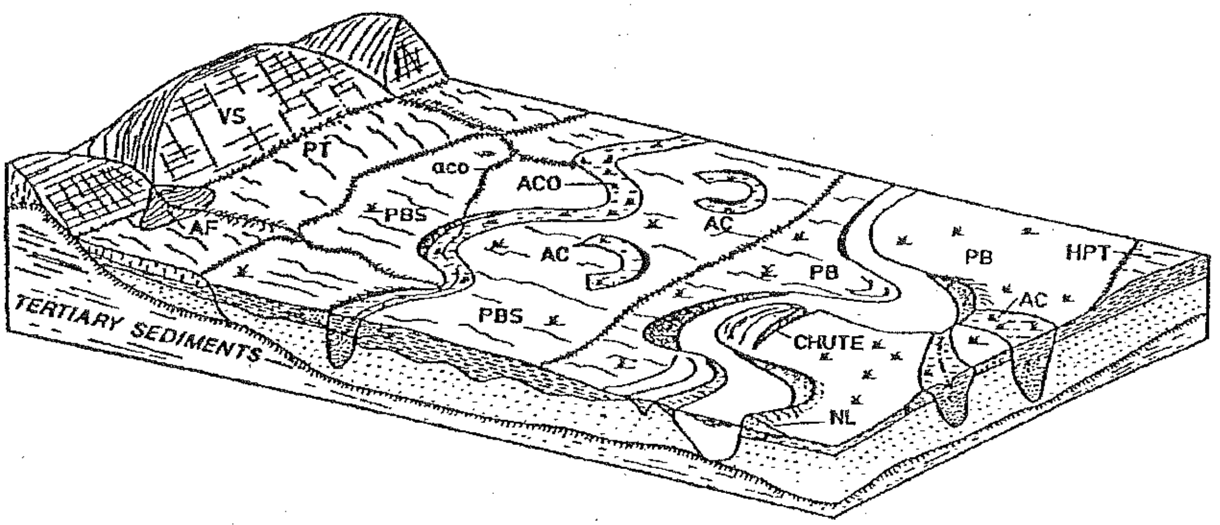
Figure 25. Location map of geomorphic study area.

Geomorphic Surfaces and Depositional Environments

Geomorphology is the science that deals with how geologic materials change through time. The geomorphic units located in the study area are shown in Table 3. The primary landforms associated with the Pearl River fluvial sediments are shown in Figure 26. Geomorphic mapping and literature review has resulted in defining three major geomorphic surfaces in the LeFleurs Lake Study Area. The three major surfaces are the flood plain, terraces, and valley slopes. The three surfaces are further divided into depositional environments and geologic formations. Figures 27 and 28 are maps showing geomorphic features and the location of four cross sections (Figures 29,30,31,32).

Table 3. Generalized stratigraphic section for the LeFleur Lake Study Area.

SYSTEM	SERIES	GROUP	STRATIGRAPHIC UNIT	THICKNESS (feet)	LITHOLOGY
Quarternary	Holocene		Alluvian	0-35	Fine to coarse grained sand gravel, silt and clay
Quarternary	Holocene		Terraces	0-40	Fine to coarse grained sand and fine gravel
Quarternary	Pleistocene		Loess	0-5	Tan to brown silt
Quarternary	Pleistocene		Terraces	0-80	Fine to coarse grained sand and gravel
Tertiary	Ecocene	Jackson	Yazoo Formation	400-525	Blue-green calcareous, fossiliferous clay
Tertiary	Ecocene	Jackson	Moodys Branch Formation	10-45	Green to gray-green, fossiliferous, glauconitic marl
Tertiary	Ecocene	Claiborne	Cockfield Formation	225-550	Gray, silty, lignitic, clay and fine sand



LEGEND

SURFACE – LANDFORM

VALLEY SLOPES
- AF ALLUVIAL FAN
- VS VALLEY SLOPES

TERRACES
- PT, PLEISTOCENE TERRACE
- HPT HOLOCENE–PLEISTOCENE TERRACE

FLOODPLAIN
- ACO ABANDONED COURSE
- AC ABANDONED CHANNEL
- PB POINT BAR
- PBS POINT BAR OVERLAIN BY SWAMP
- aco ABANDONED TRIBUTARY COURSE
- NL NATURAL LEVEE

LITHOLOGY

- LOESS
- SAND – LATERAL ACCRETION
- SILT AND CLAY – VERTICAL ACCRETION

TERTIARY SEDIMENTS

YAZOO Fm
MOODYS BRANCH Fm
COCKFIELD Fm

THIS PAGE LEFT INTENTIONALLY BLANK

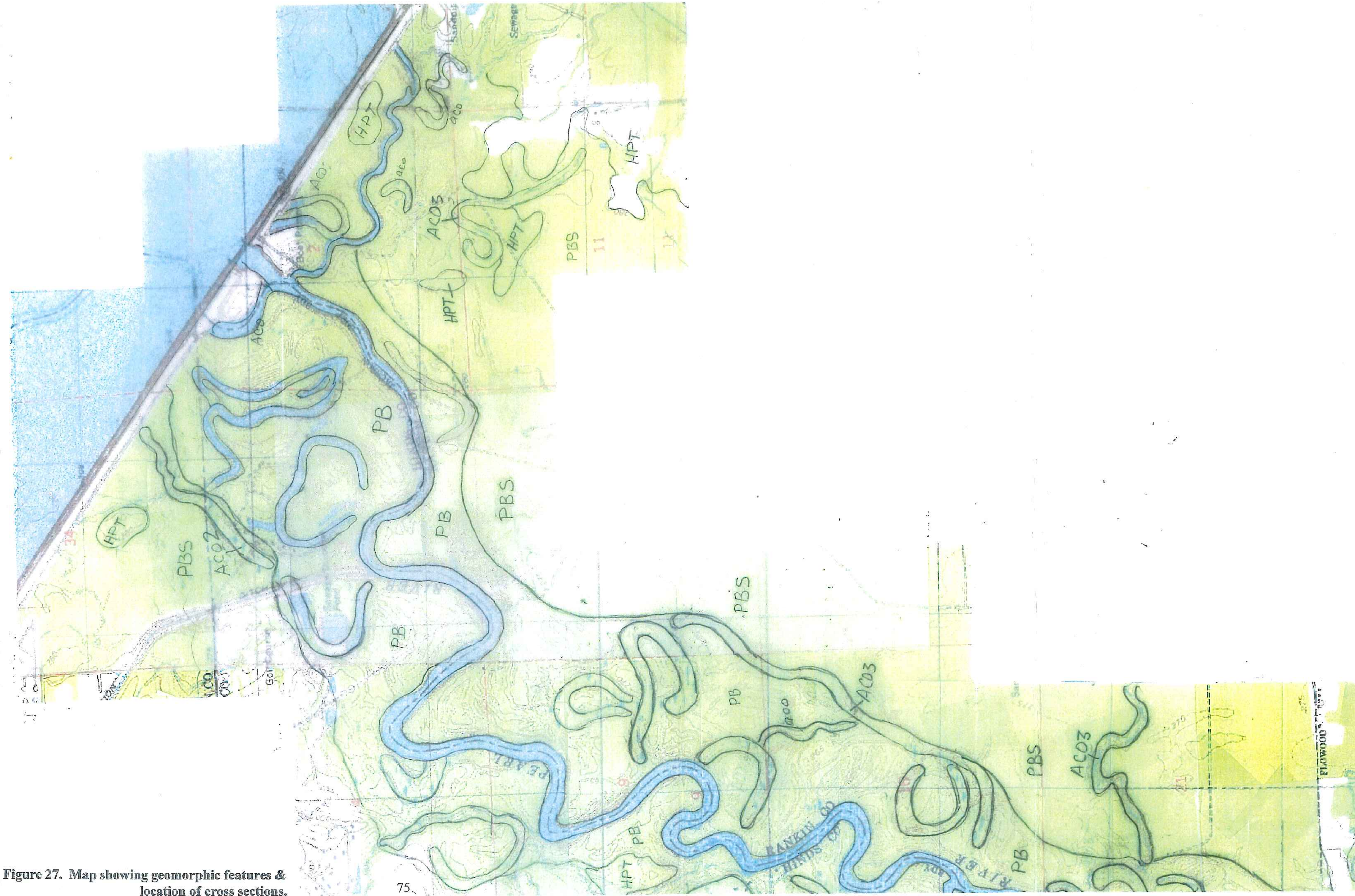


Figure 27. Map showing geomorphic features & location of cross sections.

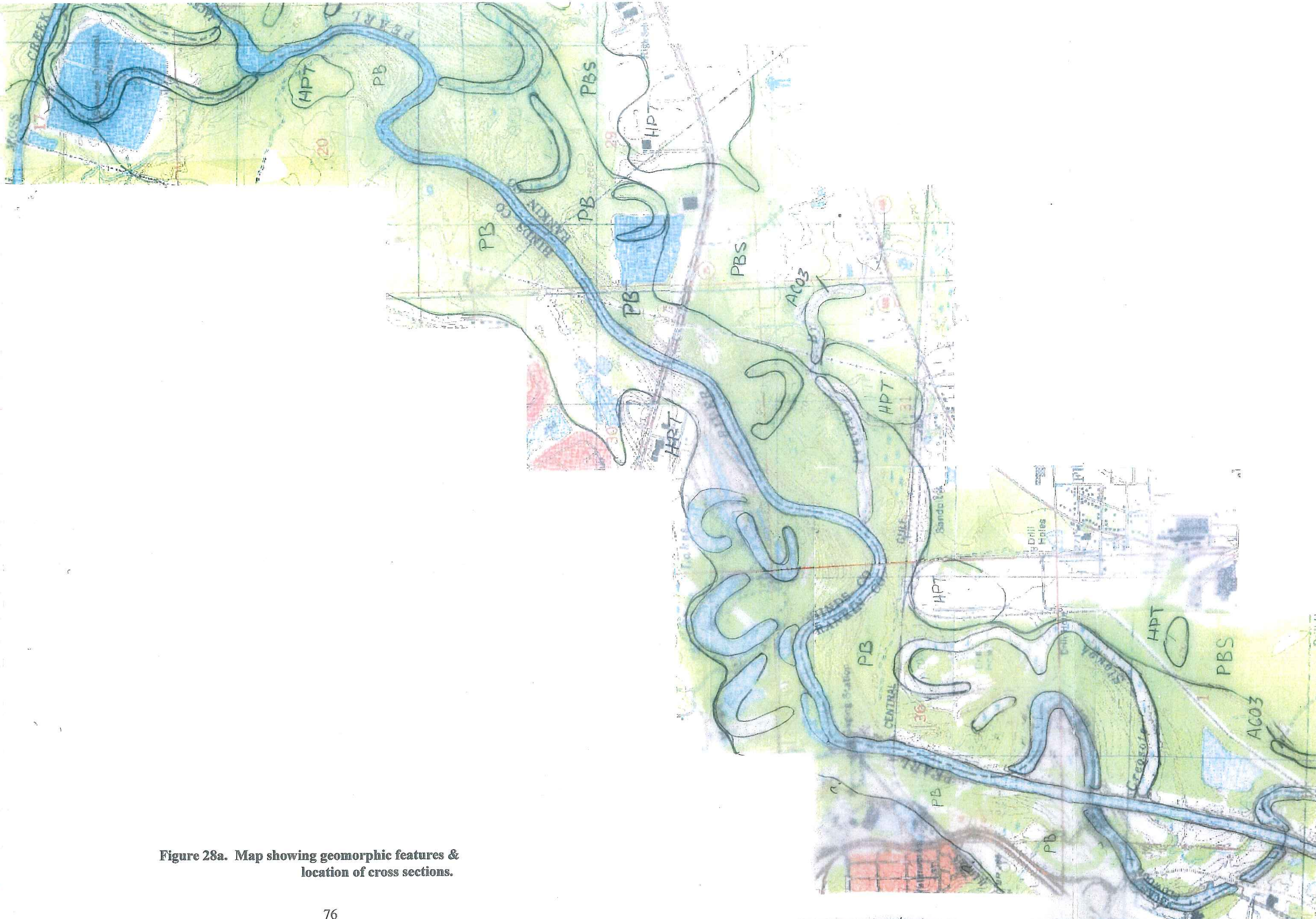


Figure 28a. Map showing geomorphic features & location of cross sections.

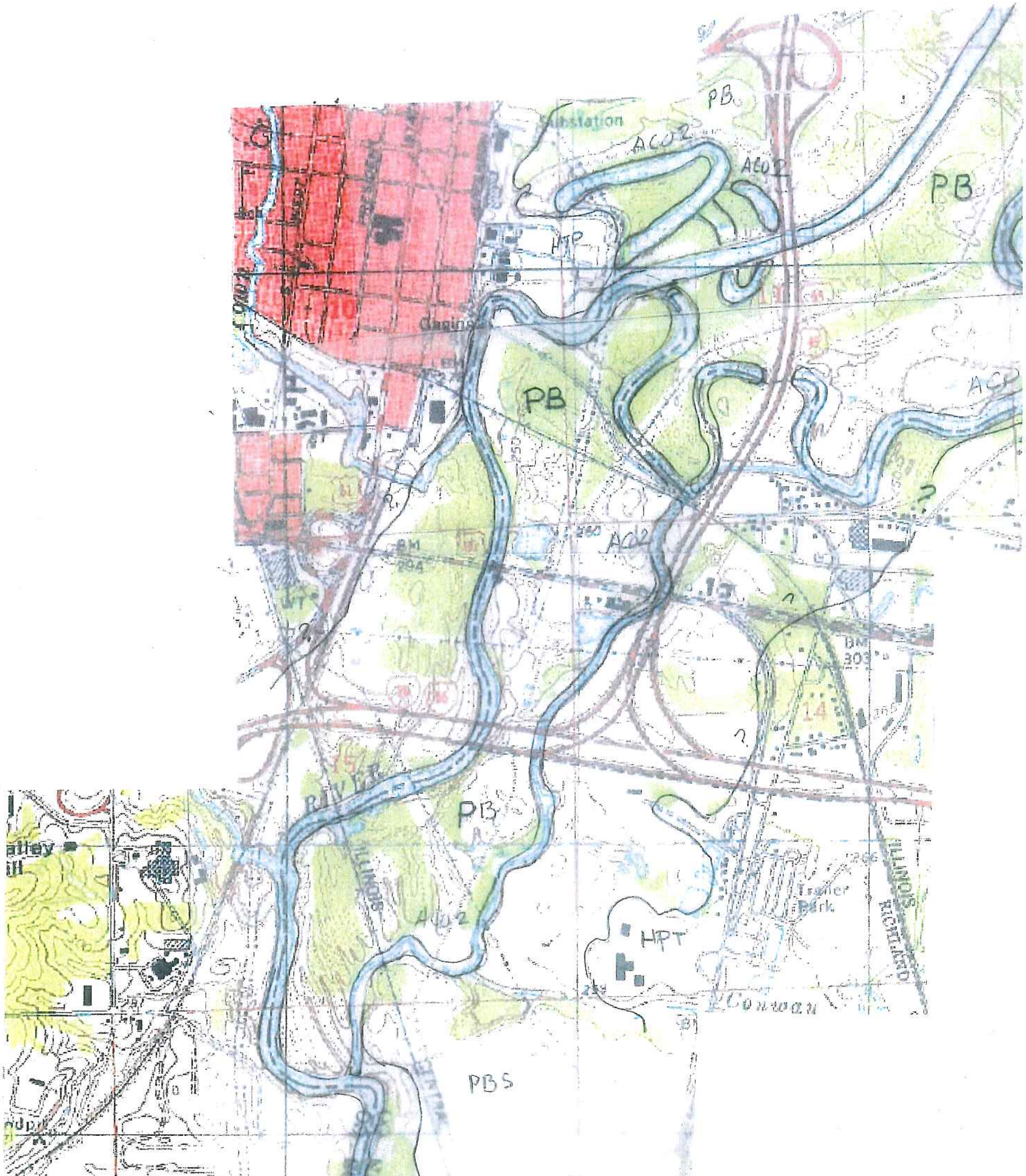


Figure 28b. Map showing geomorphic features & location of cross sections.

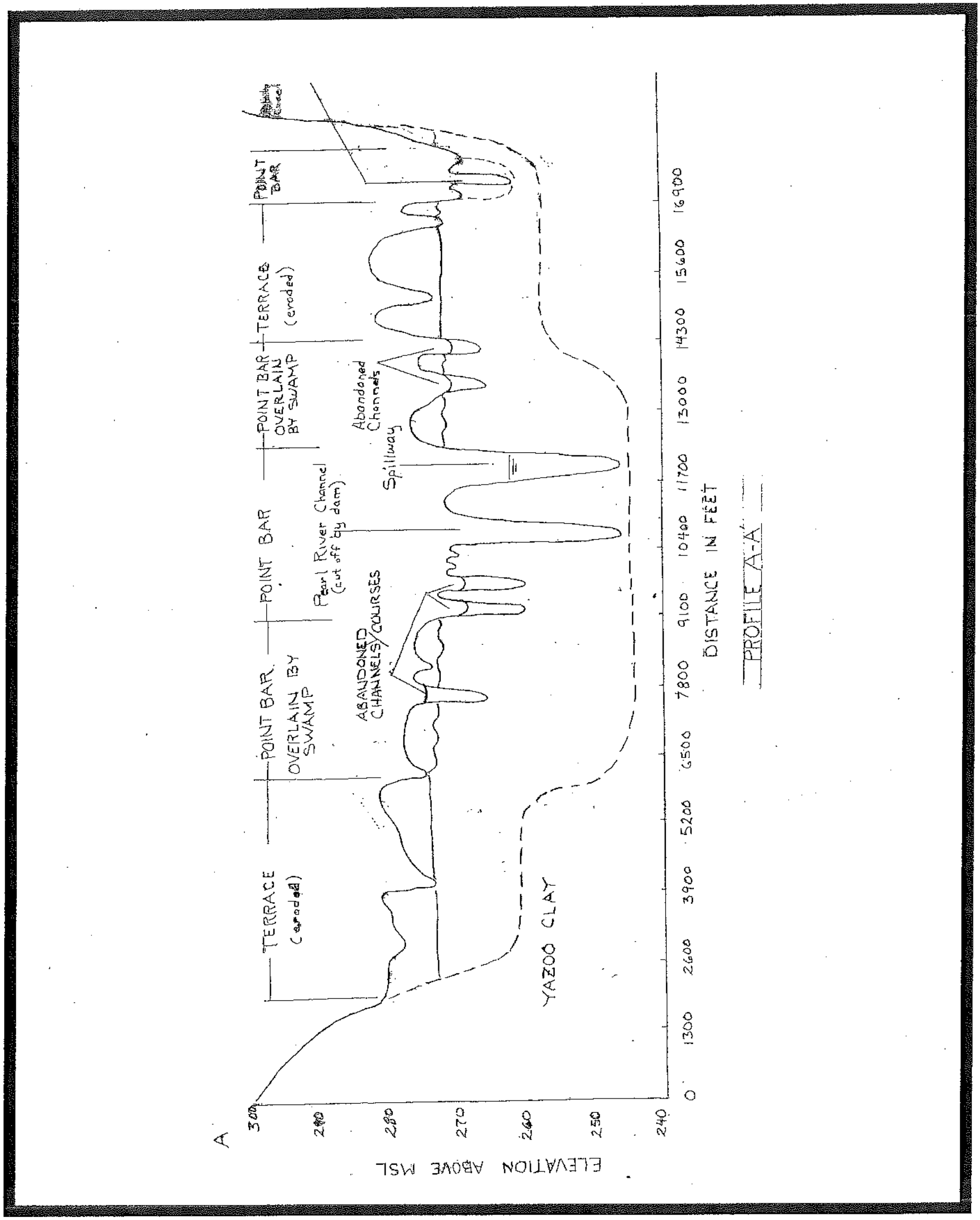


Figure 29. Profile A-A'

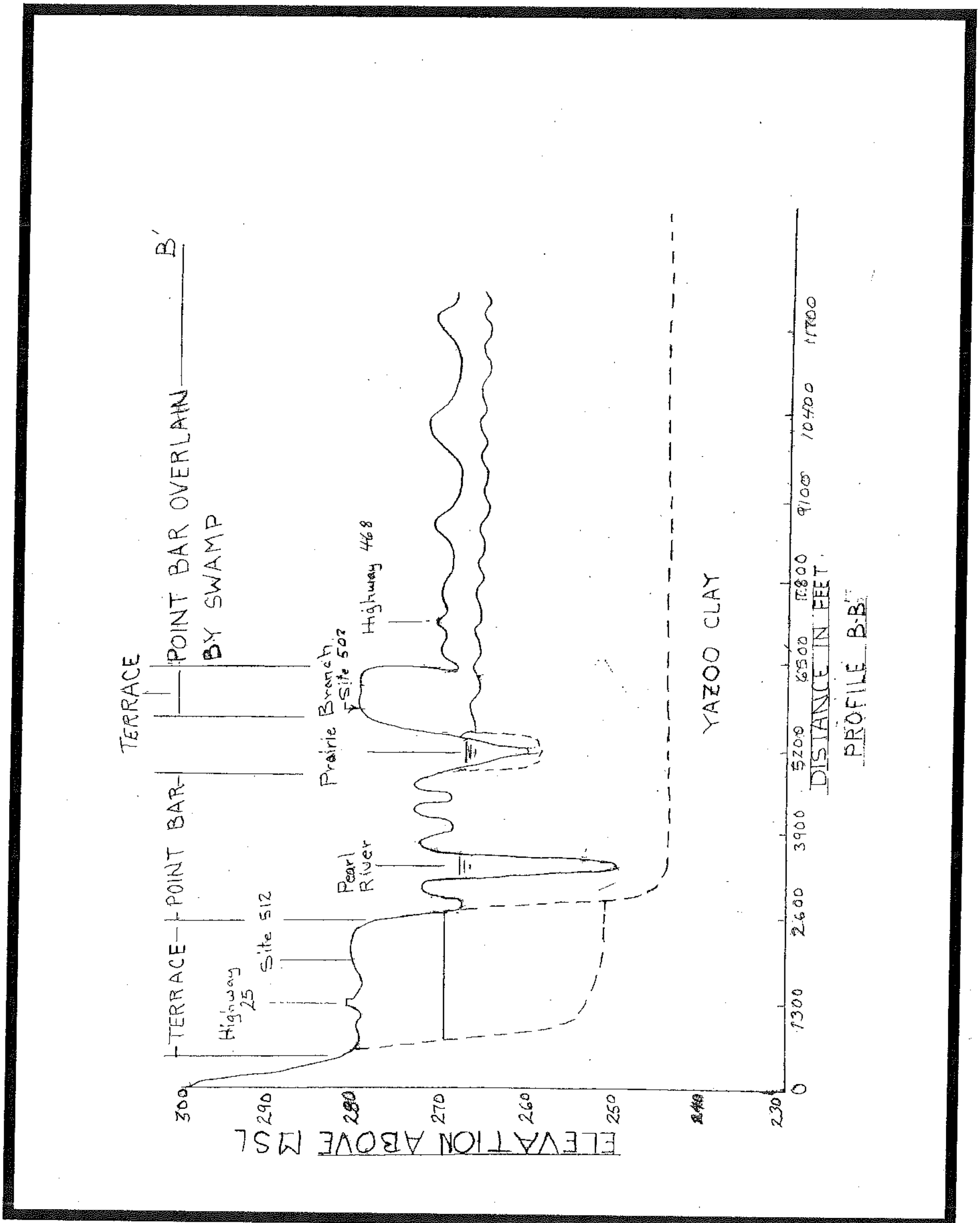


Figure 30. Profile B-B'

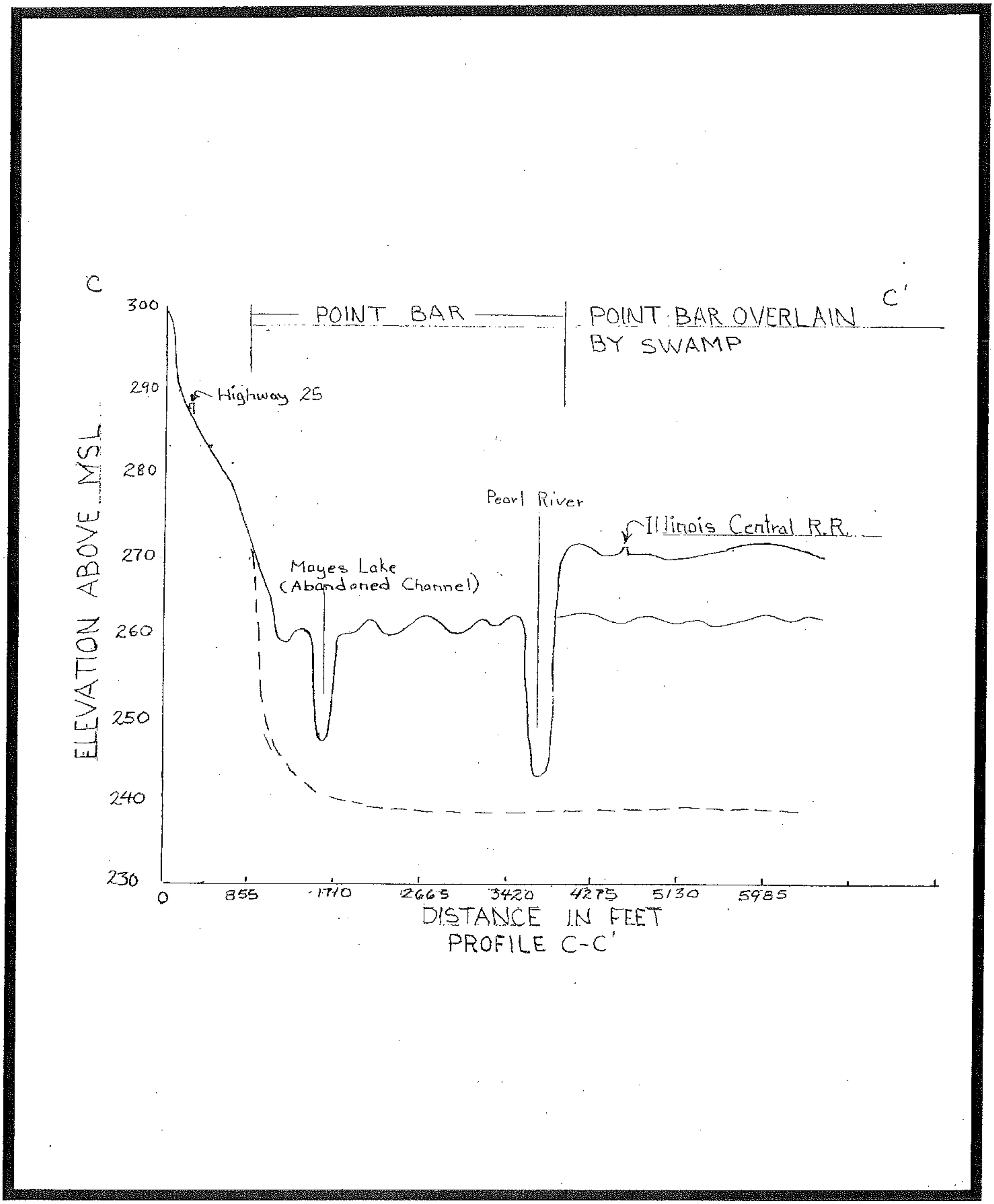


Figure 31. Profile C-C'

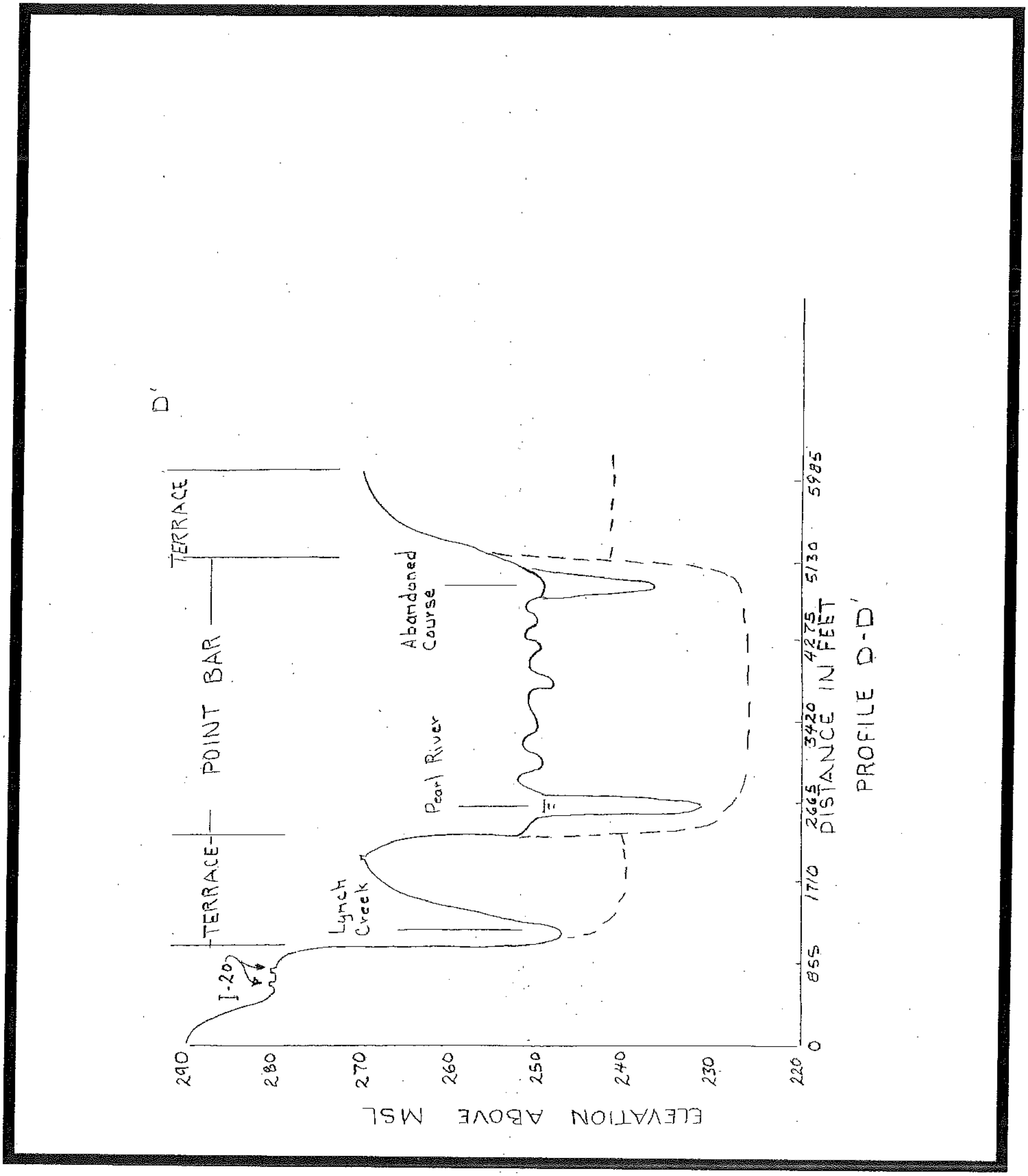


Figure 32. Profile D-D'

Flood Plain. The general definition of a flood plain for this study is that area adjacent to the Pearl that is subject to flooding every two years. The extent of the present flood plain was estimated from the lateral extent of the 2-year flood stage as defined in the Shoccoe Dam study. The flood plain includes abandoned courses, abandoned channels, point bar deposits, point bar overlain by swamp, abandoned tributary channels, and natural levees. It should be noted that the key in differentiating between a flood plain and a terrace is elevation. A terrace has all the relic features of a floodplain but is higher in elevation. It can be seen from Profile A-A' (see Figure 29) that landforms near the Ross Barnett Reservoir Dam above 380 feet in elevation (excluding the valley walls) are interpreted to be terraces. Looking at the profiles it is clear why many larger cultural sites are located on these features. Elevation is also important in separating point bar deposits from point bar deposits overlain by swamp. The point bar overlain by swamp areas are slightly higher in elevation.

Terrace (HPT-PT). A terrace is an abandoned flood plain that is higher in elevation than the Pearl's present flood plain. Bates and Jackson, 1980, define a terrace as a relatively flat or slightly inclined surface that is bounded on one side by a steeper descending slope toward the present flood plain and on the other side by an ascending slope toward the valley wall. For this study the terrace remnants out in the flood plain are not all delineated because the contour interval on the topographic maps available prohibited this level of detail. The terrace ages range from Early Holocene to Pleistocene. The terraces that have a thin veneer of loess are considered to be Pleistocene in age. The loess is a wind-blown deposit that ranges in age from 10,500 to 22,000 years old. Reworked loess was noted in several borings in the recent flood plain deposits.

Terraces can also be differentiated because of unique vegetation and soil types as shown in Figures 33 and 34. Soil profiles are usually well developed on the terrace surface. The physical properties of the soils are variable based on topography, vegetation, climate, underlying geology and age. On lower terraces that flood often the soil forming processes are not as common. The soil profile for terrace deposits are from 50 inches to 70 inches thick. The A horizon ranges from 5 to 8 inches and is usually composed of silt or loess overlain by a thin organic layer. The thickness of the B horizon is from approximately 12 to 30 inches thick, has a high clay content, and overlies a fragipan. A fragipan is a hard compacted layer with low permeability and is diagnostic of the terrace soils. The major soil types forming the terrace surface in the project area include the Kipling-Falkner-Savannah series (Cole et al. 1987).

Valley Slopes (VS). The Tertiary Geologic units bordering the study area form the valley slopes. The valley slopes are defined by a sharp break in topography between the flat lying terraces and flood plain surfaces and the moderated to gently sloping uplands adjacent to the Pearl River. The valley slopes are weathered Tertiary deposits overlain in some areas by colluvium and residual soils. The geologic units forming the valley slopes from oldest to youngest are the Cockfield, Moodys Branch, and Yazoo Formations. These Tertiary units are fluvial, deltaic, delta front sand, and marine sediments composed of unconsolidated sand, silt, lignite, and clay. The Pearl River has carved a wide valley into the Tertiary sediments. Holocene age fluvial sediments and Pleistocene loess overlie

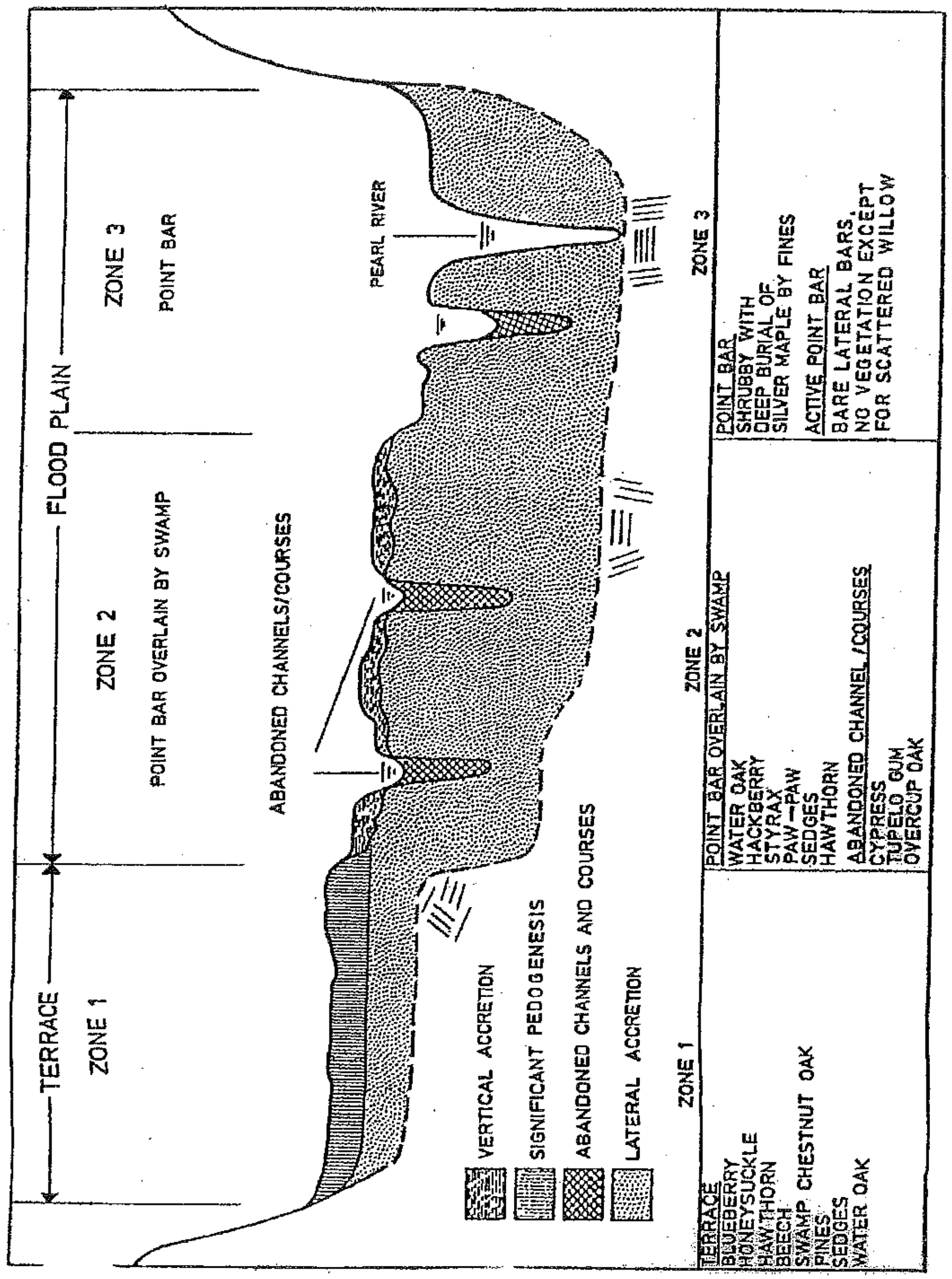


Figure 33. General comparison of geomorphology in the LeFleur Lake Study Area and types of vegetation. (After Dunbar, 1988)

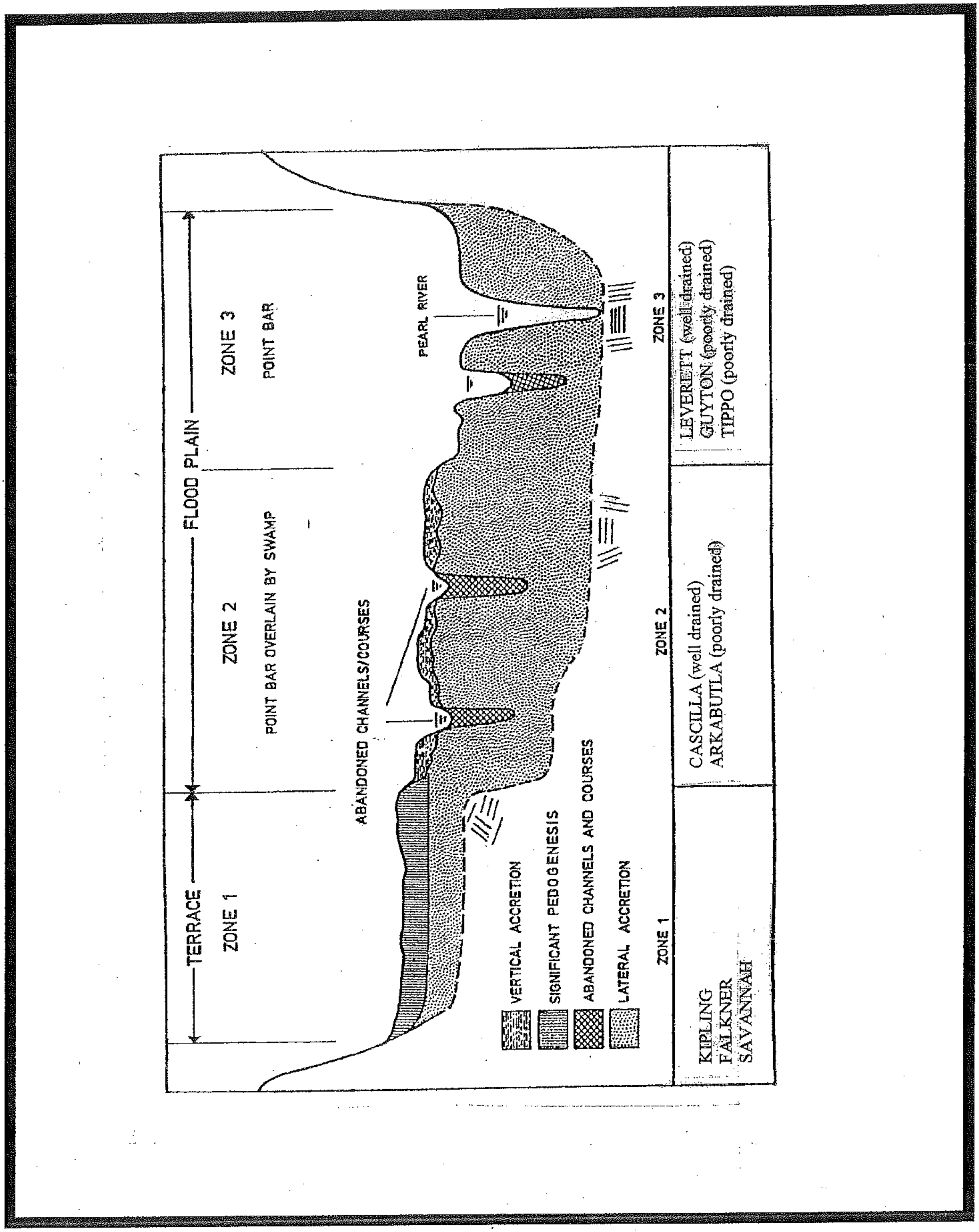


Figure 34. General comparison of geomorphology in the LeFleur Lake Study Area and types of soil. (Modified from Dunbar, 1988; soils data from Cole, et al, 1987)

the Tertiary sediments. The subsurface geologic formations are discussed under the Geologic Setting section above.

Alluvial Fans. Alluvial fans are wedge shaped features created where streams from upland areas enter the Pearl flood plain. The reduction in stream gradient and velocity causes the stream to separate into smaller channels and deposit its sediment load. No significant alluvial fan deposits were mapped during the current study.

Point Bar (PB). The most important and widespread geomorphic environment in the study area is the point bar. Point bar deposits are fining upward sequences that are as thick as the maximum depth of the Pearl River when they were deposited. As the Pearl migrates laterally across its floodplain, the outside banks of meander loops are eroded and sand bars are formed on the inside bank. The basal sediments of the point bar deposits are coarse sand and fine gravel deposited by lateral accretion, whereas the fine-grained upper portion is deposited by overbank vertical accretion during floods. As the Pearl migrates laterally a series of arcuate ridges and swales preserve the position of relic point bar deposits. The study area can be divided into the present meander belt and older meander belts. The present active meander belt is the area where the river shifts its channel and forms abandoned channels. These abandoned channels are often referred to as oxbow lakes. The older meander belts are similar to the present meander belts and are located in areas where vertical accretion is occurring. The present active point bar environment is the youngest environment in the area. Based on interpretations made during the Shoccoe study, the present point bar environment is less than 3,000 years old (Dunbar 1988). Vegetation can be used to help identify the present point bar deposits as shown in Figure 33. The underlying Yazoo clay influences the distribution of point bar deposits causing the river to move laterally instead of cutting downward. The point bar deposits usually range from 25 to 35 feet thick. The point bar deposits vary horizontally. The point bar deposits are further divided into fine-grained top-stratum and coarser grained substratum material. The fine-grained top stratum is formed by vertical accretion and the sandier substratum by horizontal accretion. The top stratum is approximately 3 to 6 feet thick.

The soils in the point bar environment vary according to the drainage conditions. The better-drained sandier areas are dominated by the Leverett series. Soils found in poorly drained environments such as swales, abandoned chutes, and abandoned channels belong to the Guyton and Tippo series (see Figure 34). The soil pH in the Guyton and Tippo soil is strongly acid to medium acid in the A horizon and very strongly acid in the upper part of the B horizon and very strongly acid to mildly alkaline in the lower part of the B horizon and in the C horizon. A gleyed soil forms due to the reduction of iron and other minerals. In the well-drained Leverett series the entire soil profile is strongly acidic. There are no gleyed characteristics in the well-drained soil profile.

Point Bar Overlain by Swamp. Point bar sediments overlain by swamp are found in areas that flood during high water flow. This environment is older than the active point bar environment. The PBS is bordered by the active point bar system on one side, and the uplands or terraces on the other side. The sandier soils in this environment are generally well drained and represented by the Cascilla series. The Arkabutla series represents poorer drained conditions. The point bar overlain by swamp environments have varying ages. The relative ages can sometimes be determined by the amount of sediment in abandoned channels and courses. The oldest PBS environments are completely covered by back-swamp deposits. In the study area the PBS covers a much larger area on the eastern side of the Pearl than on the western side.

Natural Levees. Natural levees are formed when the Pearl overtops its banks during floods. Coarser grained sediments are deposited closest to the river and finer grained sediments further away. The resulting wedge shaped deposit forms a natural levee. The natural levees in the study area are generally 5 ft thick and 100 ft wide and parallel the river. They are composed of silt and sand and are typically brown to reddish brown in color. Small calcium nodules are characteristic of natural levee deposits. Due to the scale of the available maps the natural levees are not mapped for this study. The natural levees are present along all the abandoned channels and were used by prehistoric man for traveling and residence.

Abandoned Courses. Abandoned courses are formed when a river abandons its channel and forms a new course. The abandoned course usually contains two or more meander loops and is formed when a break or crevasse occurs in the river's natural levee. The abandoned course will eventually be filled with sediment in a slow process that may take several thousand years. Abandoned courses in the study area are found in active point bar deposits and in the point bar overlain by swamp. The relative ages of the abandoned Pearl River courses in the study area can be estimated based on the radiocarbon dates from the Shoccoe study. Abandoned courses are often not completely filled, but serve as recent drainage features. The soils associated with the abandoned course environment are the Cascilla-Arkabutla series and the Tippo-Leverett-Guyton series.

Abandoned Channels. Abandoned channels are similar to abandoned courses but contain only one meander loop. When these loops are cut off during a flood the resulting feature is an oxbow lake. Numerous abandoned channels were mapped in the LeFleur Lake Study Area. The abandoned channels are geomorphically connected to the abandoned courses as determined by their location with respect to these features. The relative age of the abandoned channels can be determined by the degree of filling that has occurred. The younger abandoned channels are hydraulically connected to the active point bar environment, while older abandoned channels are associated with the swamp environment. In general the older abandoned channels are more completely filled by vertical accretion. The soil profiles for the abandoned channels are the Cascilla-Arkabutla series and the Tippo-Leverett-Guyton series.

Geomorphic Chronology

An important objective of this study is to provide a conceptual chronological model of the project area. The Shoccoe Dam study to the north provides the essential framework for the LeFleur Lake Study Area. (Dunbar 1987). Other important references are the Hinds and Rankin County soils reports (Cole et al. 1987 and Cole 1979), geologic reports (Moore 1965, Baughman 1987, Brown 1960, Morse1942, Snowden 1968, and topographic maps and aerial photographs).

The chronological history of the project area is defined by the distribution and extent of the geologic formations and floodplain deposits. The block diagram in Figure 31 can be utilized for the conceptual model of the LeFleur Lake Study Area. The ages of the significant environments of deposition for the different formations and units are shown in Table 2. Numerous abandoned channels and courses of the Pearl River were mapped in the Twin Lake Study Area. The estimated chronology of these abandoned features is shown in Table 4. It should be noted that radiocarbon dates need to be obtained to confirm the estimated chronology. The geologic units and formations are the Cockfield, Moodys Branch, and Yazoo Formations, Pre Loess Terraces, loess, and Pearl River flood plain deposits.

Table 4. Estimated Chronology of Abandoned Pearl River Channels (After Dunbar, 1988)

Abandoned Course	Meander Belt	Age (years)
ACO	Present	<3,000
ACO1	1	5,000 – 3,000
ACO2	2	7,500 – 5,000
ACO3	3	11,000 – 7,500

Tertiary. The Tertiary age (36-58 million years) deposits in the project area are from oldest to youngest the Cockfield Formation, Moodys Branch, and the Yazoo Formation. The Cockfield Formation of Eocene age is composed of lignitic fine sand, silt and clay deposited in a near shore fluvial environment. The Eocene age Yazoo Formation is a bluish-green, fossiliferous marine clay.

Early and Middle Pleistocene. The Pearl River Basin started to form during the Quaternary Period, about 2 million years ago. Prior to the formation of the present Pearl River Basin, ancient river systems had deposited fluvial sand and gravel of the Citronelle Formation and Pre-loess Terrace Deposits. As geological uplift occurred and sea levels dropped, the Pearl down cut and eroded the Citronelle and Pre-loess Deposits and formed the present valley. There were no Citronelle or Pre-loess deposits found in the LeFleur Lake project area.

Late Pleistocene and Holocene. Based on the chronology developed upstream for the Shoccoe Dam Project, the Pearl River flood plain was slightly higher about the same elevation as the terrace surface designated as PT prior to 18,000 years ago. By 11,000 years before the present the Pearl had cut downward and established the current flood plain. The presence of loess on the PT terraces corresponds to a period of maximum loess deposition. The oldest cultural sites in the current study area should be located on the PT surfaces and the valley slopes.

The abandoned courses and channels delineated in the project area are Holocene in age (10,000 years). During the Holocene the Pearl migrated laterally abandoning channels instead of down-cutting vertically. Including the present active point bar environment, portions of four meander belts (abandoned courses) were identified in the study area (Figure 35). The Pearl River Valley development was gradual during the Holocene and there are no sharp boundaries between meander belts of different ages. It is assumed that the abandoned courses and channels in the study area can be correlated with those in the Shoccoe study, but this would have to be confirmed by additional radiocarbon and palyonology tests.

Historical Geomorphic Impacts

The geomorphic phenomena described in the previous sections sculpted the Pearl River Valley to its present form. It was on these geomorphic surfaces that early man traveled and lived. It is believed by many that prehistoric man's impact on the area was small compared to that of the Europeans. However, the use of fire by early man may have transformed considerable areas from woodlands to prairie. Early man also occupied the same areas for thousands of years and this continued use might have depleted forest locally. The logging industry by the Europeans impacted the area significantly and caused severe erosion. As the forest were cut, erosion increased and impacted cultural sites by burying some and destroying others and interrupted the natural geomorphic forces acting in the Pearl River Valley.

The Pearl was dredged and cleared of logjams to maintain it as a navigable waterway. The natural geomorphic development of the Pearl was further interrupted by flood control measures such as channelization and the construction of levees. The Ross Barnett Reservoir has impacted the geomorphic regime by raising the overall base level of the Pearl River system. The dam was placed in a critical location where the river was down-cutting into its flood plain and now influences the rate of down cutting in the area of the proposed LeFleur Lake.

Significance of Geomorphology for the Interpretation of Cultural Resources

Objectives and Procedures. The major objective of this study is to develop a conceptual geomorphic model of the study area that aids in the study of known and potential archaeological sites. Specifically the geomorphic model would: a) identify areas that have been disturbed or preserved by natural processes; b) correlate geomorphic features with cultural components of a certain age; c) define areas and landforms in regard to cultural sites.

The geomorphic model developed for the Shoccoe Dam Project was used as a base for the development of the conceptual model for the LeFleur Lake area. The statistics developed in the Shoccoe study for determining the relationships of geomorphic features and cultural sites were used in the archaeological field studies for the LeFleur Lake study area. The known archaeological sites, including those found in the recent fieldwork were plotted on overlays of the geomorphic maps and the relative percentages of cultural sites occupying different geomorphic features were calculated.

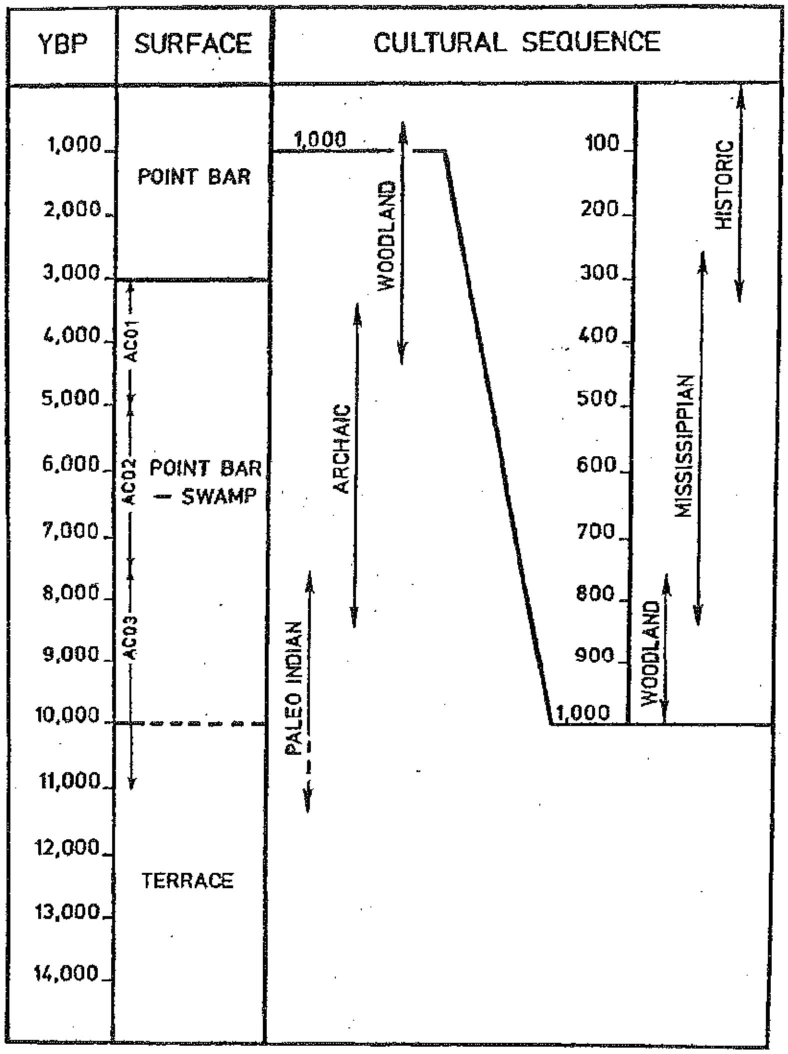


Figure 35. Chronology of cultural components as compared to the geomorphic chronology of the LeFleur Lake Study Area. (Inferred from Shoccoe Dam Study, Dunbar, 1988)

Geomorphic Surfaces. The distribution of archaeological sites in regard to the various geomorphic surfaces is a primary concern of archaeologists. The archaeological sites in the study area are concentrated on the point bar overlain by swamp (PBS) and the Terrace (HPT) surfaces. Some sites are spread over more than one geomorphic surface. In the study area where there was enough detailed information to determine statistics, it was determined that 10 percent of the sites are on the PB surfaces and 14 percent are on the PBS surfaces and 75 percent are on the Terraces.

Geomorphic Environments. The location of archaeological sites in regard to the geomorphic environments can be inferred from the Shoccoe Dam study but was not attempted for this study. The distribution of sites shows the majority of the sites are associated with primary fluvial features such as abandoned channels and courses.

Cultural Distribution of Known Sites. The chronology of cultural sites in regard to geomorphic chronology for the LeFleur Lake study is inferred from the Shoccoe Dam study because of its close proximity. For the preliminary LeFleur Lake study no radiocarbon dates were obtained, but the geomorphic model developed for the area indicates a chronology similar to the Shoccoe Dam chronology. The inferred chronology for the LeFleur Lake area is shown in Figure 35. Many of the sites contained multiple cultural components and ranged from historic to Paleo-Indian. The cultural distribution and the geomorphic association are shown in Figure 35.

Geomorphology has proven to be a very useful tool in predicting the location and ages of cultural sites and the surfaces on which they usually occur. The oldest sites are found only on the oldest surfaces. In general, Paleo-Indian sites will occur on terraces and upper point bar overlain by swamp. Care should be taken when using this model because an Early Archaic site was found in the Ross Barnett Reservoir area on the point bar surface. It is not clear if this site had been disturbed by later geomorphic processes or the point bar was an ancient point bar deposit uncovered by recent erosion. The younger sites can occur on the flood plain, the terraces, or on the valley slopes.

Prediction of Site Occurrence. The locations of archaeological sites in the project area are clearly associated with major fluvial features. The location of known sites with regard to geomorphic features can be used to locate unknown sites. The geomorphic model was used to improve the efficiency of the cultural field investigation. General trends provide guidance for locating unknown sites. These general trends are as follows:

(a) Seventy five percent of the known sites are located above the present flood plain on low terraces. Fourteen percent of sites occur on the point bar overlain by swamp surface. Ten percent of the sites are located on point bar environments.

(b) All of the significant sites are expected to be located near a fluvial feature such as an abandoned course, abandoned channel, abandoned tributary channel, abandoned tributary course, or a stream.

(c) The sites will be distributed with the oldest sites on the oldest geomorphic surfaces and the youngest sites located over all the different types of geomorphic surfaces.

Site Preservation and Destruction

A basic understanding of sedimentation rates is critical in predicting the types of artifacts that can be expected in the various geomorphic environments and in understanding the chronology of cultural sites. Rapid deposition of sediments will preserve organic material and preserve undisturbed stratification of sites. Slow rates of deposition will accelerate organic breakdown and result in un-stratified and disturbed cultural sites. Soil pH in the Pearl River flood plain is very acidic and speeds up the physical and chemical break down of artifacts. Rapid deposition of sediments will slow down the rates of organic decay in acid soils. The sedimentary rates are controlled by the geomorphic environments and must be understood in order to predict the state of preservation of various artifacts. A sedimentation model is shown in Figure 36 Ferring 1986).

It can be seen from the general cross-sections in Figures 32 and 33 the areas where vertical accretion is taking place. In these areas artifacts would be better preserved and the strata would be less disturbed. The preservation and/or destruction of cultural materials are controlled by site-dependent factors such as soil pH, soil moisture, aerobic or anaerobic environments, types of organisms in the soil, sediment movement, and soil loading. Artifacts are more likely to be destroyed in uplands, valley slopes, and terraces. Slow sedimentation rates and low pH conditions promote the destruction of bone, shell, charcoal, and even pottery. Rapid burial improves the odds that artifacts will be preserved. As lateral accretion occurs eroded and disturbed artifacts could be as deep as 30 feet. In areas of vertical accretion artifacts could be buried as deep as 10 feet. Individual sites should be evaluated based on the site-specific geomorphic and chemical forces acting on them.

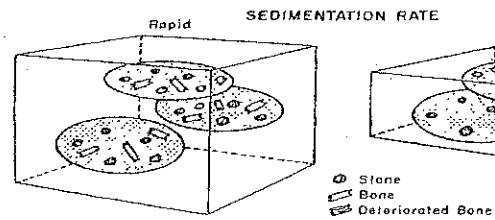


Figure 36. Sedimentation model demonstrating how artifacts are better preserved because of rapid sedimentation rates. (After Ferring, 1986)

THIS PAGE LEFT INTENTIONALLY BLANK

IV. Prehistoric Culture History

Settlement of the area of central Mississippi began by about 10-12,000 years ago. However, overall, the culture history of the Jackson Prairies is far less documented than that of other major river valleys such as the Mississippi-Yazoo or the Tombigbee, and much of what is said here about the sequence of prehistoric cultures and their characteristics must be interpolated from surrounding areas. Generally, it appears that the Jackson Prairie, Flatwoods and Piney Woods sections of the state were less favored locations for settlement due to a variety of environmental factors such as poor drainage of flats, droughtiness and lack of permanent streams, low diversity of potential food-providing species, and lack of stone for tools. However, we have found a high prehistoric site density in the Pearl River floodplain itself. Evidence of historic occupation, or indeed any occupation after ca. AD 1000 is minimal. Chapter IV will conclude with a general overview of important topics in historic period studies that may be relevant to the project area. This includes river navegation and land-transport crossings (bridges and ferries), farming/stockraising in the floodplain, and forestry and other extractive industries (especially oil/gas). Chapter IV presents general chronologies of Hinds, Madison and Rankin counties as they pertain the occupation and use of the project area. Chapter V, by Daniel Allen, will present a more detailed review of the economic, architectural and social history of Jackson.

We will state the broad problems of significance in terms of MDAH research topics, and then a review of the regional literature as it pertains to these problems. This serves as a context against which to evaluate the significance of the sites were have found.

Overview of Central Mississippi Prehistory

Mississippi prehistory began ca. 13,000 years before present (B.P.) with nomadic hunters of the waneing Pliestocene glacial. The transition to the Archaic period, ca.7500 BP is marked by significant changes in lithic technology that appear to indicate increasingly localized economies. The transition to the Woodland period is generally marked by the introduction of ceramics ca. 2500 BP. Ceramics are a primary marker of sedentary lifestyles, but other important developments associated with higher population density and smaller localized territories, such as mound building, plant domestication and elaborate mortuary ceremonialism span the Archaic-Woodland transition. The fully agricultural and sedentary complex village andchiefdom society that is the culmination of southeastern prehistory is known as the Mississippi period; these 1000-500 BP peoples were ancestral to the historic Choctaw tribe.

Paleoindian and Archaic Periods. The Mississippi "State Plan" (Mississippi Department of Archives and History [MDAH] 1999) notes that we know little about the Paleo and other early lithic periods in south Mississippi. No important evidence for these periods has come from the Jackson Prairie, and the over-all site density appears to have been low. First terraces of major streams are suggested as the most likely location to find potentially significant (vertically stratified) deposits dating to the Paleo or Archaic periods. The Late

Archaic is still poorly defined in the area, and Gilliberti (MDAH 1999) notes that the Jackson Prairie "exemplifies the lack of knowledge for the entire South Mississippi macro-region, with very little archaeological work having been conducted there. The work that has been done has revealed less-than-spectacular results." Gilliberti goes on to posit that the Jackson Prairie was a resource-poor zone marginal to hunting and gathering economies, as it tended to be alternately boggy due to poor drainage and desert-like when dry. The State Plan cites the Suddoth site (22-Ra-583) in the Hog Creek floodplain near its confluence with the Pearl, reportedly a a clear-cut knoll on the first terrace, and which produced diagnostics attributable to the Paleo, Middle Archaic, Late Archaic, and Early Woodland periods as well as later components. These materials included a steeply retouched side scraped, broad-stemmed points, narrow-stemmed points, clay-tempered pottery, and glass and historic ceramics. In recent decades, the Middle Archaic has come to be seen as important in two aspects of ritualism, the production of presumed fetishistic lapidary items (cut and ground jasper, slate, etc) and the construction of mounds. In 1994 Southeastern Archaeology devoted an entire issue to there realization that there are Middle Archaic mounds across much of the Southeast (Gibson 1994, Piaťek 1994, Russo 1994, J. Sauders et al. 1994, R. Sauders 1994).

Woodland Period. Most of the archaeological sites that have been reported in the vicinity date to the Woodland period. These include the now-destroyed 22-Ra-511, a small occupation site with Baytown Plain and Mulberry Creek Cordmarked pottery, and 22-Ra-629 on Hog Creek, a low-density, 30-cm deep site reported by Lauro in 1997 and considered to be potentially significant, as the site produced tested pebbles and debitage, as well as fire-cracked rock and Baytown Plain pottery from shovel tests on both sides of the creek. This large site lies a mile downstream from the present project area and comprises the type of resource it was believed most likely to be encountered in this survey. This was indeed found to be the case.

Indeed, Woodland period occupation represents the primary identifiable prehistoric use of the project area. The plain (Baytown Plain?) sherds are sandy in texture, as are the hard thin cordmarked (Mulberry Creek Cordmarked, Furrs Cordmarked) sherds that we tentatively assign to Marksville (Middle Woodland) period occupation. Later Woodland occupation may also be represented. We have recovered numerous small, thin, stemmed projectile point/knives attributable to Late Archaic/Gulf Formational/Early and Middle Woodland occupation.

Mississippi Period. It seems that the Pearl valley saw minimal occupation during the Mississippi period (about A.D. 1000-1600). While the Central Valley (from the mouth of the Ohio, at Cairo, to Greenville, or the mouth of the Arkansas) can be considered Mississippian, or at least "Mississippianizing" by AD 750-1250, some areas of the Lower Valley were only "Mississippianized" (in the sense of using shell-tempered pottery) in the colonial period. It may be that the Pearl Valley saw Woodlandperiod-like Plaquemine culture throughout the Mississippi period.

The local Mississippians are assumed to be ancestors or otherwise related to the Choctaw and Natchez. There was still Indian occupation in the form of fields noted on the GLO maps 1820-1840 (see Figures 13,14). A single indication of late colonial, territorial, or early statehood occupation has been found. This is a pearlware bowl sherd from a 50x50cm test unit at site Hinds 8. We entertain the possibility that this site represents historic Choctaw occupation. Because of this historical ancestry, the Mississippi Band of Choctaw Indians must be consulted concerning work at the mound sites, as they are likely to cover human remains regulated by the Native American Graves Protection and Repatriation Act (NAGPRA).

Background for Research Topics

Settlement of the area of central Mississippi began by about 10-12,000 years ago. However, overall, the culture history of the Jackson Prairies is far less documented than that of other major river valleys such as the Mississippi-Yazoo or the Tombigbée, and much of what is said here about the sequence of prehistoric cultures and their characteristics must be interpolated from surrounding areas. This means that an relatively undisturbed sites found in the project area may have the potential tocontribute significant new information to regional prehistory. Generally, it appears that the Jackson Prairie, Flatwoods and Piney Woods sections of the state were less favored locations for settlement due to a variety of environmental factors such as poor drainage of flats, doughtiness and lack of permanent streams, low diversity of potential food-providing species, and lack of stone for tools. However, unlike previous low-intensity work, our survey work has found dense occupation occured near the Pearl River itself.

Specific research topics relevant to evaluating the significance of project area sites will bediscussed below. Major research topics include 1) the Paleoindian and earlier Archaic periods, 2) problems in Middle Archaic identity, 3) the Late Archaic-Gulf Formational transition, 4) the Woodland period, 5) the Mississippi period, and 6) the protohistoric, colonial and later Choctaw.

Late Paleoindian and Earlier Archaic Periods

The Mississippi "State Plan" (Mississippi Department of Archives and History [MDAH] 1999) notes that we know little about the Paleo and other early lithic periods in south Mississippi. No important evidence for these periods has come from the Jackson Prairie, and the over-all site density appears to have been low. First terraces of major streams are suggested as the most likely location to find potentially significant (vertically stratified) deposits dating to the Paleo or Archaic periods. The Late Archaic is still poorly defined in the area, and Gilliberti (MDAH 1999) notes that the Jackson Prairie "exemplifies the lack of knowledge for the entire South Mississippi macro-region, with very little archaeological work having been conducted there. The work that has been done has revealed less-than-spectacular results." Gilliberti goes on to posit that the Jackson Prairie was a resource-poor zone marginal to hunting and gathering economies, as it tended to be alternately boggy due to poor drainage and desert-like when dry. The Suddoth site (22-Ra-583) in the Hog Creek floodplain near its confluence with the Pearl, was reported from a clear-cut knoll on the first terrace, produced diagnostics attributable to the Paleo, Middle Archaic, Late Archaic, and Early Woodland periods as well as later components. These materials included a steeply retouched side scraped, broad-stemmed points, narrow-stemmed points, clay-tempered pottery, and glass and historic ceramics.

Goodyear's (1982) review of Dalton radiocarbon dates from throughout the Southeast places this tradition ca. 10,500/9900-8500/7900 BC (which would place the fluted point horizon at 13,000–11,000 BC). This means Dalton dates to the period of marked impact of the final waneing of the Wisconcin glacial. (At the time of Goodyear's (1982) review, the internal dynamics of Holocene climate change discussed in Chapter II, aside from recognition ofan Altithermal, were not known.) The initial Southeastern hunting and harvesting mode of production may have originated in the boreal forest zone with a focus on deer and opportunistic taking of big game or may it have spread from the west with an altithermal spread of prairies and been more focused on elephants with a secondary emphasis on deer (Krause 1989:21-22). Either or both, by the Early Archaic, Southeastern economies were coastal and woodland hunters focused on deer and using portable implements. Egalitarian, concensus-governed groups such as are expected from this economy generally have adult male leaders who are the best able to shape and express this concensus (Krause 1989:22). Inter-group articulation is achieved by balanced reciprocity in gift-giving, and failure to immediately reciprocate results in social debts on the part of the gift recipient. Astute leaders could keep others in his debt, and thus more amenable to his concensus-building efforts, but such authority is typically ephemeral and by definition does not last beyond the leader's lifetime. Likewise, wealth, such as surplus meat or stone, is quickly expended rather than accumulated (Krause 1989:24).

Biface Chronology. Due to bias in investigator interests, the early lithic periods are better known in Mississippi than would otherwise be the case. Very few early sites have been investigated in Mississippi (these will be discussed below), and while the state of our knowlege is inferior to that in the surrounding states, large numbers of bifaces and other tools from often poorly provieninced surface collections have been voluntarily submitted for documentation.

McGahey (1993) combines the Paleoindian and Early Archaic periods as a study unit due to continuity in lithic working traditions, with a ca. 8000 BP abrupt shift to large crude bifaces without associated formal uniface tools. The early technology was characterized by careful workmanship, including edge/basal grinding of projectile point/knives. McGahey opines that early point types "suceed[ed] one another in a gradual evolution from one form to another with basically one type being in vouge at a time" (McGahey 1993:2). The Jackson area is well represented in McGahey's studies, since the MDAH central office is in Jackson. Hinds and Madison counties have produced Clovis, Redstone, Hinds, side-notched Dalton, San Patrice, and Lost Lake points (McGahey 1993:4-23).

Lanceolate Dalton points (10,500-9,000 BP) are characterized by thinned, concave bases, generally with basal grinding. As with most Dalton variants, there is significant resharpening, often resulting in serration, as well as a winde range of styles of reuse (Figure 37). The type appears to be most common in northern Mississippi (McGahey 2000:27). San Patrice points (10,000-9,500 BP) are small, thin, well-made

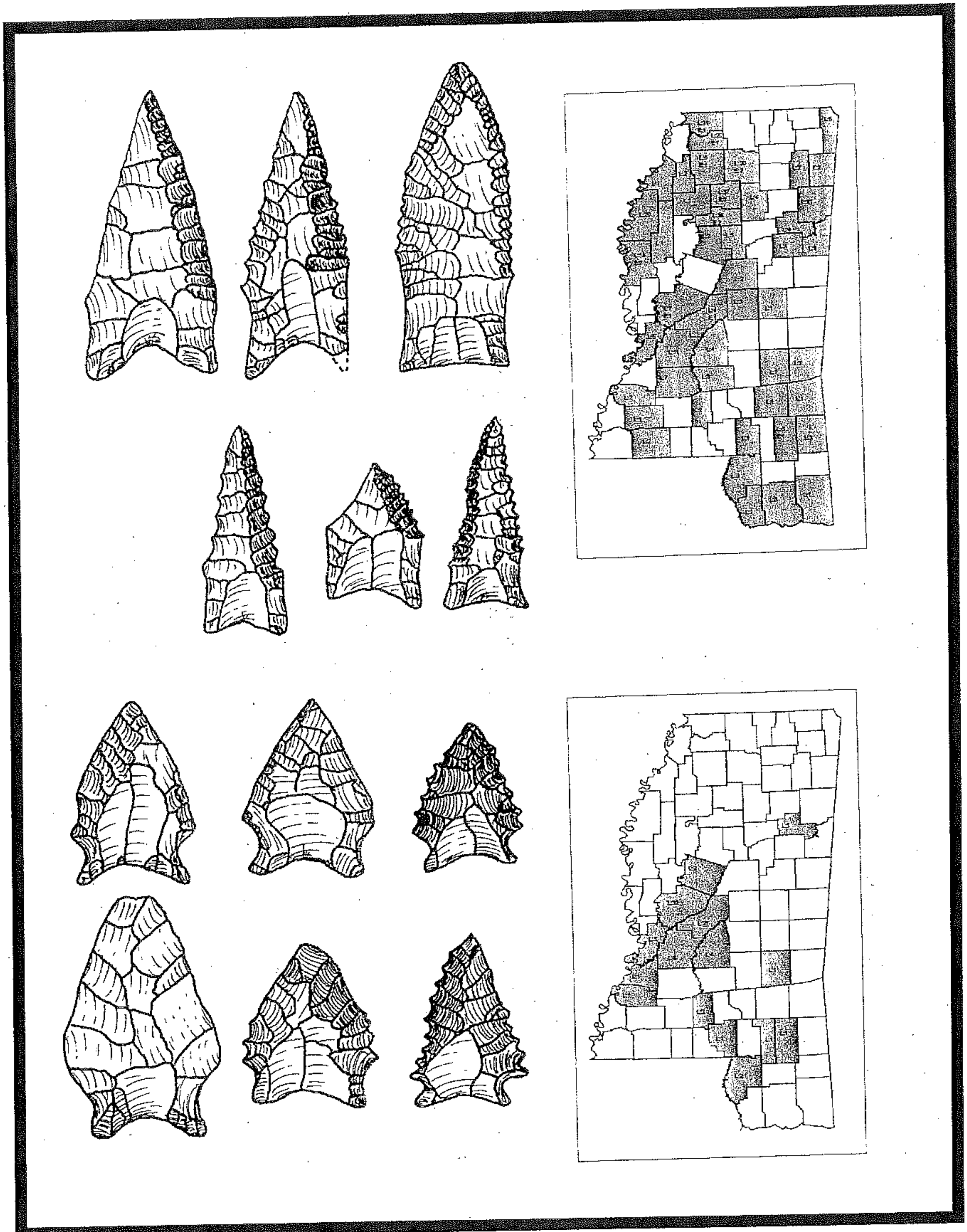


Figure 37. Late Paleo/Early Archaic points; a. Lanceolate Dalton; b. San Patrice *var. St. Johns* (McGahey, 2000).

points, often fluted, with a concave base. In contrast to Louisiana examples, those from Mississippi are often serrated like other Dalton variants (see Figure 37). They are almost always made on tan gravel chert and are found primarily in south and southwest Mississippi (McGahey 2000:34).

By the 1970s it had been recognized that northeast Arkansas Dalton sites produced an associated woodworking adze (Morse and Goodyear 1973). These are characterized by smoothed sides and rounded poll (to improve hafting quality) and gouge-like 60 degree bit. The average size in the Arkansas sample was about 7x4x2 cm, ranging from about 5 to 10 cm long (Morse and Goodyear 1973:318). They note that these are among the earliest true woodworking adzes then known in world prehistory, and point out possible relationships with the Clear Fork gouge (then undated) of central Texas and the then apparent lack (now known not to be so) east of the Mississippi.

McGahey also notes that while uniface tools are not as useful for tight chronology and they are not commonly collected by relic hunters, they typically outnumber formal bifaces in early assemblages. Some specialized flake tools, i.e. the Waller knife and Edgefield scraper, have also been recorded as occurring in Early Archaic contexts in the Pearl basin. The distinctive side-notched (hafted) bifacial or unifacial scraper known as the Albany scraper in the west and Edgefield scraper in the east is associated with some but certainly not all Late Paleo/Early Archaic assemblages (Dalton, San Patrice, Kirk). A further name for the general class in Mississippi is the Waller knife. These artifacts are found from Carolina to Texas on the lower Coastal Plain, but rarely at interior locations. These appear to be tools for heavy cutting/planing of wood or bone.

General Southeastern Trends in Dalton Studies. As several Late Paleo/Early Archaic period, Dalton culture, sites have been found by this survey, a thorough literature review of Dalton studies was deemed essential to this project, in order to interpret the sites found and to develop plans for further Phase II archaeological and associated geomorphological/pollen studies. In 1973, Morse summarized what was known about the Dalton period in the Central Mississippi valley as based on the 1960-1961 Ford-Redfield Dalton survey and the 1970 Arkansas Archeological Survey's Dalton studies with a description of what he believed to be the entire stone toolkit and the definition of a L'Anguille phase containing 38 known base settlements and butchering camps and even territories of individual exogenous patrilocal bands (which would further be explored in debates with his co-worker Goodyear). In the early to mid 1970s, the L'anguille basin/Western Lowland braided stream surface of northeast Arkansas saw several important excavations of Dalton sites. The Hawkins Cache, the Sloan cemetery, and the Brand site are all of importance in developing modern views of the transitional Paleo-Archaic interval.

One of the most significant finds for early studies of the Dalton period came with the recovery of the so-called "Hawkins Cache" at 3LW89 near Jonesboro, Arkansas. This "cache" was interpreted as a probable male grave at a base camp (Morse 1970:19). A total of 18 lanceolate base (cf. Merserve variant) points in various stages of use life from wide-bladed to expened (what are commonly called "drills") were what attracted the artifact collectors to begin with. However, they also collected 11 ovoid to triangular preforms for points and adzes, 3 adzes, a "chisel", an endscraper, a backed (chipped and ground to dull it for hand use) blade, 3 utilized flakes, and two coarse sandstone abraders. The find is highly significant because it represents a toolkit that is of undoubted contemporaniety; demonstrating the relationship between various tool types, such as abraders for dulling biface edges and the trajectory from preform to expended point/knife as practiced by a single individual.

More extensive excavations in a Western Lowland sand dune (Sloan) revealed a Dalton cemetery of an estimated 12-14 graves (given a band size of 25, representing 25-50 years of use; Morse 1975). "Caches" or personal kits included with the virtually completely decayed bodies were mapped in shovel skimming excavations supplemented with soil samples. The main diagnostic recovered was 144 Daltons, mostly "new" or only lightly resharpened, but including 14 recycled point "skewers" (a.k.a. "drills", a.k.a. "expended knives"). There were also 89 point/knife preforms, 30 adzes and 12 adze preforms, 36 endscrapers (3 with "graver" spurs), 10 hafted backed blades, 55 abraders (24 grooved from biface edge dulling). Morse (1975) notes the integrality of the abrader in Dalton technology, with one or more in each artifact cluster. Since the Cache River project was completed, Morse and associates have made much interpretive hay of the Sloan "grave lot" age and sex indicators. Most importantly for this discussion, the Sloan cemetry has been seen as tying a band to a specific territory, and using the band's ancestors to mark thier claim on the landscape.

The Brand site, 3PO139, (Goodyear 1974) is most relevant to our sites. At this site, 114 square meters in contiguous blocks of 2x2m units were excavated; however, the ceneter of the site was deemed disturbed and work focused on the periphery. Debate between Roger Saucier and Dan Morse focused on the nature of the sitre context; Saucier believing it was an aeolian deposit of waning Wisconsin age, derived from the Ozark Plateau; Morse considering the site representative of in situ soil formation (Goodyear 1974:10). The two conclusions are not mutually exclusive. The site produced over 300 points in all stages of use and manufacture; adzes, also often recycled; many unifaces and endscrapers; and, of most interest here, clusters of cobble tools, all "on floors" (Goodyear 1974:16). These cobble tools included 17 hammers, 4 hammer/anvils, 29 choppers, 2 hammer/choppers, 1 chopper/anvil, 10 anvils, and 10 other anvil-like stones with deep pecked or smoothed depressions (Goodyear 1974:65). Despite this evidence of extensive occupation, a wide range of tool types, and cached tool clusters, Goodyear (1974) interpretes the site as a male-only "hunting-butchering station." This logical inconsistency has been repeatedly attacked, and this author agrees that the site is more than a hunting camp, and could be better interpreted as a base camp where a full segment of the band undertook a wide range of activites, including hide and wood work as well as manufacture and mainenace of the stone toolkit.

Of primary interest to the interpretation of the cobble tool cluster found at Rankin 30, Goodyear (1974:63-69) identified 12 Brand site (3PO139) features "consisting entirely of cobble tools purposely stacked together. He notes that

> Most of the cobble features were found in relative spatial isolation with few other smaller chipped stone tools in association. The cobble tools seem to be involved with activities that are spacialy exclusive from other forms of behavior reflected at the site....located outside or on the edges of the concentrations, which suggests that the heavy percussion activities...were intentionally relegated to the perimeters of the working floors or possibly outside what may have been structures (Goodyear 1974:69).

More recently (Walthall and Holley 1997), have found a cache of biface and uniface tools at the Dalton culture Jens site (11-S-784) in the Kaskaskia River basin of western Illinois. The Jens Feature 30 also produced ground hematite. Hematite is widely used in hide processing, to darken, inhibit decay and reduce vermin infestation; therearemany examples from North America of the use of oil and hematite to cure hides (Walthall and Holley 1997:158). They interpret these items in a highly different light. They consider anvils, hammers and other cobble tools as site furniture placed in clusters to facilitate retrieval in anticipation of future use. Further, they note that ethnography finds an "almost universal role of women" in hide processing, grinding food, and processing and storing fish (Walthall and Holley 1997:159). These hammer/anvil/chopper clusters were thus made by women. Further, Dalton women must have done some flintknapping, as hide-scrapers require frequent resharpening (after 50-100 strokes, based on a modern Ethiopian example; Walthall and Holley 1997:157) and replacement. Not noted by the Illinois researchers, but also possibly implied is a female kin-group basis for these mobile hunting bands, with women providing at least part of the basis for selecting camp locations.

The Dalton adze is of considerable importance in the interpretation of this early culture. The presence of a woodworking tool implies houses and/or canoes (Morse and Goodyear 1973:320), and the construction of houses would imply fairly permanent settlements "base camps" where much of the band population was resident for much of the year. Their insistence that Brand was a male-only butchering camp (rather than a base camp, as this author believes) in contrast to Lace where many endscrapers indicate women preparing hides, complicates the interpretation of the adze. If Brand, with its high density, "floors", and tool caches, is considered a base camp, the maintenance and refitting of adzes easily accounts for the presence of many fragmentary and expended adzes in the assemblage.

The 1966-1969 work at the John Pearce (16CD56) site on Cypress Bayou near the Red River in western Louisiana marked some of the first investigations of Early Archaic components in the lower South as opposed to the extensive work in northeast Arkansas (Webb et al. 1971). This work was not carried out in isolation from the work in the Alabama and Missouri uplands, but it was more influenced by east and central Texas work. In the Great Bend area, San Patrice components were known from the margins of upland terraces over the valley floor or large lakes or tributaries as well as small streams in the dissected uplands (Webb et al. 1971:44). Large blocks were excavated down to San Patrice levels in the sandy knoll. No definite features or biological remains were found. The site is interpreted as a possible base camp, used by two extended family bands. The lack of features or large chopping tools probably indicates that these were short-term visits. Webb et al. acknowledge that while no ground stone/milling tools were found to indicate the amount of food gathering in the economy; it "must have been considerable in this environment (Webb et al. 1971:42).

The care of the 16CD56 excavations allowed the definition of two stone tool assemblages (Areas A and B) that were largely redundant in content, but that exhibited slight variation in frequency of individual classes. The early assemblage included, in order of prevalence: San Patrice points (both *Hope* and *St. Johns* varieties), biface preforms, graver/borers, end scrapers, raclettes, side scrapers, point fragments, unclassified side-notched points, unclassified lanceolate points, scaled pieces, denticulates, side notched scrapers, burins, notched flakes, drills, and retouched flakes. Many of the San Patrice points are heavily resharpened, generally to the point of being expended, but are not serrated. Most of the other Late Paleo lanceolate points and the Early Archaic side-notched points are likewise unserrated. Two of the classic form endscrapers have "beaks" (otherwise known as "graver spurs"). The side scrapers are of more heterogeneous form, on flakes and pebbles, but with steep (around 70 degree) cutting edges. The side-notched scrapers are of the form described as Albany spokeshaves. "Raclette" refers to blade-like flakes with minimal retouch and wear primarily on distal margins. "Scaled pieces" are described as thin, rectangular flake tools with very small flakes removed in all directions; perhaps by bipolar percussion. Overall, the tools are small (probably due to local gravel size) and, other than points, tend to be unifacially worked (Webb et al. 1971).

After working on Dalton sites on the Tenn-Tom project in the late 1970s (discussed below), H. Blaine Ensor moved to Texas where he continued his interest in early lithic periods. In 1986, he published a consideration of the San Patrice tradition and found evidence of extensive similarities between Dalton and San Patrice that indicated to him that San Patrice should be considered a western Gulf Coastal expression of the wider eastern Woodlands Dalton tradition. The San Patrice and more general Dalton traditions share many traits, but comparison is hindered by the lack of a standard lithic terminology and by the pacity of well-documented sites (Ensor 1989:71). He sees intergradation between Louisiana-Texas San Patrice at sites such as John Pearce and upland Alabama Dalton at such central Gulf Coastal components as Hester and Joe Powell; west of the Brazos a more Plains-like culture is evident. The range of side-notching and lanceolate bases in San Patrice is comparable to that in other Southeastern Dalton components, as are the types of resharpening (Ensor 1989:72). The use of local cherts and petrified wood (in contrast to Early and Middle Paleo use of exotic chert), bipolar reduction, and the range of uniface tools is also comparable (except for an apparent lack of the adze in San Patrice assemblages). Ensor (1989:76) sees differences in tool class names across the region (cf. Webb et al.'s "scaled pieces", a.ka. bipolar flakes and cores) as a major hindrance to larger comparisons; he thus advocates the use of type-cluster schemes and the definition of assemblages by classes other than projectile point/knives alone.

In the last 2 decades, archaeology has increasingly focused on true buried or stratified alluvial components. This has been enhanced by increasing use of geomorphologists in archaeological surveys and by several large scale excavations such as the Big Eddy site in the Missouri Ozarks (excavated by Jack Ray) and the Topper site in the Savanah River floodplain of South Carolina (excavated by Al Goodyear), both of which report controversial pre-Paleo components. However, even fortituous finds are still making significant contributions. Missouri Archaeological Society member Bill Eschbacher (1992) reports finding a few flakes in a creek, in a faint 15 cm thick buried old soil horizon 14' below the surface, which sparked a growing interest in archaology. Over the years, he recovered several lanceolate Daltons and a Grahaman Cave side-notched point, along with more debitage and abraders, and eventually found a fire pit which he had dated (Beta 47115; 8700±120 BP). Such a find does not appear unusual for this region; Eschbacher (1992:5) notes the Salt River Pigeon Roost Early Archaic site as 11' below surface and the Dalton type site on Osage River at 8'. Greater sedimentation rates are to be expected in the Ozarks, but we should note that very little effort has been made to find such deeply buried sites in the Gulf Coastal Plain. Also note that the deeply buried Topper site is in the lower Savannah basin on the Atlantic Coastal Plain. However, the Appalachian Piedmont may likewise provide much greater sediment loads than the small interior and flatwoods basin of Pearl River.

Tombigbee Waterway Investigations. The intense debate in Arkansas in the early 1970s had strong repercussions in the Tennessee-Tombigbee waterway work of the late 1970s and early 1980s in Mississippi and Alabama. One of the most important examples was the Hester site in Mississippi (Brookes 1979). Ensor (1985) reports his work with surface collections from the Joe Powell site (1Pi38) and excavated samples from 1Gr1X1 and 1Gr2 on the Gulf Coastal Plain prairies of Alabama (Gainesville section). Palynology indicated that the area was a xeric oak-hickory-pine forest ca. 12,500-8000 BP. As in many other reported Dalton contexts, the Joe Powell site lay on a sand knoll in the floodplain, in this case near springs along the valley wall. The surface collection analysis focused on artifact morphology and attempted to focus limited (1/4" dry screening of 3 2x2 m units) test excavations. Testing proved the site be stratified in alluvium, with Dalton materials lying on the surface in a deflated area, but the intact, sub-plowzone early strata were thin (10-30 cm) and of low density (Ensor 1985:16). Additional testing was recommended based on the potential for buried deposits. Ultimately, the site was interpreted as a favored locale for short-term, low-intensity use, particularly for tool manufacture (knapping), butchering and wood extraction. There was an apparent lack of artifact concentrations and of recycled tools, supporting this contention. Despite the multi-component surface collection and the limited testing, the range and diversity of Dalton toolkits in the Tombigbee basin remained poorly defined at the conclusion of the Joe Powell work.

The Joe Powell surface collection was of limited interpretive potential because it included Clovislike, Kirk, Vaughan and Benton points as well as several Dalton variants (*Cochrane* or lanceolate base cf. San Patrice or Greenbriar (n=7) and *River Bend* or side-notched, cf. Hardaway (n=12)). Point/knives were generally serrate and in various stages of use life. Other artifact classes represented include end (n=12) and side (n=5) scrapers, pebble scrapers (n=10), multiple direction uniface scraper planes (n=9), biface choppers (n=2), bifaces (n=14), a biface pebble knife, a denticulate flake, bipolar (n=8) and amorphous cores (n=4), a hammerstone , and battered and irregularly flaked pebbles (n=40). Apparently the entire reduction sequence from pebble to discard was carried out at Joe Powell (Ensor 1985:26). Endscraper morphology was variable from amorphous to formal or "teardrop" shape (more commonly referred to as "snubnose"); only one "graver spur" was noted. The bipolar reduction of local Tuscaloosa gravel (which comprises almost the entire assemblage) is of debatable significance; this author maintains that the technique is a response to small gravel size, although Ensor believes that some cores were thus treated to intentionally derive thick flakes suitable for the production of certain tools (hafted scrapers and point preforms). Note that he reports bipolar cores but no pitted stone anvils (some may be included in the 6 ground stone fragments from test units; Ensor 1985:Table 2).

Ensor (1985:38) states that only one Dalton adze was found at Joe Powell. However, he believes that his "uniface scraper plane" category is functionally redundant with some of the uses attributed to the traditional adze (the biface chopper may also be functionally redundant as Ensor (1985:33) describes them as having "been used in heavy duty chopping, crushing, or cleaving"). He concludes that the Dalton adze is present but uncommon in Tombigbee assemblages (Ensor 1985:40). In contrast to the marked early emphasis on male meat-eaters of the Arkansas Dalton studies (a bias still quite evident in many of today's Paleo studies that seems more related to machismo than data), Ensor (1985:38) acknowledges evidence of plant food processing.

The 1973 Hester site (22-Mo-569) excavations have only been preliminarily reported (Brookes 1979), but a wide range of Early Archaic forms was recovered, including Dalton, Big Sandy, Decatur and Pine Tree. These will not be discussed here. However, a sample of charcoal recovered from the excavations will be mentioned as they provide one of the only available samples for this early period. Lentz (nd) has submitted an analysis of these materials to the MDAH (Site file extension). Lentz notes the traditional research bias towards big-game hunting even with the extinction of Pleistocene megafauna leading to a shift in emphasis on deer, but notes that the data base upon which these assumptions are based is very limited, and the floral record is even more so. Some upland sites, particular cave/rockshelter sites have produced caches of hickory and acorn. At Hester, hickory (*Carya sps.*) nut hull was found in all Early Archaic context samples. Other edible species indicated are wild plum (*Prunus americana*), hackberry (*Celtis sps.*), black walnut (*Juglans nigra*), and acorn (*Quercus sps.*). Lentz notes that all of these can be consumed without additional processing, indicating that specialized tools or features for plant processing are not to be expected. Wood charcoal indicative of the local environment in initial Holocene times includes common pine charcoal, hickory, hackberry, and sycamore/cottonwood. The small samples support only the most tentative conclusions.

<u>Yazoo Basin Settlement</u>. The braided stream terraces of the Mississippi Delta were created 18,000 (highest) to 9000 (lowest) years ago (Connaway and McGahey 1996:26). Late Paleoindian and Early Archaic bifaces from the western braided stream remnant (the Bouge Phalia backswamp) in the Yazoo basin show marked tool curation taken as indicative of mobile settlement. While the Bouge Phalia sites lie west of McGahey's proposed Early Archaic cultural divide (marked by right-hand bevel in blade sharpening), the curation of materials exotic to a region where cream/tan/grey pre-loess gravel chert is

the nearest stone, is illustrative of decreased mobility across the Paleo-Early Archaic divide. In McGahey's (1996) sample there were 11 Paleo points (Clovis, n=1; Pelican, n=1; Hinds, n=1; Coldwater, n=3; and lanceolate Dalton, n=5) and 6 are non-gravel; exotics identified include Pitkin and novaculite. There are also 25 classified Early Archaic points (Cache River, n=4; Big Sandy, n=3; Decature, n=2; Hardin, n=6; St. Charles, n=4; and Geneill, n=7) and 10 are non-gravel; exotic materials indentified include novaculite, Ft.Payne and possible Edwards. The sources of these materials range widely from central Texas, the Ozark and Ouachita mountains of Arkansas, and Tennessee/Alabama. Grey and white/cream cherts widely attributable to upland southern Missouri, Illinois, Indiana and Kentucky were also recognized in both the Paleo and Early Archaic. High individual mobility and/or social connections with far-flung bands are indicated.

A northwest Mississippi Panola County site on the braided stream surface (short #3, 22Pa750) has been investigated with test pits as well as geomorphological and pedological techniques, as well as dubious OCR dates (McGahey 2002). The senior author served on these excavations. The site is primarily Paleoindian-Early Archaic in date and paleosols up to 13000 BP were identified. The site was well-placed to obtain good Citronelle gravel. Mant bifaces have been recovered, as well as other tool types (preforms, adze/choppers, side and end scraper unifaces) and abundant fire-cracked rock. However, McGahey's (2002:41) interpretation of the five 1x1 m test units excavated was that they did not show stratification sufficient to consider the site eligible for the National Register. Problems with this conclusion will be discussed further in Chapter X.

Pearl River Dalton Settlement. In 1980, Sam McGahey visited and surface collected a cultivated Dalton site (22-Lw-514) in the Pearl River floodplain near Monticello, Mississippi, where a smallgravel-bearing stream enters the Pearl (MDAH site file extension). The artifacts from the site appear to be from the local gravel. This sandy loam knoll had produced 10 side-notched Dalton points when it was brought to the attention of MDAH. The Daltons have pronounced basal thinning, are generally strongly serrated,and somehave evidence of heating at the preform stage. The site appears to be dominated by the early componet with moderately dense lithic scatter and four other Early Archaic (Lost Lake) points from a different area than the Dalton finds, but only one Pontchartrain, one Collins and one sherd. McGahey collected tools and other items the reporter had not recognized. These included a hammerstone, cobbles and split cobbles; cores; debitage; 5 uniface end, 6 side scrapers and 2 combined side and end scrapers (some with "graver" tips); 6 adzes; preforms and earlier stage bifaces and fragments; a drill; a nutting stone and a small metate; and sandstone and firecracked rock. The site was recomended for testing.

Site 22-Lw-514 appears to be a Late Paleo/Early Archaic base camp, based on the wide range of tool types, as well as fire cracked rock (probably from hearths, perhaps of Dalton affiliation). The floodplain and water sources coupled with nearby gravel bars must have been the attractive resource that caused a base camp to be established here. The collection is valuable in that it comes from a largely single component site and thus documents what range of items is expected in the full Dalton tool kit in the project area.

McGahey notes that most of the adzes were cruder than expected for Dalton adzes. Dalton adzes appear to be woodworking tools, probably indicating the production of dug-out canoes. The find of a "nutting stone" is of interest due to the find of a cache of pitted cobbles in this survey.

Leaf River Settlement. As early as 1980, Cary Gieger suggested that the Leaf, Pearl and Chickasawhay rivers floodplains were prime areas for the study of early settlement in southern Mississippi (Gieger 1980:20). His informal survey and surface collecting of a number of Perry County sites pointed out the importance of "steeply chipped unifaces" or end and side scrapers, spokeshaves and gravers in early industries. The survey also produced pitted stones, adzes, and a wide range of cores and other tools. Gieger's site settings resemble those of the Pearl River floodplain in some respects, but they come from a chert gravel-rich area. Site cluster 22-Pe-511 through 521 is a series of low rises in a cultivated field. It had occupation from the Late Paleoindian through Late Woodland periods, based on 233 projectile points (70% not assigned to formal types). 22-Pe-504 was on a mined gravel deposit 15' above the floodplain; additional investigations at this site are detailed below. 22-Pe-504 produced 89 pp/ks (57% untyped). 22-Pe-505 was a large midden site disturbed by gravel mining. It produced 18 points (55% untypes), although a collector reports finding "285 projectile points in one day on this site" (Gieger 1980:12). 22-Pe-527 was another gravel mine on a 30' rise above the floodplain.Of 32 pp/ks, 69% were untyped.

This author suspects that many of the untyped pp/ks are of Late Archaic-Woodland date (the problem of stemmed biface typology in this interval is discussed below). Of the 380 total points, there were 10 San Patrice, *var. Leaf River* (chert); 3 Daltons (chert and orthoquartzite); 3 Cache Rivers (tan chert), and 5 Lost Lakes (chert and orthoquartzite). The 20 early points thus comprise 5% of Gieger's (1980) collection, as opposed to 5% (n=19) "wide base" Middle Archaic points; 12% Late Archaic/Early Woodland (n=46; Kent, Pontchartrain, Gary and Bakers Creek); and 8% for late prehistoric arrows (n=30; Collins, Fishtail and Washington). There are also 43 uniface tools in the total collection, so uniface tools outnumber formal bifaces 2:1. Early occupation in the Leaf floodplain was evidently significant relative to later times with overall much higher population densities.

Jackson and Scott (1992) report investigations at the G.W.O. (22-Jo-587) site on a sand knoll in the Bouge Houma floodplain. This study was conducted with shovel testing followed by the excavation of four 1x1 m test units, ¼"dry screening, and 10 cm levels; the 493 artifacts were, with one exception, lithics and these were sorted into standard descriptive types highly similar to those used in the present study. The Early Archaic component was present at 30-70 cmbs (Jackson and Scott 1992:59, 62, 63). Very small amounts of burned earth, charcoal, burned hickory nut hull, and calcined bone were recovered. Diagnostic materials were a Dalton point, a Big Sandy point, adzes, endscraper, other unifaces, and utilized sandstone slabs. The final artifact category is of interest here, because such items were also recovered from an apparent early component in the course of our survey.

Four sandstone slabs were recovered from site 22-Jo-587. Jackson and Scott (1992:70) note such items have also been recovered in apparent early contexts at Hester and Beaumont Gravel Quarry in northeast and southeast Mississippi, respectively. Item 1 (238 g) has a shallow smooth depression with a small pitted area showing some polish. It is interpreted as a nutting stone, or possibly a bow-drill socket. Item 2 (182 g) has a shallow depression on a smoothed surface, indicative of some use as a plat grinding stone. Item 3 (320 g) has a shallow smooth depression with a small pitted and slighly polished area, and is interpreted similarly to Item 1. Item 4 (1161 g) has several pits from battering; it is interpreted as a bipolar anvil, or possibly a short-term nutting stone. Jackson and Scott (1992:73) conclude that given the over-all low density and despite the paucity of biface thinning flakes, the sandstone artifacts suggest that the site was a base camp and that these "cumbersome, relatively non-portable objects" were kept on the site for repeated use, and that the site was a base camp for the exploitation of the bottomland hickory forest (recall that hickory nut hull was among the very few organic remains recovered).

Problems in Middle Archaic Identity

The Middle Archaic has fared poorly in modern research, being reduced from both ends, but still remaining poorly defined and poorly represented. As noted above, it is most commonly typlified by a shift to large, often broad and crude, bifaces and a decline in other formal chipped stone tools. On the other hand, it is now seen as the origin of both ceremonialism (in fine ground stone work as well as in mound construction) and plant domestication (squash/gourds and sunflower). The nature of Middle Archaic human adaptions as well as the problematic nature of Middle Archaic deposits in much of the lowland Southeast appears likely linked to broad climate changes. Mcgahey notes in the draft State Plan that there has been "no fieldwork in this area which made more than a minimal contribution to our understanding" of the Middle Archaic. This is partly due to the lack at that time of large-scale surveys in appropriate environments; of 3151 south Mississippi sites, 239 Middle Archaic components had been identified. Huge USDA-FS surveys of the uplands generally fail to report a Middle Archaic presence while 75% of reported componets are on larger streams, especially terraces and floodplain knolls. There are no known floral or faunal samples from the Pine Woods/Jackson Prairie study unit, and the south half of the state lacks the bannerstones and sandstone axes typical of the Middle Archaic in north Mississippi. However, the period saw high use of Tallahata quartzite and a number of jasper lapidary caches are known from the region. McGahey notes that single-component site excavations are needed to reveal the technological inventories of groups otherwise known only from thier diagnostic projectile point/knives.

Biface Chronology. Mississippi generally lacks the diagnostic forms found to the north and east (Morrow Mountain-Eva and Cypress Creek). Other broad formsof the Sykes and Benton cluster are found. Most important in central Mississippi is the Denton point (rhymes with Benton, but made of Citronelle gravel pebbles rather than Ft. Payne outcrop/cobble-derived material). As mentioned above, Gieger's (1980) Leaf River floodplain survey produced 19 (5%) "Wide Base Archaic" points; he declined to attempt typology for these items but notes that they were made of chert, limonite, orthoquartzite and Tallahata quartzite and that they date to the Middle Archaic, roughly 5000-4000 BC (Gieger 1980:18).

McGahey (2000:108) dates Benton points 6500-5500 BP and Denton and Opossum Bayou points 6000-5000 BP. These broad bladed, generally wide stemmed points are part of a wider Middle Archaic tradition seem throughout most of the Southeast and Mid-Atlantic, including, in north Mississippi, the somewhat earlier Sykes-White Springs (7000-6500 BP) and somewhat later McIntyre (5000-4000 BP) points (McGahey 2000:101, 136). The earlier forms and Bentons are better made, while the Delta forms Denton and Opossum Bayou, made on tan gravel chert, are crude with variable blades and shoulders, and often evidence of severe use on the tip (Figure 38).

A Few Faunal Use Studies. While the Mississippi State Plan notes the lack of faunal and floral data sets for our project vicinity, some sites in the wider region have produced bone from Middle Archaic food. Jackson and Scott (2001:187-196) examined collections from three Louisiana bottomland sites (the Middle Archaic, ca. 8000-6500 BP, Conly site on Red River and the ca, 5500-5000 BP Watson Brake mound complex on Ouachita River and the Poverty Point J.W. Copes site). They also comment on the paucity of comparable data for the Mid-South, noting some Tennessee-Cumberland basin work and the Koster site in Illinios. The Middle Archaic samples have high taxonomic diversity; in contrast to the reported focus on deer in the Tennessee and Illinois samples, evidently the wide range of species used at riverine sites in later periods in the Mid-South was already well established by the Middle Archaic. At Conly, deer were important, but catfish, sucker and gar were also used. Watson Brake evidenced a riparian focus, with many rodents, coon, mink, otter, muskrat, turtles, fish (catfish, sunfish/bass, drum), ducks and geese, snakes, alligators, and cottontail in addition to deer, turkey, fox squirrel and ruffled grouse. Jackson and Scott (2001) further conclude that these were mult-season occupations (what we could consider base camps) where fishing coupled with hunting of any and all wildlife allowed year-round residency

Origins of Personal Status and Ritualism. Peacock's (2003:40) discussion of the 22-Wi-515/516 excavations notes the recovery of 3 fragments of "a simple, reel-shaped bannerstone of brown siltstone" considered to be a Middle Archaic "Southern Double-Edge" form. He also notes Sam Brookes' contention that these items were often ceremonially killed. Similar behavior with large bifaces has also been identified as a way of destroying these primitive wealth items. Four "broad-stemmed probable Middle Archaic points" are illustrated by not discussed from this large, multi-component site (Peacock 2003:37).

The Late Archaic-Gulf Formational Transition to Woodland Culture

Biface Chronology. Shumla (Brookes 1982:6-7) is a Late Archaic form common to the Delta and Bluffs region. It superficially resembles the Smith/Calf Creek defined for the Midcontinent in having barbed shoulders, however, Shumla has a small, narrow stemmed base unlike the wide square stem of the Middle Archaic forms. McGahey (personal

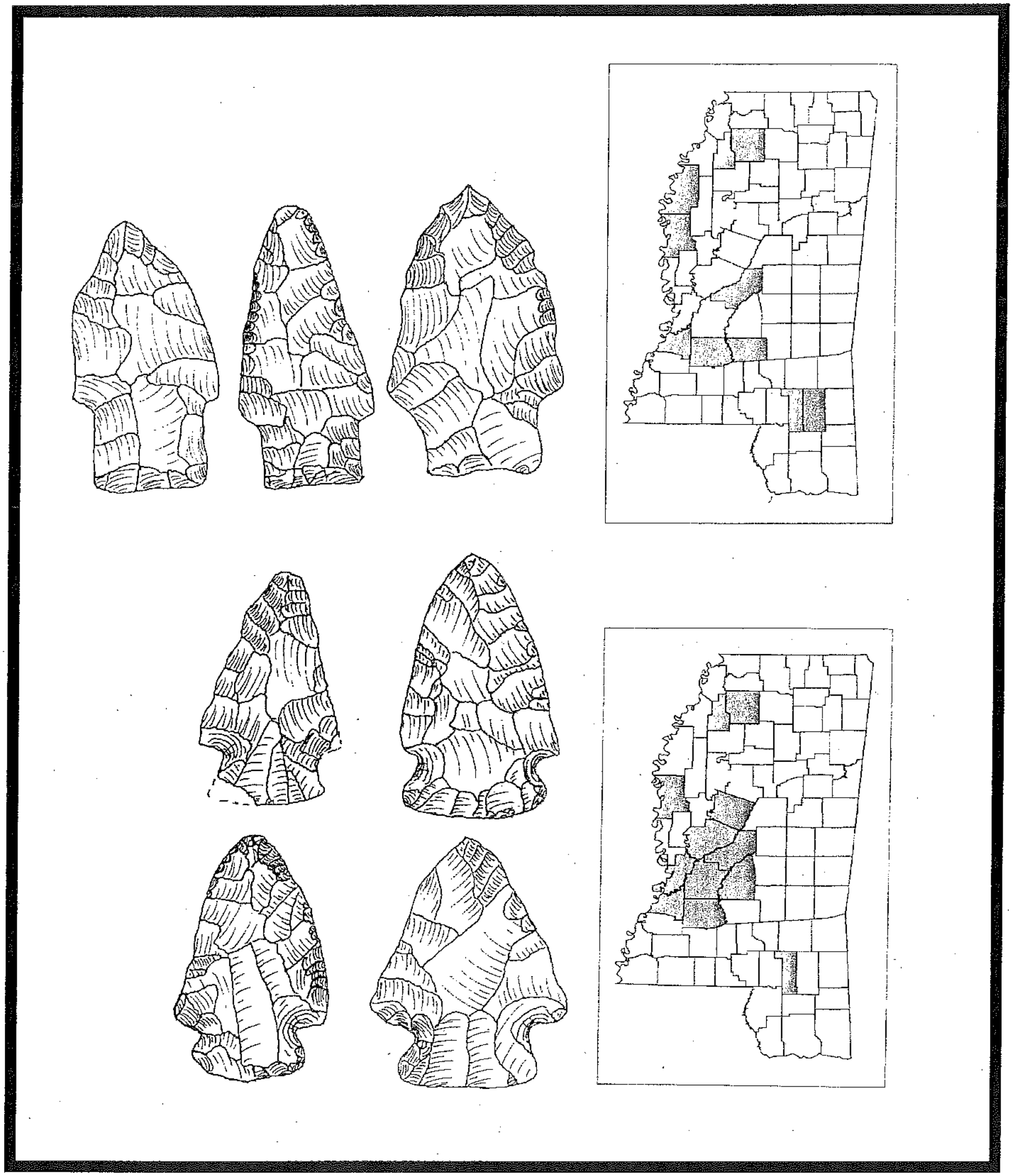


Figure 38. Middle Archaic points; a. Denton; b. Opossum Bayou (McGahey 2000).

communication) notes that some may object to the use of the Shumla class in the Gulf South, prefering to reserve it for use in West Texas where it was first defined.

There are many forms of stemmed points and they were typically made over a long time period. The "catch-all" category of Gary has been broken down into larger Archaic and smaller Woodland (*var. Mabon*) forms (McGahey 2000:144, 192). The earlier Gary points (4500-3000 BP) are randomly flaked and variable in form, but have the distinguishing characteristic of tapering stems (Figure 39). They are often made of novaculite. Issaquena phase *var. Mabon* points date 0-700 AD. The apparent gap in dates is not explained, but apparently represents a non-unimodal distribution in time. The bow and arrow was introduced ca. AD 700; the first arrow form recognized for the region is the Collins point (Figure 40, McGahey 2000:198).

Straight stemmed points have been grouped by McGahey (2000:152, 165) into a Flint Creek-Pontchartrain group (not cluster) dating 4500-3500 BP. These forms are characterized by carefull pressure flaking of the blades and common basal cortex (Figure 41). Similar forms are the roughly contemporary Late Archaic/Poverty Point period Mud Creek (3500-2500 BP) and Macon (3500-2000 BP) points and the later (0-700 AD) Edwards and Tombigbee stemmed points (McGahey 2000:171, 182, 194, 196)

Ceramic Chronology. Regional ceramic chronologies were developed largely in reference to major floodplain areas, particularly the Central and Lower Mississippi valley. Perhaps we would view regional ceramics, culture change and chronology differently if the initial work had been conducted in the uplands and minor drainages such as the Pearl. Ford's (1936) 3-dimensional, numericaly-coded paradigm yielding an unwieldy 20,000 possible types, which would form the basis of the simplified typology still in use, was based on surface collections from 103 sites (Figure 42), including 10 in the Big Black basin and 2 in the Pearl basin (particularly the large collection from Nanih Waiya, revealing Marksville, Deasonville, Coles Creek and Choctaw occupation). O'Brien et al. (2000) reexamined Ford's data set as part of the biographical/historiographical study of Ford's seminal work and the development of his views through time. While critical of Ford in many respects and arguing that this was not a true frequency seriation *a la* Kroeber, Kidder and Nelson, they do acknowledge that the 1936 study formed the basis of a "workable regional chronology" (O'Brien et al. 2000:47).

Of relevance to our study area, Ford selected 19 "marker types" and defined the Marksville, Coles Creek, and Choctaw complexes. They argue that at this early date, Ford saw his complexes as "real" or discrete segments of culture that "replaced" each other, as opposed to his later view (vs. Phillips) of continuity and gradual change we arbitrarily cut up for our analytic purposes. However, even in the 1936 study, Ford recognized some transitional Marksville-Coles Creek and Marksville-Deasonville complexes and suggested that they "were the result of an evolutionary trend" (O'Brien et al. 2000:50). The Marksville complex first defined ceramically by Ford (1936) was the focus of Toth's 1977 (1988) study of Early Marksville (AD1-200) sites of the Lower Mississippi valley. At the time, the extensive upland presence documented by modern

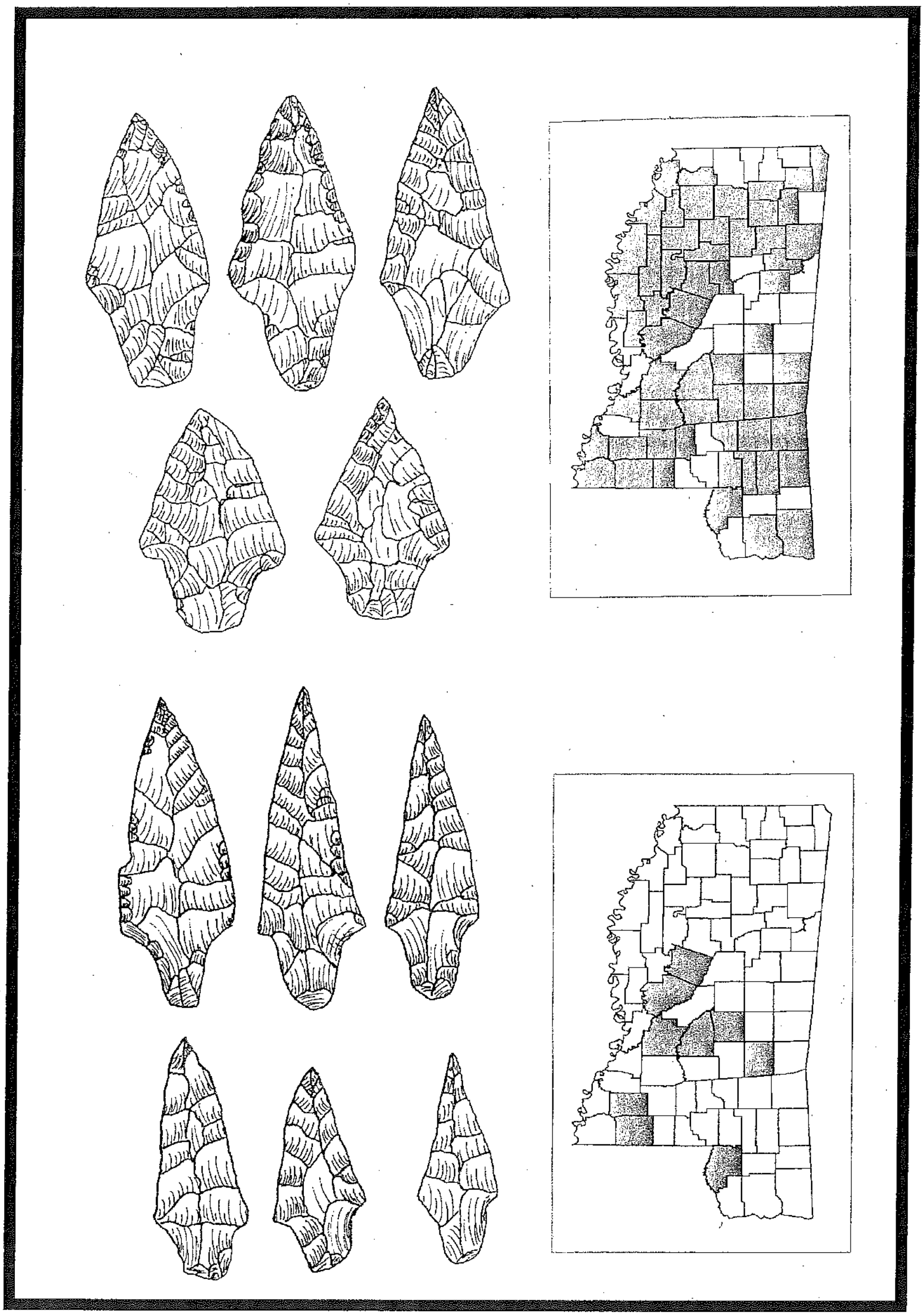


Figure 39. Late Archaic-Middle Woodland points; a. Late Archaic Gary; b. Woodland Gary *var. Mabon* (McGahey 2000).

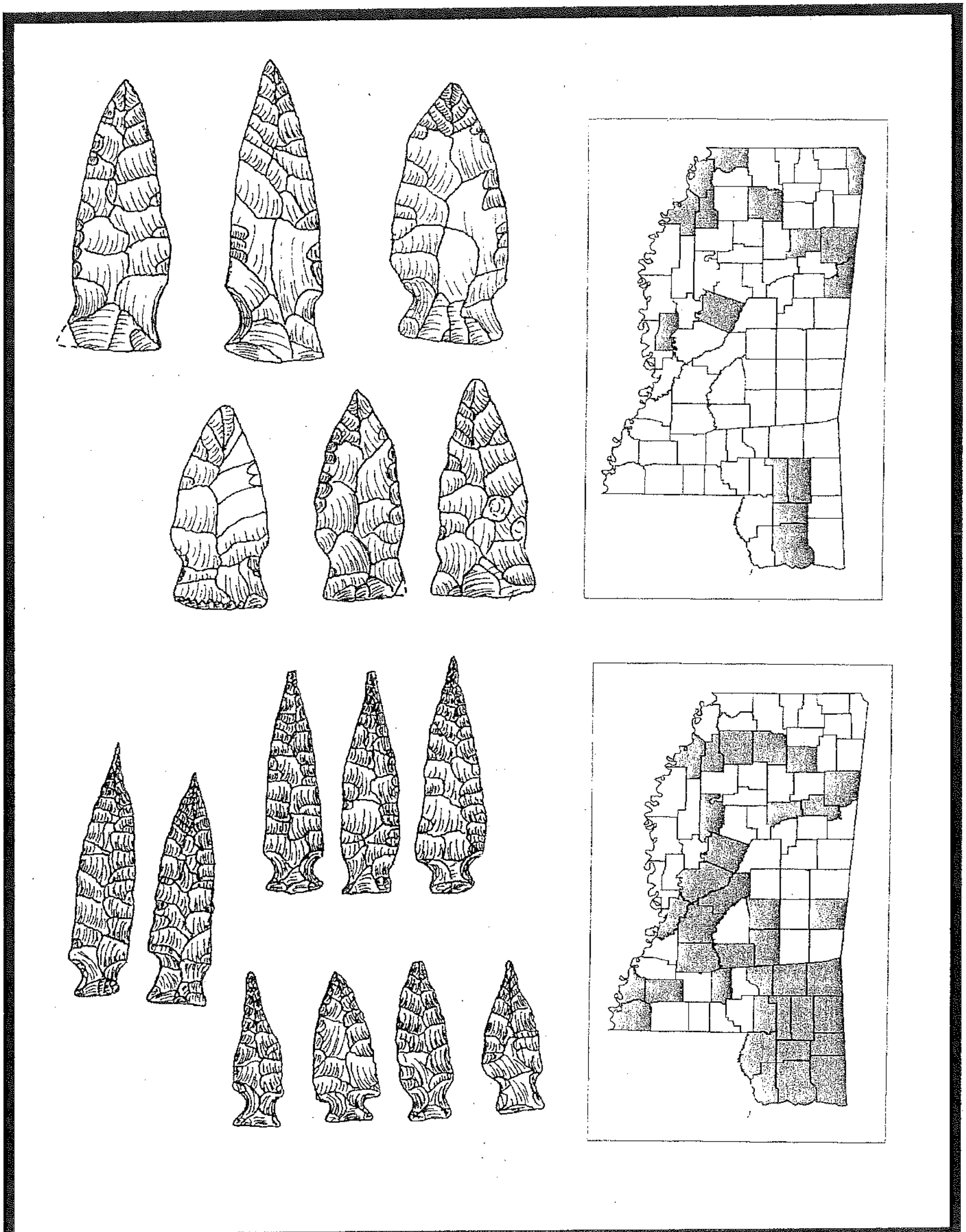


Figure 40. Woodland knives and arrows; a. Bakers Creek; b. Collins (McGahey 2000).

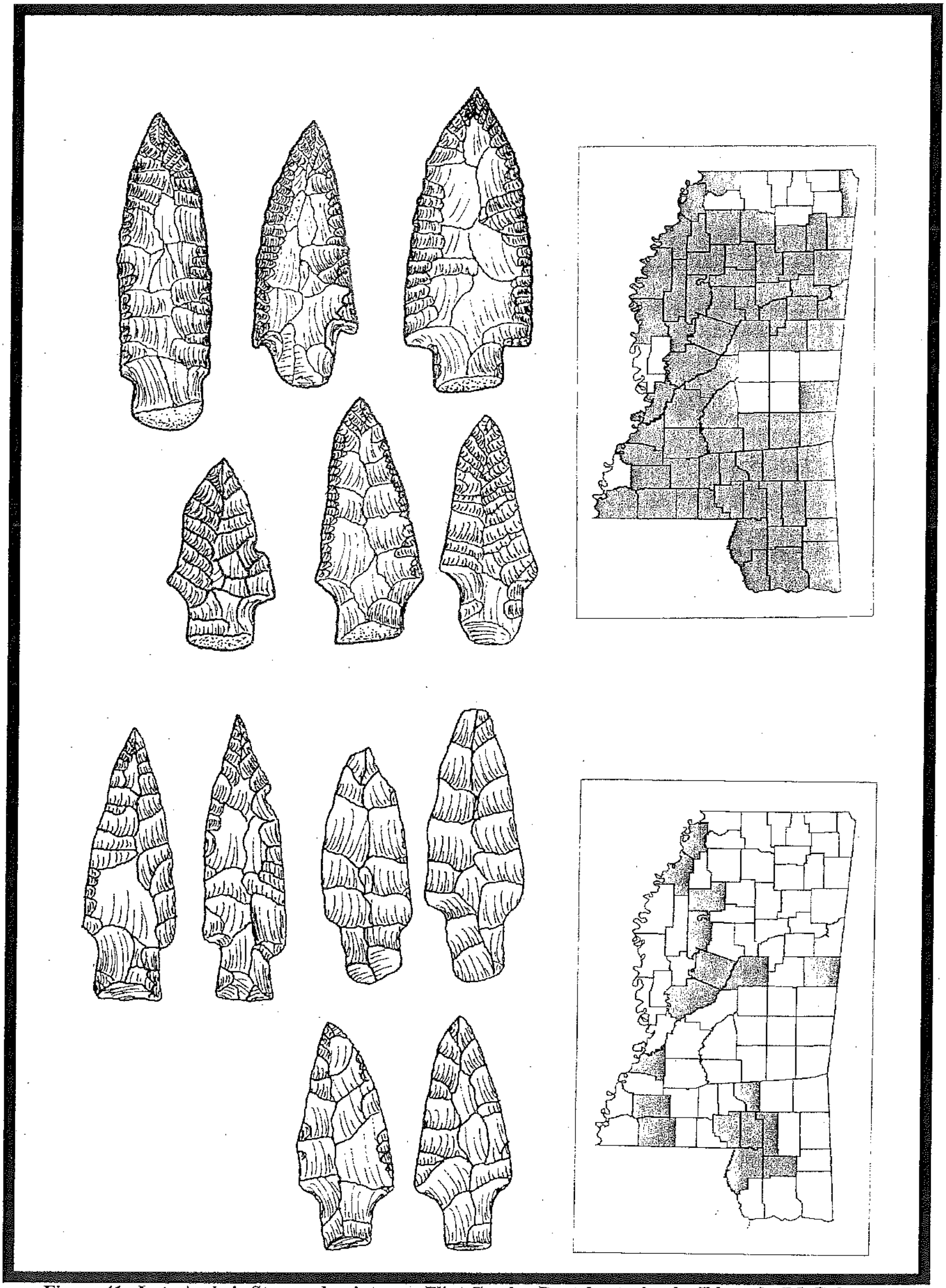


Figure 41. Late Archaic Stemmed points; a. Flint Creek – Pontchartrain; b. Edwards (McGahey 2000).

USDA-FS survey of the National Forests uplands was not known, and his study focused on the traditional Lower Valley survey universe of the LMS (Figure 43).

Sedentism and Lithic Technology in the Piney Woods. McMakin's (1996) study of lithics from two Forrest County (Piney Woods) sites spanning the Late Archaic-Gulf Formational transition argues that restriction of raw material used accompanies the transition to sedentism. His main variables in reliance on curated tools are biface:flake ratios and percentage of biface thinning flakes. The validity of these assumptions is arguable. From ethnographic analogy, prehistoric Southeastern populations' mobility may not have been strongly influenced by lithic procurement and settlement systems should not have been dependent on lithic resources. Although bedrock sources are limited, stream gravels are widely available in the Coastal Plain as well as most upland sections. In addition, site function and technological organization may have more significant impacts on assemblage composition. However, across the Southeast the transition from curated to expedient technologies in the Late Archaic is linked to sedentism rather than horticulture, environment or other technologies. When materials are limited, curated formal tools conserve materials, particularly when exotic (distant non-local) materials are concerned, but require more skill and energy to produce and keep. When raw material is readily available, bipolar and amorphous core technologies producing usuable flakes disposed of after use require less learning and labor, but are expensive of materials (McMakin 1996:52-53). In areas with readily available raw material, with the decline in curated technologies, the percentage of prepared platforms decreases (McMakin 1996:56).

The general Southeastern Archaic increase in population density, sedentism and expansion into previously less-used niches is held a result of increased post-Altithermal resource predictability. The transition from less to more sedentary settlement is marked by the 2500-300 BC adoption of ceramics. South Mississippi has produced little evidence of Early Gulf Formational (2500-1200 BC) fiber tempered pottery. Wheeler and Bayou LaBatre ceramics were introduced 1200-500 BC and from 500 to 300 BC Tchefuncte and Alexander pottery replaced fiber tempered wares. Sedentism by the end of the period is inferred from increased site size and midden accumulation as well as ceramic use (McMakin 1996:57-58).

McMakin compares the Jeff Parker (22-Fo-608) and Robinson (22-Fo-580) sites on the Leaf River in the central Piney Woods. The horizontally distinct Late Archaic area at 22-Fo-608 produced burned earth, Kent points, number of other tool types, and a wide range of debitage. It is considered as a base camp (McMakin 1996:55). Alexander series ceramics, points (Pontchartrain (n=4), Palmillas (n=1) and Morhiss (n=1)), the full range of reduction debitage and "structural daub" indicate that Robinson was a base camp of "fairly lengthy duration" (McMakin 1996:56). He sorted flake proximals into cortical, flat, faceted, and crushed, using 547 sortable flakes from Jeff Parker and 1571 from Robinson. Jeff Parker produced 17.8% faceted flakes and Robinson produced 24.3%, a significant difference (McMakin 1996:58). However, contrary to expectations, the later site produced more of the flakes expected to be correlated with a formal or curated tool technology. Comparison of biface thinning flakes (apparently classified differently from

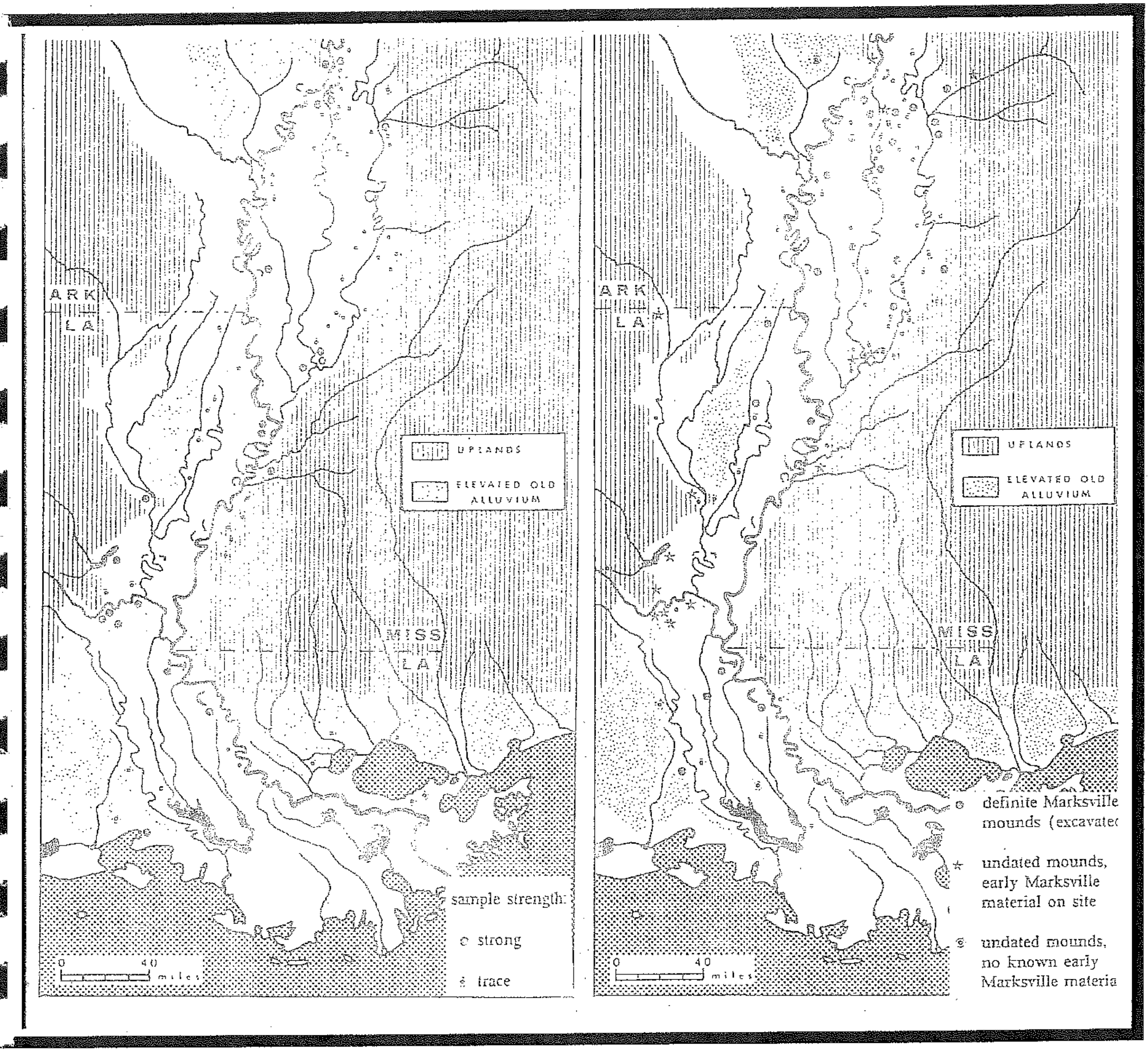


Figure 43. Lower Mississippi Valley conical mound and early Marksville ceramic distribution (Toth 1988: 32, 43).

"faceted" flakes), showed opposite results, with Jeff Parker having 171 (31.2%) and Robinson (277 or 17.6%), which was again considered significant and indicative of greater reliance of curated tools. Using all flakes, 925 flakes:14 bifaces from Jeff Parker and 2698 flakes:18 bifaces from Robinson (McMakin 1996:58). These ratios simplify to 15/1000 for the Late Archaic component and 7/1000 for the Gulf Formational site and are also taken as evidence of greater use of curated technologies in the Archaic. The first two analyses seem the strongest indicators of differences in tool production and use systems. Fields (2002) has examined McMakin's (1996) and other Pine Hills studies from the standpoint of settlement systems rather than individual site function.

Political Economy and Trajectories to Social Complexity. Krause (1989) argues that there were various Late Archaic trajectories that led to the mortuary complexity seen in the Middle Woodland Hopewellian tradition (here, the Marksville period). Some societies invested exotic mineral wealth items (themselves often enhanced with considerable labor) while others expended much labor on earthworks. Either or both were possible preadaptions towards the complex Hopewell ceremonialism that combined both attributes. The various Southeastern Archaic "social aggregates" may have approached kinship obligations differently, resulting in various bases for rights, duties and succession claims. As described above, Krause (1989:21-24) sees the consensus-based eqalitarianism of the Paleoindian and Early Archaic stages as preventing wealth accumulation. By the Middle Archaic, however, new approaches to consumption, where durable utilitarian items could, when used in burials, were converted into consumable wealth, and the consequences of gift giving and recieving could be extended so that individuals and groups had a new potential to achieve longer-term status differences. Wealth, in the form of stone tools, could be accumulated to be destroyed on ritual occasions, to confer prestige on the investor, resulting in greater command over community resources. Krause (1989:25) sees this as behind mortuary behavior in the Tennessee Valley Middle Archaic.

Inheritable status inequality originated when some Archaic men were more successful and accumulating wealth and manipulating gift-giving and ritual investments, and were thus more able to advantageously influence the status of thier sons (Krause 1989:28). He sees this personal ambition as a more powerful explanation for the accumulation of wealth than the more commonly posited explanation of sedentism. However, at Poverty Point, this pattern of wealth accumulation and expenditure was taken further by the creation of accumulated *group* wealth in the form of earthworks as "community shrines, examples of a community's fund of prestige" (Krause 1989:30-31). Futhermore, past ancestors and the currently existing individuals were linked in a community that could transcent an individual's lifetime, and "successful men could now conduct a warrant-backed discourse with thier sons and grandsons that less successful men could not draw upon" (Krause 1989:31). Honored lineages resulted from the creation and distribution of fine stonework or from the organization of labor in monumental earthen construction. These two activities would be united in Middle Woodland ceremonialism.

Subsistence Changes Over the Archaic-Woodland Interval. It has long been a tenent of Americanist archaeology that outside special cases such as the rich marine environment of the Pacific Northwest, complex, sedentary society can only be supported by agriculture. As early as the 1950s, researchers ar Poverty Point such as James Ford and Clarence Webb belived that such earthworks could only have been erected on an agricultural base. By the 1970s Jon Ginson was chalenging this view and presenting Poverty Point as a complex hunter-gatherer soiciety. Ward (1998:166-173) has reviewed the floral remains from Poverty Point and concludes that there is no evidence supporting horticulture at this site. Plants considered crops elsewhere (the chen-am complex) and even the little barley and cucurbit are within the morphological range of wild variants. The site des however produce significant indications of the use of hickory, oak acorns, persimmons and other seeds that can provide stored food reserves without direct intervention in thier growth.

Yarnell and Black (1985:93-106) have reviewed plant remains data from 60 Archaic and Woodland sites in the Southeast. Most of their data set comes from the Atlantic Province and the Tennessee valley. However, Poverty Point and Coles Creek are included from Louisiana along with the Alexander site and Miller I and II componets (Strickland and Tibbee Creek) in the Tombigbee basin of Mississippi. The debate as to the origins of horticulture has long been seen as critical to the development of understanding about this major transition, particularly the cuasitive or mutually ampliying role of agriculture/stored food surpluses and sedentism. As has long been mooted, grain seeds expand through time at the expense of nuthull. Hickory always exceeds arcorn, walnut and other rarer tree cropssuch as hazel, chestnut and beech, and is present in 90% of Archaic assemblages. Small grains gofrom 30% of Archaic assemblages to 90% of Middle Woodland assemblages, before declining in Miller III times with the widespread acceptance of corn. Yarnell and Black (1985:104-105) also note that the seeds of purslane and pokeweed are highest in Archaic plant assemblages; these plants are consumed as greens, and a wider role for non-nut plant foods could be seen in Archaic assemblages if the traditional small grains (chenopod and amaranth) were consumed earier in the year as greens rather than starchy/oily seeds. They note the need for more data from a wider range of locales.

Features at a Stratified Piney Woods Site. A Wayne County (xeric Piney Woods) site (Sandhill, 22-Wa-676), the subject of a University of Southern Mississippi archaeological field school, resulted in the identification of Middle and Late Archaic features which were subjected to experimental OCR dating (This technique of debatable validity will not be discussed here). Sandhill is a 12-acre ridge above a creek floodplain. It has evidence of occupation throughout prehistory, with artifacts recovered up to 150 cmbs in what are characterized by Kieth (1989:85) as chronologically stratified contexts, despite his acknowledgement that sandy sites are highly subject to bioturbation and that the terrace is is Pio-Pliestocene fluvial deposit with strongly developed soils with a highly oxidized illuvial B horizon. Kieth (1989:87) proposes colluviation, with possible aeolian action in warm-dry periods, as the means of site burial. Identifiable Projectile point/knife forms identified were Big Sandy (eastern Early Archaic tradition); Alachua, Putnam, and Newnan (Florida Middle-Late Archaic tradition); Pickwick and Ledbetter (Tombigbee

Late Archaic tradition); and Collins arrows (Lower Valley/Gulf Coastal Late Woodland tradition). Numerous unclassified Late Archaic-Gulf Formational/Early Woodland stemmed forms were also recovered; typology and dating of these pp/ks remains a significant problem. Nearly half of formal tools were Tallahata Quartzite, but the primary material represented was Citronelle gravel (Kieth 1989:Tables 1 and 2).

The primary point of interest about the Sandhill (22-Wa-676) is the six features defined. Feature 1 is a "roughly circular concentration of fired clay [2.5 kg], with a concentration of charcoal" (Kieth 1989:98). It was identified at 35-40 cmbs and was 40 cm in diameter. It is interpreted as a cooking/heating fire and a Gulf Formational/Early Woodland Tallahatta Quartzite point was in close association. Feature 3 was "a baked clay concentration" that produced 1.2 kg of burned clay and 120 g of sandstone. It was 60-70 cmbs and was 45 cm in diameter and is considered a cooking/heating hearth (Kieth 1989:99-100). Feature 4 was roughly circular pit from 44 to 80 cmbs with a diffuse lower boundary; it was 80 cm in diameter and had dark fill with charcoal flecks and 2.3 kg of burned earth, 200 g sandstone, 54 flakes (3 utilized) and a fragment of burned bone (Kieth 1989:101-102). Feature 5 was a circular stain with charcoal and dark fill. It was 28 cm in diameter and extended from 49-70 cmbs. It contained 7 flakes and is interpreted as "a smudge pit due to the heavily charred fill" (Kieth 1989:103). Feature 6 was comprised of two concentrations of burned material in a 75 cm diameter circular area yielding 360 g baked clay and 2.3 kg of sandstone (Kieth 1989:103).

Only Sandhill F1 was associated with diagnostic artifacts. Based on feature depths relative to stratigraphically recovered diagnostic bifaces, the features should date to the Middle to Late Archaic-Gulf Formational/Early Woodland interval; the OCR dates roughly support this (they could also be taken to support simply greater age of soils with increasing depth). Apparently no conventional dates were run although actual charcoal was noted. All Sandhill features can be considered hearths of various types. "Pit" outlines were vague and features were defined largely as concentrations of burned earth (the sandstone recovered was not noted as burned). It seems to this author that besides the possibility of providing absolute dates (either cheap but dubious OCR dates or reliable but expensive AMS dates), the primary significance of such features is their role in providing a "center" around which a horizontal artifact distribution can be interpreted.

Woodland Period Social Elaboration

Most of the archaeological sites that have previously been reported in the vicinity of the project area date to the Woodland period. These include the now-destroyed 22-Ra-511, a small occupation site with Baytown Plain and Mulberry Creek Cordmarked pottery, and 22-Ra-629 on Hog Creek, a low-density, 30-cm deep site reported by Lauro in 1997 and considered to be potentially significant, as the site produced tested pebbles and debitage, as well as fire-cracked rock and Baytown Plain pottery from shovel tests on both sides of the creek. This large site lies a mile downstream from the present project area and comprises the type of resource it was believed most likely to be encountered in this survey. Such was indeed found to be the case, with Marksville components being conspicuously important. The following review will this focus on the Middle Woodland period.

<u>The Twin Lakes Phase Debate in the North Central Hills</u>. In 1980, Ford discussed the problems of the poorly-known North Central Hills chronology relative to be better-defined Yazoo and Tombigbee ceramic sequences, and points out how a single upland excavated mound in the Skuna Basin has been misused to date both valley sequences. She notes that the Womack mound (22-Ya-500) is one of the only available detailed reports for the region and that chronology building in the uplands between the two main river basins has been focused on taking parts from Tombigbee or Yazoo sequences and assuming that upland sites are contemporary with the most closely analogous basin sites or assemblages (Ford 1980:26). This problem is expected to be seen in the Pearl River valley as well. The Twin Lakes phase in the eastern Delta had been defined largely to account for Tallahatchie sites with sandy paste ceramics ("Thomas" wares, including Withers Fabric Marked, Twin Lakes Punctated and some Marksville types) and the suspicion that they were marginal to a group of sites centered in the uplands including Womack, which had four available (low-lab number) dates (AD 70+100, 250+80, 380+80, and 670+80; unclaibrated). Ford maintains that the early end of this range is probably erroneous for the placement of Womack because it came from a pit in an occupation area that can not be demonstrated to be directly associated with the mound, but that was placed with it because of the excavator's theoretically constructed settlement model (Ford 1980:27). The pit was perhaps a ritual deposit, as it contained charcoal under an ocher "floor," but ceramics from the area were assignable to the Miller sequence (42% Furrs Cordmarked, 17% Tishomingo Plain, 16% Baldwin Plain) with very few of the proposed Twin Lakes phase diagnostics (Ford 1980:28). The only dated "Marksville" site at the time Phillips was defining Twin Lakes was Helena (AD 30+150 through 335+150), so the lower two of the three Womack mound dates could be taken as "Marksville." Ford (1980:29) points to a logical inconsistency in Phillips' (1970:891) supposition that the sandy texture of the "Thomas" wares was of purely geological import while at the same time using Koehler's (1966) paste-based sequence where sandy wares were assigned chronological significance.

Womack has been even further abused in the Tombigbee. Ford cites Blakeman's (1976) Miller summary, which misplaces the site in Lafayette County and the Tallahatchie basin, and then ignores ceramics from the mound complex, as well as the 4-stage stratification of the mound stages, to focus on the Miller sequence ceramics from the putatively associated "village" area (Ford 1980:30). Blakeman further chose without grounds to associate the Miller tradition ceramic assemblage with the two latest mound dates and to use additional evidence from the LMS surveys, while discarding their chronology, to support the contemporaniety of Miller II-III and the Middle to Late Marksville Issaquena phase, in contrast to Phillips' placing it with his early Marksville phases (Ford 1980:30-31).

Ford concludes with a caution of relevance to this project: "...the solution to defining the relationship between the Tenn-Tom and the Alluvial Valley...does not lie in ignoring data inconsistent with preconceived notions. Because it combines elements from both areas, the North Central Hills has the potential for correlating the two adjacent areas, but only when data are taken in context, instead of being used selectively as supportive information." A further point that this problem brings out is the need for absolute chronology rather than comparisons of poorly dated and sometimes faultily constructed ceramic sequences.

Middle Woodland in the Lower Mississippi Valley, Upper Tombigbee Valley and Intervening North Central Hills. Toth's 1977 (1988) study attempted to correlate then poorly dated LMV events with the better documented events in the Hopewellian area. Toth suggested that a Hopewellian "Intrusion" had resulted in "an inducement of Tchula groups from the interior...to locations along the active streams" but that "the scheme just presented is embarrassingly speculative and admittedly presses the chronological evidence to the extreme" (Toth 1988:29, 44, 73). He places the early Marksville period at AD 0-200, and notes that earlier Tchula sites, characterized by soft, chalky (here "untempered") and Alexander-like sandy wares and focused on the valley edges, are derived from a Late Archaic base modified by the addition of ceramics, burial mounds and incipient horticulture (Toth 1988:19-23).

In contrast to Toth's (1988) Hopewell intrusion, Walling et al. (1991:54-62) and Mainfort and McNutt (2004:12-24) have provided detailed radiocarbon chronologies detailing the priority of Middle Woodland developments in the South. Poor dating had hampered imperpretaion on Miller I and II culture until 10 samples of charcoal collected by the NPS during Natchez Trace excavations were submitted. At the same time an extensive chronology of 39 dates was being compiled for the Pinson mound group in upland (Forked Deer basin) Tennessee. As a result, Miller I and II culture is placed much earlier than previously (ca. 250 BC-AD 250), with Bynum (near the Yalobusha) well predating Pharr (near the Tennessee) and Miller (Black Prairie), and Pinson (midpoint AD 180-335) spanning a longer period of use than previously considered, with reuse of early (400 BC) features reused much later (AD 500). As in the Marksville culture sites, there is a wide range of variation in mortuary activity and there are many non-local items (galena, copper, silver, mica, greenstone, conch and Marginella shell, pearls, imported ceramics). The first major mound-building dated in the region is at Bynum (ca. 250-50 BC), earlier than Holding phase in the American Bottoms and the Anderson landing phase in the southern Yazoo basin, as early as Cement Hollow, and contemporary with the Elizabeth phase in the Illinois valley. There appears to be a temporal gap between Bynum and resumed mound building at Pharr, and then a spread to multiple other ceneters, including the massive mound construction at Ingomar and Pinson and the buried ca. AD 250 charnel house at Miller. Therefore, we should ask if these upland developments have priority over the better-known riverine developments of Illinois Havana and LMV Marksville, and if streams or ridge-line trails were the routes connecting these far-flung cultures. Also, these findings raise the question of whether we are seeing cycling of ritual complexes or big man lineages/networks, or if we are just missing some sites. Perhaps the sites that would fill chronological gaps are to be found the mounds of the Pearl basin.

Features at a Plowed North Central Hills Site. As in other periods, we must look outside the poorly-researched Pearl River Valley for Woodland Period explanatory models. Peacock (2003) reports test excavations in the Noxubee River valley in the North Central Hills (Stinking Water, 22-Wi-515/516). While this half-mile long terrace site has some evidence of Archaic and Gulf Formational occupation, the primary component is evidently of Marksville date, which is to be expected as Middle and Late Woodland appears to be the main period of occupation documented in Tombigbee Forest surveys, with a major population increase around AD 500. The site produced a concentration of postholes that is interpreted as two structures, one being an Early Mississippian house based on a shell tempered sherd in one posthole (survey evidence indicates that Mississippian occupation of the regional uplands ended ca. AD 1000, Peacock 2003:6).

Site 22-Wi-515/516 is in an oak-hickory-pine forest on a series of terraces over the Noxubee River. The region has suffered considerable colluviation from historic cultivation and indeed the site itself had a shallow (maximum depth of plow scars was 20-cm) mule days plowzone (Peacock 2003:6). 33 square meters were excavated, showing a sandy clay loam Ap horizon and a silty clay loam E, overlying the unexcavated silty clay B horizon (Peacock 2003:8,10). It is believed that the E horizon artifacts arrived there through bioturbation (downward percolation) but that they retain their "relative stratigraphic positions" and that the Ap horizon incorporated any biomantle that accumulated in the 2000 years after site abandonment and truncated the features delineated (Peacock 2003:10, 12). Features 1 and 2 were tree stump or burnout holes. Feature 3 was an irregular 60x40 cm stain, 20 cm deep at its maximum surviving extent. It contained sherds from 10 Middle Woodland vessels and fragments of sandstone. Association with the adjacent postholes is debatable (Peacock 2003:115-18). (Peacock refused to type pottery from the site, but they appear to be Marksville Incised and Stamped (zoned dentate rocker stamped), with two tiny sherds with sand and crushed quartz temper). Features 4, 6 and 7 were roughly circular stains that may be postholes; F6 and F7 had some charcoal flecks in association. Around 20 other postholes ranging from 3 to 16 cm in remnant depth were excavated; they are interpreted as two overlapping structures widely separated in time, but both built using singly set posts and oval ("subrectangular") floor plans (Peacock 2003:18-19, 22).

The majority (86%) of ceramic material from the site was grog tempered, although sand, quartz, claystone, bone, grog and bone, grog and claystone, grog and shell and shell tempered sherds were also identified. Peacock's (2003) argument against the type-variety system will be considered below in the Methods chapter. Illustrated examples indicate that diagnostics recovered were Baytown Plain, Mulberry Creek Cordmarked, Churupa Punctate and Marksville Incised, along with a few Alexander Incised and Punctated sherds (11% of the assemblage was sand tempered, Peacock 2003:26). An unspecified number of Late Woodland-Mississippian triangular arrow points (25 are illustrated, Peacock 2003:Figure 16) were recovered. They are made of Tuscaloosa gravel, Tallahata quartzite and Kosciusko quartzite. The site also produced an assemblage of 12 bifacial microdrills like those Ensor associated with Early Mississippian occupation at the nearby Lubbub Creek site (Peacock 2003:37-38).

From this test excavation we learn that even in the uplands features can be preserved, particularly if the sites were not subjected to mechanized cultivation. Also, note that many tree stains have to be dealt with as possible features, and that some amorphous stains are actually very informative features. Structures are very difficult to interpret from the bases of postholes alone, particularly when the entire wall area is not uncovered. Acid soils significantly limit the recovery of floral and faunal remains, with small amounts of pine charcoal and one fragment of burned bone being recovered (Peacock 2003:41-43). Charcoal sufficient for dating was recovered from two cultural features (F7; Beta-128294, AD 80(235)390 and Posthole 11; Beta-128293, AD 900(1030)1235). Out of 50 g of charcoal recovered, two corn cupules are reported, contributing significantly to interpretation of the later component as "to the author's knowledge, this is the first evidence for prehistoric maize reported from the North Central Hills" (Peacock 2003:43). This indicates that floatation sampling and recovery should be attempted even when carbon densities are very low. Likewise, the small size of the microdrills (averaging 7.2 mm long and 4.8 mm wide; Peacock 2003:38) indicates that finescreen water recovery is desirable for full representation of the lithic assemblage. Some excavations in Louisiana have successfully used 1/8" hardware cloth dry screen to recover flake microdrills (Joe Saunders, Jay Johnson, personal communication).

<u>Site Structure in the Chickasahay Basin</u>. More recent excavations directed by Fields (2003) have demonstrated the potential significance of small, shallow, multicomponent sites. Site 22GN680 was recorded as a small lithic scatter, but phase II testing indicated that postmolds were present. An extensive excavation (130 m excavated in 1x1 units, mostly in contiguous blocks) produced evidence of Early Archaic (Hardaway), Late Archaic-Gulf Formational (stemmed points, Alexander and Wheeler series ceramics) as well as more extensive Middle and Late Woodland occupation. Size grade analysis of recovered materials was analyzed by 10 cm levels, based on the assumption that smaller artifacts migrate downward more readily in sandy soils; this was coupled with contrasts in raw material (Tallahatta quartzite *vs.* Citronelle gravel) to indicate that the Late Archaic-Gulf Formational components were slightly segregated from the later Woodland component(s). Using ethnographic analogies drawn from modern hunter-gatherer studies, the proposed house area (defined by possible postholes) was found to be a void in artifact distribution, because of cleaning of interior living space. Functions of artifact concentrations were interpreted based on the content of the segregated Woodland materials. Site 22GN680 also produced some small pit features and concentrations of burned sandstone, as well as a concentration of acorn, hickory nut and calcined bone fragments interpreted as the drop area around a cooking hearth.

It has been commented on that most multicomponent, shallow sites have been considered not eligible for the NRHP as they have limited potential to provide significant information. This is perhaps the result of a lack of imagination on the part of Phase I investigators. The 22GN680 work shows that a great deal of information about the internal structure of these sites still exists and can be extracted with today's standard field methods. Besides a limited array of radiocarbon dates, the only new or non-standard method used was size grade analysis and this is not exactly a "new" idea. Fields' (2003) Phase III work was an excellent study that should be used as a model for additional investigations in the Pearl River basin. Specifics will be commented on in the final chapter.

Mississippi Period Plaquemine/Natchezan Culture

It seems that the Pearl River valley saw minimal occupation during the Mississippi period (about A.D. 1000-1700). While the Central Valley (from the mouth of the Ohio, at Cairo, to Greenville, or the mouth of the Arkansas) can be considered Mississippian, or at least "Mississippianizing" by AD 750-1250, some areas of the Lower Valley were only "Mississippianized" (in the sense of using shell-tempered pottery) in the colonial period. It may be that the Pearl Valley saw a terminal Woodland Plaquemines/Natchezan culture throughout the Mississippi period.

As discussed above in connection with Peacock's (2003) Winston County (22-Wi-515/516) testing, Mississippian occupation of the North Central Hills appears to have ended around AD 1000, although he found postholes, corn and shell tempered pottery dating ca. AD 1000 in the Noxubee valley. It is generally proposed that the Miller tradition people living in the uplands during the Middle and Late Woodland periods coalesced into the Tombigbee Valley chiefdoms, although Peacock (2003:51) notes that "reasons for the Mississippian abandonment of the North Central Hills remains unclear."

The Old Hoover Settlement Pattern on the Big Black. In the Big Black basin immediately north of this section of the Pearl River valley, Lorenz (1996) has investigated a Mississippian mound site (Old Hoover, 22-Ho-502) and some of the associated hamlets and extraction camps of a ca. AD 1200-1500 occupation. Lorenz' (1996) highly detailed studies have illustrated the presence of Mississippian groups in such interior locations, and include floral/faunal and ceramic studies from a site survey and testing project focusing on Mississippian settlements. A simple chiefdom, consisting of the single mound site and its outlying tributary hamlets, is implied. This stands in contrast to complex and even paramount chiefdoms interpreted for such areas as Winterville and Moundville. One of the Holmes County sites tested was a Big Black bottomland site interpreted as an extraction camp. This seems the most likely use of much of the Pearl floodplain as witnessed by occasional finds of Mississippian (shell-tempered) ceramics.

Blaine Mound Destruction and Data Salvage. In 1998, the only known Mississippi mound in the near vicinity of the project area was destroyed by land clearing activity for an unregulated housing project. MDAH archaeologists had only a few hours to stand and watch the destruction, and to grab a few sherd, bone and charcoal samples. This site, the Blaine Mound (22Hi544) was a multi-stage mound built ca. AD 1000-1400 (cited by Baca 2001; or more probably 1100-1300), over a Mississippian basal midden, and incorporating fill from earlier Coles Creek components. Blain was located on Big Creek in Byram, 3 km above the confluence with Pearl River (Baca 2001:4). The mound was about 5 m high and measured 22 x 25 m at base, and 12 x 15 m on the flat summit, with sides oriented to the cardinal directions and the long axis running north-south. As noted, the mound was built over a midden, which produced the Early Mississippi period diagnostic type Carter Engraved. At least three 1-2 m thick construction stages were evident, separated by burned wood, cane and daub structures that had been covered quickly after burning. Shell tempered Mississippi Plain and fine grog tempered Addis Plain were also recovered. Three radiocarbon dates (Beta-131297, 600 BP+40 or ca. AD 1350; Beta-131298, 950BP+80 or ca. AD 1000: and Beta-131299, 840BP+60 or ca. AD 1110) were obtained from the structure levels (Baca 2001:8). Shell, deer, turkey and turtle bone was also recovered from the submound midden. This was a tragic and unnecessary loss, and not much more can be said about the site besides to note the political implications that it points to: unregulated development consuming ever greater portions of suburban landscapes, lack of cooperation from landowners and developers, the fear of reprisal on the part of interested citizens who thus do not report such destruction, and, not of insignificant importance, the resulting disillusionment and jaded attitudes of regulatory archaeologists.

Baca notes the paucity of Mississippian occupation in the Jackson metropolitan area. Blaine was the northernmost confirmed Mississippian mound in the Pearl valley. The nine Pevey/Mill Creek/Pearl mounds are 85 km south; Lowe-Steen is 70 km south. To the north, Pocahontas mound is 30 km and Old Hoover 95 km, but these are located in the Big Black drainage. The large Yazoo Basin Lake George site is 80 km northwest (Baca 2001:10-11). Baca (2001) discusses the socio-political implications of this distribution, and sides with other researchers who have described the isolated single-mound Mississippian sites as local, two-tier settlement hierarchies, in contrast to complex or paramount chiefdoms of the major river valleys. These single mound sites with their associated farmsteads and work camps seem to represent simple chiefdoms or even still-equalitarian systems with achieved (merit-based) rather than ascribed (inherited) status.

Protohistoric, Colonial and Later Choctaw

The local Mississippians are assumed to be ancestors or otherwise related to the Choctaw and Natchez. There was still Indian occupation in the form of fields noted on the GLO maps 1820-1840. A single indication of late colonial, territorial, or early statehood occupation has been found. This is a pearlware bowl sherd from a 50x50cm test unit at a Hinds County site (not yet delineated). We entertain the possibility that this site represents historic Choctaw occupation.

Galloway (----) has extensively documented the origin of the Choctaw as a confederacy of western (*okla falaya*), eastern (*okla tannap*), and southern (*okla hannali*) parts. These three districts or divisions were defined by the Pearl, Sucarnooche and Chickasawhay drainage basins, with the modern homeland remnant near the dividing ridge separating these main south Mississippi drainage basins. The *okla falaya* originated in the Pearl River basin, and so are of the most importance to this study; however, other parts of the traditional Choctaw territory have received more interest and more extensive investigations. It is in the western division that the relationship of the Choctaw tribal confederacy with Natchezan/Plaquemine and lower Yazoo Basin Muskogeans could be clarified.

Mooney (1992) examined collections from 22-Ck-502, believed to be the colonial town of Chickasawhay, in the southern division and offered evidence that the inhabitants of this town had come from the Alabama-Tombigbee confluence region ca. AD 1700. Besides the historic designation as the "Choctaws of the Prairies" (a name kept after they had lived for generations in the North Central Hills), rim modes and decorated sherds from a 1792 sherd collection have close parallels with the Doctor Lake Insiced type of protohistoric south Alabama. The important nicked rim mode (the so-called "Patlaco Nicked") in particular appears to be associated with southern (*okla hannali*) and eastern (*okla tannap*) division sites, but had not at that time been found on the *okla falaya* western division (Pearl River basin) sites (Mooney 1992:38).

THIS PAGE LEFT INTENTIONALLY BLANK

V. Historic Context for Project Area

A detailed historic context for the City of Jackson has been provided by Daniel Allen and edited by Kristen Kinsella; their work is incorporated in this chapter with additional research conducted by Mary Evelyn Starr. Here some consideration is given to the larger landscape themes in the context of land use and historic period impacts as well as detailing the 19^{th} and early 20^{th} century social and economic history of the project area.

This chapter presents a historical glimpse of settlement patterns, land and water usage, as well as social, political and economic development within the proposed Twin Lakes impact zone. This chapter primarily moves through the development of the study area over four major periods: Settlement (Colonial, territorial and early Statehood), Antebellum, Civil War and Reconstruction, and the Early Modern or New South (Late 19^{th} and Early 20^{th} centuries) periods. The main topics of examination are settlement, land use, transportation, industry, and recreation. The information presented here, which includes documentation of features that already have been destroyed, was intended to assist in the interpretation of historic features reported during the cultural resources survey.

Late Choctaw and Early Anglo/Afro American Settlement

The Mississippi Territory. The 1795 Treaty of San Lorenzo, also known as the Pickney Treaty, established the Pearl River basin as a United States territory. With this treaty, the 31^{st} parallel - running from the Saint Mary's River in Georgia to the Mississippi River - became the boundary between the United States and the Spanish colonial possession in East and West Florida (Moore 1958:13). In 1798, a rectangle, formed by 31° and 32°28' latitude and the Chattahoochee and Mississippi rivers, shaped the Mississippi Territory (Figure 44). The lower Pearl River Valley opened for American settlement in 1805, when the First Choctaw Purchase required that the Choctaw Nation cede a strip of land along the West Florida border to the American government (Skates 1979:80).

The Mississippi Territory and its subsequent enlargement initiated an influx of Early American settlers seeking greater economic opportunities than were available in the established eastern states. Two factors pushed this inflow. First, the agricultural economies of the established eastern states were disrupted by the lack of suitable land for expanding settlement and the decrease in the world market's demand for the pre-Revolutionary War staple crops of tobacco and rice. Second, the wide distribution of plans for Eli Whitney's cotton gin fostered the mass cultivation of an attractive new staple crop. The machine greatly reduced the costs of cleaning cotton and made its production profitable. English cotton markets grew rapidly; and the optimal climate and soils of the territory supported this growth, which generated waves of Early American settlers seeking to establish such plantations. Choctaw women, some assisted by black slaves, were producing small amounts of cotton for home use prior to the arrival of Eastern settlers. By 1830, cotton was the principal cash crop in Mississippi (Moore 1958:13; Lowery 1968).

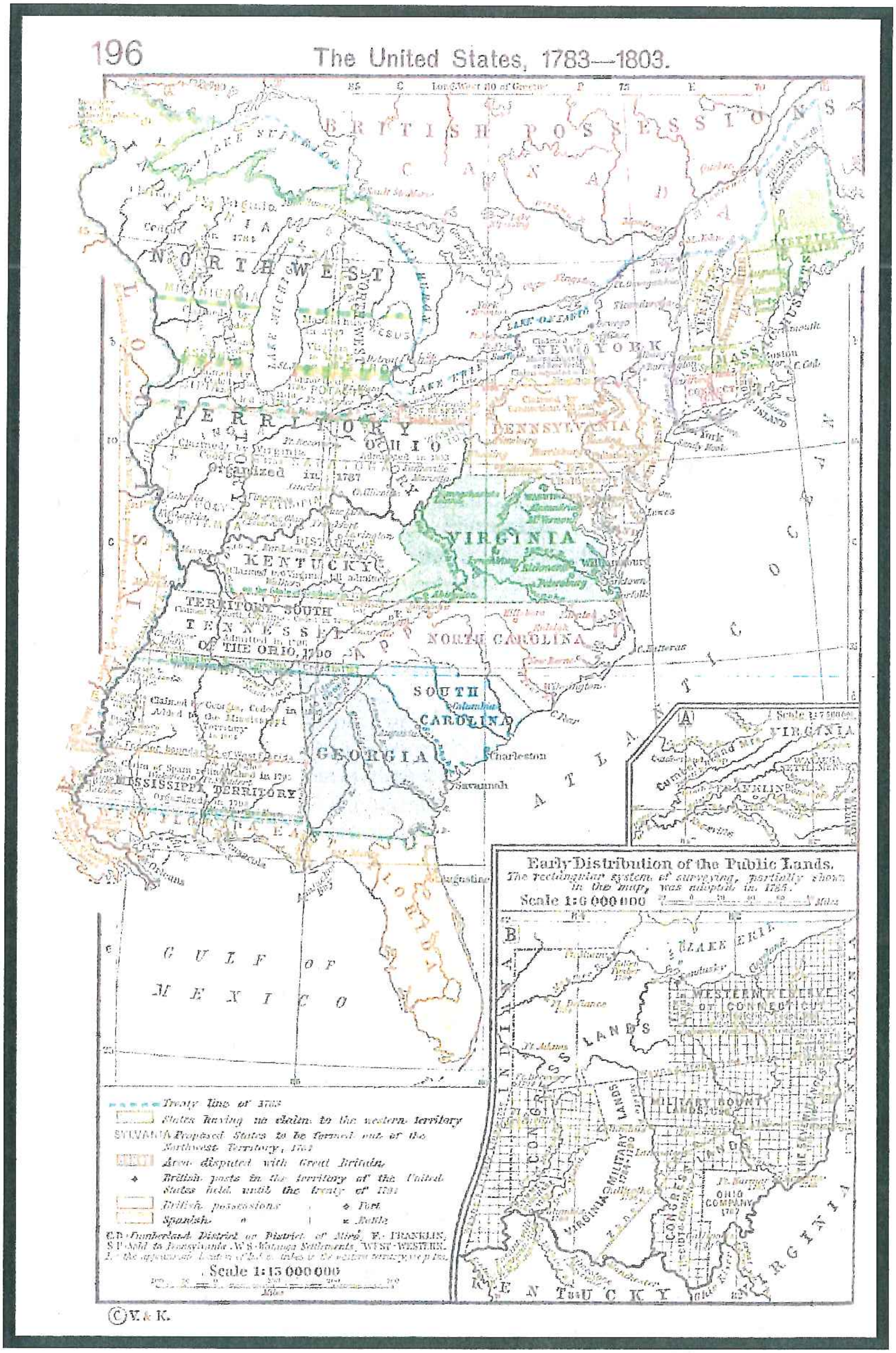


Figure 44. Mississippi Territory, 1783-1803 **(Courtesy of the University of Texas Libraries, University of Texas at Austin website: http://www.lib.utexas.edu/maps/histus.html)**

Although the Mississippi Territory (Figure 45) eventually comprised all the land area in the states of Mississippi and Alabama, the actual land available for settlement was located in its eastern and western peripheries. Settlement was concentrated along established river migration routes in eastern Alabama and the river counties along the Mississippi River. Native American land in the interior remained off-limits to Early American settlement (Lowery 1968). Following the War of 1812, as more Choctaw land opened for settlement, immigration into the Mississippi Territory increased rapidly. Additional thoroughfares such as the east-west Three Notch Road, increased settlement by providing efficient immigration routes.

On December 10, 1817, the Mississippi Territory was divided when the Union admitted the territory's western half as the state of Mississippi. The eastern portion of the Territory became Alabama (Skates 1979:74-75). At the time of admission to statehood, Mississippi had two major areas of Euro/Afro-American settlement: the Natchez District (formerly administered with French and Spanish Louisiana) along the Mississippi River and the Piney Woods section (principally in old British West Florida) across the southernmost part of the state. The Natchez District was more prosperous because its alluvial and loess soils and river transportation facilities made it an ideal cotton producing area (Fortune 1973:250-251). Migration into the Piney Woods district lagged because its soils were too poor to support a cotton-based economy. However, in places favorable for cotton production, cotton growers did settle along the lower Pearl and Pascagoula rivers. Cattle raisers ran livestock on the native grasses and cane of the open forest undergrowth (Fortune 1973:250-251; Mississippi Department of Agriculture and Commerce 1985:2; Lowery 1968). The rest of the land in Mississippi was closed to new settlement, as it remained under the ownership of the Choctaw and Chickasaw nations.

Choctaw Cessions. As the Natchez District filled, and the cotton economy expanded, Americans pushed further into Choctaw land. This led to increased conflict and some extralegal settlement in Choctaw Territory. Typically, relations were friendly; yet, this escalating encroachment by the American settlers would ultimately lead to disharmony (Fortune 1973:259-260). In 1820, the Federal government appointed General Andrew Jackson and General Thomas Hinds to negotiate the surrender of further Choctaw land in the state. This "concession" demanded that the tribe relocate to land west of the Mississippi River. Though they first refused to yield, on October 18, 1820, the Choctaw signed the Treaty of Doak's Stand. In this treaty the Choctaw Nation agreed to exchange one-third of their Mississippi territory - approximately five and one-half million acres - for thirteen million acres in Arkansas. The area ceded at Doak's Stand was called the Choctaw District. However, the land promised in this treaty to the Choctaw Nation by the United States was already occupied by and contested among the native Osage and immigrant Cherokee, and the terms could not be executed. Nevertheless, on February 12, 1821, the new Anglo settlers organized the entire Choctaw District as Hinds County. At approximately one-sixth of the state's present land area, this expanse opened the study area to early American settlement. The borders extended from the eastern boundary of the Natchez District and the Mississippi River, in the west, to the present eastern border of Rankin County (Figure 46). Included are all of present-day Hinds and Rankin counties together with part of Madison County (McCain 1953:4). This region, which is drained by the Yazoo,

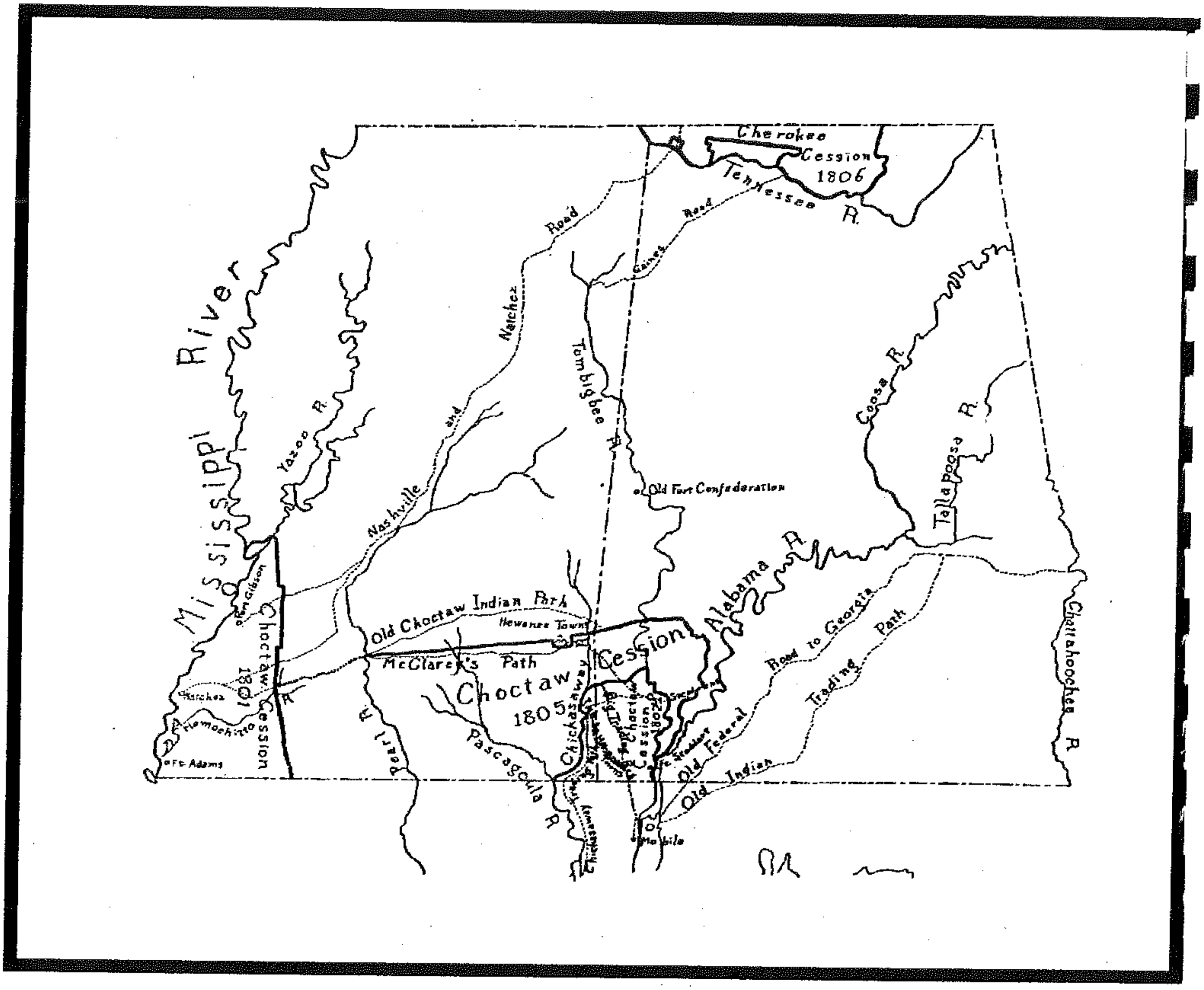


Figure 45. Initial settlement of Mississippi, ca. 1810 (Cotterill 1930).

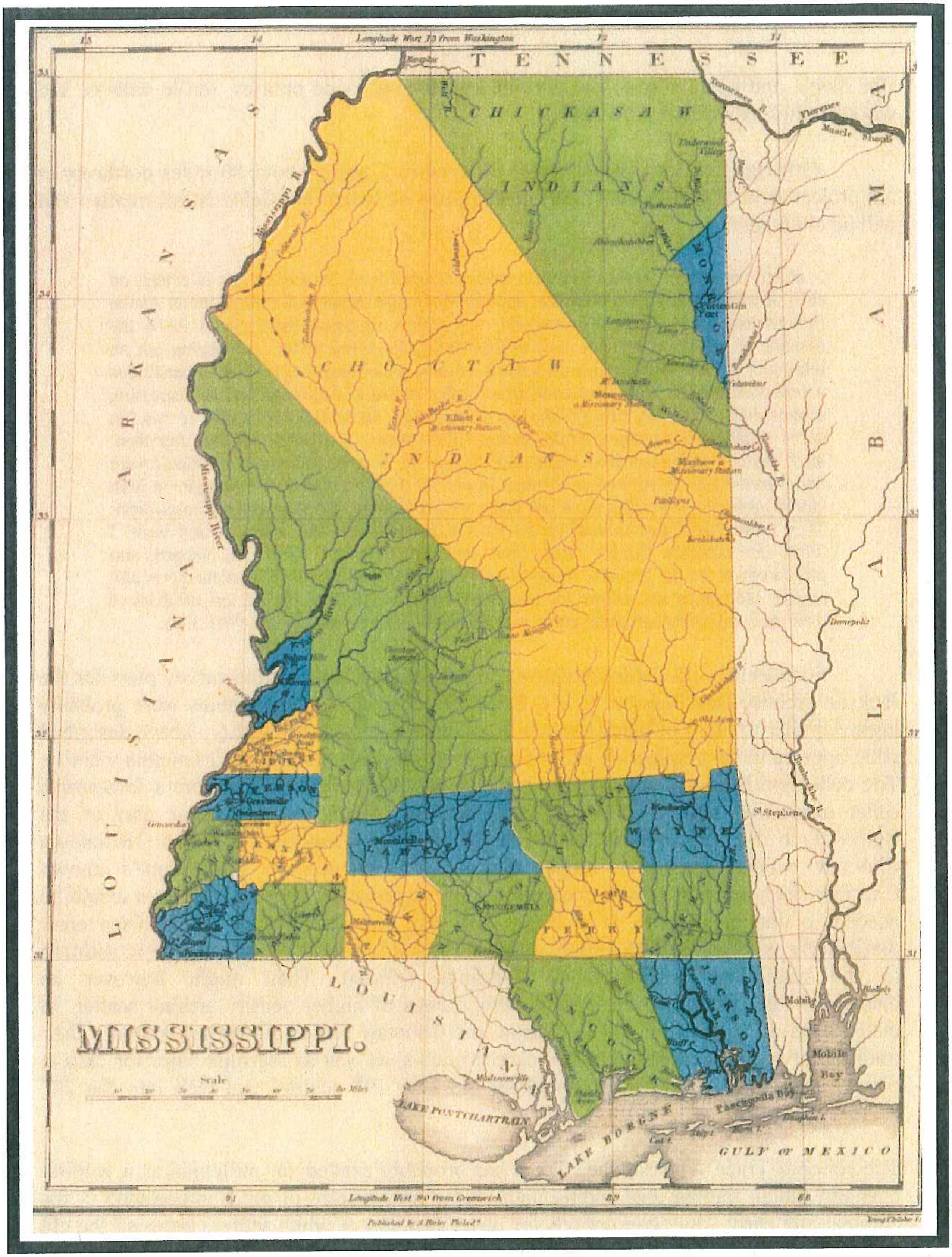


Figure 46. Mississippi, 1822 (Courtesy of Mississippi Digital Map Library maintained by Mary Hetrick at http://www.rootsweb.com/~usgenweb/maps/mississippi/)

Big Black, and Pearl rivers, was described as having "wide prairies, fertile valleys, and wooded hills" (Rowland 1976:868)

Although her descriptions apply to Kemper County, about 80 miles northeast of the project area, Welsh's (1901:350) descriptions of Indian old fields is informative and will be cited here:

> …dotted about over this section were spaces of open land, an acre or less in extent, on each of which was to be found what appeared to be the remains of a burnt cabin. As the Indians had been so recently removed, the settlers supposed these places to be the remains of Indian settlements. The negros heard this talked about, and having got an inkling of the fact that the Indians left the country rather unwillingly, their superstitious nature was aroused. They often came from work with wonderful reports of the distressing sounds they heard proceeding from these places either in the field or nearby. It was "de goses of dem Injuns mounin for dey homes." It is safe to say, if labor had been free then, those fields would never have been cultivated by the negros. Although the Indians were not citizens they constituted an element in our pioneer life that cannot be ignored with strickt justice. It is a well known fact that a remnant of the Choctaws refused to go west. They retired from that immediate section [Wahalak/Suaqualak] however, and went, I think, into Neshoba County. They came into the settlement every fall, camped, and picked cotton for the farmers. At other seasons they brought venison, baskets, bows and arrows, blow-guns and arrows for sale. They were so harmless that we lost all fears of their race and welcomed each return as a pleasurable excitement (Welsh 1901:350).

Such Indian old fields are shown on the General Land Office survey plats for the Jackson vicinity (see Figures 13,14). Early 19th century Choctaw cabins were probably highly similar to those of black and white settlers. Starr and Mainfort (---) have described what appears to be a collection of artifacts from one such cabin in the Memphis vicinity. The collection is poorly documented but it seems likely that it came from a fore-hearth cellar associated with a mud-and-stick chimney. Arson was a regular part of the Removal, to discourage those being forced out from attempting to return. No known Choctaw cabins have been archaeologically documented on Mississippi's known Choctaw sites; extensive block excavation of these generally very shallow sites would be needed to document them. It is likely that very few features would be discovered, particularly as these were apparently often horizontal log houses rather than or in addition to the traditional post-in-ground buildings (*chuka*). They might however be distinguishable as artifact clean areas within areas of higher density artifact scatter. In many areas of Mississippi and Louisiana, the Choctaw served as market hunters. Their tradition of selling baskets and other cane products, as well as seasonal labor for cash at cotton-picking time, continued thoughout the later 19th century and well into the 20th century.

<u>The Natchez Trace</u>. The Natchez Trace has propably existed for millennia as a wildlife trail and Indian trading and raiding path, and it was briefly of great importance in the colonial and early American periods for the infiltration of white settlers between the old Louisiana colony, including Natchez, in the old Southwest from the new American settlements in the central basins of Tennessee and Kentucky and along the banks of the Ohio River. When Spain was ceded Louisiana in 1765, there were 8000 settlers on the

lower Mississippi, Red and Arkansas rivers; Anglo-Americans from North Carolina and Virginia had established farms elsewhere in the Mississippi watershed and thus needed to market their agricultural surplus to the downstream plantations. These late 18th century settlers made their first expeditions by flatboat to New Orleans and latterly to the first settlement encountered downstream, Natchez. In 1785, Spanish Governor Miro asked for instructions concerning men from Ft. Pitt who wanted to sell flour at the Natchez landing. In 1787, a duty of 25% was imposed, but it was reduced to 15% in 1788 (Phelps 1962). In 1790, 64 flatboats came down from Pennsylvania, Virginia, and Kentucky, and around 240 men walked back up the path through the Choctaw and Chickasaw nations.

By 1810, eight or ten thousand American men a year used the old Indian trail to return to the Ohio valley by foot (Phelps 1962). They traveled in small companies, some buying Opelousas ponies to carry their sparse camp gear and mercantile purchases. The boatmen are described as bearded and sunburned, with satchels and old blankets over their greasy and tattered canvas shirts and pants, perhaps to be expected after a year in the backwoods and a trip down the Mississippi in a crude timber barge. They waded and swam rivers and feared for robbers who waited to take their earnings and perhaps their lives. The first of the diary-keeping Methodist circuit riders to penetrate this section of Mississippi, Tobias Gibson, left his impressions of the Natchez Trace during three round trips in 1799, followed in the next five years by Lorenzo Dow and various Presbyterians and Baptists who also made their wry and sometimes uncomplimentary comments on the food, service and accommodations obtained from Americans stand keepers with Indian wives (Phelps 1949, 1962). Stands (licensed backwoods stations offering accommodation to travelers) pertinent to this project vicinity besides that of the Choctaw Agency and store (22-Md-645, near Mile 100-101 on the Natchez Trace) were Dean's Stand (Mile 73-74) and Osburn's (or Osbornes's) Stand (22-Hi-680, Miles 93-94). Atkinson (1992:66-69) considered the Osburn's Stand arcaheological site to be significant. This site in a bodoc grove produced English and Choctaw pottery as well as a cistern that may be associated with the 1950s China Grove Church.

Anticipating the needs that would accompany the growth in traffic, in 1801 the U.S. government called the Choctaws and Chickasaws to meetings to discuss obtaining a right-of-way through their lands. The distances traversed were about the same, but the Choctaws got a much more substantial settlement than the Chickasaws. The Choctaw payment was $2000 in goods, whereas that of the Chickasaws was $700. In addition to three sets of blacksmith tools, hoes, axes, saws, augers, and wedges, the Choctaws were to receive a wheelwright/smithing provider and instructor, as well as cotton gin and cards an Anglo woman to teach spinning and weaving and (Jamison 1939:88-89). These trades teachers (Mary Nail, Robert Ross, William Swain, James Stanly, and Edward Mitchell in 1814) were located at U.S. Indian agent Silas Dinsmoor's Choctaw agency (22-Md-645). NPS copies of initial land survey show the cleared field of the Choctaw Agency extending to the west end of this project area, across a creek in the south-center of Section 24. Atkinson's (1992) investigations recovered diagnostic early 19th century ceramics as well as Native American (Fatherland Incised, Addis Plain, Kemper Combed) ceramics at Old Agency site. He identified the cellar of the brick agency house, which was subsequently investigated in detail by the Cobb Institute of Archaeology, resulting in a large collection from a unique early historic site (O'Hear et al. 2000).The Chickasaws in contrast received 10 rifles, lead, powder, flints, hoes, knives, 100 shirts, 40 blankets, and various other cloth, and some tobacco and whiskey. Both nations reserved the right to provide services (guides, stands and ferries), but did allow the stationing of a troop of 24 men under a lieutenant on the Tennessee River to serve as law enforcement to protect travelers from the generally white marauders (Jamison 1939:91).

The Natchez Trace had many names in this period: it was an extension of the Cumberland Road, and was the Nashville-Natchez mail road. In 1806 Congress appropriated $6000 for improvements to the road, and advertised for bids for a 20 ft wide clearing with corduroy causeways through swamps and bridges over streams. However, there was no provision for follow-up maintenance, and by 1811 the trail was in poor shape, which worsened during the 1812-1815 Anglo-American war, particularly due to military use in 1814 (Phelps 1962). However, by 1820, there were 20 stands or inns, run by Anglo-Indian families, offering a somewhat improved degree of safety and hospitality to the new class of travelers, largely settlers, some with slave gangs. Congress had made it a monthly mounted mail route in 1800, bimonthly in 1802, biweekly in 1814, and three times a week in 1816 (Phelps 1962) and some work had been done to improve it as a wagon road, but soon after the first steamboats appeared on western waters in 1804, the northern farmers began returning by water. The New Orleans made its first call in Natchez in 1812 on its way down from its stays in Pittsburg. By 1820, the trace was no longer needed as the Boatmen's Road.

Colonial, Territorial & Early Statehood

Congress passed an act in 1803 to regulate grants and sales of land in the Mississippi territory. The process would be complicated by the many, often conflicting, claims based on British and Spanish colonial grants as well grants in what Georgia had proclaimed "Bourbon County." In addition, there were the actual settlers on the land, squatters, many who had arrived before 1798. These were to be given title to a section of land. Those arriving after 1798 were given percentum rights to purchase the lands they had occupied. Until the Spanish, British and Georgia claims could be settled, no sales could be made. There were 300 British claims to a quarter million acres, but most had not been perfected by settlement and cultivation. After giving time for the submission of these titles after the Treaty of 1783, the Spanish began re-granting these lands to others.

The Spanish grantees were equally lax in perfection of titles. An Act of 1812 would confirm the claims, up to 640 acres, of all British & Spanish grantees who were actually resident by the Treaty of San Lorenzo. The Act also confirmed claims to 100,000 acres to actual settlers without grants; so that by the time sales began, a half million acres, the best lands available in the Mississippi Territory had been disposed of. Additional cessions from the Choctaw and Cherokee were obtained, and land surveyors were at work. The 1803 Act had also established two land offices, these would be St. Stephens on the Tombigbee for land east of the Pearl and Washington near Natchez for land west of the Pearl.

In 1807, land sales began. The results were rather disappointing. 1807 sales were under 75,000 acres and 1808 sales were 18,000 acres. Almost no sales were made east of the Pearl where most of the squatters had located; they anticipated Congress eventually granting their lands free. 1808 was an economic depression year. 1809 sales were 87,000 acres, and included lands opened in the new Choctaw Cession of 1805, entered at Washington. Sales continued to be low at St. Stephens. No sales were made east of the Pearl in 1810 or 1811. The last year of sales before the outbreak of war, 1812, saw a great increase, with 145,000 acres in Mississippi territory being entered, and a considerable migration was underway particularly into the Mobile and upper Tombigbee regions. This was aided by the opening of a new federal road from Georgia through the Creek country (soon to be closed by Creek Alliance with Britian in the 1812-15 War) and the improvement of the Old McClary Path from Natchez to St. Stephens as the Three-Notch Road. The total of pre-war land sales in Mississippi was ½ million acres, equivalent to the amount confirmed as prior perfected grants or grant less preemption; an estimated 3,500 families many or most of them planters comprised mostly of slaves, had arrived. The low sales in Mississippi are attributed at least in part to competition with 20¢ for 400 acre tracts available in Kentucky, the Georiga Lottery sales at 6-8¢ per acre and the filling of Tennessee by holders of North Carolina military warrants for service in the Revolution (Cotterill 1930: 495-506).

Antebellum History of Hinds, Madison and Rankin Counties

The first of Mississippi's booms or "flush times" saw the overnight creation of platted towns such as Jackson and Richmond (an extinct Hinds County town discussed below), a steady increase in population and a great deal of speculation centered on the government land offices (Figure 47). All of this was largely funded by credit and by state and railroad banks. The rapid influx of Anglo- and Afro-Americans from the old states as well as from within other parts of the Old Southwest continued until the collapse of cotton prices and land speculation caused by the Jackson Administration's anti-inflationary Specie Circular of 1836. Subsequently, the Panic of 1837 broke out and a ten-year economic depression followed (Moore 1958:71-72).

> I believe, that our western land sales were at the same time the cause, as well as the *nucleus*, of much reckless speculation, in which *bona fide* settlers could not participate, and which was managed and governed by gambling traders from all quarters of the United States. The State banks of the time, managed as they then were, furnished the food in this headlong race after fortune. Without a further waste of words, we have here the cause and the course of some of the most remarkable events in the private financial history of our people in the West. No land sales presented a higher degree of excitement, or more gigantic schemes of speculation, than in Mississippi. No State plunged with a bolder leap into the corrupt banking system of the times, and nowhere did more disastrous consequences follow in the train of either. The monopoly of large bodies of the public lands in the hands of a few, to the excluion of the great mass of the people, and the profits of gambling, instead of the regular returns of honest industry, were the legitimate results of the one and the other. In the crash of 1836, 7, 8, and 9, an almost universal bankruptcy ensued amongst us, and some of the finest portions of Mississippi became partially depopulated. Then, in the breaking up of our miderable banking system, many unhappy consequences followed, the baleful effects of which have pursued the

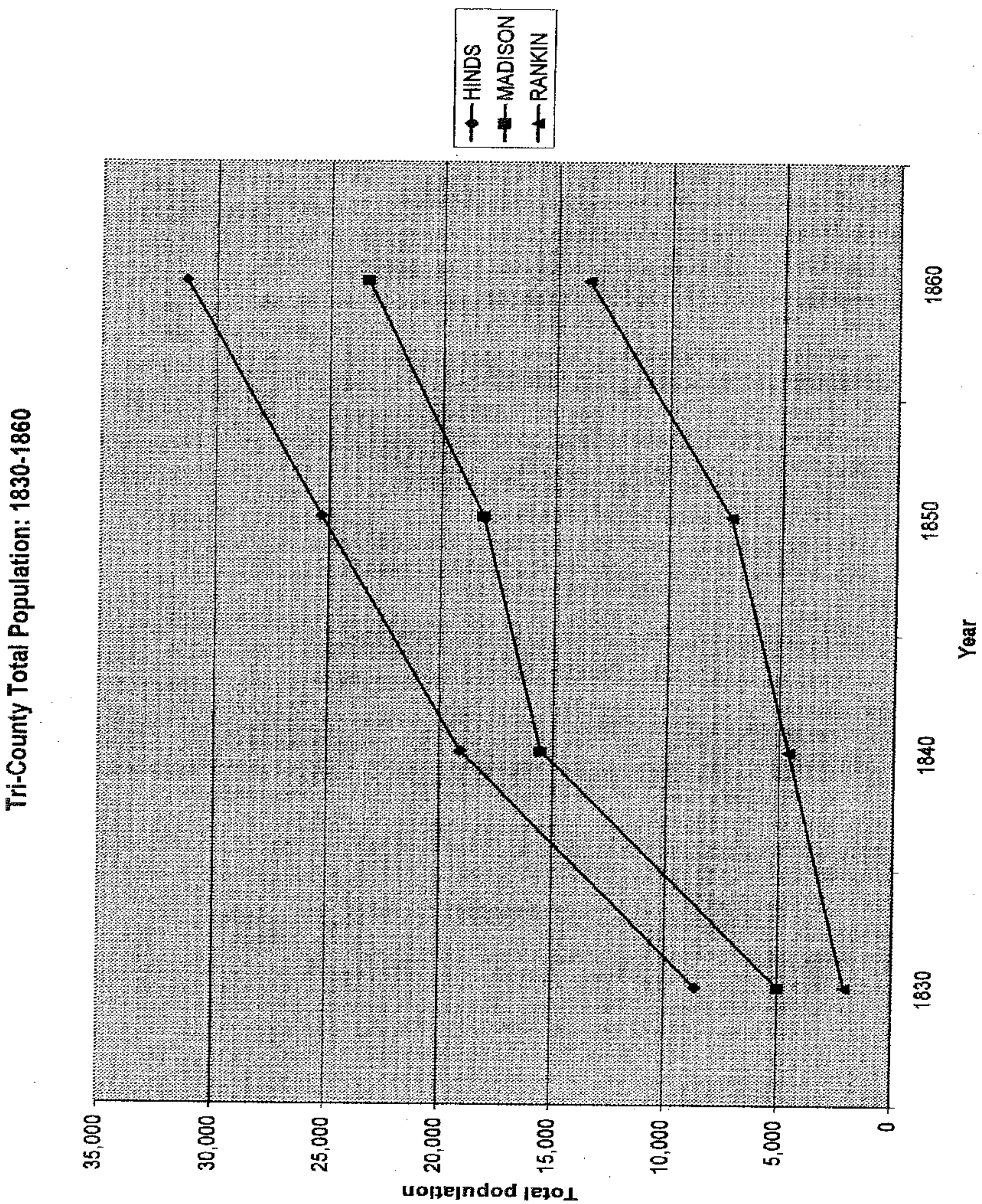


Figure 47. Tri-county population graph 1830-1860

State, kept down its natural growth and prosperity, and are yet seen, and daily felt, in our courts of justice and our halls of legislation

> They have greatly impeded our increase in population; turned away from us the goodly tide of eastern emigration, and thus crippled the revenue, resources, and power of the State. In speculative schemes, the agricultural interests have been grievously neglected, and, in its infancy, our rich virgin soil has been squandered and exhausted.
>
> Lastly, from peculiar causes, the confidence of our sister States in our general policy and system of laws, was entirely destroyed. But a great change has taken place. The old Regime of Mississippi has passed away, and better times, I hope, are ahead of us. Our lands are now in the hands of earnest cultivators. The banking system is no more (DeBow 1847:39).

When the 1837-1847 Atlantic trading system depression ended speculative development, quieter times followed until major land speculation and economic growth not resuming until the next economic boom in the later 1840s and 1850s. Land, slave and commodity prices climbed rapidly in the decade before the outbreak of the Civil War. These are the brief years of the stereotypical or mythical Southern cotton plantation of elaborate mansions managed by cultured house slaves and vast expanses tended by large gangs of field slaves houses in "quarters." This was still a credit-dependent form of agriculture. The wealth generated by these plantations permitted the development of a literary and hospitality culture by a small but wealthy minority, while life for most white settlers remained little changed from that of the previous generation. The arrival of railroads, the establishment of stage lines and seasonal steamboat transport alleviated some of the hardships of life, such as annual oxcart trips to the coastal towns, and provided easier access to a wider range of manufactured goods for those who could afford them. We have no evidence that such plantations existed in the project area, but an extensive land records search was not made to verify this.

<u>Hinds County</u>. Hinds County was formed in 1821, when the site of Jackson was selected for the new state capitol. Soon thereafter, Yazoo, Rankin and Copiah counties were formed from Hinds. By 1829, the present boundaries were established and Raymond was selected as the county seat. The location was determined after the center of the county had been determined and marked by a large stone. Raymond was selected as the county seat because it was near the geographic center of the county. The 1828 log jail was replaced with a stone building in 1858 with rock quarried from Mississippi Springs (Brieger 1980:258). The town had educational facilities and churches as well as trading activities for county plantations before the civil war, and still has antebellum structures, including the Court House. It is also the hub of historic roads. By the 20th century, and probably by the establishment of plantations in the antebellum period, the Natchez Trace had ceased to have any expression in the local road network, being superceded by the YMV railroad and the county and state road systems.

Thirty years before the Civil War, Hinds County had firmly established commercial agriculture. Farms and plantations were moneymaking operations, many with little or no subsistence farming and marginal diversity in crops. Increased income came from increasing the amount of acreage under cultivation, and no attempt was made to increase per acre yields. Instead, landowners practiced extensive exploitative agricultural practices. It took the Panic of 1837 and the ensuing the ten-year depression to force them to explore other less destructive methods (Moore 1958:37).

The Alabama and Vicksburg railroad reached Hinds County in 1840. Prior to this time, the Big Black provided the main transport for cotton leaving the County. Kocher and Goodman (1918:9) state that the county was prosperous before the Civil War with many well-improved plantations in the uplands, and much of the bottom land under cultivation. Soil exhaustion was an early problem on erosion-prone, less fertile upland soil, resulting in shifting cultivation and large areas becoming rough open-range cattle and hog pasture, while bottomland plantations retained the same fields in cultivation until at least the early 20th century.

Le Fleur's Bluff and the Selection of the Capitol. While the Treaty of Doak's Stand was being negotiated, sectional disputes over the location of a new state capital came to a head between the people of the River Counties and those of the newly settled area. The River Counties wanted the capital in Washington, near Natchez. Piney Woods settlers were concerned about the undue political influence of the River Counties and wanted the capital closer to the center of the state. They argued for the capitol to be located at Columbia, on the Pearl River. Though Columbia was not chosen as the site, the government decided to pursue a central location for its capital (McCain 1953:4; Skates 1979:76).

The Legislature appointed Thomas Hinds to lead the capital-site selection commission. James Patton and William Lattimore joined the commission; and Middleton Mackay, a Madison County local, served as their interpreter and guide. Given that it was required that the site be located close to the center of the state, and adjacent to a navigable waterway, they began at the Choctaw Agency in Madison County. Hinds and his men surveyed several sites along the Big Black and Pearl rivers. They moved southwest until they "returned" to LeFluer's Bluff on the Pearl River. Despite the fact that it was more than thirty miles from the center of the state, this site was located on a navigable river and situated above its highest flood levels. Once the homestead and trading post of Louis Le Flore, French-Canadian boatman and Choctaw by marriage, Le Fleur's Bluff had a dependable water supply, nearby fertile agricultural soils, substantial timber, and access to the Natchez Trace.

According to the commissioners, it appeared that the site was already inhabited and well known. Hinds and his men noted that a keelboat had gone up beyond the bluff several times. They were shown limestone deposits by a bricklayer and another person informed them of some creekside mill sites (Brinson 1977). Field notes from a survey of the Pearl River conducted by Henry Washington in 1821 identified the Bluff and noted that it was "eminently suitable for a town" (Figure 47). One of the first acts of the legislature was to give a land warrant to Henry Bone who erected the first manufacturing plant in the study area: a tan yard within the boundaries of the town site (Brinson 1977:27-45.) The Commission recommended the site; it was eventually accepted by the Legislature, and became the permanent seat on November 28, 1821 (McCain 1953; Claiborne 1907).

The Hinds commission recommended the eastern half of sections 3 and 10 and the western half of Sections 2 and 11, Township 5 North, Range 1 East for the capitol (Lowery and McCardle 1978: 617). The United States Government granted the State these two sections of land. Peter Van Dorn was assigned the task of laying out the town. To chart the uplands overlooking the Pearl River, Dorn used a checkerboard pattern intended to have buildings interspersed with parks (Figure 48). LeFleur's Bluff was renamed Jackson in honor of Andrew Jackson; and Dorn's plan for the city is still visible today (McCain 1953). James Smith of Jackson laid out the earliest map of Jackson in 1845. It was based on Van Dorn's layout for Jackson from 1922 (MDAH files) (Figure 49).

The location known as LeFleur's Bluff apparently lies between the Woodrow Wilson Bridge and the old Alabama and Vicksburg (later ICG, now BNSF) railroad bridge (Figure 50). The MDAH architectural file for Jackson (049-JAC-0743) notes that the most likely location for LeFleur's post was the "corner at west side of the Woodrow Wilson Bridge at Jefferson Street" and that this French-Canadian settler established his trading post here before 1800 and that he lived here until 1812. The location continued to be known after Louis LeFleur until the time of initial land surveys associated with the platting of the state capitol. This is also the site of the mid to late 19th century Enoch's sawmill and lumber yard, so any traces of early 19th century occupation have probably been thoroughly disturbed. Likewise, while the present Pearl River meander belt appears to be remarkably stable, the bluff is a prime location for landward cutting and indeed the 1821 survey plat (see Figures 13, 14) may indicate slight cutting along this bankline. Any occupation associated with the colonial era in the 10-acre area bounded by Silas Brown, Commerce and McNutt streets has probably been destroyed by the extensive later 19th and 20th century industrial development to be discussed below (Brinson 1977).

Madison County. On January 29, 1828, from Yazoo County land east of the Yazoo River, Madison County was organized (Long and Sinks:126; Lowery and McCardle 1978). According to the Madison County Sheriff's Office files (2002), in 1829, additional land from Northern Hinds County was added to Madison County. A comparison of the number of place names and land warrants taken out between 1826 and 1830 in Township 7, Range 2 East suggests that the Pearl River basin of the southern part of the county was not as densely settled as the Big Black River basin. The original survey of Madison County in 1837 divides land bordered to the east by the Pearl River and to the west by the Big Black River into 5 districts (Figure 51) (Meade 1987: 43). In the 1850s, Madison Station, now the town of Madison, was formed by railroad-seeking merchants from the nearby town, Madisonville (Meade 1987:19) (Table 5).

Table 5. Known Antebellum Estates near Madison Station (Dean nd).

Name of Place	Acerage	Location
Hanna	1400	S 1, 6,7,8 T7R1E
Lee	400	14, 15, 22
Owen	403	3, 10
Prairie Plantation	560	3, 10

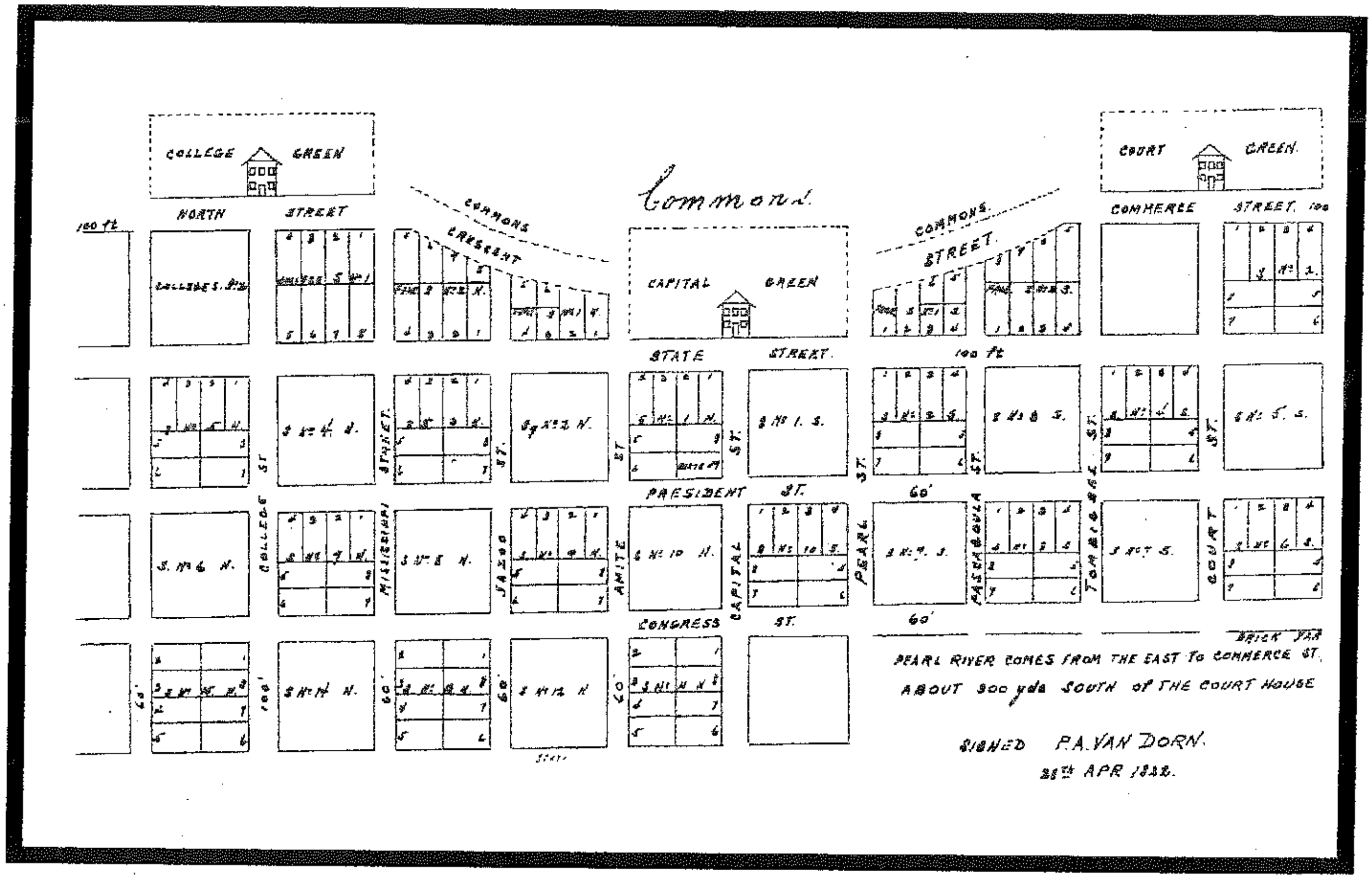


Figure 48. Van Dorn 1822 plat for Jackson (MDAH files).

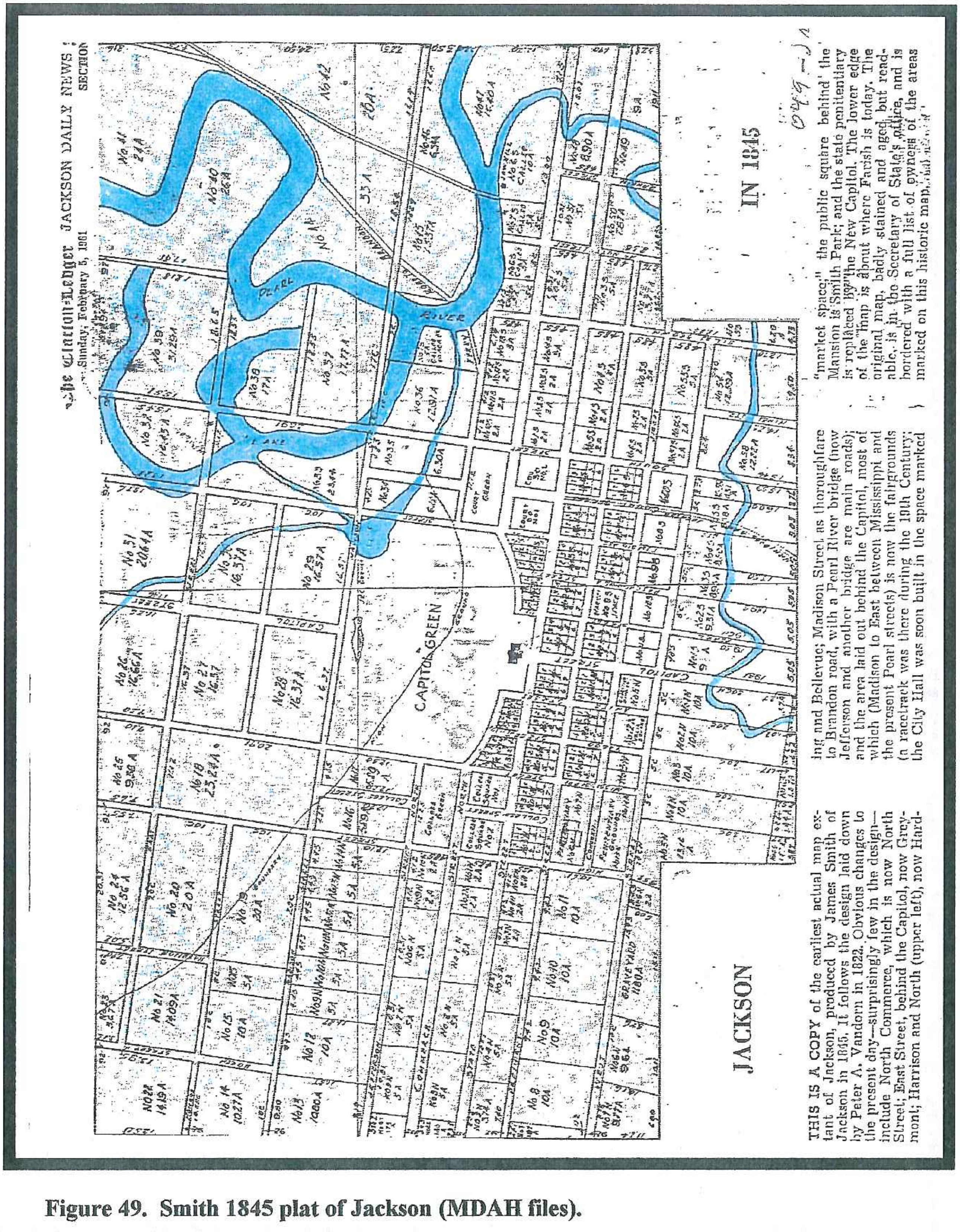
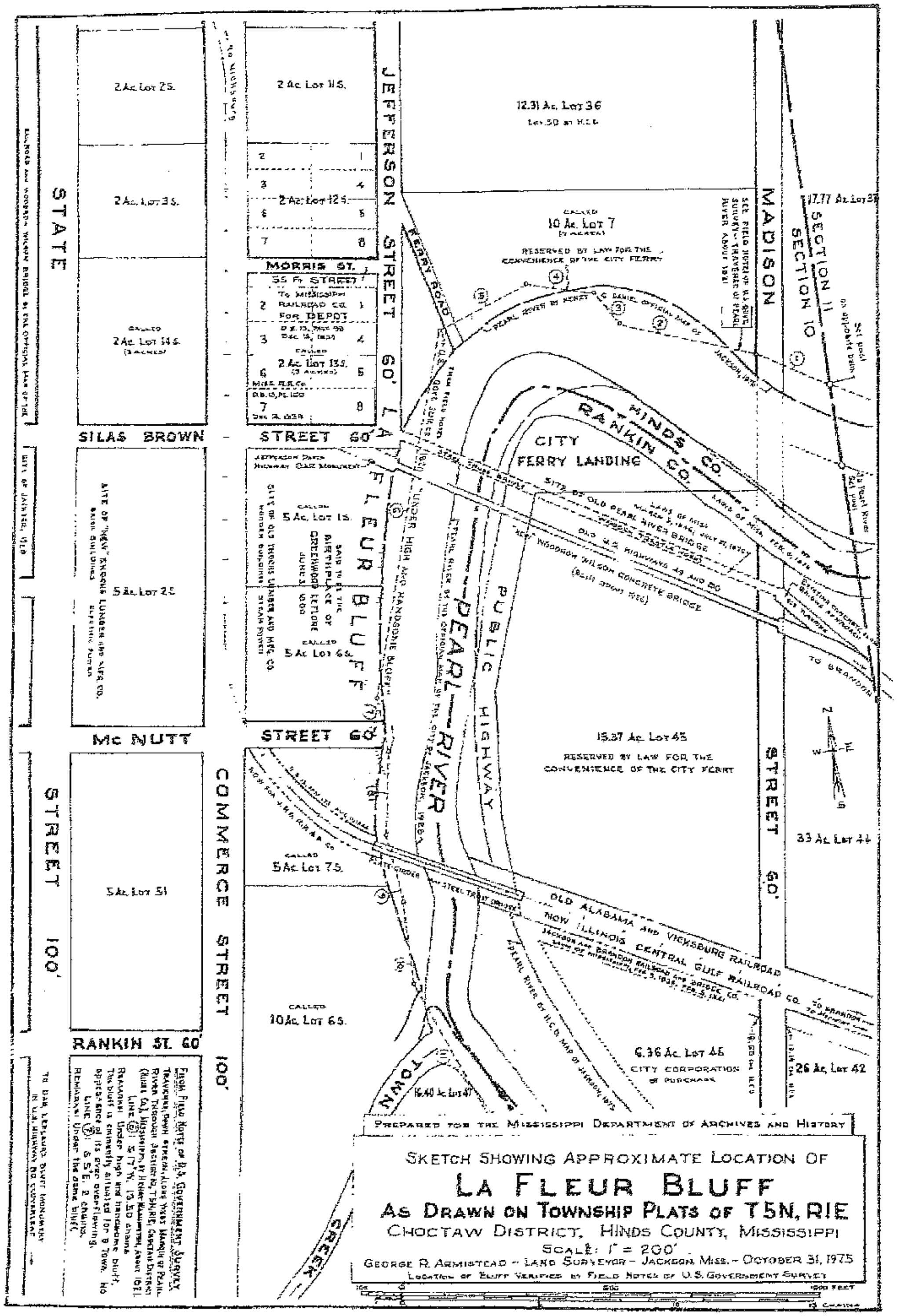


Figure 49. Smith 1845 plat of Jackson (MDAH files).



Here is another reconstructed map of "La Fleur Bluff" from field notes of a U. S. Government Survey made by Henry Washington about 1821. Note that later streets, railroads and bridges of this part of Jackson have been superimposed on the original map. (Map courtesy of George R. Armistead, land surveyor, and Mississippi Department of Archives and History).

Figure 50. Location of La Fleur's Bluff at south end of Jefferson Street (MDAH files).

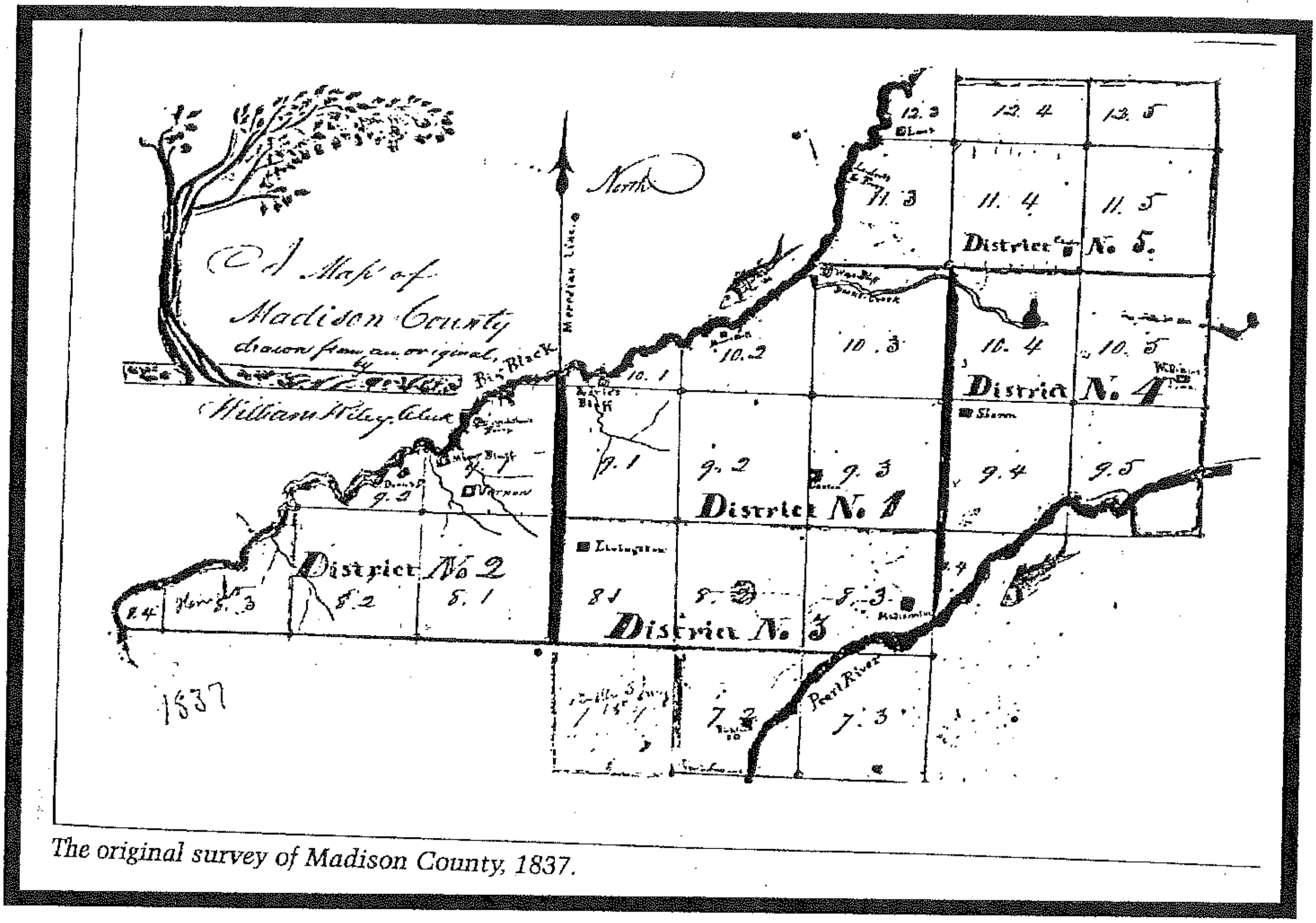


Figure 51. Original combines plat of Madison County 1837 (Meade 1987: 43).

Rankin County. Even while the Choctaw still occupied lands east of the Pearl River south of their present reservation, American settlements were being established east of the Pearl during the antebellum period. This land was organized into Rankin County on February 4, 1828 from the original Hinds County. The Pearl River served as Rankin County's western border while the Choctaw District boundary line was its eastern border. Many Choctaw people remained in the area until after the September 27, 1830 signing the Treaty of Dancing Rabbit Creek, which required those not claiming homesteads and accepting state legal jurisdiction to relocate west of the Mississippi River. The U.S. government promised the Choctaw protection if they re-settled in present-day Oklahoma, then termed "Indian Territory."

The earliest known Anglo-American settlement in Rankin County was at Stewart's Bluff, later known as the town of Richmond, approximately five miles south of Jackson in the vicinity of today's Richland. This extinct townsite lies immediately downstream from the proposed dam site. In April 1830, Charles E. and Elizabeth Stewart sold 80 acres in the NW ¼ Section 3, Township 4 North, Range 1 East to John Long, Jr.; this evidently was the townsite (Rankin County Historical Society VI:88). A ferry was established here; and in October 1829, roads were built from the settlement to the south and east. Started by John Long and his partners, Richmond – officially named in 1832 – had a population of 300 people at its height. By 1902, Richmond was under cultivation and all that remained were a pine tar kiln, a few chimneys, and the cut down to the river that had served as the ferry landing (Rankin County Historical Society 1984:86-88; Ridley 1902:517). After 1829, when the county seat of Brandon was established, Richmond's population remained stagnant. Brandon was located at a "center for Indian activities," near the north-south and east-west Native American trails junction. This trail system, which had led to various Choctaw villages, was improved for wagon traffic and served as the foundation for the county's early road network (Rankin County Historical Society 1984:10-11, 17). Another early settlement, characterized as a farming, rather than plantation area, existed near present-day Flowood and Pearl (Rankin County Historical Society 1984:21; Muffuletto 1998:10-11).

In the 1830 census, the old, larger Rankin County had 1,695 whites and 386 blacks (Rankin County Historical Society 1944:17), indicating that the area was already passing beyond frontier status before the Choctaw land sessions. The 1850 census lists the county as having 2 sawmills, 2 blacksmiths, and a gristmill, serving a population of 7,227 (Rankin County Historical Society 1944:115). By the time of the Civil War, Rankin County had brick-makers, rock quarries, Yost's lime kiln, and a salt works on Steen's Creek (Rankin County Historical society:117). Clay may have also been mined in the 19th century (Rankin County Historical Society 1944:118). The area, like most of the Middle and Lower South, experienced periodic yellow fever epidemics in the mid 19th century, with one of the county's worst in 1854 (Rankin County Historical Society 1944:259).

Antebellum Agriculture. The early American settlers moving into the Choctaw District who intended to farm had two fundamental location requirements. First, soils needed to be fertile enough for cotton. Second, the water supply had to be plentiful, easily accessible, and suitable for navigation (USDA 1926:4; Moore 1958:27). Though it would be a less prolific cotton producer than the Big Black River basin, the Pearl River basin still met both criteria (USDA 1917:10; USDA 1918:7; Muffuletto 1998:10-11; Bullard 2000:1). Thus, farms and plantations lined the Pearl River. Rolling uplands, covered with longleaf pine and interspersed with small, scattered areas of native prairie grassland, marked the highest elevations. Immediately below, originally forested with hardwoods and pine, lay the river terraces or second bottoms. These terraces were extremely important to cotton producers because they were fertile and above the river's usual annual flood. Although the Pearl's terraces stood from twenty to forty feet above the bottomlands and were composed of the same soil types as those on the Big Black, the valley was much narrower. It ranged from only one to three miles wide, which limited the width of the second bottoms (USDA 1926:4; USDA 1917:6-7). Below the terraces was a flood plain within which the main river channel meandered along the west side of the valley. A dense growth of trees and bushes interlaced with vines masked the valley floor. Cane grew abundantly in the bottoms; this dense vegetation acted as a drag on channel overflow during the high water season of the fall and winter when water inundated the valley. During the worst floods, one to two feet of water topped the highest bottoms while twelve to sixteen feet stood in the depths of the cypress brakes (USACOE 1879:881; USDA 1917:6; Silbernagel 1966:65).

In addition to cotton, farmers and planters raised a variety of crops for both food and forage. Sweet potatoes were a ubiquitous food crop; also grown were upland rice and wheat (Silbernagel 1966:65; USDA 1918:9). Cow peas, or Indian peas, were grown for livestock, and used as a cover in a crop rotation system. Grown for fulfilling both human and work stock needs, corn was a most important crop, second only to cotton. Most of the crop could be used, since the grain, cobs, shucks (green and dried), canes, and even young green yields served as livestock pasturage (Moore 1958:57).

As the Pearl River floodplain was an important range for livestock, all farms and plantations raised cattle and hogs for household consumption (Bullard 2000:2). Both cattle and hogs were unimproved stocks that foraged on the open range and received little or no additional feeding (Moore 1958). Hogs were of the old razorback stock originally introduced by the Early American settlers (USDA 1926:6) and cattle were descended from an Iberian stock favored for its hardiness. Bottomland floodplains provided cane for cattle; and for hogs, it supplied mast in the form of nuts and acorns. Open forests and prairies provided native grasses (MDAC 1985; Guice 1977:167-178).

A stereotypical image of the Trans-Appalachian frontier is presented to describe the initial Rankin County settlers:

> These early settlers in and around Richmond were not agriculturalists. They were primarily livestock grazers and hunters, whose chief interest in the land was to have a place for a cabin, a few outbuildings and stock pens, small corn and vegetable patches, and open range for their livestock. It was several years later that farmers moving into the area desired the ownership of the land for money crops rather than for its free use. Older settlers began to decrease their herds and increase their fields (RCHS VI:89).

Any archaeological sites resulting from such early settlement should be diffuse and ephemeral. Early 19th century English refined earthenware and English or Southern redware/stoneware, along with small amounts of bottle glass and very small amounts of arms and personal items are to be expected. Nails and window pane would probably be absent, but burned earth (chimney or wall chink) and ambiguous postmold patterns are to be expected. Such back-country hunter/cattleman sites have been investigated in the Carolina uplands, but none are known to have been investigated in Mississippi. What little historic archaeology has been done in Mississippi has focused on the dense midden deposits and ready documentation associated with the mansions and quarters of larger plantations to the exclusion of the homesteads of poor white and smaller slaveowners. The sites of less wealthy families should be a focus of future work. At these sites whites, blacks, Indians and mixed-ancestory people often lived in close proximity, generally in the same cabin, and ethnic studies would probably not be possible. As many never perfected their claims or were transitory squatters, and almost all were illiterate, the documentary trail would in all likelihood be quite faint.

The Beginnings of the Timber Industry. Several species of tree flourished in the low-lying areas along the Pearl River: bottomland hardwoods, cypress-tupelo brakes of the floodplain, and terraces of mixed hardwood-pine and pine forest (USACE 1996:12). The types and their economic uses have been described in detail in the Environment chapter. With trees as an abundant resource, logging was a common trade in Mississippi. It began as a seasonal activity carried out by farmers and planters as they cleared their lands. The logging operations took two stages. During the dry summer and fall season, the trees were felled and skidded to stream banks; subsequently, with the high water season, timber could be rafted and driven to mills down river (Fickle 2001:53). Mississippi's early industrial sawmills were concentrated on the Gulf Coast. However, inland, sawn lumber was expensive due to few local sawmills and poor road transportation; thus, the development of the logging and lumbering industries was sporadic. By the time of the establishment of major industries later in the 19th century, most of the land within practial haulage of floatable streams had already been logged off, so it can be expected that the first cuttings of the project area were in the antebellum period. This was probably limited to high-grade cypress, slash pine and hardwood timber.

The state's timber industry started to emerge in the 1840s. While there is no documentary evidence of commercial harvesting within the study area, 23 of the state's 56 counties were involved in the industry and as early as 1839, there was a saw mill operating on the river below Jackson. These facts suggest that the antebellum Anglo- and Afro-American settlers in the study area were engaged in timber cutting for commercial sales for lumber as well as land clearance and constructing their own and their masters homes, farm buildings and means of transportation (McCain 1953:57).

Dugout Canoes, Keelboats and Steamboats. The Pearl River flows through unconsolidated materials that are highly erodable, creating a meandering channel with numerous bends. Overhanging tress and brush on its banks, snags and logs on the surface and submerged, towhead islands, standing cypress trees, and debris carried in from bayous and over-flow channels obstructed the channel (U.S. Army Corps of Engineers 1879:881). For some time during the late eighteenth century until its removal in 1810, a raft blocked the mouth of the river (Brinson 1977:321-322). Despite such challenges, the Third Choctaw Purchase of 1830 opened much of Mississippi's eastern interior to Early American settlement. Hence, in search of new homesteads, the settlers took keelboats and flatboats along the Pearl River (*Carthagenian* 1979). At the same time, Piney Woods and Choctaw District residents were already demanding improvements to navigation. Though the Mississippi and Louisiana legislatures were cooperating on meeting these demands, the Natchez District blocked legislative efforts in Mississippi to continue any work beyond the states' common border (Fortune 1973:268).

Dugout canoes were undoubtedly used on the Pearl in prehistoric as well as historic times. McGahey (1986) has compiled data on Mississippi dugouts. These include the flawed, unused Georgetown canoe from Pearl River, a square-ended cypress canoe made with metal tools, including peg-filled thickness-gauging holes. This example was 5.44 m long, .55 m wide and .35 m high. The wood was dated to AD 1610+70 (unclaibrated UGA-3135; McGahey 1986:60). Also from Pearl River is the East Pearl #1 canoe, also probably made of cypress with metal tools. It has been dated to AD 1765+45 (UGA-2413). It is 5.94 m long, .72 m wide, and .61 m high and is so rough that it may also be unfinished (McGahey 1986:63). Other historic canoes also of note are 1) the 11.4 m long, .6m wide, .2 m high tupelo gum canoe probably made in the 1930s and recovered from the Tallahatchie River at Greenwood and 2) a cypress canoe from the Homochitto River that is 4.9 m long, .65 m wide and .49 w high with three radiocarbon dates apparently indicating late 19th century wood. Other canoes have been found in these streams, and have also been recovered from the Pascagoula, Chickasawhay and Gulf Coast; the Tombigbee and its cut-offs; and Steel Bayou in the Yazoo basin (some are prehistoric).

Cypress log canoes are to be expected in the Jackson area. Due to their small size and preservation under water or mud, there is very little chance of finding them in the course of standard shovel test survey. However, all parties concerned should be aware of the fact that they may be found during earth-moving activities associated with dredging, and that canoes can be costly to recover and preserve in terms of time, materials, and transport. They are however a valuable cultural resource for the understanding of prehistoric and historic transportation. Late 19th-early 20th century specimens are marked by such characteristics as the use of metal tools as well as burning; the lack of end platforms and mooring holes characteristic of Mississippian canoes; metal nails and fittings (probably for oarlocks or 10 or 8 ga. goose gun mounts); plugged holes drilled for assessing thickness during hollowing; and carved or attached plank seats. Most are cypress like prehistoric canoes, but white pine and tupelo gum have also been described (McGahey 1986:66-67). Since there are numerous known historic canoes, it may be preferable to the MDAH and the CoE that any finds of historic canoes be documented but not preserved.

Keelboats were important vessels on the river both before and after the Civil War. Harvey Gill owned the first known keelboat on the Pearl; with it, he made monthly trips between Carthage and New Orleans. Eventually Philadelphia was established at the head of navigation on the Pearl (*Carhagenian* 1979). In the early 1860s, "Cap" Atkinson and Sam Setter built a "hook and jam" propelled keelboat. Launched from Carthage in Neshoba County, the boat journeyed for fifteen days before reaching Jackson. In 1864, Union Forces sunk Atkinson and Setter's keelboat (*Carthagenian* 1979). A ca. 1830 keelboat-barge has been excavated from the Leaf River; it is believed to have been a trading boat such as might be expected on the Pearl as well (Figure 52)

Although the shallow and snag-filled Pearl River was much more suitable for such small boats (Brinson 1977:72), it was not long after the introduction of self-propelled boats on inland waters before steamboats arrived in the project area. On December 4, 1835, the *Mississippian* noted the first steamboat to arrive in Jackson: Captain James Latham's *Choctaw* of New Orleans (*Carthagenian* 1979). From the 1840s and for 60 years thereafter, with Edinburgh as the head of navigation, the steamship industry worked the Pearl. The 1840 Leake County Census listed, for the first time, ten persons as employed in "navigation of canals, lakes, and rivers" (*Carthagenian* 1979). Before long, steamboat captains were advertising their services in regional newspapers. On the day after Christmas, in 1843, Jackson merchant Marcus Hilzheim announced plans to operate a small Hinds County–Neshoba County steamer. Within one year of Hilzheim, A.E. Hayes announced his commercial intentions. For cotton, Hayes charged down-river freight rates of one dollar and fifty cents per bale; for a barrel of molasses, the up-river charge was two dollars and fifty cents; and passage to New Orleans cost ten dollars (*Carthagenian* 1979). With a mid-19th century dollar worth roughly \$20 in today's money, such a passage cost the equivalent of \$200, a sum available to only a few people. In 1848, another steamer, the *Caroline*, began making regular runs. However, the next report of a steamboat on the river is not until the Carthage-Jackson boat, *Ranger* left New Orleans on January 7, 1859, but burned 46 days later, approximately three mile north of Grant's Mills (*Carthagenian* 1979).

Prior to the construction of the rail system, navigation played an important role the economy. The most difficult part of raising cotton before railroads arrived was getting it to market. After the crop was picked, ginned, and bagged or baled, the farmer or slave still had to take his product from the gin house and traverse over poor roads to the nearest river. By November, farmers had their roughest travel, for after the winter rains began, roads were not much different from quagmires. This fact put a premium on tracts along navigable rivers or in their immediate vicinity. Land away from water transport, or later, railroads, was not as profitable for cotton production. As keelboats, and later steamboats, carried cotton down-river and returned with manufactured goods, Central Mississippi became more conducive Anglo-American settlement (Moore 1958:54-56).

<u>Establishment of Roads and Stage Routes</u>. By the Choctaw cessions of the 1830s, the natchez Trace had been superceded in north Mississippi by the 1821 Jackson Military Road and the 1824 Robinson Road, running from north of what it now Jackson to the Tennessee River in Alabama through the new settlement in the Black Prairie around Columbus. The southern part of the original Natchez Trace remained a main overland mail route until the mid 1830s (Phelps 1962).

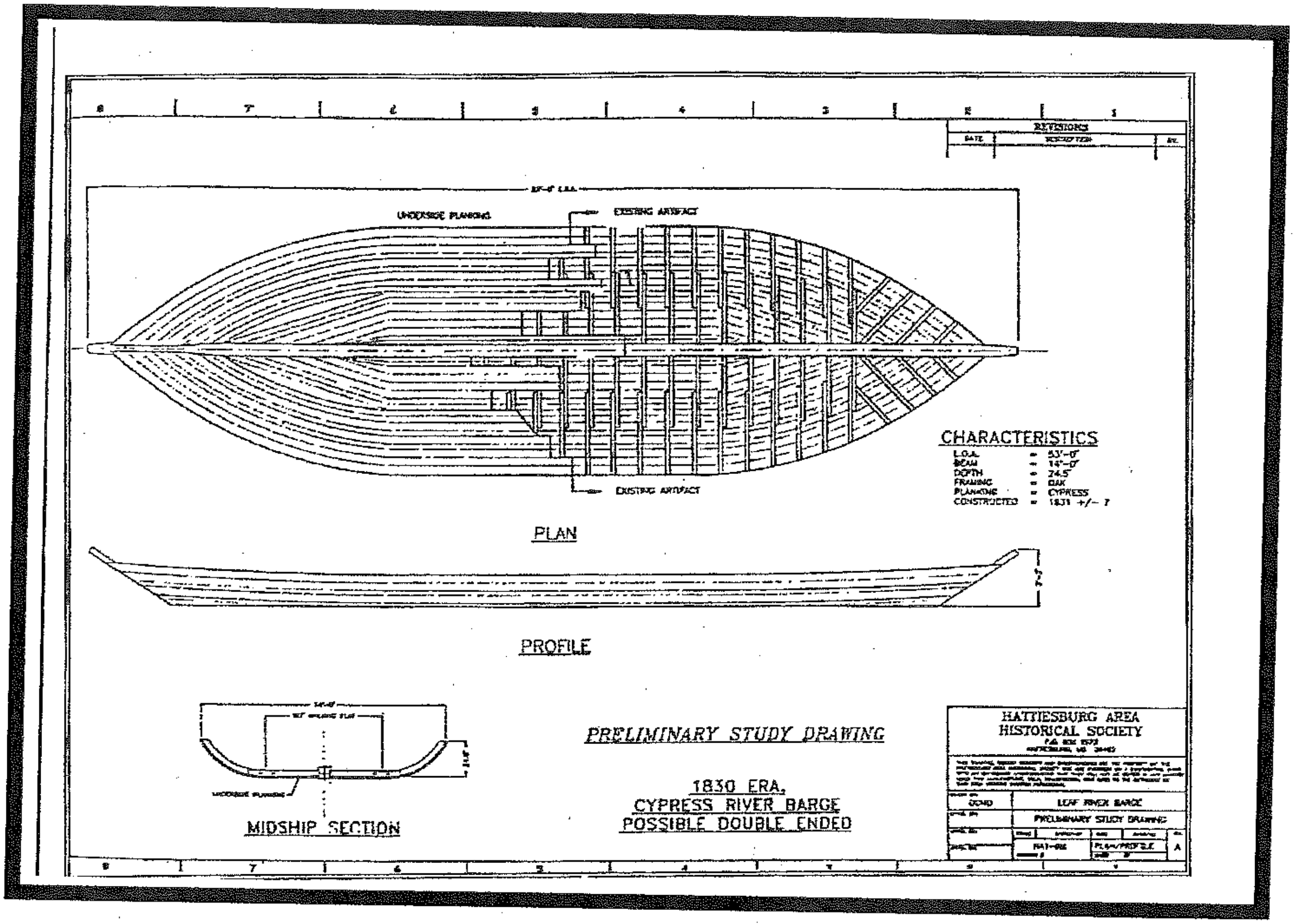


Figure 52. ca. 1830 keelboat-barge from Leaf River (HAHS 1990).

Early American settlers moving into the study area came from the east, south, and west. Most immigrants were from Georgia, North Carolina, and South Carolina. Most of those from Georgia and the Carolinas traveled by way of Three Notch Road, which had opened through what is now Alabama after the Creek War (Owsley 1949:61-62). Settlers moving in from the west, both residents of the River Counties of the old Spanish-colonial Natchez District and immigrants from the Ohio River valley, would have used the Natchez Trace, which had been improved for wagons as a government mail route. The informal system of Native American trails, or "ridge roads," which followed the divides between watersheds, also provided a route for eastward travelers (Lowery 1968; Dean n.d.:8). This trail system appears to have continued east, crossing the Pearl in the vicinity of the Woodrow Wilson bridge, following the modern Old Brandon Road, as indicated by the original survey plat for T5N, R1E (Wailes 1842). Settlers coming north from the first Choctaw Cession in the Piney Woods had two routes to choose from: Carroll's Road, a wagon road completed around 1817 between Monticello and the Choctaw Agency (see Figures 13, 14), Wailes 1842, Brinson 1977:27) or the Pearl River itself. Settlers are known to have used a water route to reach the upper Pearl in the 1840s (Carthagenian 1979).

As the population increased, existing roads and trails were improved and new roads were constructed (the initial Hinds County Police Court Minutes Books should have extensive documentation of early road opening). Extant Native American trails laid the foundations of Rankin County's early local roads. For example, from trails heading east out of Richmond (Stewart's Bluff), two roads were ordered built – one to the extinct town of Westville in Simpson County, and another, to the Stewart's Bluff Road segment between James Jones and Beasley Campbell (Rankin County Historical Society 1984:86-87). A wagon road between Jackson and Vicksburg was completed in 1824 and around 1835, it was established as a regular stage route (McCain 1953: 321). Rankin County appointed a jury to lay out a road from Brandon to the Jackson Ferry in July, 1833; by 1847, this road continued into Alabama (McCain 1953:55). The stage line between Jackson and Brandon was first advertised in Jackson in October and in Brandon in November of 1837. This road, also know as the Brandon "Pike," followed the route of the trail shown on the 1842 GLO plat that ran along the present Old Brandon Road and then dropped south along the route of Interstate 20 (Rankin County Historical Society 1984:I:24, 27; McCain 1953:55). By 1839-1840, roads were also open to the north and south, so by this time, the capital was linked to nearly all of west- central Mississippi's major centers.

<u>Early Ferries</u>. Ferries across the Pearl were established soon after county organization to provide east-west communication. A ferry was established at Jackson sometime between 1822 and 1830, perhaps being operated by Harry Long in the latter year (An Act to amend an Act passed June 29, 1822; Acts of the State of Mississippi, December 15, 1830). This ferry was operated by James Coleman in the 1830s (Rankin County Historical Society 1984:I:27). The trail system used by early nineteenth century travelers and immigrants appears to have crossed the Pearl in the vicinity of the modern Woodrow Wilson bridge and Old Brandon Road, as indicated by the original survey plat for T5N, R1E (Wailes 1842). The Federal government had already allotted the property to the

State for its new capital, north of the modern Woodrow Wilson Bridge on either side of the Pearl River, the landings were slightly below the town grid (Daniels 1875; Buchanan n.d). From the high ground, off what became Jefferson and Silas Brown streets, a road serviced one landing. The income to the City of Jackson from ferry in 1848 was $3000 (McCain 1953). Numerous other Pearl River ferry-keepers are known, but their locations are uncertain. From the Rankin County Board of Police Minutes (Rankin County Historical Society 1984:26-28) we see that Richmond had a ferry and others known but not located include the: 1) the 1832 Price or Ferry #3, 2) Griffith or Ferry #4, 3) Ammon, 4) Fortner, 5) Haley, and 6) Denson ferries. Ferry-servicing roads were ordered built in Rankin County. Cooper Ferry Road from Anderson's Ferry to its intersection with Cook's Ferry Road was built in February of 1850. Then, in November of 1856, roads were built to Smith's Ferry on the Pearl River from Mrs. Ratliff's place on Brandon Pike and from William Denson's place (RCHS 1984:28).

The First Bridge. Though the city-operated ferry provided a crossing point, it was small and inadequate for the traffic demands of the increasing population. The first wagon bridge across the Pearl at Jackson was built 1849-50. The first proposal for a bridge came in 1844 when it was suggested that the bridge be built on the piers and abutments that had been constructed by the defunct Brandon and Jackson Railroad and Bridge Company. The city finally decided to build a bridge immediately north of the railroad piers between the ferry and the end of Silas Brown Street and advertised for bids in 1849. The contract called for a 150' span 52' above the foundation; 1000' of trestlework from the east end of the bridge to the embanked roadway that was to be between ten and twenty feet high and wide enough for a double track; and 2000' of embankment in Rankin County to connect the trestle work and original railroad causeway, being between seven and ten feet high and twenty feet wide. The bridge was a covered toll bridge described as "a Towns (double track) lattice bridge, with framed cypress abutment piers" and is shown in an 1850 photo and located on a map in Brinson (McCain 1953:188). The same basic layout has been used by the subsequent bridges in this location.

Jackson as an Antebellum Railhead. As steamships developed Central Mississippi's economy via the water, the rail was laying the foundations for Jackson's early twentieth century rise as an industrial center. Several railroad lines into the city were constructed. Originating with an early 1830s charter, the first line into the capital was the Vicksburg & Jackson. In 1840, the railroad completed their line (Figure 53), with its terminus and depot at Capitol and Mill Streets (Cotterill 1922: 323). Though the railroad wanted to extend its line to the Pearl River, the elected officials of Jackson obstructed the plan. The two groups remained in deadlock until the State Legislature allowed the railroad to choose a lot near the capitol building for its depot, and to have the right-of-way across state-owned and city owned land. The depot was erected on the southern half of Court Square Lot 1, the present site of the Mississippi Department of Archives and History's Division of Historic Preservation (McCain 1953:59). A railroad between Brandon and Jackson to tie into the Vicksburg & Jackson Railroad was originally chartered in 1836 as the Brandon Railroad and Bridge Company. Due to a series of delays, including reorganizations and obstruction from city officials, it took fourteen years for the Brandon

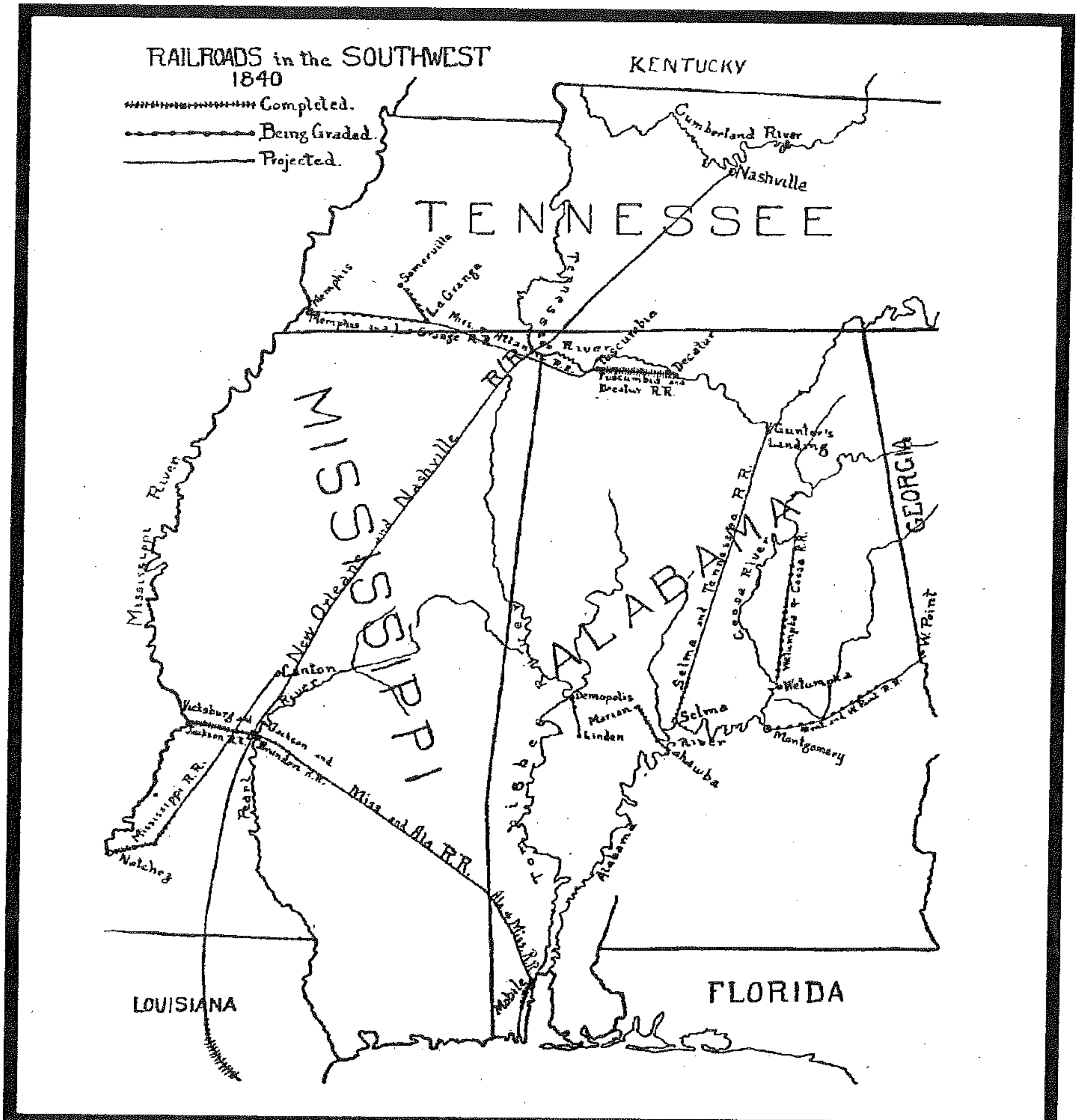


Figure 53. Initial railroad construction in the old southwest (Cotterill 1922: 323)

& Jackson Railroad project to be completed. Concomitantly, sometime between 1848 and 1850, at the present site of the Kansas City railway system bridge, the first bridge to span across Pearl River in the study area was built. In 1858, the Brandon Railroad and Bridge Company extended the track to reach Morton. Soon afterward, Southern Railroad acquired both the Vicksburg & Jackson and Brandon & Jackson railroads; and in June of 1861, the Southern Railroad was lengthened eastward to reach Meridian (McCain 1953:60-61).

Orleans, Jackson, & Great Northern Railroad, provided Jackson's rail network with its north-south axis. The former, chartered in 1841 and completed by 1855, accessed the Central Mississippi Railroad, and reached the Memphis railhead by way of Jackson, Tennessee. Additionally, along Mill Street, the Canton & Jackson Railroad joined with the Vicksburg & Jackson railroad. Just as the Canton & Jackson Railroad provided an efficient northbound passageway, the New Orleans, Jackson & Great Northern Railroad opened the southern half of the state. However, before the this railway could come into fruition, the 1837 proposal for such a railroad, stretching southward from the capital, had to overcome much resistance from Vicksburg and Natchez interests (McCain 1953:61).

In the antebellum period, the transport of cotton to market was a pressing concern. The project area, and much of the interior southeast, conducted this trade through New Orleans. Atlantic (Baltimore & Charleston) and Mississippi River (Memphis, Natchez and Vicksburg) towns as well as Mobile saw the construction of railroads as the way they could obtain the trade for themselves. New Orleans would not sit and wait. In the 1835-36 session, Alabama had charted the Alabama and Mississippi Railroad which could tap the Pearl River trade, as well as a line to serve the upper Tombigbee. If either were built, the trade of New Orleans would be harmed. They sought an ally in Nashville, which would suffer if Memphis became a transportation center. By December, 1834, plans were made for a New Orleans-Nashville line to run west of the Pearl and cross the Tennessee at Colberts Ferry. By the summer of 1835, four groups of surveyors were laying out this route.

Louisiana granted a charter in 1835 and Tennessee in 1836, and the line had been built north from New Orleans to state line and newly platted industiral town of Tangipbro (*sic*, Tangipahoa? Cotterill 1922:322), but "the Mississippi Lesiglature proved recalitrant and this spelled disaster for the road." Such a line west of the Pearl would be disastrous for the trade of Natchez and Vicksburg, so their representatives opposed the petition for charter in Mississippi. At the same time, both towns were building short haul lines into the same interior that would have been served by the New Orleans & Nashville. The 1836 legislature granted charters to these lines, but Senate and House could not agree, and so charter was granted to the projected New Orleans & Nashville. The next year, the 1837 panic struck and railroad construction in the old southwest ended. The New Orleans & Nashville suspended operations and discharged its employees. Alabama and Mississippi had granted state aid to their projects and were now unable to pay the bonds they had obtained.

However, some of the smaller projects had been completed or were able to function to an extent to remain open. The Natchez-Washington Road was 25 miles long, and Vicksburg had built an equal distance towards Jackson. By 1839, the Mississippi Railroad (Natchez to Canton), planned to be 140 miles, had 25 miles complete and 15 more being graded, and was operating with 4 locomotives. The projected 45 mile Vicksburg and Jackson had 25 miles complete and 20 being graded, and also operated 4 locomotives. Two other short lines also foreshaddowed Jackson's role as a railhead; 12 miles were under construction on the Jackson and Brandon and 6 miles were under way on the Vicksburg & Jackson to Raymond (Cotterill 1922:318-326).

> The importance of the decade 1830-1840 lies not so much in what it did as in what it intended to do. It outlined the railroad program for the next two decades and there was hardly a railroad built in the southwest before the Civil War that was not projected during this earlier period. The xxxx of 1830 were also the xxxx of 1850. During the next two decades the fight for commerce went merrily on between New Orleans and the other southern cities... this early period initiated the method of railroad building that was to continue in use long after. Southern railroads were to be built with southern money and for this reason public sentiment had to be constantly aroused. The favorite intrument was the converter and thousands of these were held in the south in the thirty years immediately preceding the Civil War. The local press was utilized... this decade, too, was prophetic of the defects that were to make themselves felt in the building of the southern roads for the next twenty years. The different lines were of different gauges. The material equipment was flimsy, the grades were heavy, and great reliance was placed on inclined planes. Railroads were looked upon as auxiliaries to the rivers rather than as main lines of transportation. (Cotterill 1922: 325-326).

Antebellum Industry in Jackson. In or adjacent to the study area was the original industrial sector of Jackson. Antebellum manufacturing in the study area was an exclusively urban activity. Many these early establishments were located near the river, either in the floodplain or along Commerce Street, on the Bluff, close to the Jackson Railroad tracks. As mentioned above, it appears that a tannery is the earliest manufacturing enterprise in the study area. In 1821, Henry Bone was entitled to three acres of land for $300, provided that within one year, he establish a tan yard. The tract on Pearl Street is located approximately 600 yards east of the uplands (in the southwest corner of Section 2, Township 5 North, Range 1 East). The act that permitted Bone to erect his tan yard suggests that the yard had already been in operation, "and the Tan Yard Creek in this vicinity" (Daniels 1875). In the early 1830s, on the Bluff above the ferry landing, a sawmill was operating (RCHS 1984: 27). By 1839, there was another sawmill approximately one-and-a-half miles south of the city (McCain 1953: 57).

By the mid 19th century, the Mississippi Penitentiary Mill at High and State streets was a large-scale manufacturing establishment. Initially intended to defray the costs of operating the prison and supply its need for cotton textiles and other manufactured goods the mill employed convict labor. However, as it expanded its production, it could undersell goods fabricated in private establishments; and, consequently, the mill may have played a role in delaying the development of a viable local manufacturing sector (McCain 1953; Brinson 1977:76).

Joseph Spengler's Steam Mill, a cotton mill begun in 1852 on 5-acre plot (Lot 1 South), never went into operation due to Spengler's death (McCain 1953: 87). The first successful large-scale manufacturing enterprise was the Pearl River Cotton Mills on the bluff of the southern tract of the block formed by Commerce, McNutt, and Silas Brown streets and the Pearl River (on Lot 6S). Built in 1858 by the Jackson banking firm of Joshua and Thomas Green, it was the last and largest Mississippi textile mill built before the Civil War. Within two years, Samuel Poole was named supervisor and the mill had hired more than two hundred employees. Although short-lived because of the Civil War, it was a financial success from the start: they produced 450,000 yards of cloth annually valued at $151,000 (Daniels 1875; McCain 1953: 87; Narvell 2004).

The Southern Agricultural Implements Company - the only Mississippi farm implements establishment organized on a factory basis - was located on the Spengler lot, immediately north of and next to the Pearl River Cotton Mills. The initial purpose of this factory was to produce an improved plow and other Martin W. Philips farm equipment. Phillips, a noted agricultural reformer and small planter in Edwards, with his brother Z.A. Philips, in 1857, and son-in-law, Robert Kells, organized the company. Within one year, production began. The factory building was a three-story brick structure measuring forty by one hundred feet. Two smaller buildings stood adjacent to the main structure. A steam engine powered the woodworking machinery, which produced parts for wagons, plows, and other equipment. The factory did not have a foundry, thus all the iron and steel castings still had to be imported. Despite selling at reduced costs, other producers in the state copied the company's designs and undersold Southern Agricultural Implements Company's products (Daniels 1875; McCain 1953: 87; Moore 1958:85-88). Additional establishments in the immediate vicinity included H.C. Sides and Brothers Foundry and Machine Shop (1851), William Wylie's boat manufacturing business on State Street opposite Capitol (1851), and J. O. Steven's 1858 Jackson foundry and machine company (McCain 1953:87).

Prior to the Civil War, and probably essential to increasing the productivity of the manufacturing sector, a privately owned gas works lit the city's streetlights and served as Jackson's first public utility. The gas company was located outside of the study area on the southeast corner of Congress and Pearl streets (McCain 1953: 87). Service was first provided in 1857, but was interrupted and did not resume until after the Jackson Gas Light Company began its operations in April of 1860.

<u>The Origin of the Fairgrounds</u>. While the Pearl River's annual flood regime discouraged permanent development in low-lying areas, the floodplain was used for recreational as well as livestock and lumbering activities already mentioned. It can be assumed that the hunting, fishing, boating, and picnicking excursions of late have their origins in the antebellum period. The floodplain was even considered as a potential dueling ground when the editors of the Clinton *Gazette* and Jackson *Mississippian* arranged to meet at the Rankin County ferry landing. The duel did not ensue and similar engagements are not reported (McCain 1953: 168). The State Fairgrounds, the largest recreational venue in Jackson, has its origins in the antebellum period. The Jackson Jockey Club first met on February 7, 1844, in the floodplain below Jackson. The track was most likely laid out

just northeast of the Old Capitol building, at the western end of the present Fairgrounds. The short-lived club held its last-known race in November of 1847. Apparently, it was during this time that the first fair was held there (McCain 1953: 146-147, 149, 211).

American Civil War and Reconstruction in the Jackson Area

While specific information is lacking, agriculture along the Pearl River served the Confederate war effort. Cotton underwrote state and Confederate bank notes, while the army's commissary agents purchased food, livestock, and fodder. The three major changes that affected the pre-war rural economy included: 1) a shift away from cotton; 2) the Federal blockade tightened and the market for foodstuffs and livestock increased; and 3) manpower shortages resulted when white men were drawn into the Confederate Army.

The Confederate defensive strategy was to take advantage of its interior lines of communication in order to shift men and materials between threatened fronts. Since Jackson's rail and supporting telegraph infrastructure were already in place, Jackson became a vital transportation hub for the Confederates, making it a legitimate Union target. The city was the junction of the regional rail network. Trains ran south to New Orleans and Ponchatoula, Louisiana; and they stretched north to Grenada and Grand Junction, Tennessee. There were lines west to Vicksburg, and east to Meridian eventually reaching Montgomery, Alabama. For such reasons, Jackson was the military headquarters of Vicksburg's defense and later played an important, if degraded, role in the defense of the entire western theater (Adams 1950:6; Grabau 2000:35).

Navigation of the Pearl River in the Jackson area did not play a significant role during the Civil War. The last antebellum steamboat service on the river ended when *Ranger* burned on her maiden voyage from New Orleans in1859. The only Confederate vessel known to have used the river, a keelboat operating between Carthage and Jackson, was burned by Union forces in 1864 (*Carthagenian* 1979).

<u>Garrisons, Battles and Occupations of Jackson</u>. As soon as the Civil War began, the City of Jackson became a major regional military center. In October of 1862, it became the Confederate headquarters of Lieutenant General John C. Pemberton. He countered the threat to the Vicksburg stronghold posed by the build-up of Grant's forces in Memphis. Converted for military purposes, Jackson's industrial infrastructure became essential commissary and production points, while the transportation infrastructure served as a depot. Government personnel and civilian employees were attracted to this (Adams 1950:4; Grabau 2000:10). The American Civil War profoundly affected the study area and its subsequent social, political, and economic development. The city prospered during the first two years of the war, especially the commercial and manufacturing sectors (Adams 1950:4). Unfortunately, Union strategists recognized the importance of the area as well and methodically destroyed its industrial and agricultural capability as they introduced and refined the concept of total war. The City of Jackson either fell to or was occupied by Union forces on four separate occasions. The most serious damage to the city and the farms and plantations along the river occurred between in May and July 1863 and February 1864 (Figure 54). Both sides engaged in widespread foraging, while

Confederate efforts to defend the city resulted in the city's receiving extensive combat damage followed by systematic destruction, looting, and burning.

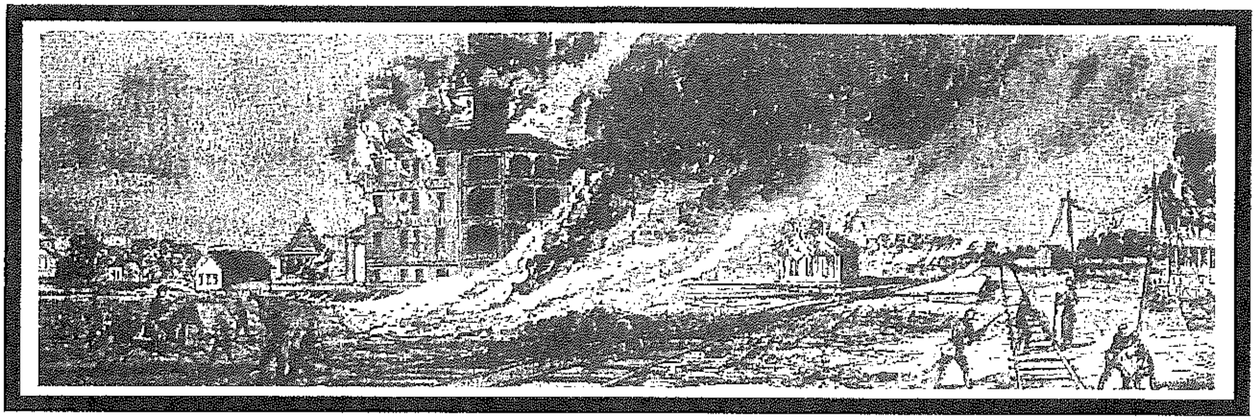


Figure 54. Destruction of Rebel property at Jackson, Mississippi May 15 (Pratt #1955: 113).

The Jackson Gas Light Company was probably considered a blessing when Jackson's manufacturing sector was pressed into the Confederate war effort. Both public and private manufacturing establishments were called upon to provide essential commodities and arms to the Confederate troops of Mississippi, Louisiana, and Tennessee. Establishments included spinning mills, foundries, tanneries, and food depots (Grabau 2000:239-240). The city's main industrial sector was located near the New Orleans, Jackson, & Great Northern depot on the western side of town. The study area's large-scale Southern Agricultural Implements Factory and Pearl River Mills on Commerce Street were also productive enterprises. Two arsenals were also built, one at the Penitentiary, and the one on the "College Green," in the building of the former public boys' school, the later of which accidentally exploded in November 1862. The public "college" of Jackson were situated on the then northern outskirts of the city in the area bounded on the north by High Street, south by Mississippi Street, east by Jefferson Street and west by North Street. Two brick two-story structures had been erected in this area before the war. The northernmost building was for boys and the one on the southern end of this "Green" was for girls. According to one historian: "In 1862 the boys' school building was converted into an arsenal and occupied by about eighty men, women and children, manufacturing cartridges for the Confederacy." As late as 1953, Anabel Powers, a Mississippi columnist described the trail of residue left where the explosion of 5 November 1862 had taken place, 91 years after it had happened:

> The Arsenal occupied a large part of what is now the 500 block of North street and on the site now stands the home of the late Mr. and Mrs. T. P. Barr, and their family. Their daughters, Mrs. Ida Bar, Hannah and Mrs. M. E. Barr Martin and Mr. Martin still occupy the home which Mr. Barr bought in 1897. On taking possession of the property Mr. Barr immediately had the back part excavated for a garden; workmen struck brick foundation of the old arsenal and all the bricks were removed and stored for further use. Numerous flower beds in the yard are outlines with these relics of Jackson's greatest tragedy at that time. A splendid oak tree still stands in the yard and into its branches were blown mangled bodies during the explosion. A cannon ball is imbedded in its trunk and we are told that even now, after ninety years, following unusually heavy rains, millie balls and

fragments of shell are brought to the surface and, until a few years ago, an occasional cannon ball would be found. A tree in the yard of Mr. and Mrs. Tom Spengler, adjoining the residence carries a cannon ball in its trunk as a reminder of the tragedy (H. Grady Howell, Jr., 2002, http://battleofraymond.org/howell.htm accessed 2/20/2006).

A couple of temporary, but notable, changes to the city's landscape in or near the study area occurred during the war. First, underutilized properties were converted to wartime industries; for example, an arsenal that exploded in November of 1862 was located three blocks behind the Bowman House hotel in the northeastern part of the city (McCain 1953:96). Second, a series of prisoner of war facilities were developed in the city, including: 1) in late January 1863 the Pearl River Prison was established in an "old" bridge over the Pearl (apparently the ca. 1849 covered toll bridge; Adams 1950:20-21); 2) a "prison pen" was situated on the floodplain northeast of the Old Capitol Building in the vicinity of today's Coliseum at High Street, (Davis et al. 1895:Plate 37); and 3) in November of 1864, an 150-foot square stockade was reportedly built on the capitol grounds (Dana to Howard, Official Records Series 1, Vol. 41:585; Davis et. al 1895:Plate XXXVII, Map Nos. 2 and 3; Woodrick 2004). There is little likelihood that any trace of any of these prison camps remains.

The countryside was stripped of forage and supplies by Confederate and Union armies. While the Confederates foraged to feed their troops and livestock, Union foraging served three purposes: first, it allowed greater freedom of maneuver by lessening their dependence on supply trains; second, it cleared the countryside of subsistence for Confederate forces; and third, it undermined the morale of Confederate soldiers and their families. Sherman fed his troops and livestock during the week-long July siege by sending reinforced foraging parties deep into his rear. Union foragers not only collected food and livestock, but carried off slaves, ruined growing crops, and destroyed buildings, fences, and agricultural implements (Adams 1950:92-93). Contraband (captured slave) concentration camps were established in Vicksburg. We have not found the number of slaves confiscated or the number of freed men inducted into the US Colored Troops from the Hinds-Madison County area, but this would be an important venue for further investigation. Unlike in subsequent wars, black men were armed and quickly trained and largely used for combat troops as well as in service roles such as in entrenching or as teamsters. Especially hard hit were the farms and plantations west side of the Pearl River because they lay immediately behind the Union lines. A tactic used to protect livestock from Union seizure apparently led to the creation of the Mule Jail Lake in the extreme northern part of the study area: plantation owners on both sides of the river dug a trench across a bend in the river and drove or swam their mules, horses, cattle, and hogs over to the resulting island to hide them from Union foragers and, later, during Reconstruction, tax collectors (Bullard 2000:3-4).

Sherman's foraging policy was highly effective. In a letter to his wife dated July 15, 1863, Sherman described the policy's impact in the study area: "This is a beautiful country, handsome dwellings and plantations, but the Negroes are gone, houses vacant, fields of corn open to the cattle, and our army has consumed or is consuming all the cattle, hogs, sheep, chickens turkeys and vegetables Everything...The people are flying east, into Georgia and Alabama" (Sherman 1999:503). As early as July 11 Johnston was reporting to Jefferson Davis that his troops, especially Mississippians, were deserting in large numbers across the Pearl River fords at Jackson, and on July 30 he informed Secretary of War Seddon that "the Federals destroyed everything connected with cultivation of ground between Jackson and Big Black River, including growing crops (Official Records, Series I, Volume XXIV/1 [S# 36]:209, 233).

The Pearl River Mills, located on the bluff on Commerce Street, continued operating after the city fell. Grant and Sherman entered the mill and watched the female workforce turning out Confederate cloth. After awhile Grant is said to have turned to Sherman, saying he thought the ladies had worked long enough. The mill was then cleared and burned (Adams 1950:47).

Jackson was damaged again three months later following the Vicksburg surrender when Sherman was ordered to disperse Confederate forces that had assembled in the Union rear. After chasing the Confederates into the city defenses, during which time many Jackson residents took refuge in the river bottoms, Sherman initiated a weeklong siege and sent cavalry to destroy the railroad south to Brookhaven and north to Canton. Combined with the foraging discussed earlier, the land was "devastated" in a thirty-mile radius (Brinson 1977:110; Sherman to Grant, July 17, 1863, Ser. I, Vol. XXIV 2:529; Adams 1950:116). Following the Confederate evacuation on July 17, the entire business district, except for older frame buildings, and most of the fine houses not used for Union military headquarters were looted and burned (Garner 1968:117). Damage to the city was so severe that Jackson was thereafter referred to as "Chimneyville." Both the siege and property destruction in the city were illustrated in Harper's Weekly (June 20, 1863) and Frank Leslie's Illustrated Newspaper (Oct 17, 1865) (CITE MSDAH?). Finally, all Confederate guns, shot, shells, and ammunition that were left in the city were either destroyed or thrown into the river, and the piers of the old railroad bridge were battered down by artillery (Official Records, Series I, Vol. XXIV 3:534).

Letter from Major-General Sherman, U.S. Army, to Acting Rear-Admiral Porter, U.S. Navy, regarding operations about Jackson, Miss., and referring to the harmonious relations between the army and navy

JACKSON, MISS., *July 19, 1863..*

DEAR ADMIRAL: Your kind and considerate letter reached me at Clinton as we were trudging along in heat and dust after Johnston, that had been troubling us about Vicksburg during our eventful siege. We must admit these rebels out-travel us, and Johnston took refuge in the fortified town of Jackson. My heads of columns reached the place on the 9th, but the forts and lines were too respectable to venture the assault, and I began a miniature Vicksburg. The enemy was about 30,000 strong, with plenty of artillery, which he used pretty freely; some rifled 32-pounders, of too heavy metal for our heavy fieldguns, but we got close up and made the invariable sap, succeeding in disabling one of the 32-pounders, knocking off a trunnion and breaking up the carriage. We expended on the town as much of our ammunition as was prudent to expend, and a train with a resupply reached me the very night he concluded to quit. We had a good deal of picket work, in all of which we succeeded, driving the enemy behind his earthworks, but we made no assault; indeed, I never meditated one, but I was gradually gaining round by the flank, when he departed in the ngiht. Having numerous bridges across Pearl River, now very low, and a railroad in full operation to the rear, he succeeded in carrying off most of his material and men. Had the Pearl River been a Mississippi, with a patrol of gunboats, I might have accomplished your wish in bagging the whole. As it is, we did considerable execution, have 500 prisoners, are still pursuing and breaking railroads, so that the good folks of Jackson will not soon again hear the favorite locomotive whistle. The enemy burned nearly all the handsome dwellings round about the town because they gave us shelter or to light up the ground to prevent night attacks. He also set fire to a chief block of stores in which were commissary supplies, and our men, in spite of guards, have widened the circle of fire, so that Jackson, once the pride and boast of Mississippi, is now a ruined town. State house, governor's mansion, and some fine dwellings, well within the lines of intrenchments, remain untouched. I have been and am yet employed in breaking up the railroad 40 miles north and 60 south; also 10 miles east. My 10-mile break west, of last May, is still untouched, so that Jackson ceases to be a place for the enemy to collect stores and men from which to threaten our great river.

The weather is awful hot, dust stifling, and were I to pursue eastward I would ruin my command, and, on a review, I think I have fulfilled all that could have been reasonably expected, and by driving Johnston our of the valley of the Mississippi we make that complete, which otherwise would not have been.

I hope soon to meet you, and that we may both live long to navigate that noble channel, whose safety has absorbed our waking and sleeping thoughts so long. I trust we may sit in the shade of the awning, as the steamers ply their course, not fearing the howling shell at each bend of the river or the more fatal bullet of the guerrilla at each thicket.

Last night at the governor's mansion, in Jackson, we had a beautiful supper and union of the generals of this army, and I assure you the "Army and Navy Forever" was sung with a full and hearty chorus. To me it will ever be a source of pride that real harmony has always characterized our intercourse, and, let what may arise. I will ever call upon Admiral Porter with the same confidence as I have in the past. Present my kindest remembrances to Captains Breese, Walke, McLeod [Murphy], Bache, and all the gallant gentlemen who have been called about you, and please say to Captain Selfridge I regret exceedingly that I walk called off so suddenly as not even to say good-bye to him.

Most sincerely and truly, your friend,

W. T. SHERMAN.

Admiral David D. Porter,
Commanding Mississippi Fleet.

(Cornell University Making of America at http://moa.cit.cornell.edu/gifcache/moa/of the/Naval Forces on Western Waters"; (313-314)

FRIDAY.---Jackson, Miss., is in possession of the enemy. The melancholy news came to us by telegraph last evening. The enemy may be driven out again; but experience has shown that where he has obtained a lodgment, the possession is permanent. The loss of Mississippi would be a terrible blow, and protract the war almost indefinitely. The army on the other side of the river can maintain itself, and successfully wage war, and there remains enough to the east of us to continue the war for many years. Meanwhile there must be foreign aid or intervention!

The advance upon Jackson was made by Sherman, with 30,000 troops. General Johnson fell back to Canton without a fight, and can there receive reinforcements, *via* Brandon, which we occupy in force.

All public property was removed in advance from Jackson, State and Confederate, and probably the Pearl River bridge was burnt.

SATURDAY, May 16.---There are idle rumors floating about that the Yankees have burned the capitol and hotel at Jackson, and destroyed the railroad track between Jackson and Brandon; but no authentic news is received.

SUNDAY.---More news from Jackson, and in a better shape. The enemy have evacuated the town after burning hotel, penitentiary, cotton factory, railroad bridges, etc. Believed that the hurried retreat was caused by a reverse at Edward's Depot.

The Governor had removed, in advance, all the worst malefactors at the penitentiary, and pardoned all the rest on condition that they joined the army.

The retreat from Jackson it is to be hoped is but the beginning of the end. We shall soon have an army in the State sufficient to drive the enemy back upon their gunboats, and confidently may expect that result. Their advance is perhaps the best thing that could have happened if we move with promptness and efficiency.

Several steamers ran the blockade at Mobile yesterday from the West Indies. Their cargoes are of little account. We had the opportunity of inspecting them. The chief importations are now articles of luxury which do not advance the cause, and in exchange the cotton is given, which goes into the hands of the enemy. The whole business should be stopped unless controlled by the government and for the benefit of the army. Exchange cotton for nothing but what will make for the public defence and welfare!

Cotton is now selling at Mobile at 30 to 35 cents for blockade running, and in Texas at 40 to 45 cents. Gold is bought in Mobile for blockade use at $6 for one.

The third and fourth episodes of city destruction occurred in February and July of 1864. The February episode was part of Gen. Sherman's Meridian campaign that chased Gen. Leonidas Polk out of the state, destroyed Meridian's rail and industrial infrastructure, and devastated central Mississippi in a corridor between Vicksburg and Meridian. More of the city was burned over the next two days as elements of the Union force waited their turn to cross the river (Adams 1950:133-134). The final episode occurred on July 10, 1864 when a task force was sent to destroy a temporary wagon bridge constructed by the city's citizens. In consideration of the amount of damage already done to the city, the task force contented itself with burning the bridge only and then immediately withdrawing (Adams 1950:137).

The Confederate defensive works that ringed the city west of the Pearl River is the most notable landscape change still visible today. The fortifications were constructed under Confederate generals John C. Pemberton and Joseph E. Johnston, in May and July of 1863. The northern works extend between Canton Road (today's North State Street) and the river swamps that lie along the ridge south of today's Poplar Street in the Belhaven neighborhood. Fortification Street was said to have been built as a service road for this line. The southern line of entrenchment deviated to the southeast, midway between Raymond Road and the New Orleans/Jackson/Great Northern Railroad, before turning back to the northeast to tie into Town Creek and the river (Davis et. al 1895:Plate 37; Woodrick 2004; Figures 55,56).

The southern trench line was the scene of the only major combat during the Siege of Jackson in July of 1863. This July 12 engagement was an unauthorized Union attack against elements of Breckenridge's division. The battle resulted in a Confederate cemetery west of the river approximately fifty yards south of Interstate 20 near the edge of the east Jackson Levee. Among twenty-five or thirty burials, one had a tombstone: 2nd

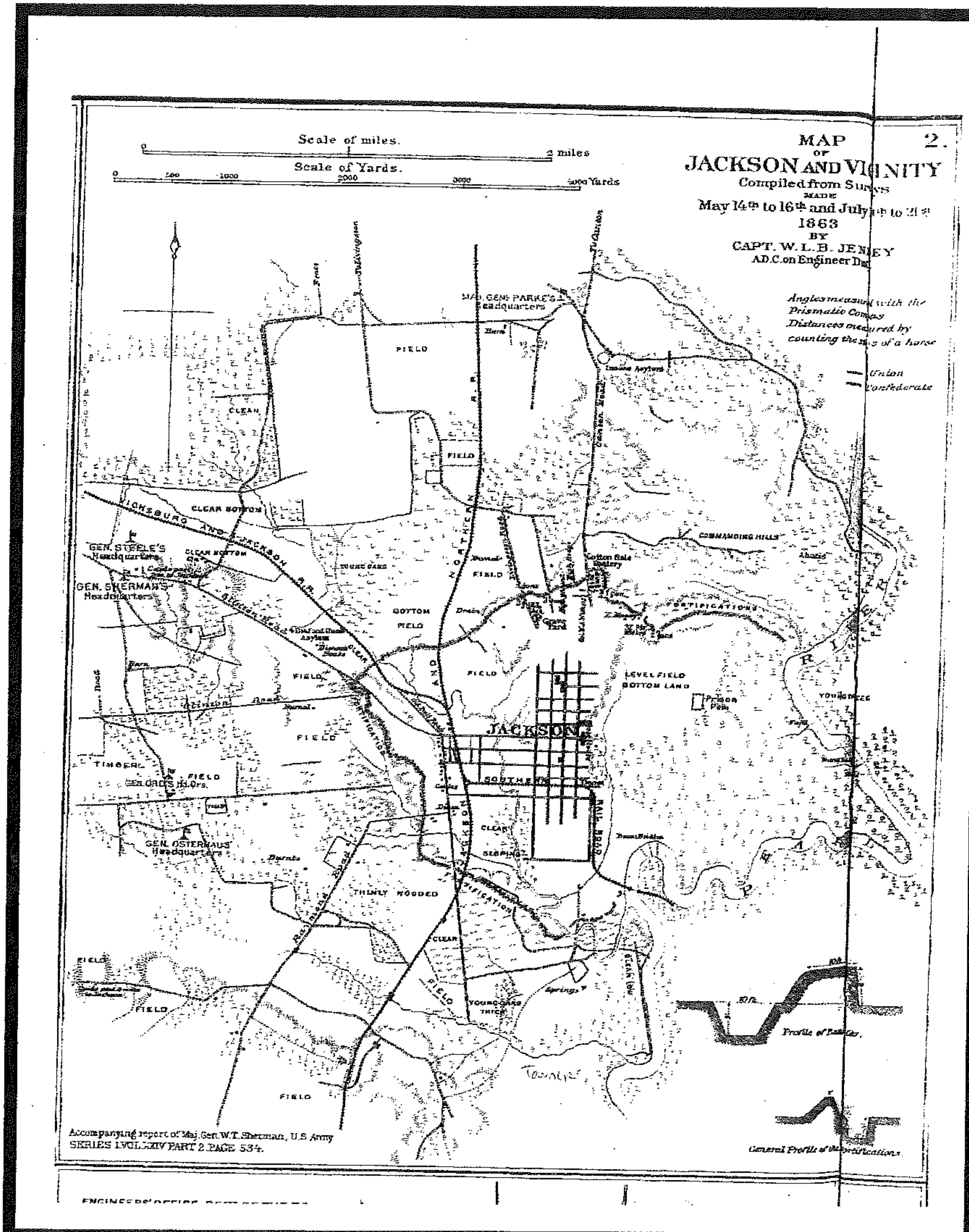


Figure 55. Battle of Jackson, May-June 1863 (Davis 1895).

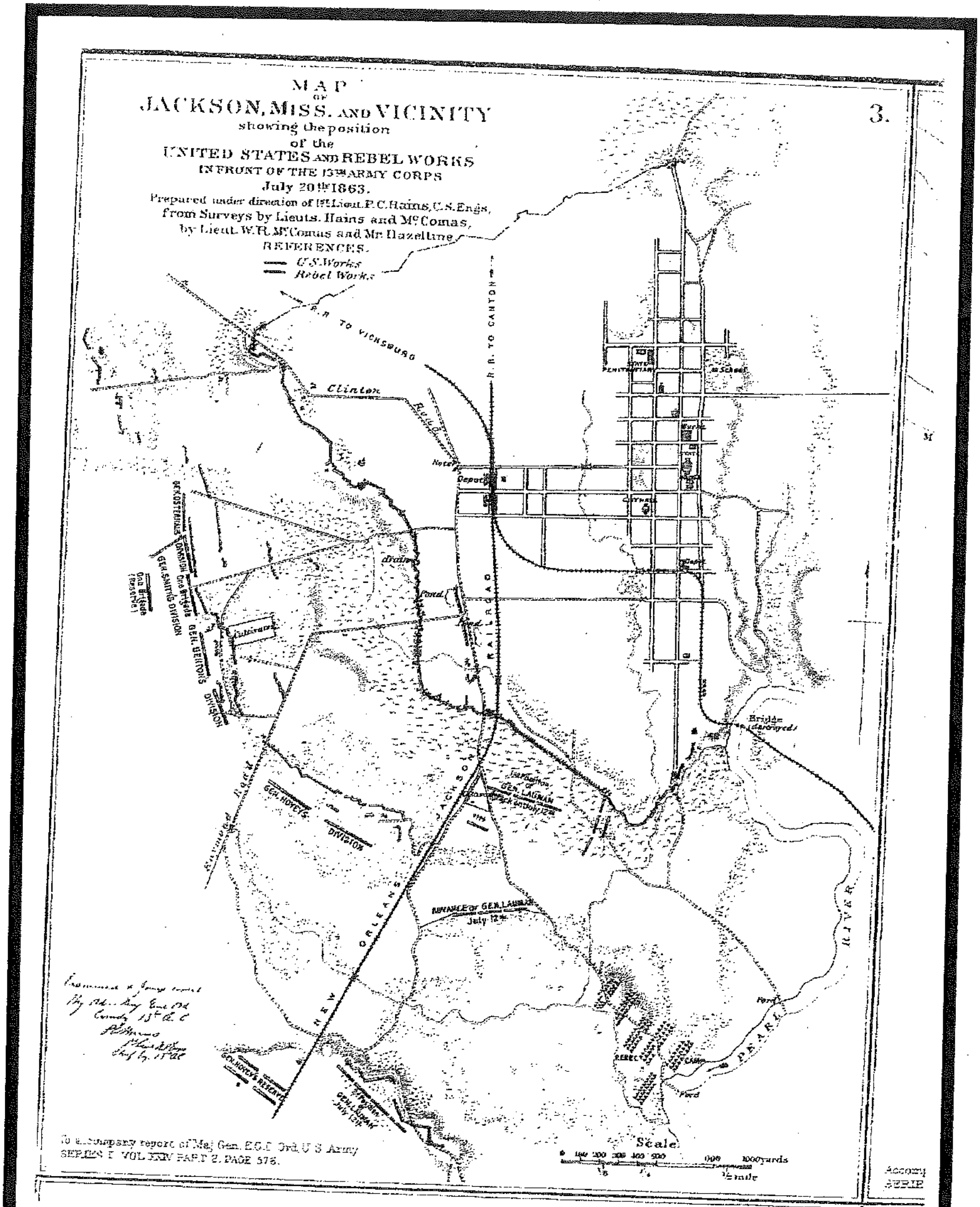


Figure 56. Battle of Jackson, July 1863 (Davis 1895).

Lieutenant Christopher C. Bradon of the 19th Louisiana (Hewitt 1996:416; Booth 1984; Official Records Ser. I, Vol. 21/2 [S# 37]:655; RCHS 1980:35).

Jackson was targeted during four Union campaigns designed to disperse Confederate forces, damage the city of Jackson's war-making infrastructure, and destroy the ability of the surrounding countryside to support future Confederate military operations. The city was first captured on May 14, 1863 during U.S. Grant's Vicksburg campaign, resulting in the systematic destruction of the city's transportation and industrial infrastructure (Adams 1950:23, 40; Grabau 2000:195-199, 239-249, 254-356). Its second capture occurred two months later after a week-long siege. In addition to further damage to the city caused by the fighting and looting, U.S. General Sherman sent his troops through the countryside to strip and demolish farms and plantations and systematically destroy railroad and telegraph infrastructure (Adams 1950:59-61; Grabau 2000:205-506). Garner's (1901:11-12) unapologetically Redeemer history of Mississippi cites Sherman's May 1863 report.

> ....the city...is one mass of charred ruins....I then ordered all ordnance to be collected and destroyed, and put working parties to destroy the railroads. Besides the breaks at the north and south...twelve miles north and south of the town were absolutely destroyed; every tie burned, and every rail warped so as to be utterly useless. About 20 platform cars, 50 box cars and passenger cars were burned in the city and all the wheels broken. About 4000 bales of cotton used as parapets were burned. Two heavy rifled 6-inch guns with an immense pile of shot, shell and fixed ammunition were destroyed and cast into Pearl River.

In August of 1863, the Chicago Times reported U.S.soldiers "ransacking the town and appropriating whatever of value or otherwise pleased their fancy....Such complete ruin and devastation never followed the footsteps of an army before (Garner 1901:12)." The city was occupied again on 4 February 1864 during Sherman's Meridian campaign and, while the Confederates offered little resistance, it was again looted and burned for two days while Union troops waited to cross the river (Adams 1950:133-134). The city's final capture occurred on 6 July 1864, when a Union task force destroyed a temporary wagon bridge that had been rebuilt by city citizens over the Pearl. Considering the amount of damage already inflicted, the Union commander simply destroyed this rebuilt bridge on 10 July 1864 (Adams 1950:133-134, 136-137; McCain 1953:202-203).

As noted, Jackson suffered extensive damage on three of the four occasions it was occupied. Following May 12, 1863, Union forces entered the city and systematically burned and looted public and private property for the next two days. Damage was estimated at between $5,000,000 and $10,000,000 in the city and surrounding countryside. Buildings burned included the penitentiary which was in use as a munitions factory; the Philips and Green factories; Steven's foundry; Goman's hat factory; Peanne's, Robinson's, and Bailey's cotton sheds; two hospitals; the Catholic church; the banking house; a medical stores building; all workshops and the entire block of public and private buildings between City Hall and State Street (Adams 1950:56). The Pearl River bridges, depot buildings and rolling stock also were burned, and the railroads and telegraph lines destroyed in a five-mile radius (Adams 1950:50-51; Grabau 2000:254, 257). Damage to the city was so severe that Jackson was referred to as "Chimneyville."

Both the siege and property destruction in the city were illustrated in Harper's Weekly (June 20, 1863) and Frank Leslie's *Illustrated Newspaper* (Oct 17, 1865; See Figure 54). Finally, all Confederate guns, shot, shells, and ammunition that were left in the city were either destroyed or thrown into the river, and the piers of the old railroad bridge were battered down by artillery (Official Records, Series I, Vol. XXIV:3:534).

River crossings east of the city are shown on the Union map produced after the July 1863 siege. A northern ford across the river is shown due east of the Capitol at the mouth of Belhaven Creek, and a burnt bridge and another ford were located approximately three quarters of a mile further south. Three burnt bridges north of the railroad bridge in the vicinity of the city ferry and boat landings represent the destroyed wagon bridge and temporary pontoon bridges built by the Confederates and used during their evacuation. (Davis et al. 1895:Plate XXXVII, Map No. 2). Confederate orders for the July evacuation describe the divisions manning the northern defenses being instructed to assemble in the low ground east of the Bowman House ruins, follow the "new road" to the upper bridges, and cross the river to take the Old or Upper Bandon Road. The southern division was to use the bridges at the lower end of the town and follow the New or Lower Brandon Road. The wagons and artillery from all three divisions were to use the trestle bridge (Official Records, Ser. I, Vol. XXIV/3 [S# 38]:1008). The bridges were burned and the roads mined on the east side of the river as the Confederates retreated (Adams 1950:99-100).These roads and bridges can be tentatively located using the 1905 and 1998 topographic maps of the Jackson area (Figure 57). The new road into the floodplain possibly followed the route of today's Mississippi or Pearl streets. The Old or Upper Brandon Road follows the road segments of today's Old Brandon and the Old Fannin Road. The northern crossings were probably pontoon bridges; the southern infantry crossings were also probably pontoon bridges or the repaired wagon bridge, and the bridge used by the artillery and trains was either the same temporary wagon bridge or repaired remnants of the railroad bridge (Hewitt 1996:416; Booth 1984; Official Records Ser. I, Vol. XXIV/2 [S# 37]:655; Rankin County Historical Society 1980:35).

<u>Post-war Redevelopment</u>. Rail service from Jackson to Vicksburg, New Orleans, Canton, and Meridian was restored before the end of 1865; this most important form of transport will be explored more fully below (Harris 1967:195) (Figure 58) . River navigation also resumed immediately after the end of the American Civil War. Steamboats were operating in Jackson by December of 1866, and the owners of the steamer *Fleta* were suing the Southern Railroad Company because the boat could not proceed up the river to Carthage because of the railroad bridge (McCain 1953:211). A toll bridge over the Pearl was reopened on October 1, 1867 (McCain 1953: 210). Following complaints that high tolls were diverting trade, city residents voted in April 1871 to issue bonds for the purchase of the bridge (MDAH Subject File).

The railroads themselves were rapidly returned to operation and profitability in 1866 and 1867. Railroads were seized and operated by the Union army for some months after the end of the war. The Federal government invested some $45 million in repairs to seized Confederate railroads. In August 1865, Johnson directed that they be returned to

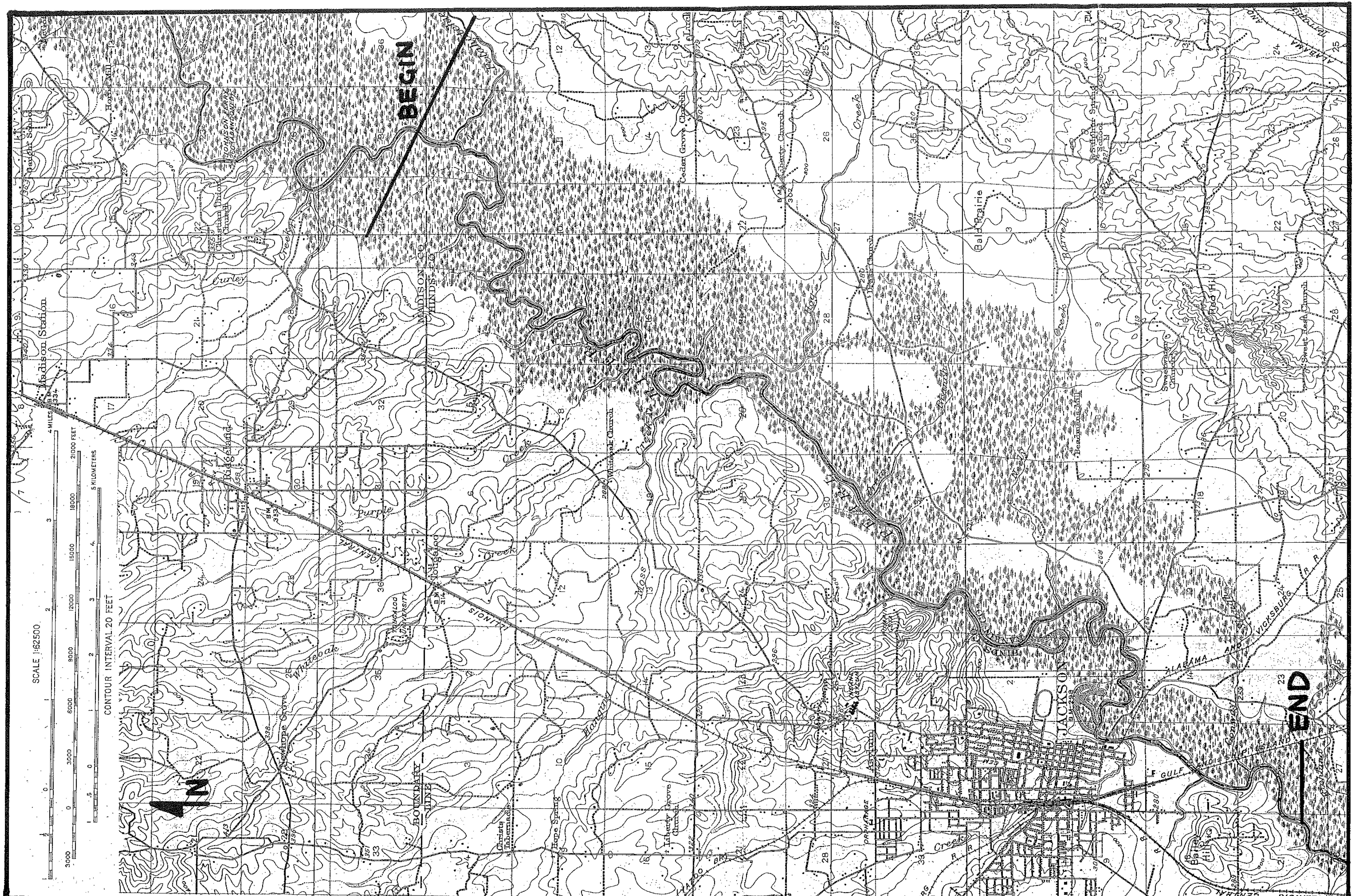


Figure 57. Jackson 1905' topographic map

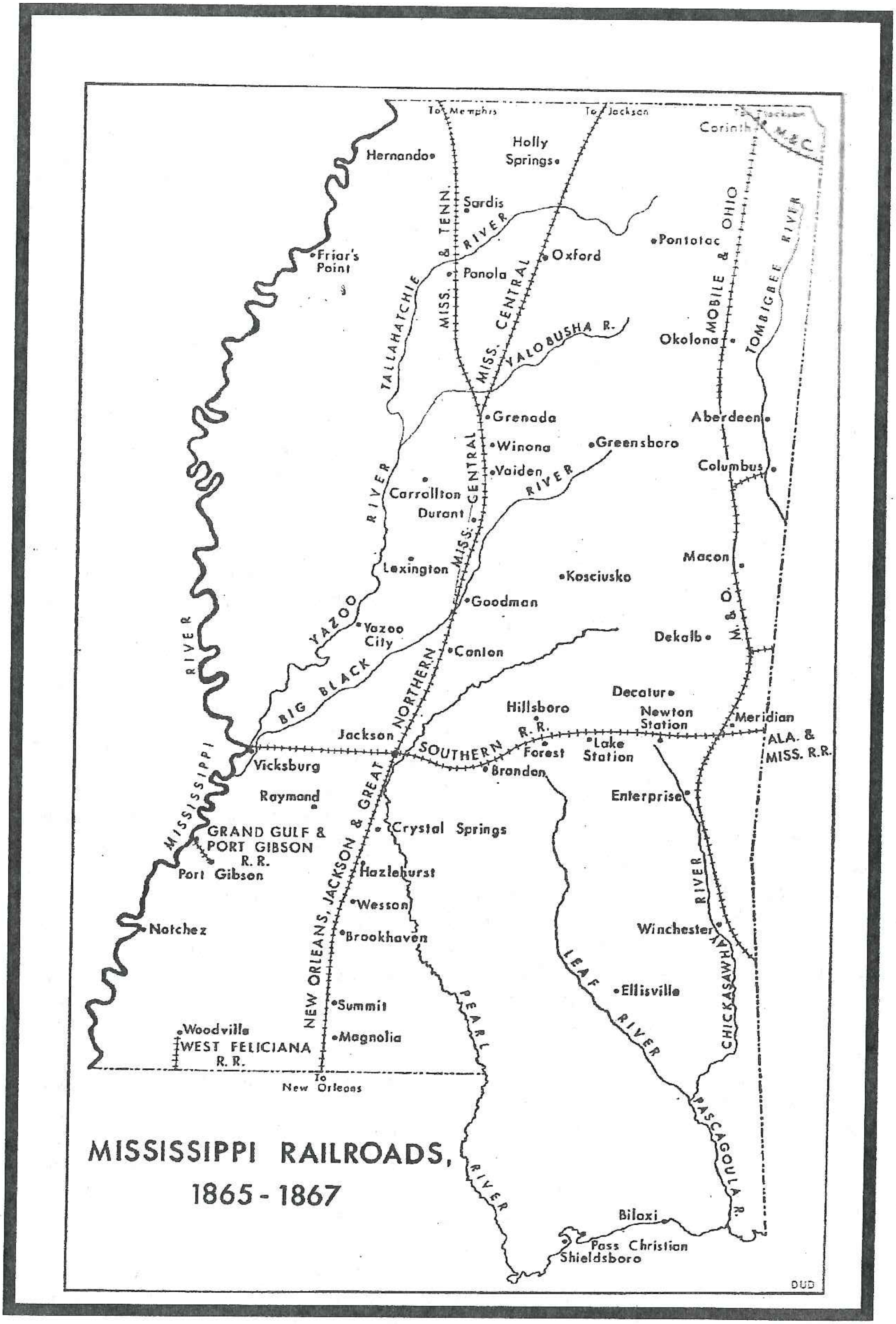


Figure 58. Mississippi Railroads, 1865-1867 (Harris 1967: 195).

their owners, who were required to pay bonds for the purchase of the $7 million in new rolling stock they would receive with their lines (Garner 1901:141). The two lines in Jackson, the NOJ&GN and the Alabama Southern, had quite different experiences in the initial years of reconstruction, but as would be the case in Japan after WWII, Northern creditors saw that complete reconstruction would be immiacle to the recovery of debts for as-yet-unpaid-for infrastructure destroyed in the course of the war, and that the only hope for recovery of debts would be further investment.

> In general...the railroads...recovered quickly after the Civil War despite their apparent prostration when the conflict ended. Their physical restoration was accompanied by relatively luctrative traffic reciets, which paid for the workof reconstruction....officials persuaded creditors to grant liberal extensions on the time for the payment....this success enabled local promoters to retain control of the roads at least for a few years....public sentiment in the state, now directed by business-oriented Whigs, favored the railroads, and this fact contributed...to their pre-eminence in the economic life of Mississippi after the war (Harris 1967:216).

In the spring of 1865, before the line was officially returned to its owners, the New Orleans, Jackson & Great Northern (NOJ&GN) hired Confederate general P.T.G. Beauregard as its superintendent. The NOJ&GN was returned to its owners in June 1865, without a debt to the government for new rolling stock. The June reopening did not include the short section of the line in Jackson city itself. They had entered the war years with 49 engines, 37 passenger cars and 555 frieght, baggage and gravel cars. At the end of the war, they had one engine, 3 passenger cars and 6 frieght cars left between Jackson and Canton and 2 engines and 13 frieght cars left between Jackson and Brookhaven. By September he had the line open from Canton to Brookhaven and in October, the first trip to New Orleans since 1862 could be made. By March 1866 daily service over the entire route was fully reestablished. In April, Beauregard was elected president of the company and went to Europe to petition bondholders for forbearance. In less than a year, Beauregard's men had rebuilt 78 bridges, laid 42,000 ties, and acquired much government surplus rolling stock. The repair work was done completely on the funding of receipts, which totaled $2.9 million in the first two years, allowing for repaymnent of much of the debt as well as the outright purchase of new equipment. Given such evidence of rapid recovery, the outstanding debt was converted into a second mortgage. By 1868, stockholders could expect to begin receiving dividends on NOJ&GN stock (Garner 1901:141, 144; Harris 1967:199, 203).

The Mississippi Central was restored to its owners in August 1865 with a Federal debt of $61,000 for new cars and engines (Garner 1901:141). The restoration of the Southern line was aided by U.S. Army engineers who were using it for their own transport. By August 1865, the line was running from Jackson to Meridian and by October a temporary pontoon bridge over the Big Black allowed service on the full line. The Union army had also established some repair shops along the line prior to the end of the war, so this line may have been in the best shape of any railroad in a Confederate state, indeed in September 1865 it was in better shape than it ever had been before. However, the line, newly established at the outbreak of the war, had $2 million in unserviced debt. Company president Emanuel went to the North and Europe to renegociate the 25 year bonds so as not to be pressed for high initial payments. He convinced bondholders that the line would soon run from the Alabama coal and iron fields to Shreveport and Texas (which it did not do), but this allowed more investment in rebuilding in 1867 (Harris 1967:208).

Tthe April 15, 1866 reopening of Southern Agricultural Implement Factory began the renewal of Jackson's industrial infrastructure. Further movement came in October 1873, when the Green family business, by changing its Pearl River Mills into Pearl River Oil Mills, became a cottonseed oil pressing establishment (McCain 1953:208, 209). The Pearl River Oil Mill, backed up to the top of the riverbank, occupied the corner lot of Silas Brown and Commerce streets. The Greens remained in the cottonseed oil business for approximately thirteen years, as it appears that they ceased operations following the 1885-1886 season. An open area separated the cottonseed mill from another riverbank business, Green's Fertilizer Factory, a plant that ran for about a third of the year. Six hundred and fifty feet of open ground separated these companies from Williams' Plow Factory on South State Street.

Effects of Civil War and Reconstruction on Agriculture and Commerce. Mississippi was estimated to have had 80,000 white men serve in the Confederate forces and 79,000 black men served in the Union States Colored Troops (Garner 1901:103). These figures are debatable. MDAH historian James Barnett believes that around 125,000 of Mississippi's white men served in the Confederate forces and that the number of USCTs is not firmly established either because many were inducted from contraband concentration camps or were simply armed and supplied wherever found in the field during Union raids. Most Mississippi companies were down to a handful of men at the surrender of Appomatox; most survivors had simply left Virginia and started walking home and thus would not have parole papers. Only 699 men from Mississippi's 2nd, 11th, 12th, 13th, 16th, 18th, 19th, 21st, 26th, 42nd, and 48th regiments were recorded as still in service in April 1865 (Harris 1967:203). Losses of productive manpower were high to both black and white Mississippians, which would hinder the return to agricultural productivity (Figure 59). By the end of the Civil War, little of value remained in Hinds County, and as late as WWI, it could be said that "from this devastation the county has not yet fully recovered" (Kocher and Goodman 1918:10). The one-crop credit system of sharecropping was a direct development of postwar conditions, and it prevailed until around WWII.

The Union occupation force of Jackson was 242 men, second in the state only to Vicksburg and Greneda (Garner 1901:171). Ord was ordered to register all voters who could or would take the loyalty oath. He was prepared to accept even cases of probable perjury, until overruled by Sherman, in order to obtain a constitutional convention. From June to September of 1865, the registrars found 46,600 eligible white and 60,100 eligible black men, for a total of 106,800 proposed voters for the state (Garner 1901:173-175). Ord's brief reign as military governor saw some attempts at halting the rife lawlessness. His trials by military tribunal show the extent of the losses in work stock: 32 of the 41 cases were for theft of horses and mules, with a total of 34 horses and 18 mules represented. The worst case, the theft of 12 horses in Hinds and Warren counties resulted in a sentance of 5 years at hard labor in the Dry Tortugas. Of the 32 cases, 10 had colored offenders; one other colored accused thief was acquitted (Garner 1901:169). The Hinds

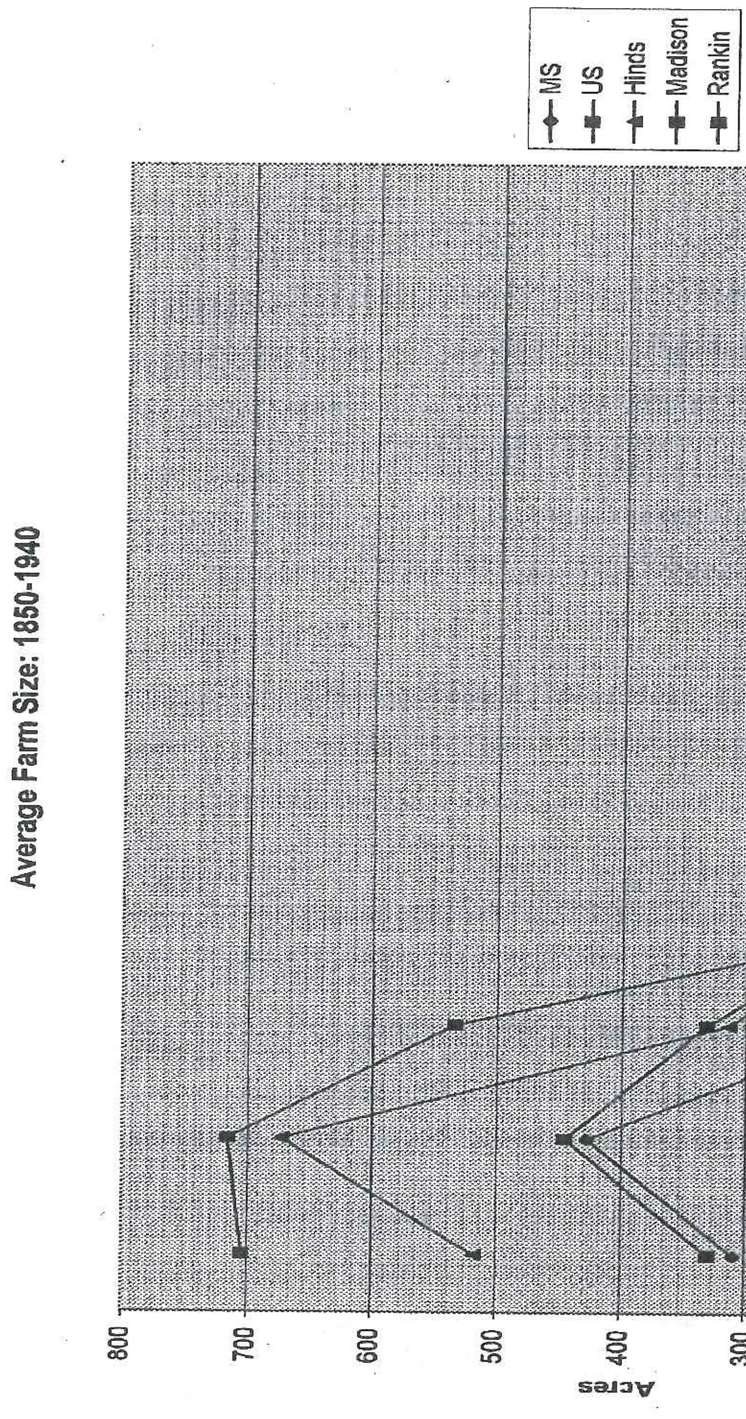


Figure 59. Average farm size graph in acres: 1850-1940

County courts (2nd District, Final Record Book 1:1-21) provide further evidence of the extent of the problem with horsethieves. Many of the suits were between freedmen and their presumed former owners. There was very little stock left, and what was still alive was very valuable and hence subject to disputes. Mary L. Epperson, administrator of the estate of Greene Williams, conducted a suit against the county sherrif for removing her property to satisfy debts of the Williams estate. In 1863, two mules and a spring wagon worth $250 and a bay mare worth $150 were taken from her. The court found in her favor, but it is not known if the animals were still alive or to be found to be returned. Also in 1866, Lucy Ellis, widow, filed suit against William Ellis, freedman, saying that in 1863 he took a brindle work ox worth $75 and a wagon worth $30 from the Ellis Place. Although his lawyer argued he could not be held responsible because the action had occurred too long ago and that he had been a slave at the time (and thus not subject to be brought to court), the case was found in Mrs. Ellis' favor. In a similar finding, Abner P. Bush's case against freedman Alfred Elmore for taking a work mule worth $200 in January of 1866 was found in Bush's favor. These were the only three cases for theft of livestock brought to the 2nd District, Hinds County, court in the immediate post-war years, so this was evidently a very limited problem, probably limited mostly by the scarcity of animals.

On 28 December 1866, Ord turned over his command and was transferred to the Department of California (Garner 1901:181), to continue his war against the Indians. In later service on the Plains during the 1870s locust famines, he again showed a willingness to bend military regulations to the benefit of struggling local populations. Ord died of the yellow fever in Havana in 1883 (Garner 1901:182).

Beginning in the fall of 1865, Jackson saw a building boom. By October, 40 stores had been built, and many others were under construction. Government service did not expand much, and there was little need for expanded public facilities (Harris 1967:218). However,

> The construction fever and commercial optimism soon subsided, and Jackson settled into doldrums of the kind experienced by many other Southern towns....Two decades later, Jackson was still a small town of less than 6000 (Harris 1967:219).

Many Northerners expected to do good business in the months and years immediately after the end of the war, and they filled many stores along the railroad lines. They were to be disappointed, particularly given the 1866 and 1867 crop failures. In 1869, a Northern traveler estimated that Vicksburg, twice the size of Jackson, did more business in a day than Jackson did in two weeks (Harris 1967:221, 223). Restablishment of postal service was also hindered by the loyalty oath requirements. The provisional governors tried to appoint post masters and mail contractors, but the loyalty oath had to be modified to find very young or very elderly men, unmarried women (with the expectation that they would delegate actual responsibility to a man), or anti-Seccesionists. Many of these appointments would be disallowed by Congress, and mail could not be delivered to any place without a sworn postmaster. In January of 1866, the Jackson Clarion complained that no mail was coming from the North, but by August, 89 post offices were in operation in the state (Garner 1901:139-140).

The same loyalty oath requirements disrupted attempts to find revenue collectors, especially as President Johnson and Congress felt that the difficult and indeed hated work of tax assessors and collectors should be done by natives (Garner 1901:140). The extent of the magnitude of the problem can be expressed in the simple figure of one-fifth of land in the state being forfeit for back taxes. The problem would be further compounded by the "almost unprecedented" crop losses to drought and flooding in the next two years (Garner 1901:313). The state tax rate was 14 mils, while county rates were 10 mils for Rankin, 11 mils for Madison and 11.4 mils for Hinds (Garner 1901:313).

Social and Labor Conditions During Reconstruction. In 1860, Mississippi has 4 textile plants and 227 sawmills (mostly on the Mississippi Sound); in 1870 there were 5 textile plants and 274 sawmills. There was an increase of only 755 industrial workers in the decade of the war and initial Reconstruction period. Likewise, investment in sawmills increased from $1.8 million in 1860 to $2.2 million in 1870 while sawmill workers increased from 1400 to 2000. However, the effects of sawmilling were more widely spread throughout the state. The great concentration on the coast shifted to distribution tied to railroads, and these would be, until the arrival of great Northern syndicates in the 1880s, mostly small mills (Harris 1867:224, 226, 227).

Naturally, the Civil War turned the damper down on many recreational activities, as locals focused their efforts on survival. It was not until four years after the war's end that the first post-war fair at the reopened fairgrounds marked the renewal of such formal leisurely distractions in the Jackson floodplain (McCain 1953:211-213). However, for three years before the fairgrounds even reopened, baseball games provided a more casual outlet for local communities. In 1873 the fairgrounds hosted the state baseball championship (McCain 1953:211).

Mississippi's early constitutions paid lip service to public education but did little. The 16th Section lands given to the states for the support of education, which should have paid Mississippi $15 million, were a total loss, and tens of thousands of white children grew up completely uneducated prior to the Civil War. Throughout the South, white labor saw no need for education and accepted their subordination to the slave-owning class. They saw education as a luxury for the wealthy, not as a means to wealth. Likewise, slave and land owners saw no need to be taxed to educate the laboring classes, especially as it would make their exploitation more difficult. Black labor, often in closer daily association with the slaveowners, and observant of the slave owner's treatment of poor whites, did associate education with power, and knew it as the way to wealth and respect. The Freedmen were then among the strongest advocates of a public school system and throughout the South, newly freed slaves flocked to any schools offered (DuBois 1935:640-141).

Between 1866 and 1870, the Freedmens Bureau assumed half the cost of funding schools begun by the U.S. Army, by Quaker, Methodist, Baptist, Presbyterian, and Congregational benevolent associations, and by the freedmen themselves. AME Rev. James Lynch, for whom the Jackson street is named, was in Savannah, Georgia in early

1865, encouraging public education. By the end of the war, Savanah blacks had contributed thousands of dollars towards schools and teachers and had 500 students in attendance (DuBois 1935:645). In 1866, there were 90,000 black students, 1300 teachers, and 740 schools in the South and border states. As late as 1870, the Congressional appropriation for 247,000 students, 9300 teachers and 4200 schools was $1 million. One in ten black children were attending school (Dubois 1935:648). In Mississippi as elsewhere, arson of church/school buildings, and threats and beatings were used to dissuade teachers. Mississippi's 1868 constitution called for uniform free public schools for ages 5-21, but progress was slow. Only 66,000 students and 3500 teachers (400 of them black) in 3000 schools were supported, but this expenditure exceeded all other state expenditures (DuBois 1935:652). The victory of "Home Rule" in the 1876 elections was followed by a period of hostility to tax-funded education, and even as DuBois wrote (1935:665) the "situation in South Carolina, Florida, Georgia, Alabama and Mississippi is still reactionary and deplorable."

"Redemption" of Mississippi politics by the Democrat party came with the 1876 impeachement of Yankee governor Ames and elected black/mulatto politicians Lt. Gov. Davis and Cardoza (Garner 1901:105).

The New South

Here we consider the post-Reconstruction history of Jackson and Madison and Rankin counties, agriculture and forestry, and the social and labor conditions in the regions. We will also consider the material culture correlates of historic archaeology and the potential impact of the 1880s-1910s Corps of Engineers navigation improvements of the Pearl on the archaeological resources of the project area.

Population growth was uneven in the three-county metropolitan area, with piney woods Rankin County continuing to be significantly less populated that the plantation areas of Madison and Hinds counties (Table 6) (Figure 60).

Table 6. Early modern population, metropolitan counties (Harris 1967:151).

Year	Hinds	Madison	Rankin
1870	30,488	20,948	12,977
1880	43,958	25,866	16,752
1890	39,279	27,321	17,922
1900	52,577	32,493	20,955
1910	63,772	33,505	23,944
Area (Sq Mi)	1013	725	791
1910 Rural Density/ Square Miles	20	40.8	30.3

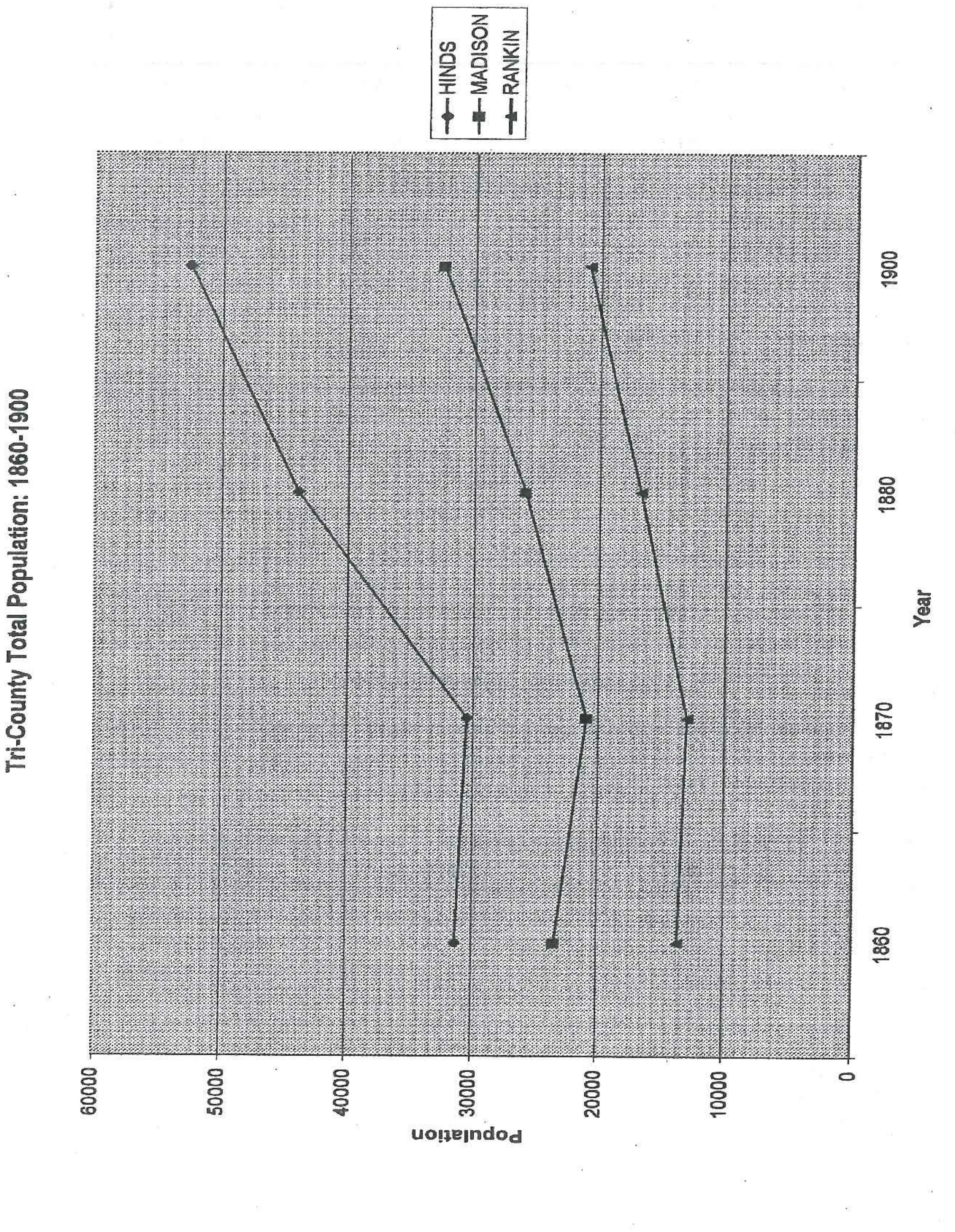


Figure 60. Tri-County Total Population graph: 1860-1900

Jackson. Beginning in 1885, after the Sanborn Map Company started providing map coverage for Jackson, changes to the industrial landscape were documented in approximately five year increments. These maps are a valuable resource for urban archaeology and will be extensively cited below. Two factors supported the continued growth of Jackson as an economic center. The city's stronghold as the state's major railroad hub by the turn of the century led to its growth as a manufacturing center based on lumber and agriculture-related industries. Lowery and McCardle (1978:980) noted that, in 1890, half of Jackson's eight functioning industrial enterprises were located on or near Commerce Street: William's Plow Factory - one of the city's three foundries; the Morris Ice Company; the Jackson Fertilizer Company - occupying the Green Fertilizer Company site; and the city's lone sawmill, Enochs Lumber Company - occupying the Pearl River Oil Mill site (Sanborn Insurance Map Company 1890:Map 7) (Figure 61). Between 1900 and 1907, the number of manufacturers decreased from 83 to 58 establishments, but manufacturing employment grew from 735 employees to 3000 (Rowland 1907:951-952). The boll weevil has partial credit for the agriculture depression of the 1920s, and continued post-war low prices for cotton and other commodities undermining the agricultura/timberl economy of the area. Consequently, many rural residents were forced to seek work in the area's rapidly expanding commercial, industrial, and transport sectors or leave to the area entirely.

In the 1850s, the arrival of the New Orleans, Jackson, & Great Northern Railroad, had begun to shift the chief manufacturing sector from the banks of Pearl River to tracts along main rail yards, sidings, and switching stations north and west of the original city limits. (The G&SI/IC siding east of Town Creek would be an exception). Thus, by the turn of the century, the Pearl River industry lost its viability as the study area saw the beginning of large-scale private manufacturing establishments. The story of Enochs Lumber Company illustrates this transition. Enoch's Lumber Company is one of the most interesting establishments of the study area because it not only demonstrates how the timberlands of the area were used; it highlights the importance of railroads to the city's industrial growth. Founded in the early 1870s, the company's timberland and first sawmill were located next to the Illinois Central Railroad between Magnolia and McComb. Via its retail and distribution center on Commerce Street, the firm expanded into the growing Midwest lumber market. The company acquired other lumber companies, including the Pearl River Lumber Company and its mill at Pelahatchie, as well as additional timber holdings in Madison and Rankin counties (Fickle 2002:76; Lacy 2002:29; Meade 1987:132). Two interesting features on the Enochs' site are what appear to be a log-holding pond and a slide or boom down to the river. This suggests that the river was being used to transport timber to the mill from upriver (Sanborn Insurance Map Company 1890:Map 7) (See Figure 61). The year 1895 brought improvements and expansion for the Enochs Lumber and Jackson Fertilizer companies. The Enochs removed the log boom and added on a pond, while side tracks were laid into the center of the Jackson Fertilizer building complex tracks. Around the same time, William's Plow Company on South State Street became the Pearl River Foundry & Agricultural Works (Sanborn Insurance Map Company 1895:Map7).

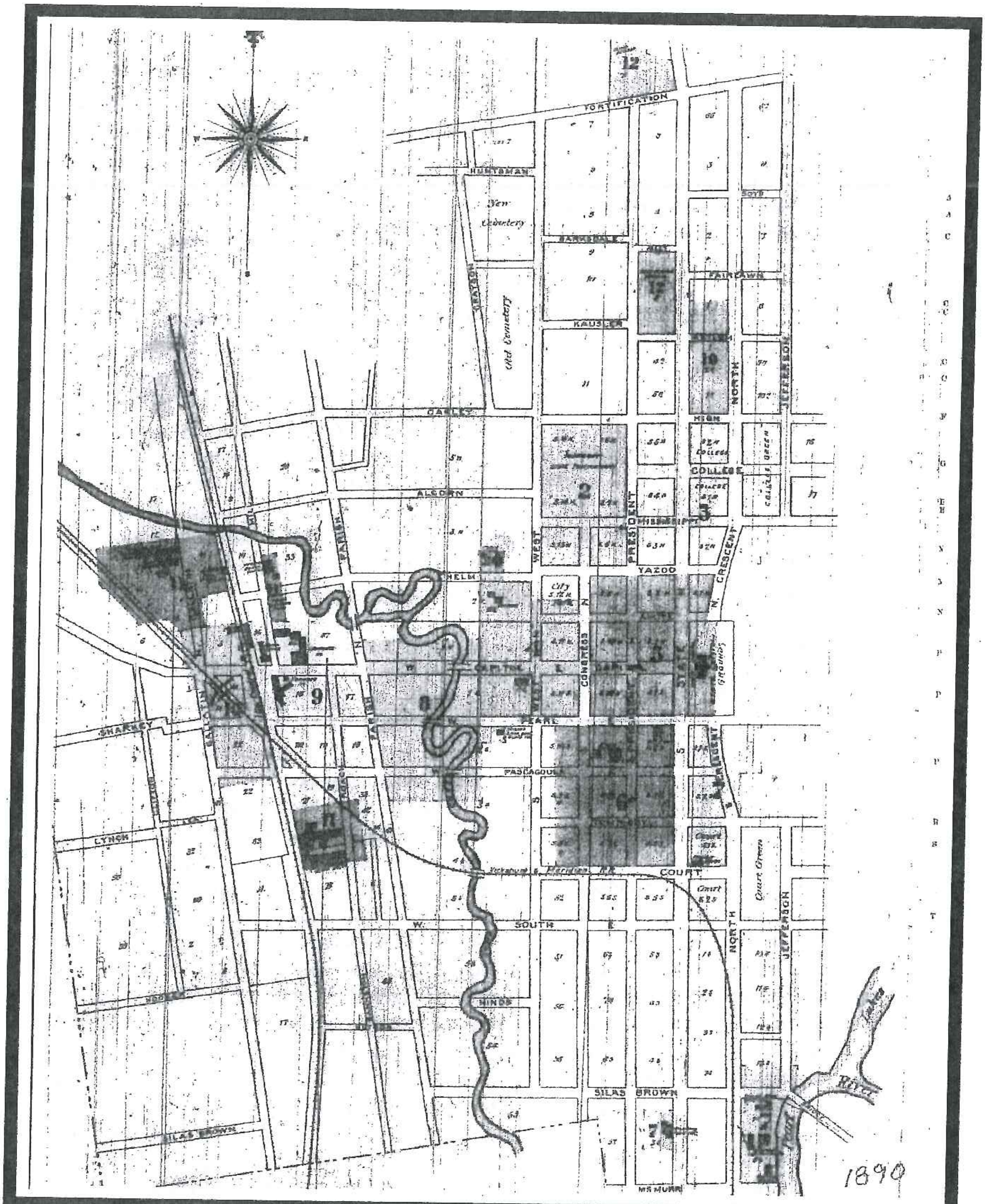


Figure 61. 1890 Sanborn Index map for Jackson.

By 1900, the Enoch's company had taken over the grounds of the Jackson Fertilizer Company, occupied the whole block on the eastern half of Commerce Street, and proceeded across the road to the northwest corner of Commerce and Silas Brown. The expansion continued until it occupied the whole block. It was on this expanse that they built a milling plant and original 1925 warehouse. More companies joined the Enochs and the new industrial center grew – both in number of businesses and residents. Westbrook Manufacturing Company, a business and office furniture supply company, had opened in 1914 on the east side of Jefferson Street, opposite South Street. On the northern side of Silas Brown, across from the Pearl River Oil Mill, settlers established personal dwellings (Sanborn Insurance Map Company 1885:Map 6). By this time, the portion of the block between South State and Commerce streets south of Enochs' had become an African American residential area. Within five years, retailing and wholesaling ventures had diffused throughout this Jefferson Street neighborhood (Sanborn 1914:Map 35; 1919:Map 11; Figure 62-1919 Automobile Blue Book). In 1948, Enoch's Lumber Company ceased to exist and Hodge's Building and Lumber Company succeeded them in their original location, while the Ludlow-Martin Steel Company moved in across the street (Sanborn Map Company 1900:Map 17; 1925:Map 50; 1948:Map 50).

In 1888, a private company expanded Jackson's basic utility infrastructure by building a reservoir and pump house to provided city residents with tap water. This water works was located just east of where today's Laurel Street meets Riverside Drive. Its ruins lie in the study area on a terrace approximately one hundred yards north of the causeway to the intake house (David Willis, personal conversation, September 10, 2004). In response to years of complaints from customers, in 1914, the City of Jackson purchased the plant and constructed a filtration building and new pump house just east of the study area (Brinson 1977:137, 178; MDAH: Jackson Water Works Subject File) (Figure 63). By 1895, on the northeast corner of East Pearl and South Congress streets, the Jackson Gas Light Company had established its electric light works (Sanborn Insurance Map Company 1895:Map 4). The Morris Ice Company (652 South Commerce Street) was built in 1880. Prior to that time, lake ice from the North was shipped to the South, packed in sawdust, by rail and ship. Civil War veteran Capt. Joseph Henry Morris began with this natural ice trade but by the 1890s adopted the new technology providing artificial ice to the South. His plant on the Pearl River bluff distilled river water and had a steam engine fuled by chips from the adjacent Enochs Lumber Company. By 1885, on the eastern side of Commerce Street in the block between Silas Brown and South streets, the Morris Ice Company ran twenty-four hours a day, six months per year. The plant used anhydrous ammonia in Decappet's absorption process. Joe Henry Morris Jr.'s new plant was in operation by 1924, at 652 South Commerce. This ice was distributed in the city by wagon and by rail to nearby communities.

The twentieth century brought the most notable landscape change in the study area with the rapid growth of Jackson and the urbanization of the agricultural lands adjacent to it. The city began annexing lands to the north, south, and west and replacing farmland with industrial and residential developments (McCain 1953). At the same time,

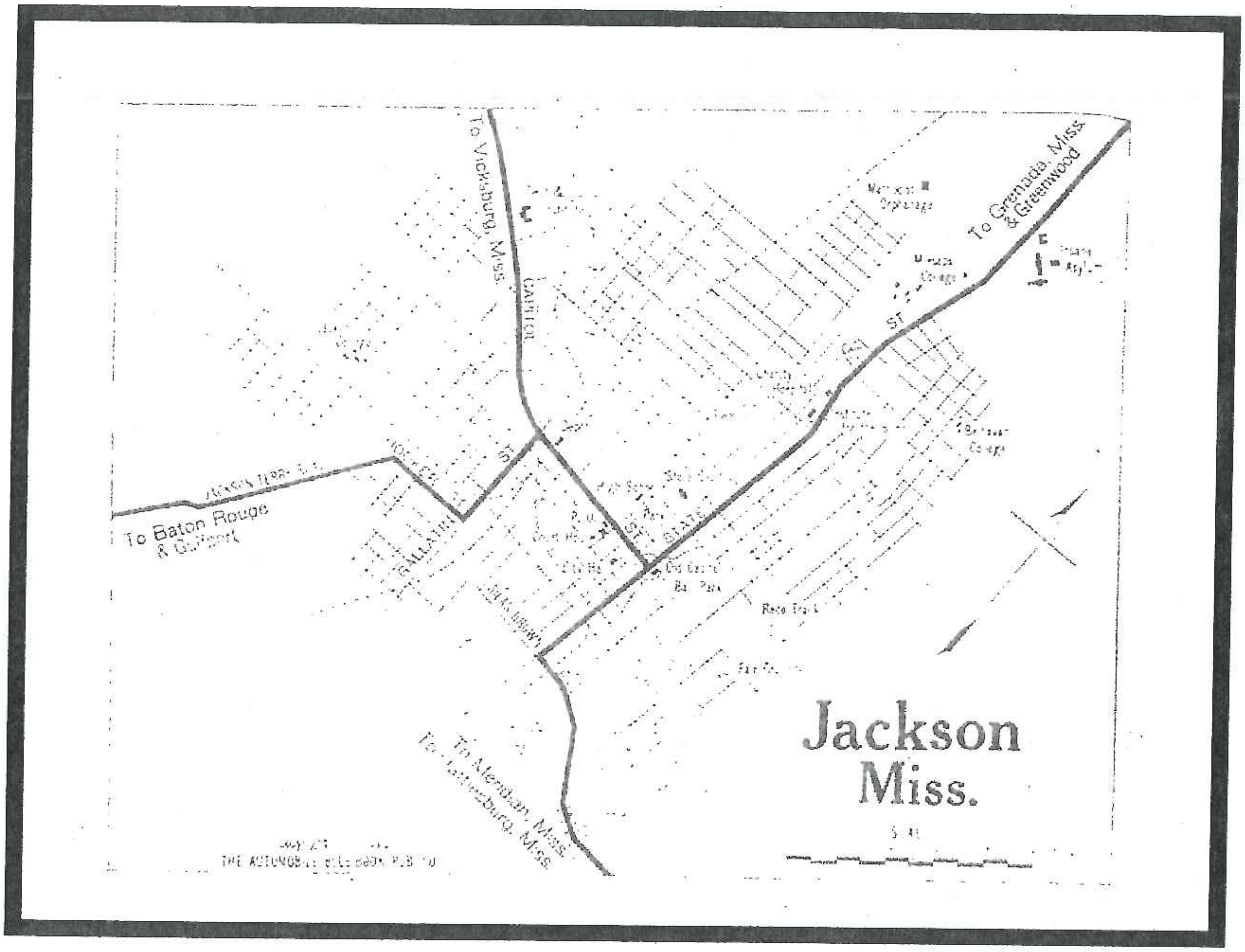
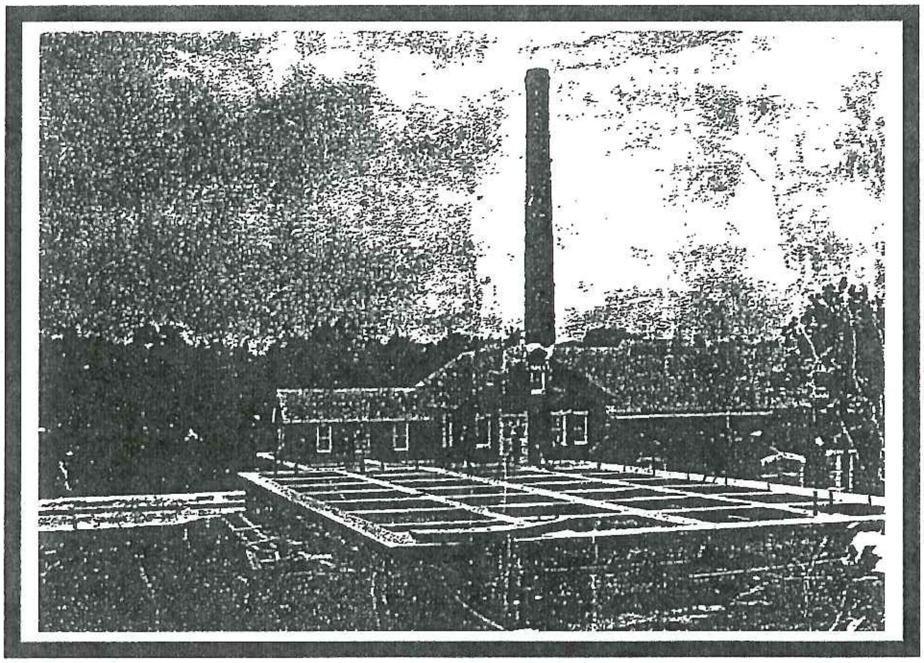


Figure 62. 1919 Downtown Jackson.



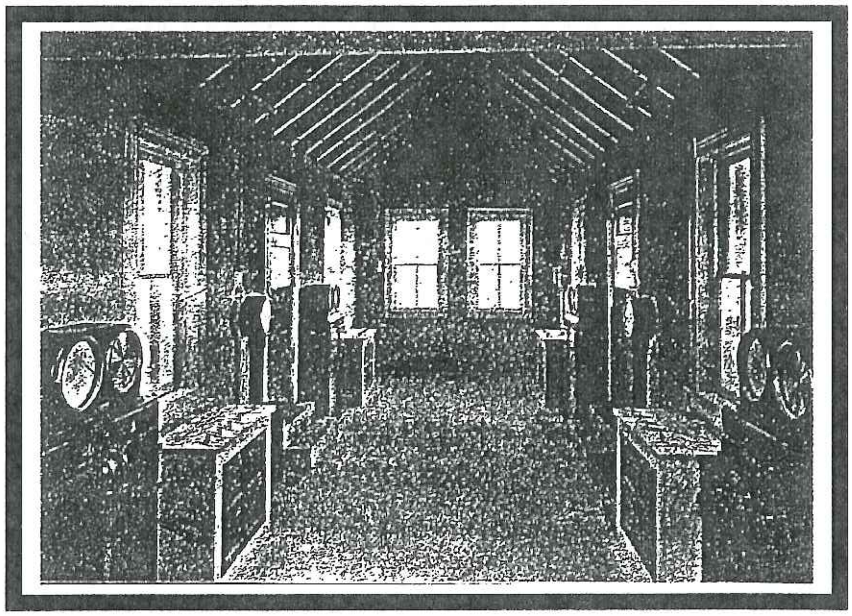
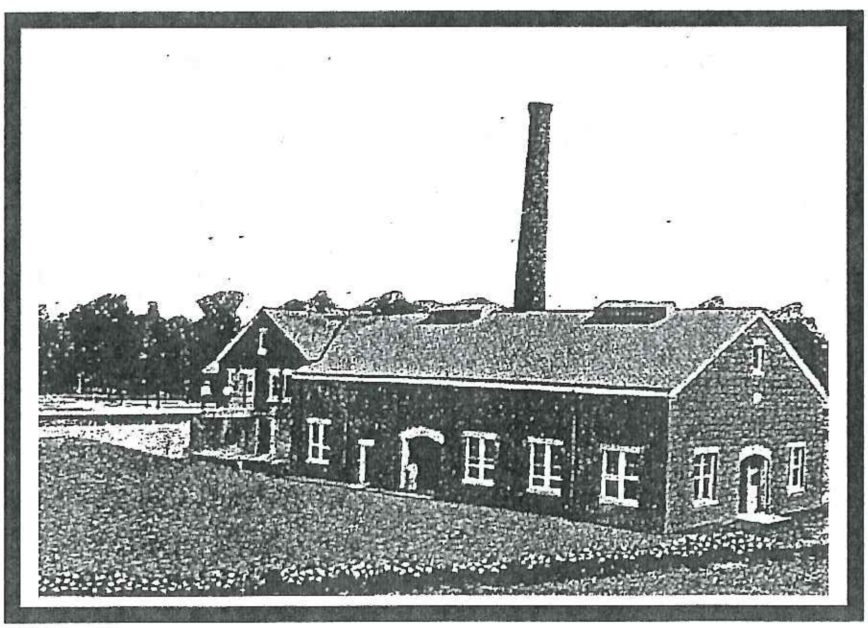


Figure 63.
Jackson City Water Plant.

a. **1915 filtration plant and pumping station.**
b. **interior**
c. **plant in 1922**



farm land in the Town Creek area defined by West Pascagoula, West, Rankin, and South Farrish Streets developed as a mixed wholesaling, light industrial, and African-American residential area (Sanborn Map Company 1904, 1948). In the early 20th century, new industrial development also occurred to the west and north of the former city limits and east of the Pearl River in today's Pearl. The new developments undermined the viability of the old industrial sector, and the original industrial district shifted to wholesaling and warehousing activities. Interspersed with African American housing and tenements, along Jefferson Street, a variety of city-owned facilities emerged; while down State Street, retailing and wholesaling activities increased (McCain 1953; Jackson City Directory 1935-1950; Sanborn Insurance Map Company 1900-1948) (Figure 64). For the Town Creek portion in the study area, the process was a bit different. Within the first four years of the twentieth century, just north of the planks near the junction of Gulf & Ship Island and Illinois Central railroads, the Town Creek area began to develop. In 1904, the W.W. Lake Bottling Works occupied a plot next to the creek on the south side of East Pearl Street (Sanborn Map Company 1904:Map 24). In less than ten years, the area had developed into an African American working class neighborhood with what appear to be shotgun houses along alleys that parallel and lead toward the creek. One such alley, Phillips, off Pascagoula, was also known as Mound Place. However, businesses began rolling into these alleys. The Tri-State bus terminal was on the south side of Phillips Alley, with its west side on Town Creek. It had a used car lot and a garage on either side in 1925. If this was the site of a prehistoric mound, all traces have been removed or paved over. Further south, that same year, the Arkansas Fuel Company - with its warehouse and storage tanks backing up to the creek - occupied the southwest corner of the Hudson Street Alley and South Farrish Street. Still further south stood the Independent Petroleum Company oil warehouse. Just two years before the midpoint of the century, the transition from primarily residential to mixed-residential with light industrial was complete. South of the interchange between Hudson Street and South Farrish street, dating to this period are four houses and the Arkansas Oil Company warehouse (Sanborn Map Company 1948:Map 49) documented in the Results chapter below.

At the beginning of the 20th century, Jefferson Street between South and Silas Brown streets was a lightly settled residential area. Over the first quarter of the century, the City of Jackson built several municipal facilities on the south side of Jefferson Street. By 1914, these included an incinerator, woodshop, and bathhouse/public comfort facility (probably associated with the bridge and ferry). Five years later, the dog pound was established; and the Jackson Light & Traction Company streetcar repair barn occupied the whole block on the west side of Jefferson, between Court and Tombigbee Streets, where the present-day Entergy complex lies (Sanborn Map Company 1919:Map 11). By 1925, the city's property here also included an asphalt plant, paint and meter shop, crematorium, and two buildings immediately behind the crematorium between the bluff and the embankment (Sanborn Map Company 1914, 1919, 1925). By 1950, the City of Jackson had added a municipal garage and warehouses for its engineering and water departments (Jackson City Directory 1950:1597). Several grocery stores were built across from the offices of Enochs Lumber Company at the present-day location of the WLBT television station. By 1953, farms and undeveloped land between North State Street and

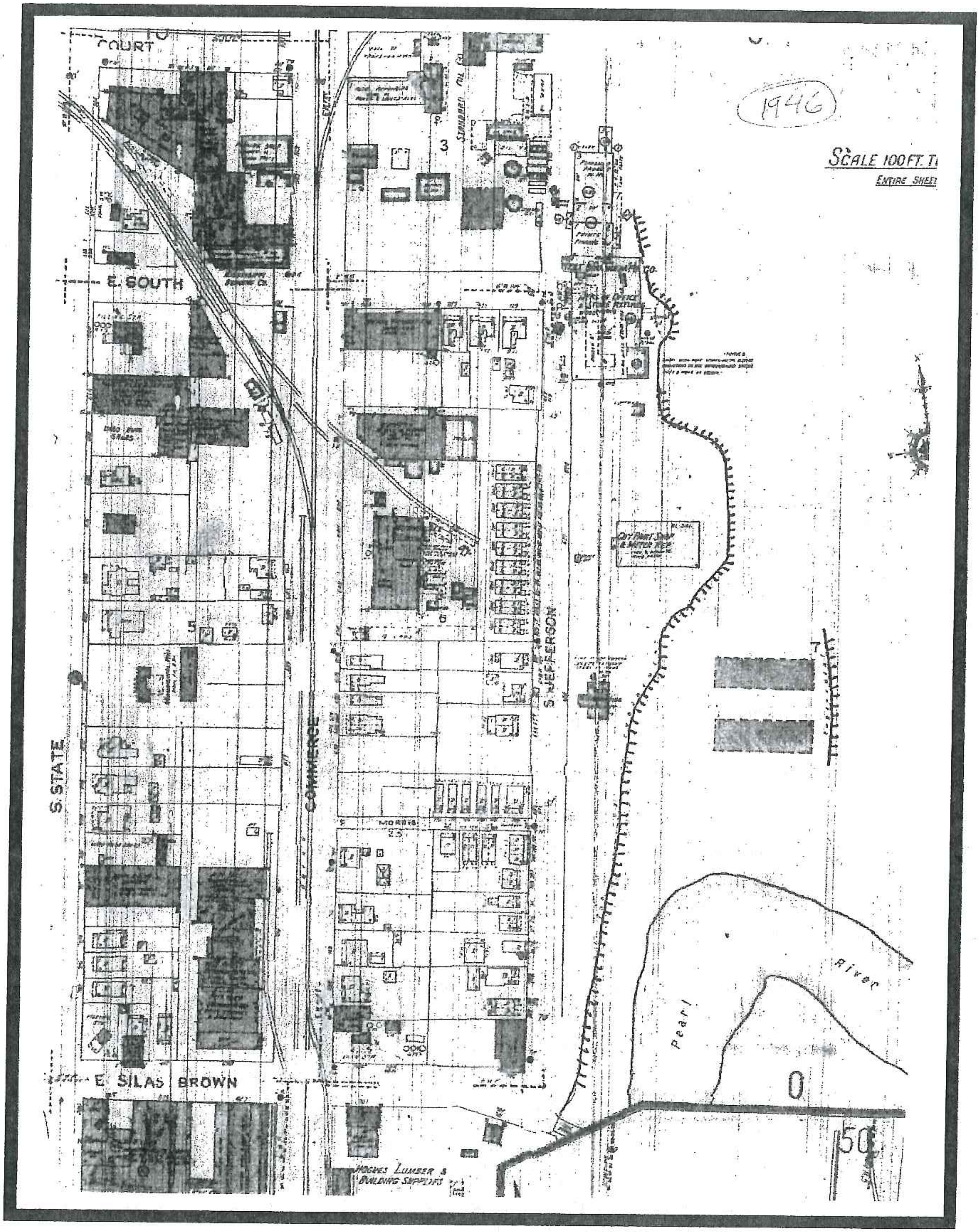


Figure 64. 1946 Sanborn Insurance map for South Jefferson Street area.

the Pearl River had been converted into the Belhaven Heights and Belhaven neighborhoods (CJPD 1998, 1999).

The State Fairgrounds expanded to include the bottomland between the foot of the bluff and the river swamps. By the end of the nineteenth century, the Jackson Senators baseball team was organized and playing regularly at the fairgrounds (Brinson 1977:183). Many early 20th century photographs show how the fairgrounds has been used. In a 1929 photo, grandstands for a football and baseball field can be seen. You can see a 1930s Midway in one picture. A 1933 photo shows the Women's Building. In 1935, the Fairgrounds held May Day celebrations and an automobile race. Evident in a 1943 snapshot is the old "Municipal Stadium" and the main entrance (Brinson 1977). From 1940s aerial photos, features of the Fairgrounds complex including the stadium, baseball field, and traces of what are probably sequential racetracks can be identified.

Another recreational development in the area, located on an unpaved extension of High Street, was a swimming pool with wooden sides and sand bottom, called Crystal Lake. The "lake," a popular travel destination, operated in the early 1930s so long as the dry Ridgeway-McGehee No. 1 Well supplied it with hot water. Despite complaints about fumes, salt water burning eyes, and being hot in warm weather, it was a popular swimming spot. The pool may have not been the main attraction, however; for, on site, there was a unisex shower area, with only a low partition to separate the boys' and girls' showers (Hughely 1993:80).

<u>Madison County.</u> Through the late nineteenth century, American settlers continued to trickle into the study area. In 1896, the site of Ridgeland, in Madison County, was purchased by a group of Chicago investors and given the name of Highland Colony (Meade 1987:21).

There is an early modern soil survey for Madison County (Tharp et al. 1920), but it was not obtained by this project. Only a small part of the project area is in Madison County, but this source should be consulted for future fieldwork in the northernmost part of the project area.

<u>Rankin County.</u> In 1890, after modern county boundaries had been settled, Rankin County had 7,454 whites and 10,467 blacks (Rankin County Historical Society 1944:17), for a total population of around 15,000 people. Any households, then to be found from this period, are most likely black. The economy throughout this period was predominantly agricultural. The area, like most of the Middle and Lower South, experienced periodic yellow fever epidemics in the mid 19th century, with one of the county's worst in 1854 (Rankin County Historical Society 1944:259). During the late 19th and early 20th century malaria was also endemic, and many patent medicines advertised as malaria tonics. In 1920, the population of Rankin County was 20,000; by 1960 it had increased to over 34,000 (divided into approximately 20,000 whites and 14,000 blacks) and in 1970 to over 43,000 (a density of 54 persons per square mile; Baughman 1971:21). In 1970, Flowood had a population of only 344, while Pearl, which

had a population of 21,000 (49% of the county's population), was petitioning for incorporation.

The Boehle, Bierdeman, Valentour families established a farming settlement in Rankin County, close to the location of today's Pearl (Muffuletto 1998). Concurrently, the community of Lucknow coalesced at the edge of the uplands around today's Lakeland Drive and the Gulf, Mobile, and Ohio Railroad right-of-way. Lucknow was a post office 1875 – 190; its name was changed to Luckney when the railroad came through (Brieger 1980: 419). In the 1920s, the East Jackson community of Rankin County (famous as the "Gold Coast") started near the new Gulf States Creosoting Plant and grew with the establishment of several other industrial plants on today's Old Fannin Road, including: the Knox Glass Company and U.S. Corrugated Fiber Box Company (Brieger 1980:420; Silbernagel 1966:31-34).

Rankin County saw a peak in post offices in the 1900-1909 decade, with 44 in operation at some point in this decade (Table 7, RCHS v:112-113). The 1860-1900 growth and 1910-1940 decline of post offices follows a smooth progression. The peak years between 1890 and 1910 correspond to the period of most extensive population distribution throughout the state (Figure 65). The low level of service in the immediate post-war years (4 operational 1860-1869, 10 operational 1870-1879) is in no way coparable to the equally low numbers of the mid 20th century (10 operational 1930-1939, 7 operational 1940-1949) because the later consolidation was accompanied by far better roads as well as Rural Free Delivery (RFD) routes, almost all of which had motor service (Figure 66)

Table 7. Post-Bellum Rankin County Post Offices.

Post Office	Dates	Years of Service	Disposition/Mail Sent to:
Almadale	1912-1916	4	Ferry
Alonzo	1901-1912	11	Almadale
Anse	1902-1908	6	Florence
Armistead	1881-1895	14	Clarksburgh
Brandon Depot	1913-1917	3	Value
Cato	1861-1909	48	Mendenhall
Cherry	1890-1901	11	Thomasville
Chapman	1885-1909	24	Lynwood
Clarksburg	1890-1923	33	Pelahatchie
Cleary	1896=1908	12	Florence
Comeby	1903-1918	15	Star
Dobson	1886-1909	23	Brandon
Edda	1906-1909	3	Pelahatchie
Enoch's Mill	1872-1875	3	?
Fannin	1860-1959	99	Brandon
Ferry	1912-1914	2	"branch"
Finkbine	1919-1927	8	Puckett
Florence	1901-		(Existing)
Flowood	1951-1959	8	Jackson
Gainesburg	1886-1890	4	Fannin
Goshen Springs	1868-1962	94	Brandon

Green Field	1891-1935	44	Brandon/Whitfield
Joe	1899-1922	23	D'Lo
Johns	1891-1955	64	Brandon
King	1881-1908	27	Florence
Langford	1891-1934	42	Brandon
Leesburgh	1897-1890	11	Pink
Leesburg	1900-1939	38	Morton
Light	1900-1909	9	Pelahatchie
Lodabar	1905-1909	4	Pelahatchie
Lucknow	1880-1882, 1888-1903	17	Jackson
Lynnwood	1881-1910	29	Brandon/Puckett
Mayton	1893-1909	16	Daniel/Puckett
Monterey	1872-1874, 1877-1908	33	Florence
Mountain Creek	1877-1881	4	King
Ophelia	1897-1924	27	Beach
Pat	1897-1908	11	Florence
Patrick	1892-1911	19	Johns
Pearl City	?-1951		Flowood/Jackson
Pearson	1872-1957	85	Jackson
Pelahatchie Depot/Pelahatchie	1870-		(existing)
Piney Woods	1926		
Pink	1884-1905	21	Pisgah
Pisgah	1897-1921	24	Leesburg
Plain	1895-1910	15	Florence
Pollock	1893-1895	2	Brandon
Puckett	1891		(existing)
Rankin	1894-1910	16	Pelahatchie/Brandon
Rufus	1902-1919	7	
Sandhill	1892		
Shadydell	1901-1902	1	Dobson
Shiloh	1868-1869	1	
Sinai	1892-1993, 1902-1908	7	Steens Creek/Florence
Snow	1901	1	Thomasville
Star	1900		
Steens Creek	1871-1901	30	Florence
Steep Bank	1880-1887	7	Monterey
Thomasville	1885-1908	23	Florence
Value	1917-1964	47	
Virgil	1887-1909	22	Lynwood/Puckett
Whites	1890-1908	18	Florence

One recreational development that forged some controversy for conservative residents was located at the eastern end of the Woodrow Wilson Bridge in what was then labeled East Jackson. Between 1925 and 1935, this formerly rural area, located between the City of Jackson and the Knox Glass and the Gulf Creosoting factories, developed into a commercial, industrial, and residential district and was dubbed the "Gold Coast" (Sibernagel 1966:31). Mississippi was among the first states to institute prohibition of alcohol sales in 1908, and when Mississippi sustained Prohibition the 1933 Federal repeal of the Volstead Act, a local entrepreneur named Sam Seaney realized the lucrative potential of buying a federal liquor license. With this in mind, Seaney legally purchased

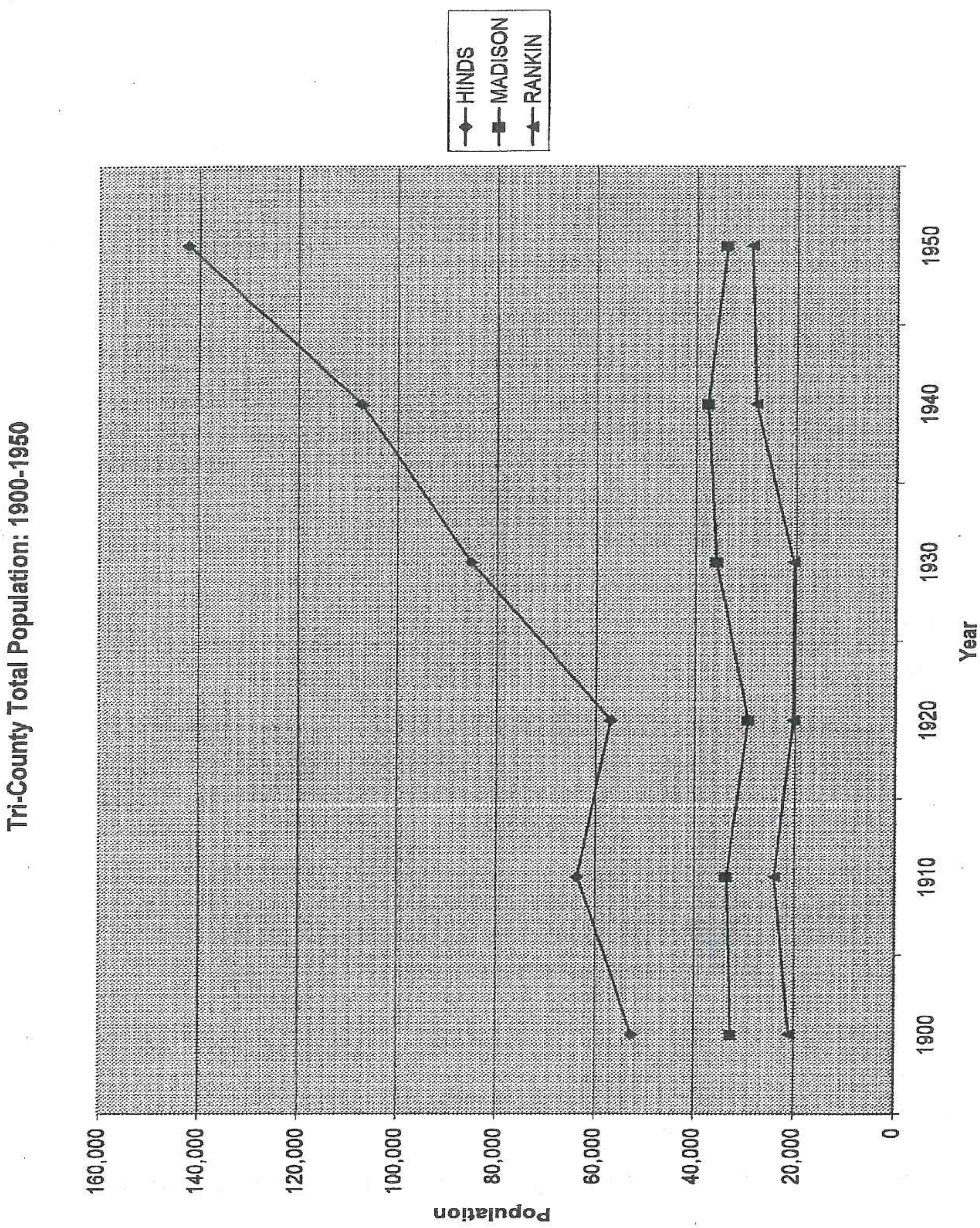


Figure 65. Tri-County Total Population graph: 1900-1950.

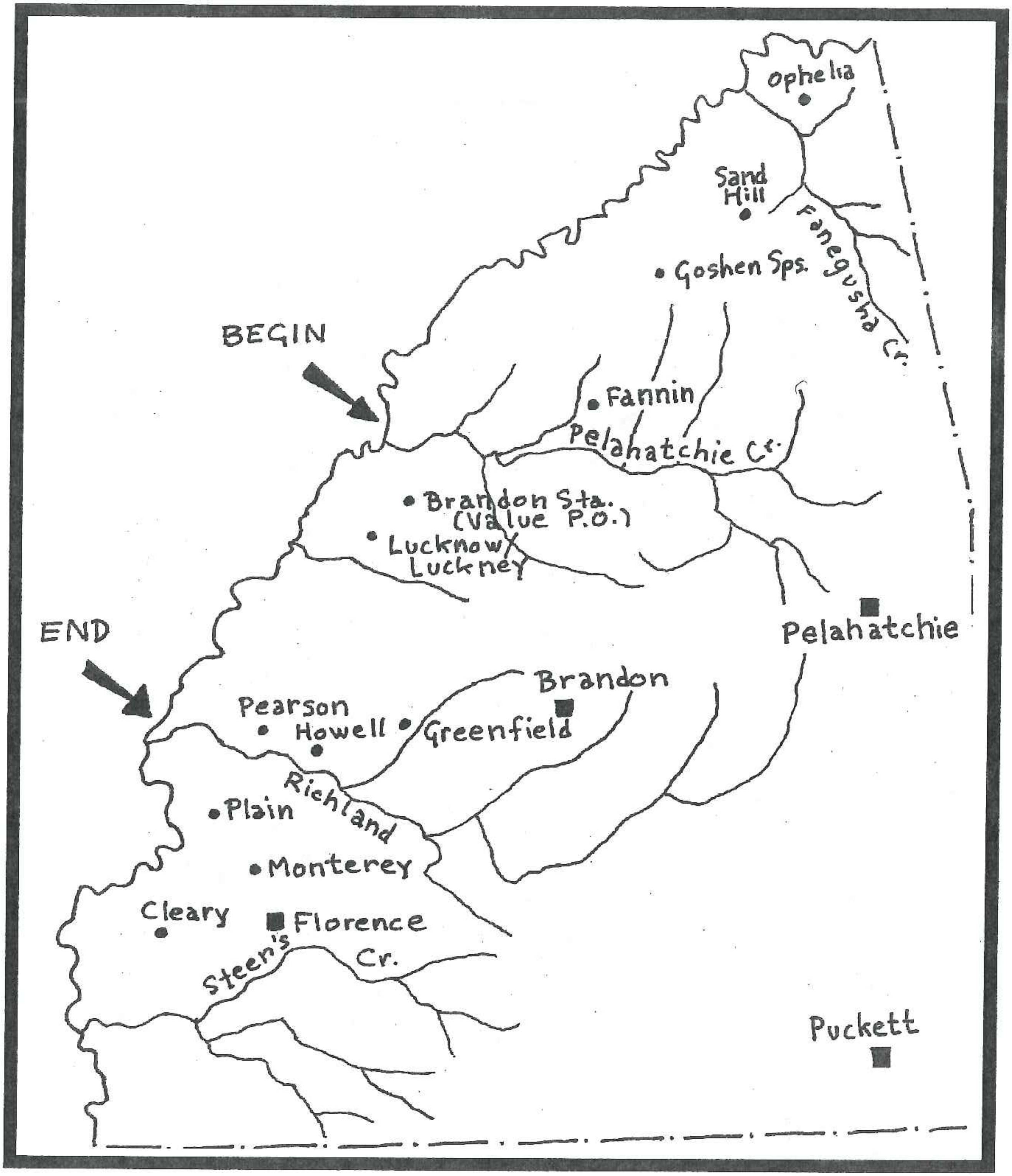


Figure 66. Rankin County extinct communities/post offices, 19th and early 20th century (Rankin County Historical Society 1988: 163).

bonded whiskey and sold the alcohol to Jackson area residents traveling from the opposite side of the Woodrow Wilson Bridge. Likewise, Pat Hudson saw the possibilities for a gambling operation; accordingly, he quickly established one at the intersection of Gulfport and Brandon roads. Within a year of the repeal of Federal Prohibition, the two men were operating out of a few area gas stations, hot dog stands, and via a dozen liquor peddlers (Brandon 1939:181-184).

By 1939, the Gold Coast – immediately south and east of the study area between today's Old Brandon Road, Old Gulfport Road, Casey's Lane, and Fannin Road – was a base for various institutions of vice, including bootleg operations, honky-tonks, and nightclubs with gambling. A 1939 national magazine article described the locale as a "Glorified mud-hollow Monte Carlo," separated from the city by a "minor swamp stream called Pearl River" (Brandon 1939:182, 183). The thirty-five to forty crude Gold Coast structures, which looked like cheap tourist cabins, were contained within its one-half mile radius. Bootleggers sold "hip-pocket" or "grass" whiskey not only from storefronts, but also from any convenient road shoulder. Nightclubs – described as fifty-dollar shacks with fifteen-hundred-dollar bars and lavish gambling equipment – as well as less reputable honky-tonks served drinks and provided a space for dancing and gambling (Brandon 1939:182; Chambers 1977:24). These criminal activities attracted "a horde of gamblers, bootleggers, fugitives, paroled convicts, and pistol-whipping thugs recruited from every center of national crime," with the majority migrating from Chicago, St. Louis, Memphis, New Orleans), and Hot Springs (Brandon 1939:181-182).

The Gold Coast's bootleggers and nightclubs were scattered among the homes, churches and commercial and industrial enterprises of the area. Racial segregation was prevalent, as Brandon and Gulfport roads were settled by European Americans, while Fannin Road was settled by African Americans (Jackson City Directory 1935; 1940; 1945; 1950). The Stamps Brothers Hotel is claimed to be the first African American hotel in Mississippi, and prominent African American entertainers – such as Duke Ellington, Cab Calloway, Lena Horn, and Billy Holiday – played the Fannin Road nightclubs (Rose 2001). From the 1950 Jackson Directory, a number of other listings that appeared to be night clubs are listed in Table 8 below.

Table 8. East Jackson Night Clubs (1950).

Locale	Street Adress	Establishment Name and Type
Brandon Road East from Bridge	100	First Place
	111, at Sullivan Tourist Court	Clyde's Place
	206	Lackey's Place
	(none)	Big Red's Place, operated by segregationist and bootlegger "Red" Hydrick
Old Gulfport Road, south from Brandon Road	109	This Is It Club
	302	Owl's Nest, cold drinks
	400	The Oaks Club, cold drinks
Casey Lane, west of Old Fannin Road	none	Muse's Place
	none	Pat's Place

	none	Wilson's Place
Fannin Road, north past Knox Glass Co.	214	Circle-O-Club
	231	Heat Wave
	310	Penthouse
	316	House of Blue Lights
	413 R	Playhouse
	413 R	Blue Flame Cafe

These clubs operated openly; they made radio and newspaper advertisements and put up neon signs and floodlights, creating a "carnival effect" (Gordon 1977; Stover 1983; Brandon 1939:182). To thwart such activities, during World War II, the State of Mississippi passed the Black Market Tax on illegal alcohol sales. Episodic attempts by state and local governments and religious and civic groups to clean up the area were rather unsuccessful. It took a shootout to quiet the clamorous advertising efforts of such clubs. The 1946 shootout between a Rankin County constable and the Coast's original bootlegger, Sam Seaney at the Seany's Shady Rest Club on Old Highway 49 resulted in both their deaths. Following the shooting, public outcry led to a state and county crackdown on bootlegging (Gordon 1977).

While the cheap construction techniques were a rational response to the river's annual flooding, once State Prohibition ended in Mississippi in 1966, these structures of nightlife quickly deteriorated and most no longer exist. According to a Jonelle Anderson (personal communication June 23, 2004), surviving commercial establishments that date to the heyday of the Gold Coast include Foy's Grocery and perhaps Jack's tamale stand. Additionally, still present today are a few houses on Fannin Road, as well as several houses and the metal base of what appears to be a neon sign for a tourist court on Old Brandon Road. The Gold Coast is historically significant not only because of its lawless past, but because it represents a controversial period in the State's and Jackson's history. Nightclubs and bootleggers also lined U.S. Highway 51 as it ran down the Hinds and Madison county line. Other parts of the state such as the Delta, Gulf Coast, and the River Counties were notorious for illicit liquor-related activities. Nonetheless, the Gold Coast received national attention and became the poster child for the failure of, and hypocrisy in, continuing Prohibition. It even inspired one of the great speeches in Mississippi political oratory, Representative N.S. "Soggy" Sweat's famous "Whiskey Speech" delivered on April 4, 1952, at a banquet in Jackson:

> My friends, I had not intended to discuss this controversial subject at this particular time. However, I want you to know that I do not shun controversy. On the contrary, I will take a stand on any issue at any time, regardless of how fraught with controversy it might be. You have asked me how I feel about whiskey. All right, here is how I feel about whiskey.
>
> If when you say whiskey you mean the devil's brew, the poison scourge, the bloody monster, that defiles innocence, dethrones reason, destroys the home, creates misery and poverty, yea, literally takes the bread from the mouths of little children; if you mean the evil drink that topples the Christian man and woman from the pinnacle of righteous,

gracious living into the bottomless pit of degradation, and despair, and shame and helplessness, and hopelessness, then certainly I am against it.

But if when you say whiskey you mean the oil of conversation, the philosophic wine, the ale that is consumed when good fellows get together, that puts a song in their hearts and laughter on their lips, and the warm glow of contentment in their eyes; if you mean Christmas cheer; if you mean the stimulating drink that puts the spring in the old gentleman's step on a frosty, crispy morning; if you mean the drink which enables a man to magnify his joy, and his happiness, and to forget, if only for a little while, life's great tragedies, and heartaches, and sorrows; if you mean that drink, the sale of which pours into our treasuries untold millions of dollars, which are used to provide tender care for our little crippled children, our blind, our deaf, our dumb, our pitiful aged and infirm; to build highways and hospitals and schools, then certainly I am for it. This is my stand. I will not retreat from it. I will not compromise (Jackson Clarion Ledger 1966).

Agriculture. The early 20th century soil surveys are a valuable resource for economic as well as geographic reasons. Specific agricultural-soil correlates have been discussed in the Environment chapter. Here we will consider aggregate data for the counties of the project area.

In 1879, there were 80,000 acres of cotton planted in Hinds County, producing 36,600 bales. There were also 47,500 acres of corn producing 532,700 bushels, and minor amounts of sweet potatoes, oats and cane for home use as fodder and syrup. By 1889, cotton had increased to 97,800 acres (37,400 bales) and corn to 53,300 acres. Cane and hay production had increased significantly. The county also had 53,000 peach and 6,400 apple trees reported in the 1890 census and about the same in 1909. Cotton and corn production had continued to increase, with 103,300 acres of cotton (41,300 bales) and 70,900 acres of corn (986,600 bushels). In 1909, cotton acreage had stagnated, with early 20th century production fluctuating wildly between 17,500 and 52,000 bales a year (Kocher and Goodman 1918). These highly variable yields were the result of the interaction betweem weather conditions and the encroachment of the boll weevil (boll weevil infestations are worse in wet or late crop years). Given rapid and extreme fluctuations in the world economy at this time, the unreliability of cotton yield in a monocrop system made the situation of cotton farmers very precarious.

In 1900, Hinds County had 52,500 people, with 75% of the population classified as "colored." In 1910, Hinds County had a population of 63,700, with over 70% colored. Therefore, late 19th and early 20th century homestead sites found by archaeological survey were most likely occupied by black farmers. The number of owner-operators was in steady decline, with only 19% of farms worked by owners in 1910. Therefore, most historic sites are those of tenants, perhaps by several sequential families. Land owners got half of the crop if they furnished everything, and better-off sharecroppers who provided their own stock, seed and implements paid either cash rent of 75 cents to 2$ acre or 20 to 25 pounds of lint per acre. Population was already beginning to concentrate in incorporated areas; in 1910 only 67% of the population was rural, with centers of population near Jackson and in the railroad towns. The rural population density was 49 per square mile (which would be 10 household per section, assuming an average size of 5 per family). Farm buildings were usually small, with many having no barn or stable for the small horses and mules used for single-animal light turning plows. The 1918 soil survey notes that some of the formerly fine old houses remaining were becoming (one hundred year-old) ruins occupied by Negro tenants; this pattern of status change through time on archaeological sites should be noted and expected on sites with initial early 19th century occupation extending into the 20th century. In 1910, the average value of Hinds County farms was $1473, with nearly 60% of this value being in land and around 20% each in animals and buildings. In that year, there were 7,305 farms, averaging 53 acres each, but there were also many farms of over 1000 acres and several of 10,000-15,000 acres. The few Negro farm owners had mostly small, 5 to 40 acre parcels, but they supplied most of the sharecrop farm labor and almost all of the hired labor. Tenants were more common than wage workers, with only 1600 farms paying directly for labor. Laborers were paid 50 to 75 cents a day, or 50 cents per 100 pounds at cotton picking time (Kocher and Goodman 1918:14, 15).

In addition to cotton and corn (grown largely on terraced uplands or more reliably on well-drained bottomland), Hinds County was producing cattle, hogs, poultry, dairy products and vegetables for the urban market, and some cattle and tomatoes were being shipped to larger cities by rail (Kocher and Goodman 1918:6-8). Oats were produced in Hinds County, with production ranging from 2000 acres in 1879 to 1000 acres in 1909, but in 1918 Kocher and Goodman (1918:11) note that "several thousand" acres were being sown; hay of various grades has also been produced. The signature artifacts of small grain and hay/fodder production are the scythe and reaping sickle. Hinds County has also produced sweet potatoes, with 1400 acres in 1879 and 2000 in 1909; the expected archaeological trace is the root cellar or vegetable pit near a homestead. Kocher and Goodman (1918:11) also note that tomatoes were being exported to Pittsburg by the Illinois Central, with over 100 carloads shipped in 1915, along with some cabbage and other vegetables. Besides the largely home-use fruit industry established in the last decades of the 19th century, Hinds County also produced pecans, white potatoes, peanuts, field peas, and other fruits and vegetables on a small scale.

Kocher and Goodman (1918:12) also note that "nearly every farmer in the county keeps one or more cows to supply dairy products for home use" and that there was some local trade in butter, poultry and eggs. This indicates that stoneware butter churns and crocks should be ubiquitous on late 19th-early 20th century sites. Hinds County also produced beef cattle in excess of local consumption needs, and had at least one herd of prize-wining Herefords. Cattle were pastured on abandoned fields and wintered with bottomland cane, with some fattened on corn and/or oat silage and cottonseed meal. Nearly every farmer also had a few hogs, with some keeping droves of 20 or 50 animals. In addition to home and local consumption, a few hundred carloads of meat animals were exported by rail annually from Hinds County. In the early 1900s, the Mississippi's cattle industry was still based on the open range. Unlike the replacement of the razorback with improved hog stocks, the county's cattle changed little from their original breeds (USDA 1926:5-6). Fencing was intended to keep hogs and cattle out of crops and not in pastures. Thus, efforts to pass a stock law requiring fencing began in the 1880s; but it was not until 1926, that a state law (retaining a local county option) was passed. Even after the law's passage, farmers continued to let cows loose after harvest and round them up before the next spring planting (MDAC 1985). While early-twentieth century boosters promoted the livestock potential of Rankin County's bottomlands (Rowland 1907:518), until the 1926 law was passed, open ranging remained the norm. Still, as late as the 1940's, farmers had round up their cattle. For example, the Jones and Robinson families, who lived on opposite sides of the Pearl River near the Mule Jail would have to sort out their cattle after low river levels allowed the herds to mix (Bullard 2000:4). Jackson, Natchez, East St. Louis, and New Orleans served as the principle markets for Hinds County cattle and hogs (Kocker and Goodman 1918:8).

Rankin County's conomy throughout this period was also predominantly agricultural, although the hardwood andpine timber industries were more important than they were west of the river. Between 1877 and 1905, sharecropping and tenant farming were the basis of the local economy, but the array of timber industry and other manufacturing plants (Particularly at the huge Pelahatchie sawmill) in the area indicates that local small farmers would have had access both to off-farm wage employment and to a wider array of industrial products than many other areas of the state. Cotton has been a mainstay of the county economy, and production peaked around 1899, when 15,000 bales were produced. Production declined throughout the 20th century, to 4,500 bales in 1924, and 6,300 in 1969 (Cole et al. 1981:3). At the same time, the number of farms decreased and their size increased, with the 4151 farms in 1910 and 2207 farms in 1925 averaging around 85 acres.

In 1960, Rankin County's 1600 farms had 302,000 of the county's 512,000 acres under cultivation or pasturage (59% of area), but by 1964 the agricultural land had declined to 270,000 acres (53% of area; Baughman 1971:22). Rankin County's main products in the 20th century have been livestock, timber, poultry, cotton, soybeans, grain and dairy. Cotton production increased slightly in the last quarter of the 20th century, with 11,300 bales harvested in 1974 and 9,200 bales in 1981. By 1974, the average farm size had increased from the early 20th century average of 85 acres to 203 acres, still quite small by Mississippi standards. Dairy cattle declined markedly in the later half of the 20th century as well, but woodland acreage, remained at 360,000-310,000 acres from 1958 to 1977 (Cole et al. 1981:3).

Kocher and Goodman (1918:13) note that despite the usual abandonment of exhausted upland cotton fields and the traditionally higher production on alluvial soils, the prevalence of the boll weevil in the bottoms was forcing early 20th century cotton production once again on to the loess soils (Memphis and Grenada silt loams). Mule plowing for cotton usually only reached only 3-5" below the surface in the early 20th century, but any cultivation of loess inevitably causes erosion. It seems to the author that deflated soils from 1830-1930 cotton producing era, even when pasture or woodland in the 20th century, are the rule in the loess-derived soils of the Jackson metropolitan counties.

<u>Hardwood Timber Industry</u>. By the early decades of the twentieth century, the timber industry consolidated its position in the study area (Figure 67). In the 1910s, the Gamill and Interior lumber companies owned timberlands along the Pearl River (Lacy 2002:29). Eventually, the Pearl River Lumber Company, which also owned a large sawmill in

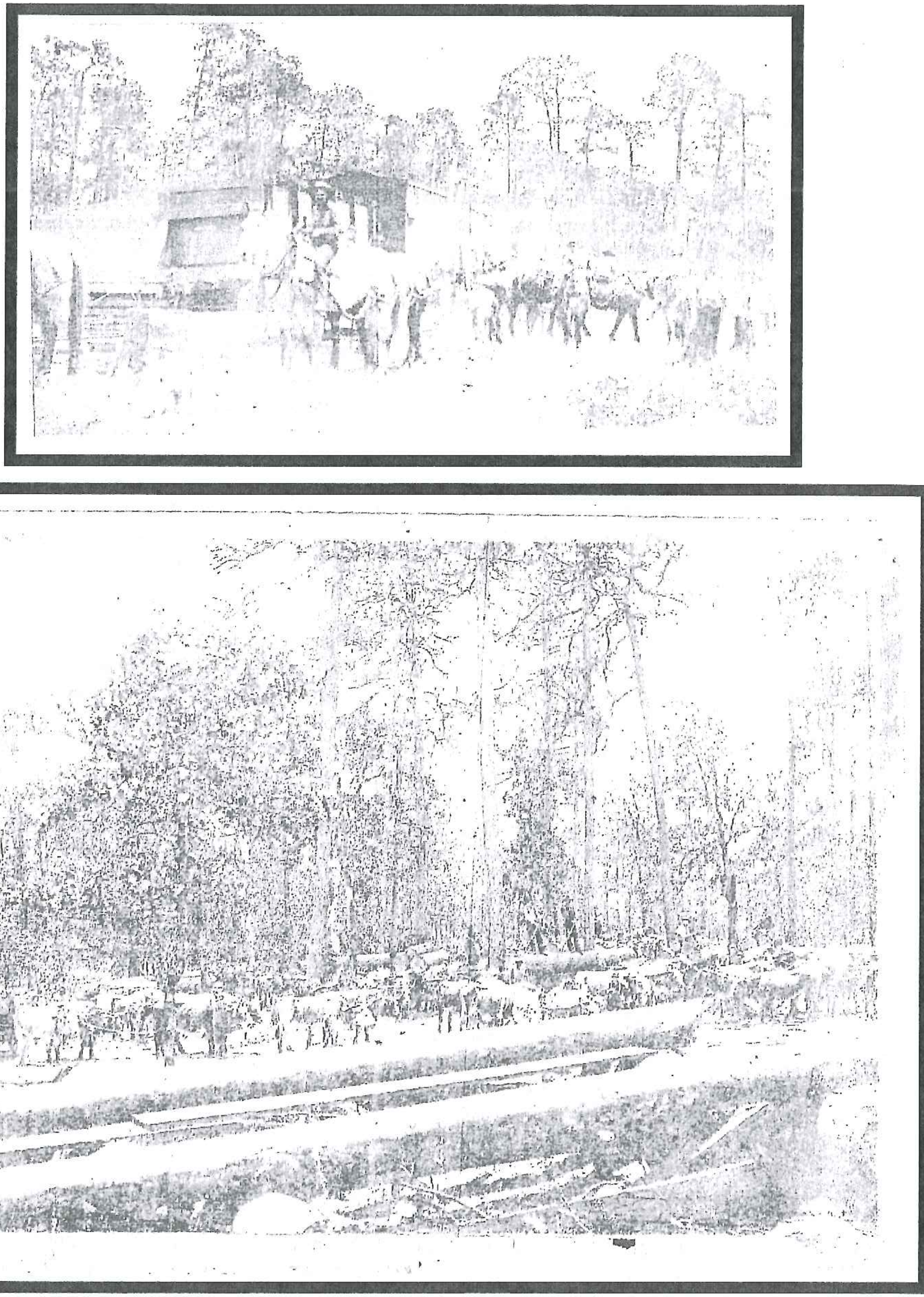


Figure 67. New South – hardwood timber industry.

Pelahatchie, purchased these two companies. Subsequently, by 1921, Denkmann Lumber Company, associated with the Weyerhaeuser, had acquired the Pearl River Lumber Company. Following a fire at the Pelahatchie Mill in 1935, Denkmann relocated to Canton and became Mississippi's largest pine and hardwood mill (Meade 187:132; Lacy 2002:31). The Interior Lumber Company leased land to the Mule Jail Fishing Club in 1909 and in 1916 offered the Club a lease that included a timber contract with Gamill Lumber Company for less than $10/acre; the club is discussed in the next section (Bullard 2000:5). Further, according Bullard (2000:4), a story of children from logging camps in the swamps riding donkeys to school suggests that logging operations were going on in the project area.

<u>Hunting and Fishing</u>. Both individuals and clubs used the Pearl River bottomlands for hunting and fishing. Hunting and fishing were not solely for recreational gain. As part of navigation improvement, after 1879, the removal of a failed wood-and-stone fish weir, just below a railroad bridge, confirms the presence of commercial fishing. The Pearl River probably also had commercial hunters supplying ducks and deer to hotels or private clients.

The bottomlands also provided recreation opportunities for the both rich and poor urban and rural populations, such as Mr. Neill, a plantation manager, who fished Mule Jail Lake every Saturday (Bullard 2000:4, HR 1879:1:884). Mule Jail Lake, on the Hinds County side of the river (Section 3, T6N, R2E), was the site of a formal club. According to local legend, this artificial cut-off of Pearl River is the site of stock pens established during the Civil War to hide mules and cattle from military foragers. A group of Jackson businessmen established the Mule Jail Fishing Club in 1909 in a house that they leased from Interior Lumber Company. In less than eight years, the club began to build private and community structures and assembled further landholdings through purchases from the Interior Lumber Company and the Betterman Plantation. Clear Lake, Lewis Lake, Big Slough, and Little River (locations uncertain) are other locations that provided a suitable environment for such activities (Bullard 2000:5-7).

Area residents also took advantage of the informal recreational venues that the bottomlands provided (Figure 68). Bullard (2000:2) relates the reminiscences of an older Rankin County resident, whose father took her and her siblings to a sulfur spring in the swamps. Mrs. Seta Sancton, in her 1920 memoirs of her Jackson childhood, recalls Sunday afternoon excursions a favorite destination to a bend in the Pearl River, called Devil's Elbow. These treks to the river bend were generally day trips as the river was not entirely safe; it was too treacherous for swimming and "blind tigers" – a local term for moonshiners – lurked in the swamps (Sancton 1987:105). Hidden still sites are generally quite small, perhaps less than 10 m in diameter, and consist of a few bricks, charcoal, and barrel bands or steel drums and glass or stoneware sherds. They are often recorded in surveys of such tracts as our survey area.

Figure 68. Recreation activities on the Pearl River ca. 1910.

Social Conditions in the New South. While the main exodus of black labor from the South came with farm mechanization after WWII, the trend was well established by WWI, and as in the later movement, it was pushed by conditions in the South as much as pulled by promises of wage labor in the North. Leaders of the black community realized that substandard education was a primary tool of their subordination, and began to point this out as soon as white land and mill owners began to notice the restlessness of labor. In 1918 a delegation of 50 blacks testified to a commitee of the State House of Representatives that black elementary, secondary and college opportunities were important factors to those leaving the stateand that "if these matters are given substantial consideration…the exodus which has struck at the very foundation of the labor system in Mississippi will be largely checked (Jackson attorney Perry Howard quoted in McMillen 1991:90). In the same year, the Warren County Colored Ministers' Association petitioned locally for better rural schools for blacks, saying the existing conditions "are not such as might breed contentment. We have noticed that the people…are not settled. Many are leaving (McMillen 1991:90)."

Throughout the 1920s and 1930s the Women's Federation, established in 1903 by wives of black bussinesmen, professionals and religious and education leaders, focused on education and other typical middle class concerns such as health, housing, churches, social services for the elderly and destitute, school libraries, and eventually the 1943 construction of Oakley Training School for delinquent black youth. Also focusing its efforts on the capitol area, the Committee of One Hundred, founded in 1923 during a post-war surge in out-migration, worked quietly with the dominant power structure on such issues as restoring Latin to Alcorn A&M College's curriculum, pointing out to the all-white board of trustees that Mississippi blacks who wanted to study languages had to do so out of stste where they were in danger of encountering "pernicious doctrines." In 1923, the peak year of migration, state legislators were persuaded by this group of community leaders that increased funding for black vocational education would "show the Negros of the state that we...want them to stay here (McMillen 1991:93)."

These accomodationist movements were successful mainly as long as there was a farm and woods labor shortage, and white paternalism decreased with the Depression. These early movements for fair treatment in schools, workplaces and courts would, with the end of WWII, be transformed into a new powerful and militant civil rights movement demanding full equality before the law.

Late Nineteenth Century Material Culture. The county court records provide a valuable source for studies of local material culture. As is the case with ca. 1830-1850 estate and dower settlement, which often provide estate sale inventories and merchant accounts, lawsuits from later in the century sometimes provide detailed records. In Hinds County (Final Record, 2nd District, Book 78 and 79), a long-term (1879-1881) suit between local defendants C.C. Parkman & Co. of Bolton and New Orleans suppliers/creditors Bickham and Moore/Flash Preston & Co. lists foodstuffs, hardware, harness, and household wares credited, totaling $665.12. These provide not only the types of goods available in the plantation economy, but relative percentages as well. Items that might be expected to leave an archaeological trace (mostly iron/steel) are given in Table 9. These indicate little small grain/hay production or manuring, and far more work mules than saddle horses. The shovels and spades are probably indicative at least in part of the extensive ditching the 1918 soil survey (Kockher 1918) indicates was needed to produce crops on Hinds County bottom lands. The items in the Parkman storehouse were ordered sold to settle the $584 debt. This seems to be a typical case of a great deal of credit being issued on unsecured speculation to a failed merchant. There are numerous cases of merchants' sueing each other that could provide similar inventories of the range of goods available in the area in the late 19th century.

Table 9. Goods of C.C. Parkman & Co. subject to 1880 claims from New Orleans creditors.

Item	Quantity	Price per	Total value
Kegs wrought nails	1	7.00	7.00
Kegs wrought nails	7	5.00	35.00
Kegs nails	2	5.00	10.00
Short handle shovels	6	.80	4.80
Long handle shovels	8	.65	5.20
Long handle spades	4	.75	3.00
Short handle spades	6	.90	3.40
Muck forks	5	.90	4.50
Sythe blade	1	1.50	1.50
Side saddles	2	3.50	7.00
Side saddles	1	4.50	4.50

Man's saddles	1	6.00	6.00
Man's saddles	3	4.00	12.00
Girths	14	.20	2.80
Halters	6	1.00	6.00
Blind bridles	6	.60	3.60
Curb bridles	3	.70	2.10
Head stalls	3	.75	2.25
Horse collars	5	1.00	5.00
Breast straps	7	.75	5.25
Back bands	15	.70	10.50
Back bands	14	.20	2.80
Trace chains	48 pairs	.53	25.44
Trace chains	15 pairs	.53	8.05
Single trees	30	.25	7.50
Breast chains	3 pairs	.40	1.20
Small stove	1	4.00	4.00
Baking pans	11 pairs	.10	10.00

While the above mentioned Parkman store inventory indicates that "wrought" nails were still in use as late as 1880, a barbed wire machine had been invented 1878 and fencing wire was evidently in use in central Mississippiin the same era. In an 1881 suit of D.C. Warrick seeking reimbursement from Mrs. E.A. Anderson for improvements to a Hinds County plantation he managed for her, the Anderson Place, his labor and building materials are itemized (2nd District, Final Record Book 79:507). The items that might leave and archaeological trace are given in Table 10. Warrick's total claim for his and his hands' labor and the materials was $433.04. A neighbor, McDowell, testified that the Anderson Place was badly out of repair when Warrick began to rent there. McDowell had recently been building cabins and fence and thought the cabins worth $25 each and that the labor cost estimates were very reasonable. He thought the rail and wire fence worth $1.40/mile rather than the .80/mile claimed. Warrick received judgement in his favor (Hinds County, 2nd District, Final Record Book 79:510, 527)

Table 10. Cost of a selection of Warrick's 1881 improvements to Anderson Place.

Item	Cost ($)
Repairs to 1 cabin	15.00
Building 4 cabins	100.00
2x 63 pounds nails	15.78
Clearing 1.5 miles fenceline	30.00
Splitting 6000 rails are .75/100	45.00
Hauling rails and posts around fence	28.00
Putting up 1.5 miles post and wire fence	34.00
Putting up 3.5 miles rail fence	52.50
100 pounds wire	9.00
Crosscut saw	5.00
Digging and curbing well	34.00
Well bucket	.75
Pulley	.75
7 plowpoints @ .35 each	2.45
Hoe	.75

Detailed estate inventories such as characterize the antebellum period were no longer made, but some lawsuits do provide extensive details about households and their furnishings. The 1881 case of Jessie, Mary and Cassie Marshall against James Futch alledged that the sherrif had ejected these tenants from land they worked in NE ¼ of SE ¼ of Section 31 and NW ¼ of SW ¼ of Section 32, Township 8, Range 3 (This would be west of Jackson). The plaintiffs were found to have been in legal possession and they were awarded losses of $1900 ($500 for property, the remainder for time and attorney costs) for their losses (Hinds County, 2nd District, Final Record Book 79:427, 436). These are itemized in Table 11.

Table 11. Property of Marshall family destroyed, damaged or lost in 1879 ejection from 80 acre tenancy in Hinds County.

Item	Value ($)
3 bales cotton destroyed	150.00
1 basket lint & cotton from mattrass	2.50
100 bushels corn, crop pears and pumpkins lost	12.50
30 bushels sweet potatoes	22.50
Irish potato patch	15.00
Vegetable garden	25.00
10 bee hives robbed	2.50
1 bee hive destroyed or carried off	10.00
40 chickens	10.00
Hog and calf	10.00
300 cypress boards used or destroyed	6.00
200 rails destroyed	4.00
Stove skillet destroyed or carried off	1.00
Armchair	2.50
Lot of table ware	5.00
50 pounds soap	2.50
25 pounds butter	5.00
2 gallons lard	2.00
Damage to library	10.00
Damage to furniture	20.00
Damage to sewing machine	25.00
Loss of use premises, 3 months	150.00
Waggon and team to move back home	5.00
Their time	5.00
Attorney fees	200.00

Many suits also involve groceries or cloth/clothing, or the value of furnish supplied against crop liens. Most of these items are perishable, but some might have an archaeological trace. For instance, the 1879 case of Henry Franks *vs.* James C. Winters & Co. (Hinds County, 2nd District, Final Record Book 79:151-154) lists jeans coats and overcoats; pants, shirts and vests; buttons and sewing pins; tuck combs, hair pins, bead necklaces, bracelets, folding fans, and corsets; and rubber tip pencils in addition to a large quantity of yard goods. The $252.99 suit of A.B. Burnham & Co. of Louisville, Kentucky, *vs.* A. Fisher of Edwards (Hinds County, 2nd District, Final Record Book 79:143-145) lists sheet zinc, snips and solder; stove eye lifters and stove scrapers; saw knives; 5 and 10 gallon lard cans; 1, 3 and 4 quart enamel sauce pans; ladles, cake turners, waffle irons, and propeller egg beaters; 172 pounds of hollowware worth \$9.30; and a gross of silver tea and table spoons worth \$11 in 1881.

The 1880s-1910's Corps of Engineers Navigation Improvements. The Pearl was once considered a navigable stream. The 1878 Rivers and Harbors act appropriated money for a study by the Army Engineers to estimate the cost and amount of work to render the stream navigable, given the high rail freight rates and the long distances cotton and merchandize had to be hauled over clay hill wagon roads. The public-good value of the project was to be increased shipping and thus greater cotton production and population density (HR 1879:882). Very few farms were seen in the bottomlands, although they had previously (prior to the Civil War) been cultivated, and farm buildings were formerly placed on the river bank. Major flooding in 1874 had destroyed crops, livestock, fences, buildings and indeed land itself in the bottoms, causing settlement to shift to the bluffs adjacent to the river bottom. Immediately below Jackson it was noted that the constriction of the valley led to flooding of the lower bluffs, as the "great rise in 1874 could not pass fast enough between the bluffs, and attained an extreme height of 57 feet above extreme low-water of summer droughts....even the lower parts of the bluffs was under water in 1874....the height being several feet above any other since the first settlement of the country (HR 1879:887)." The central part of Jackson was flooded by the backwater of a small creek (Town Creek?) entering the Pearl immediately below the city (HR 1879:887). This destructive flood may account for the extreme paucity and ambiguous nature of 19th century deposits in the project area.

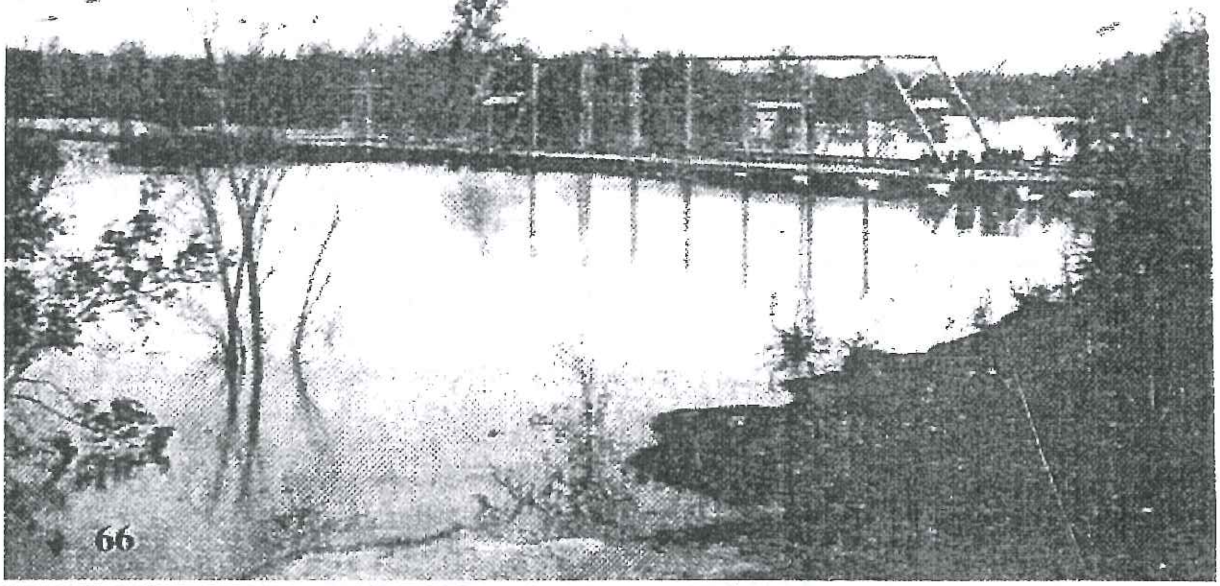
The initial 1879 appropriation for channel improvement was \$6000. Survey work began at Carthage rather than the initially proposed Edinburg. It was understood from the outset that the work would not be permanent and that annual appropriations for maintenance would be required (HR 1879:879). The engineers also suggested that side-wheel boats were more damaging to the banks and that "malicious mischief in the way of cut-offs" should also be prevented (HR 1879:898). The survey plat from Capt. C.W. Howell's 17-31 December 1878 survey from Carthage to Jackson and Mr. H.C. Collins' 28 March-26April 1879 survey from Jackson to the Rigollets has not been found during the course of this project, but it was a transit map with river soundings. This would probably be a valuable resource if persued by future investigators.

The originally clear and slow stream had been muddied and filled with snags by repeated attempts by landowners or shippers to shorten the river by artificial cut-offs.

> Nearly every man we met on the survey was ready to point out some place where by a short cut in the bank a cut-off could be made, and very many of them had at times done more or less towards making new cut-offs, with the expectation that such cut-offs would improve navigation. How it has effected it is seen in the fact that formerly steamboats ran quite regularly to Carthage, and now only one little boat remaining, with but a capacity of 31 bales of cotton, is laid up at Grant's Ferry, the change being the effect of the great accumulation of logs, snags, &c. washed in from caving banks which were only made caving banks by the increased currents due to cut-offs (HR 1879:883)

Pelahatchie River, a large stream, entered at river mile 82. Mule Jail Cut-off, at mile 83, was said to have been made in 1878 with a 50' cut, which cut-off 2 miles, so that boats could pass, but the consequent rafting of oak and hickory trees at the next bend below Mule Jail Cut-Off made it difficult even for the survey party's skiffs to pass, and below that point the river ran straight, as every practicable cut-off had already been made "a few years ago" (HR 1879:884). Variation in the height of the Pearl at Jackson was 42' (HR 1979:880). There were two bridges at Jackson in 1879, a highway bridge and the Vicksburg and Meridian Railroad bridge. The highway bridge must correspond with the modern replacement Woodrow Wilson bridge and the V&M (now BN) railroad bridge still stands (Figures 69,70). The 1879 report then notes a third structure, 200' below the railroad bridge: a failed rock and timber fishtrap that formed a navigation obstruction when the water was less than 3"above low stage according to Howell or 7' according to Collins (HR 1879:884, 887). The location has been heavily impacted by the 1970s work, and no mention of it appears in future reports. The surveyors above Jackson further note that they encountered only one Indian mound, with pottery and arrow points, on an old river channel cypress brake, being actively cut by a new channel, but they do not state its location; this could be one of several mounds encountered in this survey work, or could lie north of the project area. Some 4 miles below Jackson the first farm was noted on the left bank; at the 6th mile on the left bank was Richland Creek; at the 7th mile the river reached the bluffs noted as flooded in 1874; and at mile 9 was Richland Bluff standing 40' high and vertical for 1200' length. By mile 11, the river flowed along the right bluff at McMillan's farm, and at mile 14 Tucker's Bend Cut-off had shortened the river by about 2 miles (HR 1879:888).

An appropriation of $13,500 was made in 1879 and 1880 for the work above Jackson, and contracts were entered with J.S. Hamilton & Co. for the Carthage-to-Jackson work, but these contracts were invalidated by Hamilton's failure to perform the work (HR 1883:1099-1100). The Engineers then undertook to carry out the work themselves and constructed a derrick boat and quarter boat and proceeded with the work with hired labor. The snagboat would later (1885; HR 1887:1337) be transferred to Wakiah Bluff on the lower Pearl and used by the engineers annually. Major Amos Strickney continued the requests for further monies by stating that significant savings for consumers could be had: $2 was added to sacks of flour or barrels of salt in hauling them from the railheads; these goods could be delivered at $.60 by boat; likewise the region had abundant white oak and cypress timber and shingle that was needed in New Orleans (HR 1883:1100). Below Jackson, much more was appropriated ($30,000) but most of the work on this section was in the Pearl delta and passes. Seth N. Kimball was paid $25,000 after work on 195 miles below Jackson in 1881-1882, and additional contractors worked on the lower river. New Orleans shippers had proposed to begin regular steam shipping on the Pearl after the 1882-1883 work (HR 1883:1101), but this increased traffic evidently failed to materialize. Strickney also noted that timbermen running large rafts loose logs should also "be stopped by the strong hand of the law (HR 1883:1102)." It is doubtful if this could have been enforced; rather the logging-out of stream-side areas accessible with ox and carralog carts caused the timber industry to shift inland to railroads.



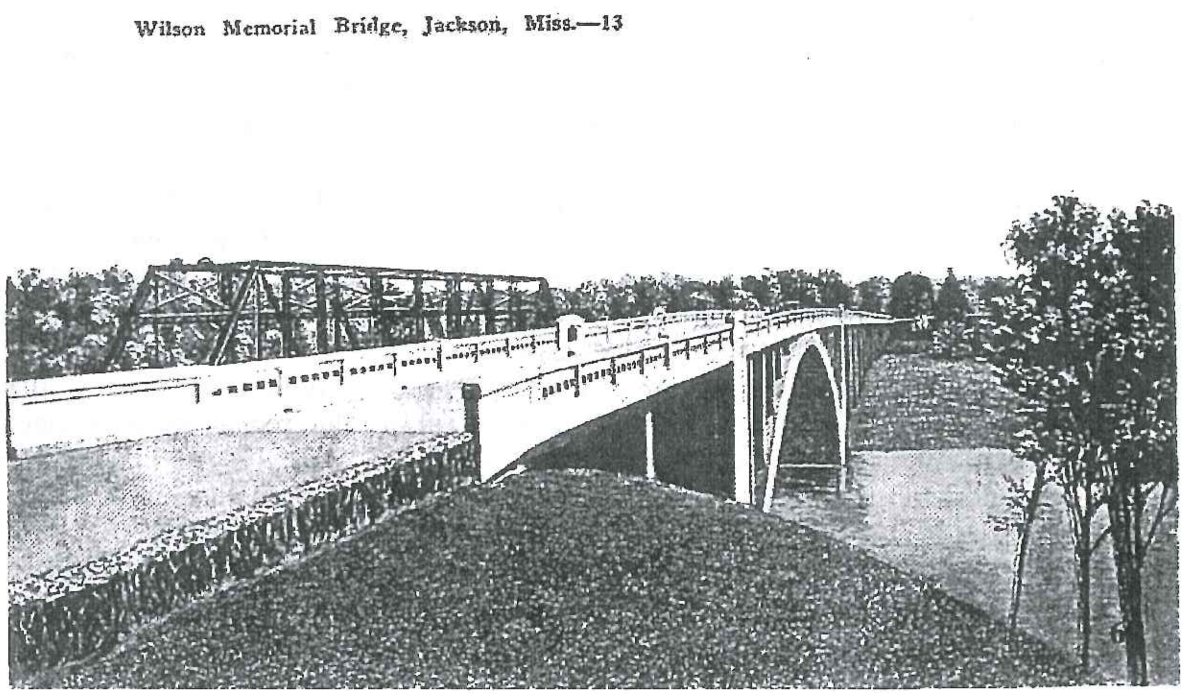


Figure 69. Railroad bridge and Woodrow Wilson Bridge over the Pearl at Jackson.

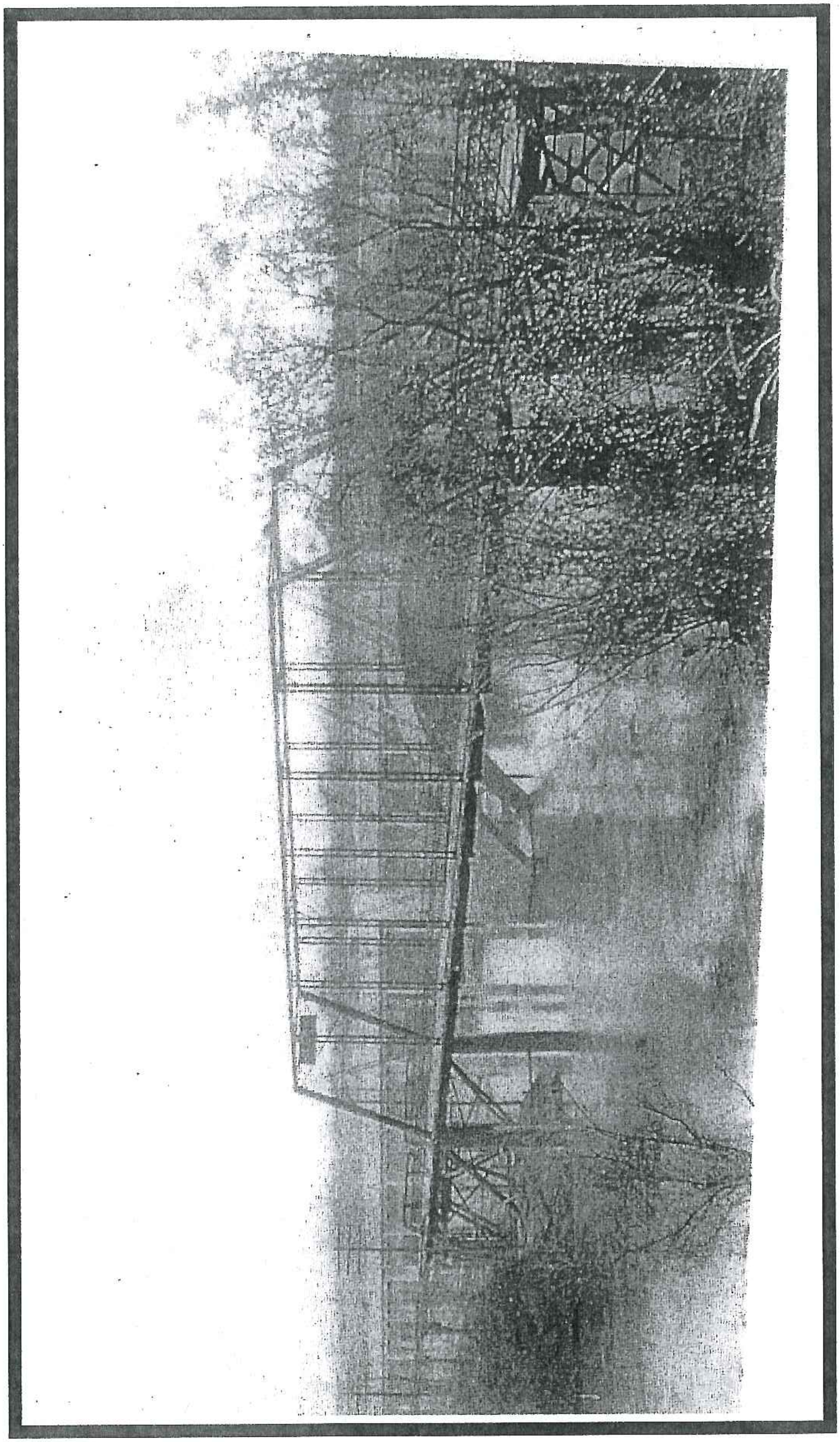


Figure 70. Railroad bridge and Woodrow Wilson Bridge; view from northwest.

As noted, Hamiliton's 1879-1880 and 1880-1881 contract work was left undone, with the funds reverting to the government. A $2500 appropriation in 1881 had no bidders, so the 1881 and 1882 monies were spent in-house. Maj. Strickney transferred the money and work boats to Maj. A.M. Damrell, with most of the work being conducted near Carthage, and "in the balance of the river down to Jackson only the worst and most dangerous places were partly improved" (HR 1887:1337). The 1885 appropriation of $2,250 was spent in 1887 on hired labor and materials. By 1887 it was clear that the initial cost estimates were low, as the survey had been done during high water many snags had been missed. The estimate for the Carthage-to-Jackson work was increased to $29,000, with the extended caveat that annual work at about $2400 would be needed for maintenance (HR 1887:1336). However, before the work, boats could make only 2 trips a month from Jackson to Carthage, and could by 1887 make four or five a month, given a 6' or 7' rise above the low-water stage (HR 1887:1338). The boats operating were the 110 ton, 95' long, 4.5' draught *O.R. Singleton* sternwheeler and the 35' long, 3' draught *Dora* prop boat, along with 2 towed flatboats. Materials being shipped down to Jackson were, in order of value, cotton (500 bales), sawlogs (5000), firewood (1200 cords), lumber (25,000 board feet) and staves (11,000); with a total value of only $42,700; savings over land freight were $3.50/bale and a reduction from $1.80 to $.50 on barrel goods (HR 1887:1338).

The steamers *Steadman* and *Oliver Clifton* were operating between Jackson and Carthage by 1880 (*Carthagenian* 1979). As discussed above, the Pearl River became a U.S. Army Corps of Engineers navigation project when Congress funded a survey and channel improvements for the upper Pearl between Jackson and Carthage in 1878 and 1879 (USACE 1879:1:878-879).

The Jackson and Carthage segment was a success at the beginning. The *O.R. Singleton*, measuring 95 feet long, 110 tons burden, and 4.5 draught, appears to have been operating between Jackson and Carthage as early as 1883 (*Carthagenian* 1979). This boat was reported to be the only vessel operating as late as 1887, making only one round trip to Jackson that year because of low water levels, but the table of vessels that accompanies the report also includes the 35 foot, 8 ton, and 3 foot deep *Dora* as well as 2 towed flatboats (HR 1887:2:1336, 1338). The *Singleton* apparently went out of service between 1890 and 1892 and was replaced by another steamer with a three-foot draught measuring 90 tons.

Four flatboats were in use on the river in 1890 and six in 1892, and appear to have remained in service until 1896. In 1890, four flatboats were operating; and within two years, two more were running. These primitive craft appear to have remained in service until about 1896. A postcard of the landing at Jackson, apparently at the west end of the modern Woodrow Wilson Bridge, taken around 1910, shows one of these flatboats (McIntire nd). This fleet operated until 1896. Upstream traffic between Jackson and Carthage appears to have remained stable up to 1895, but downstream freights reached their peak in 1892. Traffic on this segment then collapsed between 1895 and 1896 to the extent that the Corps stopped providing detailed commercial statistics, and by 1897 listed only 50 tons of cotton and 200 tons of barrel staves as being transported (HR 1896:3:1458; HR 1897:2:1700). Improvements were also funded for the lower Pearl between Jackson and the Rigollets at its mouth. By 1883, any work north of Monticello was considered impracticable and was therefore discontinued (HR 1887:2:1341). The inhabitants of the upper Pearl were the primary beneficiaries of the projects, which were intended to open the agricultural and forest product industries to development.

Although city boosters touted the river's navigability, Pearl River navigation never became an important component of Jackson's postbellum economy. The city's position within the regional railroad network was solidifying throughout the late nineteenth century, and rail transportation was both cheaper and more versatile than river transportation (Rowland 1976:951). River trade was conducted during the winter months using flatboats, barges, and engine powered vessels. Flatboats and barges were used to carry white oak barrel staves and other hardwood to New Orleans (Figure 71). The first gasoline powered vessels on the river were built and operated by Henry Caldwell of Feeny, the first being the *Belle of the Bends*, sunk by a cypress snag in 1904 while bound for Jackson, and the last was the *Caldwell #3* that sank at its mooring around 1912. These boats were of approximately twenty tons burden and carried cotton, cottonseed, corn and down and flour, sugar, molasses, and other merchandise upriver. Caldwell announced his approach by sounding a horn, a communication technique used on other rivers since the beginning of steam navigation in the 19th century. The boats traveled at a speed of about ten miles per hour downstream and four upstream, and a trip down to the Jackson landing took one day while a trip with a full cargo took about three days back up to Carthage (*Carthagenian* 1979).

By the turn of the century, the Corps of Engineers and Congress were losing interest in the project due to lack of funds and traffic. Although commercial navigation continued, especially timber rafts, commercial data for 1907 show only 340 tons of general merchandise worth $10,000 shipped (USACE 1908:2:1454). Despite the fact that 608 tons of general merchandise were shipped in 1909, the Corps anticipated recommending the project's abandonment because there was too little traffic to warrant the expense (USACE 1910:1:487, 2:1587). In 1911 the Corps recommended that no more funds be spent on the project because: 1) there was too little traffic on the river and that only during winter months, 2) the costs of keeping the stream navigable were not warranted by the small amount of traffic, 3) even moderate maintenance expenses were not justified by the resulting benefits, and 4) no facilities had been built to handle freight (USACE 1911:1:542; 2:729). The Corps discontinued maintenance of the Federal navigation project in 1916 and the last commercial use of the river was in 1938 by a German company in the Carthage area (*Carthagenian* 1979).

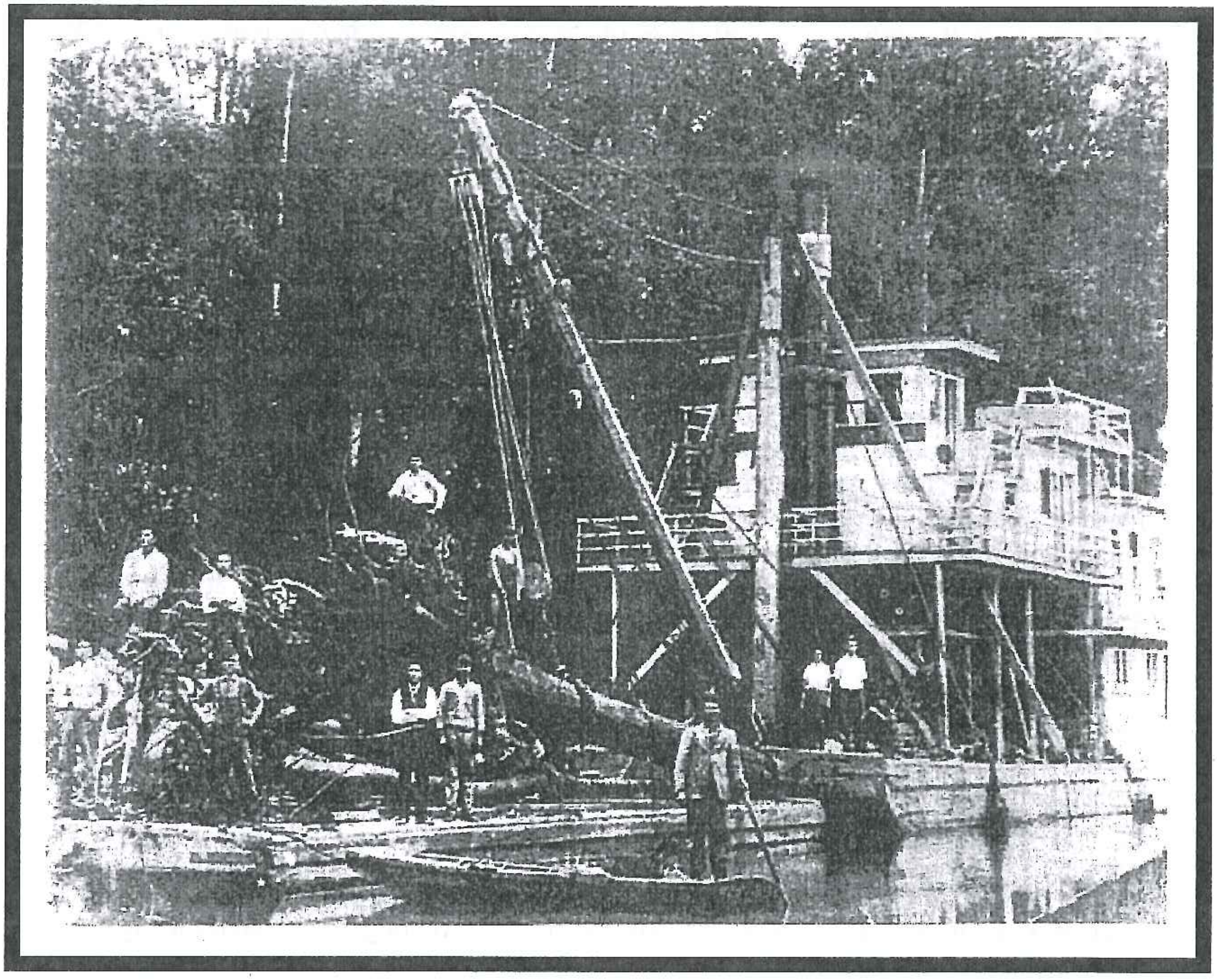


Figure 71. Probable image of Corp of Engineers Pearl River snag-boat ca. 1900. Commonly cited as ca. 1853 log boat on Pearl at Carthage. (Mississippi Forestry Commission cited in Fickle 2001: 79).

Extension of Land Transportation. The metropolitan area road system was improved and expanded after 1900. North-south roads serving Jackson included the Canton Road and a road immediately west of the river leading into the city from the south (today's Interstate 55). Neither road was paved until after 1940 (Bell 1926; Hinds County White School Map 1940; see Figure 57 (the 1905 quad)). The Gulfport Road, then one of only two improved roads in Rankin County and the original route of today's U.S. Highway 49, paralleled the Gulf and Ship Island Railroad and ended at the Old Brandon Road near the Woodrow Wilson Bridge. The Gulfport Road and other improved roads in Rankin county were described as being graded and in condition during the dry months but very poor and impassible in places during winter and spring, a characterization that probably applies to the roads on the west side of the river as well (USDA 1926:2; MDAH Subject File). Two major early 20th century improvements were made to Jackson's east-west corridor. The Woodrow Wilson Memorial Bridge was completed in 1928 at the site of the original city ferry, wagon bridges and boat landing as part of the Dixie Overland Highway, a planned coast-to-coast Federal highway system running from Savannah, Georgia to San Diego, California. The Gulfport Road also used the bridge in its route to Yazoo City as did the Jefferson Davis Highway. In 1940 the latter highway was rerouted and renamed U.S. Highway 80. The clover-leaf interchange at its intersection with South State Street is claimed to be the first in Mississippi (MDAH Subject File; Brinson 1977: Illustrations/Group Six).

In 1934, Congress authorized the National Park Service to create a Natchez Trace Parkway to commemorate the most important highway from the early days of the Old Southwest and to promote tourism in Mississippi and Tennessee. The Natchez Trace cuts through an old agricultural landscape. The WPA (1938) files note that $50,000 was allocated for a survey of the proposed route (begun in 1935 by engineer F.L. Brownell of the Bureau of Public Roads), and that the estimated cost was $60,000,000. In 1936, $8,000,000 was appropriated. In 1936, Mississippi appropriated $200,000 to purchase additional rights-of-way, and by 1937, the state had spent $100,000 raised by bonds for 12 miles between Old Madisonville and Ridgeland in Madison County. The work conducted in association with the parkway led to a burst of scholarship in history and archaeology, most importantly that of Phelps (1949, Phelps and Ross 1952), Cotter (1951) and Jennings (1941, 1947). The work of Cotter on the Mississippian and Natchez sites at the south end and the work of Jennings in the Tupelo (Chickasaw) areas remain foundational references for Mississippi archaeology. Work has continued more recently during the tenure of Atkinson as NPS archaeologist for the Natchez Trace Parkway, as well as the 2000 excavations of Dinsmoor's Choctaw Agency (O'Hear et al. 2000).

As noted above, by the late 19th century, as rail transportation was both cheaper and more versatile than river transportation, the city's position solidified as the regional rail hub (Figure 72); and, in due course, the twentieth century proved to be one of profound change for the study area. The development of Jackson as a transit point in the national rail network led to growth in industry and population. In the 1880s, there were two minor additions to the system with short railroads built to link Jackson with Natchez (1882) and Yazoo City (1884; McCain 1953: 312) (Figure 73). The Gulf and Ship Island Railroad (G&SI) out of Gulfport arrived at Steen's Creek, today's Florence, in 1899. Its final entry into Jackson was delayed by quarantine restrictions imposed during a yellow fever epidemic (RCHS 1988: 158-159). The G&SI tied into the Illinois Central (IC). This connection was beneficial to the development of the area's commercial sector because the IC railroad, with its 1874 acquisition of the New Orleans, Jackson, & Great Northern and Central Mississippi railroads, stretched throughout the mid-continent, broadening the opportunities for business along its routes (ICHS 2004). The G&SI railroad provided rail linkages for industries located along Commerce Street and the Town Creek area and opened the Piney Woods timberlands of South Mississippi for exploitation. The Gulf Mobile & Northern Railroad (GM&O) followed the Pearl River valley north from the Gulf of Mexico and arrived in Jackson in 1909. Jackson's last line, the GM&O was completed in 1927. The now abandoned GM&O, located immediately south of the Jackson Water Works, crosses the Pearl River and its floodplain via a causeway with trestles and an iron truss bridge (McCain 1953: 312-314) and is further described in the Results chapter.

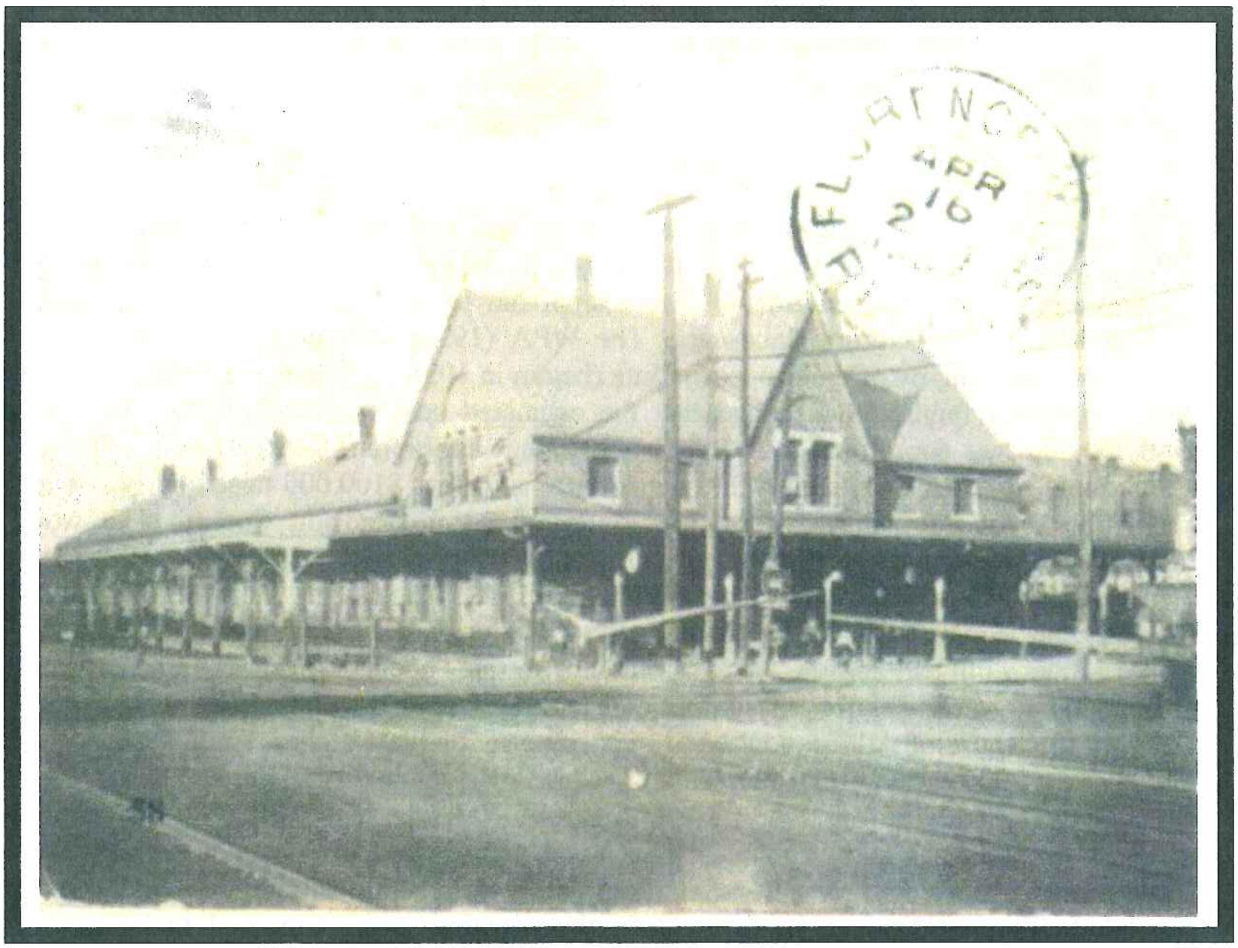


Figure 72. Train depot at Jackson ca. 1888.

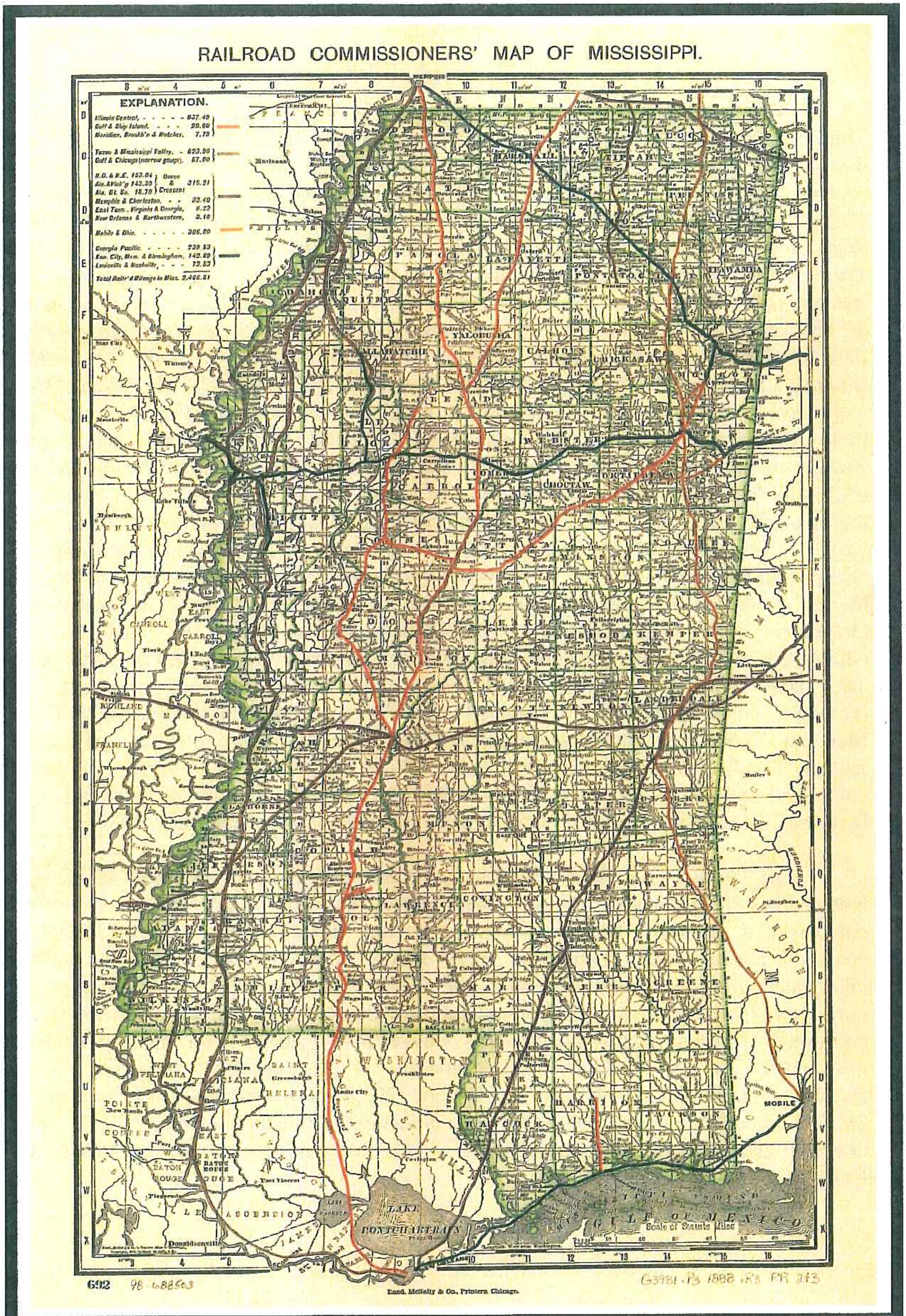
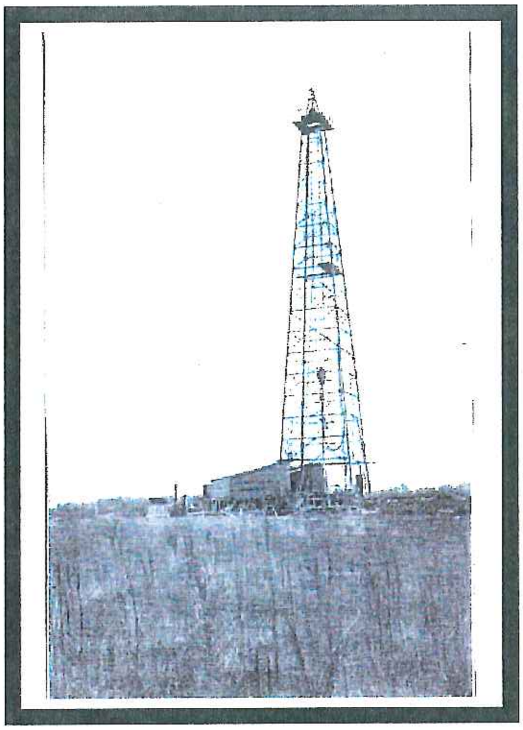
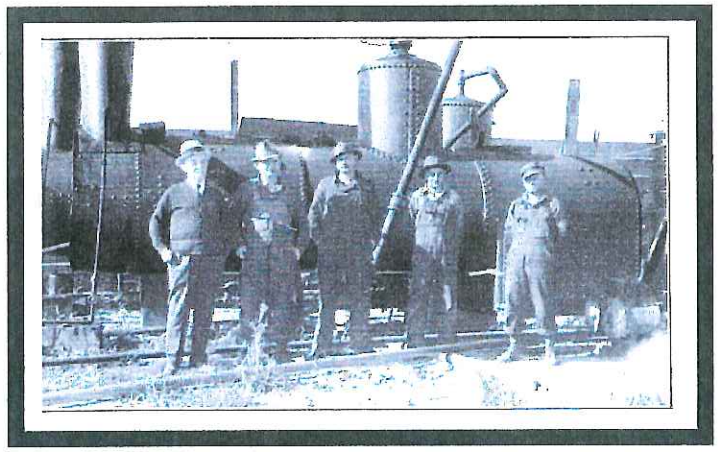


Figure 73. 1888 Railroad Commissioners' map of Mississippi

The Jackson Oil and Gas Field. Following the discovery and successful exploitation of the Jackson Gas Field as discussed in the Environment chapter, the City of Jackson became a major center in the southeastern United States gas industry (Figure 74). Many of the wells associated with the field are in the project area, including the field's first exploratory well, discovery and demonstration wells, and several well concentrations. These wells run along both sides of the river, from the Lakeland Drive uplands that are immediately north and west of the river, and from the floodplain that lies east and south of downtown Jackson. In 1917, exploratory drilling in the Late Cretaceous Period Jackson Caldera eroded volcanic island and reef commenced (Hughely 1993:64-66; Monroe and Toler: 1937). In the four years between 1925 and 1929, the project area underwent serious exploration, resulting in the final demonstration of the Jackson Gas Field. For such exploration, Ella Rawls Reader obtained a lease from the State Insane Asylum to explore their thirteen hundred acre property located near the present-day site of Smith-Wills Stadium and the Agriculture Museum. Other exploratory wells included the Misterfield Well, five miles south of the city in Rankin County; and the Rainey Well, near Old Brandon Road and approximately 1.5 miles east of the Illinois Central railroad bridge (Hughely 1993:67-69). The first gas well to be commercially tapped was the Mayes Number 1 Well, located in the river bottom, immediately east of the present-day Downtown YMCA and Interstate 55. The well began on December 4, 1929 and was completed 76 days later, when the well blew out upon reaching a depth of 2,466 feet. The Mayes Number 1 Well produced two to six million cubic feet of gas per day (Huhgely 1993:70; Monroe and Toley 1937:20). Yet it was the Mighty Mendoza Well (or Mendoza Number 1), which produced and sold more gas than any other well in the Jackson Field, that proved the significance of the gas field. The Mighty Mendoza, completed on May 2, 1930, at a depth of 2447 feet, was located east of the interchange between Pascagoula Street and I-55 (Hughely 1993:73; Monroe and Toley 1937:20).

The Jackson Gas Field played an essential role in the development of the gas industry in the Southeastern United States. Though the field produced only 119 billion cubic feet of gas and 20,000 barrels of oil, it was still key to the City of Jackson's economic development. Having the development of the field and associated pipelines take place during the Great Depression, the city and state survived in better shape than they would have otherwise. The presence of this natural utility attracted badly needed oil companies and their wealth into the state. Consequently, Jackson and Meridian became the major oil and gas centers in the state, and oil and gas exploration continued, leading to further discoveries in the 1940's (Hughely 1993:84-85). Production by the Jackson Gas Field declined rapidly after 1939; and commercial production ended by 1954. Only one well continued to produce until 1983. This well served the campus at Belhaven College.





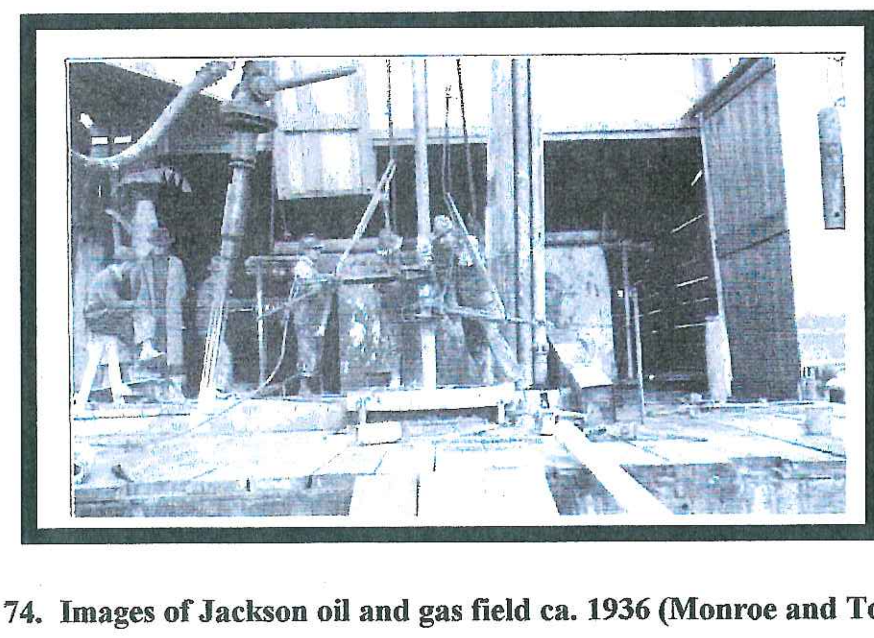


Figure 74. Images of Jackson oil and gas field ca. 1936 (Monroe and Toler 1937).

THIS PAGE LEFT INTENTIONALLY BLANK

VI. Previous Research

In Chapter VI we turn from regional research problems and historic document searches to actual archaeological fieldwork that has been conducted in the project vicinity. Portions of the proposed lake project have been subjected to low intensity survey in the past three decades. Few sites are reported but the increasingly high levels of landscape disturbance in the immediate vicinity of the built-up areas are documented.

Prehistoric Archaeology

There has been extensive survey coverage of the Pearl River floodplain in the vicinity of Jackson, with surprisingly few results in terms of sites discovered (Figures 75,76). These include large development and industrial areas, highway rights-of-ways, and work for the U.S. Army Corps of Engineers. Most of these are probably considered as low-intensity efforts. These survey and testing projects show a low density of archaeological sites in the lower floodplain. This low density may be more apparent than real due to the methods used in most previous surveys. The areas are largely bottomland, hardwood, swamps, and floodplains which require intensive shovel testing to find small prehistoric sites. In addition, no deep testing with backhoe trenches has been undertaken so we are in a poor position to judge the overall density of sites in the floodplain sediments. However, a prediction of the types of sites expected must be made based on current knowledge.

A very brief and very poorly documented survey was made prior to the construction of Ross Barnett Reservoir (Rands 1958) (Figure 77). Rands was an employee of the University of Mississippi; the work was supported by the Mississippi Department of Archives and History and the National Park Service. Unfortunately, as one might somehow guess, this work was in no way comparable to the valuable River basin Salvage work being carried out at the same time in other parts of the United States where dams were being built. It is not even favorably comparable to 1930s Works Progress Administration work. The initial "report" is three pages long, with an additional four and a half pages on the testing of a single site, Wills (22-Hi-512). A few sites were tested; apparently we observed some of these sites and pot holes in the course of our fieldwork. There are many problems with Rands' locational data. Of the 24 sites mentioned by Rands, 5 in Madison County and 3 in Rankin County were believed likely to be covered by the impoundment. Rands notes:

> Invariably surface collecting was handicapped by the heavy growth of vegetation covering these sites. This is in part due to the fact that the region along this part of the Pearl has not been farmed intensively for many years. Another contributing factor to the paucity of artifacts and sherds was, unquestionably, the lack of intensive aboriginal occupation (Rands 1958).

The contention of a paucity of occupation cannot be supported based on the results we will present below. Sadly, Rands concluded:

> The similarity of most of the sites encountered within the reservoir limits to sites lying on the bluffs beyond the flood line suggests that little of unique archaeological interest will be lost upon completion of the reservoir (Rands 1958).

[redacted]

[redacted]

[redacted]

We do however concur in part with his finding:

> The majority of the archaeological sites along this part of the Pearl River pertain to the Woodland or Burial Mound period, as evidenced by the presence of small conical mounds, Baytown Plain pottery, or both (Rands 1958).

The location of collections and fieldnotes, if there ever were any, has been unknown for decades.

Survey 93-024 (Engineering Associates, Inc./Archaeology Mississippi, Inc. 1993) reports survey coverage of large portions of the proposed lake (Figures 78,79). It was supposedly agreed between various parties that this coverage will be allowed to stand, and not be resurveyed, with caveats. First, reported sites will be revisited and examined more carefully. Second, high probability areas where no sites were reported will be reexamined. Third, these areas will not be excluded from the fluvial/sedimentology, geomorphological and/or soils investigation. Finally, if the results of this survey indicate significantly higher site density in the present than previous survey areas, additional coverage will be recommended.

The proposed project would impact a number of previously recorded sites. Our initial scope proposed that these sites be fully assessed through thorough (grid) shovel testing, assisted by core/auger and .5 or 1 m square test pits as necessary. When these sites were found, this was done.

Table 12. Previous survey coverage of Pearl floodbasin; parts of Hinds, Madison and Rankin Counties, Mississippi.

MDAH Project #	Investigator	Project size	Sites
Rankin County			
80-045	Hyatt	30.5 acres	Negative
80-115	Hyatt	?	?
81-027	Mobile CoE	?	?
83-115	DeLeon	15 mile	Negative
83-022	?	?	?
91-284	Lauro	505 acres	22RA590-598
93-017	Lauro	15 acres	Negative
93-024	Engineering Assoc. Inc. (Lauro)	10,000 acres	43 sites, including revisits
93-353	Carleton	96 acres	Negative
94-104?	Lauro	10 acres	Negative
95-240	Lauro	14 acres	Negative
96-002	Lauro	60 acres	Negative
96-323	Lauro	60 acres	Negative
97-029	Lauro	125 acres	22RA629
98-109	Lauro	33 acres	Negative
99-045	Lauro	11 acres	Negative
03-078	Lauro	79 acres	Negative
Hinds County			
79-018	Howell	?	Negative
83-022	Gray	?	Negative
84-155	Gray	?	?
85-044	DeLeon	18,000 feet	22Hi665

87-192	DeLeon	?	Negative
01-127	Lauro	36 acres	Negative
02-160	Lauro	100 acres	22Hi779
02-180	Lauro/Starr	Sewer line	22Hi780
02-224	Goodwin & Ass.	?	22Hi769 22Hi772

Table 13. Previously recorded sites in project vicinity, below 275' contour.

Site Name/Number	Site Characteristics	Cultural Affiliation	NRHP Status
Madison Co.			
22-Md-504, Alsworth or Culley Mounds	100x90x4' mound, 20' high when recorded by Chambers and Ford 1928-29, village site in cornfield	Woodland	Reported destroyed by construction by Lauro in 1986
22-Md-510, Brasher's Creek	Village midden in field	Unknown	Potentially eligible
22-Md-517, Wright or Black Lake	3 conical mounds	Woodland	
22-Md-602	4 acres on cultivated erosional remnant along [redacted] bottom	Late Archaic, Woodland, Mississippian, historic	
22-Md-603, Brasher's Creek #2	3 acres, cultivated erosional remnant bordering creek	Late Archaic, Woodland, historic	
22-Md-604, Brasher's Creek #3	2 acres, cultivated rise in bottom	Late Archaic, Woodland	
22-Md-605, Brasher's Creek #4	1 acre, cultivated erosional remnant in bottom	Woodland, sparse sherds and fire cracked rock	
22-Md-680	150x100 m, wooded floodplain, looted, three "knolls" not considered mounds, one 2m high "superficially resembles an artificial mound"	Debitage, fired clay, Middle and/or Late Archaic (stone bead), Late Woodland/Deasonville (Coles Creek Incised *var. Hunt*, Mulberry Creek Cordmarked), Mississippian (Mississippi Plain, Leland Incised)	MDAH field party led to site by collector J. Starnes, note probable redundancy with 22-Md-517
Hinds County			
22-Hi-510, Bransom or Westbrook (may be sameas 22-Hi-516, Rands Hi 12)	Oval moundsand associated village	Woodland	
22-Hi-512, Wills	30x100 m, [redacted]	Poverty Point, Gulf Formational (Wheeler series), Tchula/Tchefuncte, other Woodland, Coles Creek, Plaquemine	Tested by Rands 1958, later destroyed
22-Hi-517, Virden	Cotton field and woods	Archaic, Woodland	
22-Hi-548, Blake Bell	5 acres village and mounds on [redacted]	Gulf Formational (Wheeler), Woodland	Destoyed for subdivision

	[redacted]		
22-Hi-665, Jackson Country Club	80 sq. m low density lithic scatter	Early, Late Archaic (Cache River, Hardin, Uniface scrapers), Pontchartrain, Gary points, Woodland	Destroyed, ineligible
22-Hi-672, City Mound	Mound with some middens	Marksville, ColesCreek, Mississippian/Plaquemine	Listed NRHP
22-Hi-680, Orsbun's Stand	.5 meters deep, 13,000sq. feet	19th century Anglo/Afro and Choctaw	Eligible
22-Hi-720, Metropaleo	4200 sq. Feet on [redacted]	Late Paleo/Early Archaic uniface tools, Early and Late Woodland (Collins)	Highly disturbed by borrow pits
22-Hi-779	Low density 190x 85 meters	Unknown aboriginal, 20th century	Destroyed, ineligible
22-Hi-780, Sophisticated Playhouse	.3 meter deep (plowzone) 4000 sq.ft. lithic scatter	Unknown aboriginal lithic scatter	Ineligible
Rankin County			
22-Ra-502, Rands RK2, Flowood #1 (same as 22-Ra-529)	2 mounds	Woodland, Plaquemine, Mississippian (Pontchartrain and Bayougoula points)	Eligible,but cultural nature of mounds has been debated
22-Ra-503, Hog Creek (Rands Rk4)			
22-Ra-504, Spann		Pyramidal mound, one Baytown Plain sherd,one shell-tempered sherd	Tested by Rands, minimal finds
22-Ra-506, Flowood #2			
22-Ra-508, Mule Jail (Rands Rk9)	100 m east of river in ridge and swale terraine		
22-Ra-520, Trailer Park	Village or camp with hearths, baked clay, firecracked rock, on north bank of [redacted]	Paleo, Middle and Late Archaic (Shumla), Gulf Formationa (Alexander), Middle Woodland (Marksville), Late Woodland	Developed, destroyed
22-Ra-524	Low density sherds and flakes	Woodland	Developed Highways 49/80
22-Ra-526, 49 South	Debitage, cores, hammer, daub in a 40x50 yard area, ceramics	Late Woodland (Tishomingo Plain and Cordmarked, O'Neal Plain, Baytown Plain)	Covered with backdirt
22-Ra-527, Interstate Bridge	Burial mound,village midden, perhaps fishwier, Confederate cemetery	Gulf Formational/Early Woodland (Wheeler and Alexander series), Middle-Late Woodland (Baytown Plainand Mulberry Creek Cordmarked)	Destroyed by various construction projects
22-Ra-528	Low density ceramics and lithics in a 10x50 yard area on a small ridge by slough	Woodland	Bulldozed, north of Highways 468/80
22-Ra-541	1 acre area with two	Woodland or	Potted

	mounds in pine thicket, village area not found	Mississippian, reputed turtle effigy pot and greenstone celt and bone	
22-Ra-545 (Rands' Rk3)	No description	No description	Ineligible
22-Ra-546 Fred Parker	High density village site, 15 acres on first terrace, Tallahata quartzite, milling and nutting stones	Early, Middle and Late Archaic; Gulf Formational Alexander ceramics, Middle Woodland Marksville and Mississippian ceramics	Ineligible, construction, extensively collected, probably destroyed by Highway 25
22-Ra-564, CE2 (same as 22-Ra-546)	First terrace, medium density		Ineligible, extensive damage from construction Highway 25
22-Ra-576 Armstrong	Dense ceramics	Early Archaic uniface, Late Archaic, Early Woodland Wheeler ceramics, Middle-Late Woodland, Mississippian ceramics	Island in reservoir, eligible
22-Ra-565	Scatter of debitage and petrified wood	Late Archaic Shumla and Pontchartrain points	Unknown
22-Ra-583, Suddoth	Medium density, knoll on terrace	Paleo scraper, Middle Archaic broad point, Late Archaic stemmed point, Gulf Formational Wheeler ceramics, Middle-Late Woodland ceramics, historic	Bulldozed, pot hunted, ineligible
22-Ra-584, Flowood 2	Low knoll on terrace, possibly formerly cultivated, woods, debitage	Middle/Late Archaic (Wade), Late Woodland/Mississippian (Gunthersville)	Unknown
22-Ra-587, Flowood 1	First terrace, possibly formerly cultivated, low density	Woodland	Unknown
22-Ra-590, Chuh-ah-tubbe to Minerva Morgan 1	First terrace, low density lithic scatter	Archaic?	Ineligible, destroyed by clearance and erosion
22-Ra-591, Chuh-ah-tubbe to Minerva Morgan 2	First terrace, low density lithic scatter		Ineligible, destroyed
22-Ra-592	Lithic scatter	Middle Arcahic, Middle-Late Woodland	Ineligible, destroyed
22-Ra-621, DenMiss Corp, Hog Creek Awful	Low density floodplain lithic scatter, short-term special use		Ineligible, borrow pit
22-Ra-622, Pelahatchie/ Reservoir	First terrace, moderate density, 5 m diameter midden 30 cmdeep	Middle-Late Woodland ceramics	Unknown
22-Ra-623, Cecil Jones	First terrace, trash-filled pits up to .6 m deep with bone and charcoal	Early Archaic (side notched point), Middle Acahic (broad stemmed point), Middle Woodland (Marksvillepottery and Mabin point), 20th century house	Unkown,looted
22-Ra-624	First terrace, ceramic		Unknown, locational

	scatter		data dubious
22-Ra-629	First terrace, ceramics and lithics, [redacted]	Woodland	Recomended testing

[redacted]

[redacted]

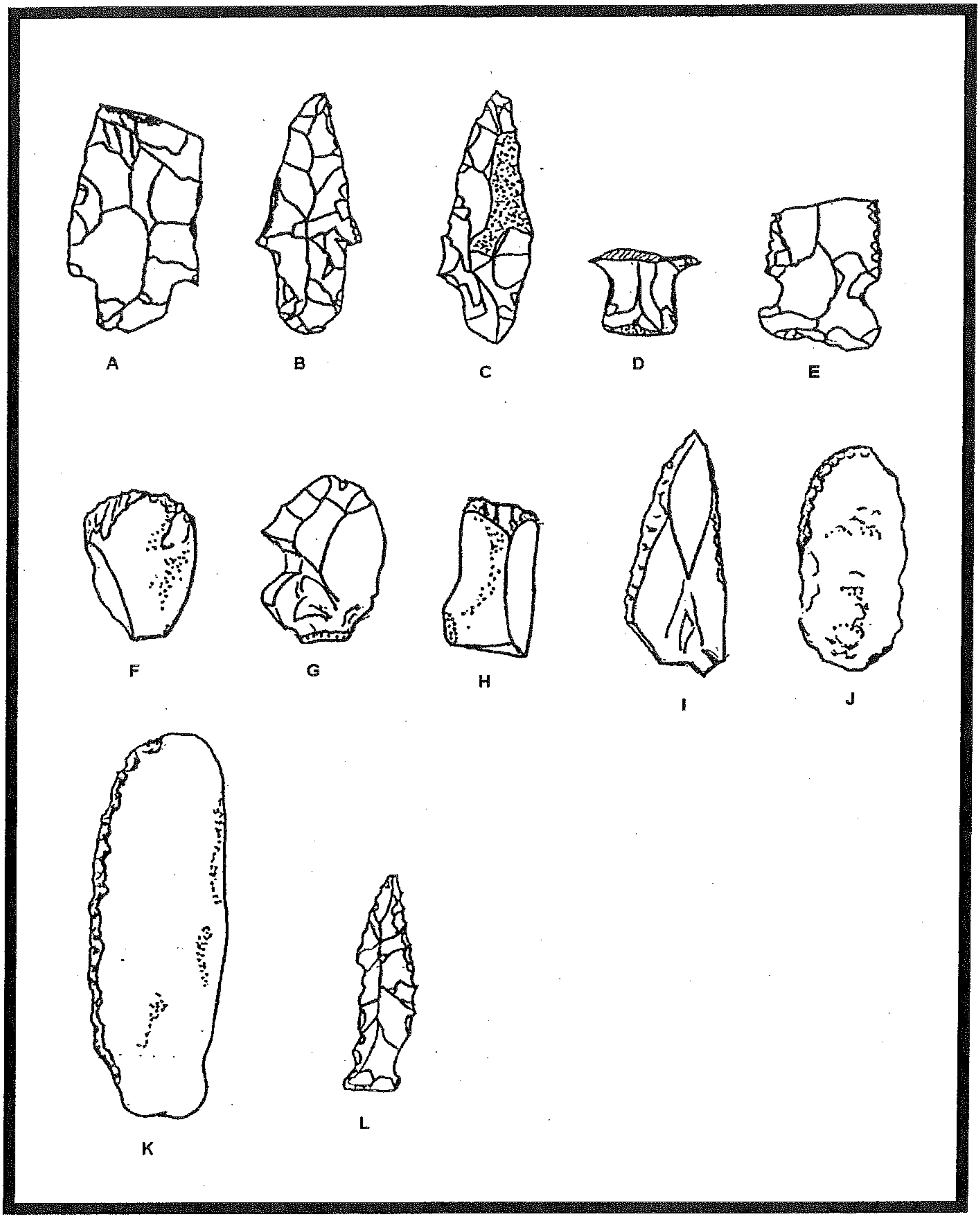


Figure 80. Diagnostic Artifacts from Engineering Associates & Archaeology Mississippi Inc (1993) reconnaisance; a-e. Late Archaic-Woodland Stemmed points (22-Hi-672); f-k, Paleo/Early Archaic flake tools (22-Hi-720); l. Collins arrow point (22-Ra-502).

Table 14. Presently listed NRHP properties.

NAME/LOCATION/ OWNER	SIGNIFICANCE	FUNCTION
MOUNDS:		
[redacted] 22-Hi-501 Address restricted Owner: private	Information potential; prehistoric; Coles Creek, Plaquemine Mississippian; 499-0 AD, 1499-1000AD, 1749-1500 AD, 1900-1750 AD	Historic: Religion, ceremonial site; Current function: landscape; forest
Bardin Mound 22-Hi-537 Address restricted, Coxs Ferry Owner: private	Information potential; prehistoric, Native American 499-0 AD, 1000-500 AD	Historic: Funerary; graves/burials; current function: agricultural/subsistence; agricultural fields
[redacted] Archaeological Site Address restricted, Terry Owner: private	Information potential; prehistoric, Late Woodland 1499-1000 AD	Historic: Domestic; village site; Current funcation: landscape; underwater
*City Mound 22-Hi-672 Address restricted, Jackson Owner: local government	Information potential; prehistoric; Middle Woodland, Marksville 499-0 AD	Historic: Funerary; graves/burials Current function: landscape; unoccupied land
[redacted] Archaeological Site Address restricted, Edwards Owner: private	Information potential; prehistoric; Early Mississippian, Plaquemine 1000-500 AD	Historic: Domestic, funerary; graves/burials, Village Site Current function: landscape; underwater
Floyd Mound Address restricted, Bovina Owner: private	Information potential; prehistoric; Native American 1499-1000 AD	Historic: Funerary; graves/burials Current function: landscape; unoccupied land
JACKSON & HINDS COUNTY:		
*Woodrow Wilson Bridge Spans Pearl River on Silas Brown Street, Jackson Owner: local government	Engineer unknown; significant in engineering and transportation 1925-1949	Historic: transportation, road related, Current: same as Historic
Armour Company Smokehouse and Distribution Plant 320 W Pearl St, Jackson Owner: private	Significance: event; commerce 1900-1924, 1925-1949, 1950-1974	Historic: Agriculture/subsistence, processing Current: commerce/trade, work in progress
Bailey Hill Civil War Earthworks [redacted] Owner: local government	Significance: event; military 1850-1874	Historic: defense; battle site, fortification. Current: education, funerary, landscape; graves/burials, unoccupied land
Belhaven Heights Historic District Jackson Owner private & local government	Significance: Architecture/ engineering; community planning & development; engineer unknown; late 19th and 20th Century revivals, Bungalow/ Craftsman, Late Victorian; Greek Revival, Queen Anne, Colonial Revival style	Historic: domestic; commerce/trade; single dwelling, hotel, multiple dwelling, restaurant, secondary structure; Current: domestic; single dwelling; commerce/trade, health care, medical business/office, multiple dwelling; professional, restaurant, warehouse
Bellevue Court Apartments 950 North State St, Jackson Owner: private	Significance: Event, architecture/ engineering; community planning & development; architect: Claude Lindsley; Style: Renaissance, Mission/Spanish Revival 1925-1949	Historic: domestic; multiple dwelling; Current; same as Historic
Capitol Green Bounded by Amite St, Pearl St & State St, Jackson Owner: State of Mississippi	Significance: Event, politics/ government; 1800-1824, 1825-1849, 1850-1874, 1875-1899, 1900-1924	Historic: Government, landscape, recreation & culture; Capitol, Monument/Marker, Plaza Current: Same as Historic; museum

Central Fire Station S President St, Jackson Owner: Local government	Significance: Event, social history 1900-1924	Historic: Government, fire station Current: Vacant/Not in use
City Hall 203 S President St, Jackson Owner: Local government	Significance: Event, architecture/ engineering: Gibbons, William, Willis, J.; Politics/Government; Style: Greek Revival, Other 1825-1849, 1850-1874	Historic: Government/ City Hall Current: Same as Historic
Edwards Hotel Capitol and Mill Sts., Jackson Owner: Private	Significance: Architecture/ engineering; Politics/ Government Arch/Eng: Nolan, William T.; Style: Other; 1900-1924	Historic: Domestic/Hotel Current: Vacant/not in use
Medgar Evers House 2332 Margaret Walker Alexander Dr, Jackson Owner: Private	Significance: Event, person, black, social history; Person: Medgar Evers; 1963; 1950-1974	Historic: Domestic/ single dwelling Current: recreation & culture; museum
*Farish Street Neighborhood Historic District Bounded by Amite, Mill, Fortification and Lamar Sts., Jackson Owner: Private/local government/State of Mississippi	Significance: Event/Architecture/ Engineering, Person; Black/ Education; Architect unknown; Style: Bungalow/ Craftsman, Art Deco, Queen Anne; Historic Person: multiple1850-1874, 18751899, 1900-1924, 1925-1949	Historic: Commerce/Trade, Domestic; Business, Multiple Dwelling, Restaurant, Single Dwelling, Specialty Store Current: Commerce/Trade, Domestic; Business, Multiple Dwelling, Restaurant, Single Dwelling, Specialty Store, Warehouse
Fountainhead 306 Glen Way, Jackson Owner: Private	Significance: Architecture/ Engineering; Architect: Frank Lloyd Wright; Style: Modern Movement, Other; 1950-1974	Historic: Domestic/ single dwelling/ Current: work in progress
Galloway—Williams House 427 E Fortification, Jackson Owner: Private	Significance: Architecture/ Engineering; Architect: unknown; Style: Queen Anne; 1875-1899	Historic: Domestic/single dwelling Current: Commerce/trade
Garner Wynn Green House 647 N State St, Jackson Owner: Private	Significance: Architecture/ Engineering, Law, Person; Architect: Emmett Hull; Style: Classical Revival; Historic Person: Garner Wynn Green; 1900-1924	Historic: Domestic/ single dwelling Current: Commerce/trade
Greenwood Cemetery Bounded by West, Davis, Lamar and George Sts., Jackson Owner: local government	Significance: Event, Architecture/ Engineering, Social History; 1800-1824, 1825-1849, 1850-1874, 1875-1899, 1900-1924	Historic: Funerary/Cemetery Current: Same as Historic
Hinds County Armory 1012 Mississippi St, Jackson Owner: State of Mississippi	Significance: Event, Architecture/ Engineering, Military; Architect: Frank P Gates; Style: Gothic Revival; 1925-1949	Historic: Defense/Military facility Current: Vacant/Not in Use
Hinds County Courthouse Pascagoula St., Jackson Owner: Local government	Significance: Architecture/ Engineering; Art; Architect: Claude H. Lindsley & Fred M. Torrey; Style: Art Deco; 1925-1949	Historic: Government/ Correctional Facility/ Courthouse Current: Same as Historic
Houses at 500, 505, 512, 513 North State Street, Jackson Owner: Private	Significance: Architecture/ Engineering, Event; Style: Greek Revival, Queen Anne, Classical Revival 1825-1849, 1850-1874, 1875-1899, 1900-1924	Historic: Domestic/ single dwelling Current: Domestic, work in progress, single dwelling
Poindexter Park Historic District Bounded by W Pearl St., Rose St., Hunt St., W. Capitol St. and Clifton St., Jackson Owner: Private, local government	Significance: Event, Architecture/ Engineering, Community Planning and Development; Style: Late 19th and Early 20th Century American Movements, Other; Cultural Affiliation: Anglo-American; 1825-1849, 1850-1874, 1875-1899, 1900-	Historic: Commerce/Trade, domestic; multiple dwelling, single dwelling, specialty store Current: Same as Historic

	1924, 1925-1949	
Smith Park Architectural District Along N West and N Congress Sts between Capitol St and the State Capitol, Jackson Owner: Private, State, Federal	Significance: Architecture/ Engineering; Style: Art Deco, Late 19th and 20th Century Revivals, Mid 19th Century Revival; 1825-1849, 1850-1874, 1875-1899, 1900-1924, 1925-1949	Historic: Commerce/Trade, Government, Religion; Financial Institution, Religious Structure Current: Same as Historic
Spengler's Corner Historic District E Capitol, N State and N President Sts., Jackson Owner: Private	Significance: Event, Architecutre/ Engineering; commerce; Style: Italianate; 1825-1849, 1850-1874, 1875-1899, 1900-1924	Historic: Commerce/trade; Business, professional Current: Same as Historic
West Capitol Street Historic District Bounded by railroad tracks, Amite, Roach, and Pearl Sts., Jackson Owner: Private	Significance: Event, Architecuture/ Engineering; Commerce, Black; Style: Colonial Revival, Late 19th and 20th Century Revivals, Art Deco; 1875-1899, 1900-1924, 1925-1949	Historic: Commerce/Trade; Business, Financial Institution, Restaurant, Specialty Store Current: Same as Historic
Rankin County		
Misterfeldt Home Place 1101 Old Hwy 49S, Richland Owner: private	Built by Edgar and Henry Misterfeldt, of agricultural & architectural signifiance, 1900-1924	Historic: agriculture & subsistence, domestic, single dwelling with secondary structure and animal facility. Current function the same.
*** in direct impact zone**		

Historic Archaeology

Historic archaeology is still in its infancy in Mississippi. Very few investigations have been conducted focusing on the late 19th century. Few historic sites of any period are reported in Rankin County. As general context for the state of archaeology in Rankin County, 159 numbers have been assigned. Several are redundant for a Pearl River bank locality of extensive occupation. There are skips in the site files (cards not turned in for 6 sites (22-Ra-593--598) and 7 sites (22-Ra-650--656) respectively) and there is no card for the one tested 19th century plantation site (22-Ra-630), leaving 145 site cards to consider as a database. These cards were reviewed to see if anything could be learned about historic occupation in the county.

There are 27 sites in the county with reported historic components (Table 16), but of these 3 might be omitted from consideration of farmsteads (22-Ra-527, Confederate graves on Indian mound; 22-Ra-573, cattle lick in Catahoula formation; and 22-Ra-626, Whitfield hospital employees domestic dump). Of the remaining 24, there are 5 known antebellum and 7 late 19th-early 20th century components, with the remaining half (12) having inadequate material reported to date them. Many were reported as minimal manifestations on primarily prehistoric sites. There are 5 sites that can be assigned to the early to mid 19th century based on the site cards. These are Sites 22-Ra-606 (Brick kiln), 22-Ra-609 ([redacted]), 22-Ra-515 ([redacted]), and 22-Ra-618 ([redacted]) found by James Lauro in a survey he conducted for Archaeology Mississippi, Inc. (Table 15.). The fifth is (or was) [redacted] a ca. [redacted], alleged to the second oldest recently surviving in the county, that had an extensive midden, but which was destroyed this year (Cliff Jenkins, personal communication 2004).

An additional 7 sites have designated late 19th-early 20th century components (22-Ra-572, a house with spring based on informant report but probably destroyed; 22-Ra-

613, [redacted] from Lauro's 1993 Pearl Basin survey; and 22-Ra-631, 633, 637, 642, and 645). Some of these sites are discussed in the 1993 survey and testing report for the Pearl River Basin Development District (Lauro, 1993). However collections were small, too small for determination of site chronology or function, and were evidently opportunistic surface collections . Likewise, the collections from 22-Ra-642 and 22-Ra-645 (Lauro 2003 b) are too small to be useful (7 plain white, 3 porcelain, 2 brown glass (22-Ra-642) and 18 brick, 29 plain white, 13 "brown earthenware", 11 "purple tinted", and 1 clear glass (22-Ra-645)).

Almost all known historic components are in the northern Jackson Prairie section of Rankin County, with the Piney Woods section poorly represented. This may be a function of variable survey coverage.

Table 15. Engineering Associates, Inc./Archaeology Mississippi, Inc. 1993 Pearl River basin reconnasaince historic sites artifact recovery.

	Glass	Ceramic	Metal	brick	Other
22-Ra-606, Brick Kiln	12	69	1	sample	1 slate
22-Ra-608 Hemphill	7	18			1 coal
22-Ra-610 Hemphill	1	8			
22-RA-613 Lowe Barn	2	10		1	
22-Ra-615 Logging Road	2	14	4	5	
22-Ra-618 Holman	6	2	6	1	

One historic archaeological site has been investigated in some depth in the vicinity. This is the [redacted] (22-Ra-630; no site card in files) reported in 1996 by Lauro& Bey/Millsaps College. Testing of middens at this 19th and 20th century site produced solarized glass, cut nails, brick, metal, bone and 19th century decorated ceramics. This site [redacted] recently tested by Post, Buckley, Schuh and Jernigan, and may provide the best comparative artifact collections. The Hillendale collections, if still extant, should be considered as a comparative sample for any 19th century components recovered by this survey, and should be re-examined.

Table 16. Summary of Rankin County Historic Archaeological Sites.

Site Name/#	Location	Description	Recorder/ Date	Significance
22-Ra-527 Interstate Bridge	S15T5NR1E Pearl River Prairie	Confederate graves in a Woodland period midden/ mound	Taylor, HPG (83-054)	Potentially eligible, destroyed
22-Ra-533 Feild #2	S7T5NR2E Prairie	1930s-1940s sharecrop house on light lithic scatter	Taylor 1978	Plowed
22-Ra-572	S22T4NR2E Pine woods	Aboriginal ceramic and lithic site with small house and spring, early 20th century	McGahey and Lauro 1986	Destroyed? Eroded, not evaluated
22-Ra-573 Rock House	S25T3NR2E	Cattle lick in Catahoula Formation	BBB 1986	Perhaps not a "site"
22-Ra-583 Suddoth	S21T6NR2E knoll on terrace, [redacted] at	Extensive Archaic and Woodland site with glass and historic ceramics	Morgan 1989	Tested by Millsaps 1992, not eligible

	Pearl River floodplain, Prairie			
22-Ra-606 Brick Kiln	S20,21T4NR1E, silt loam terrace, Prairie	Archaic scatter with rectangular brick and ash area with blue shell edge, brown transfer, handpainted, flow blue decorated and plain white ceramics, porcelain, and canning jar lid liner	Lauro 1992 (93-024)	Not evaluated, cultivated
22-Ra-608 Old Hemphill Homestead	S20T4NR1E silt loam terrace, Prairie	Lithic scatter with glass, historic ceramics and coal	Lauro 1992 (93-024)	Not evaluated. Forestry, cultivated
22-Ra-609 Hemphill Bluff	S20T4NR1E silt loam terrace, Prairie	Lithic scatter with transfer decorated, earthenware, aqua and olive glass	Lauro 1992 (93-024)	Not evaluated. Forestry, cultivated
22-Ra-612 Lowe East	S36T5NR1E, silt loam terrace, Prairie	Three historic sherds on a Woodland scatter	Lauro 1992 (93-024)	Ineligible
22-Ra-613 Lowe Barn	S36T5NR1E, silt loam terrace, Prairie	Lithic scatter with brick, plain ceramics, and clear and brown glass	Lauro 1992 (93-024)	Ineligible
22-Ra-615 Logging Road	S36T5NR1E, silt loam terrace, Prairie	Archaic and Woodland with 19th century: blue shell edge, hand painted and flow ceramics	Lauro 1992 (93-024)	Ineligible, log road
22-Ra-618, Holmam Camp	S3T4NR1E, Pearl River cutoff	Late Woodland with 19th century: square nails, metal, brick, glass and ceramic	Lauro 1992 (93-024)	Ineligible, shovel tested
22-Ra-626, Whitfield #1	S34/35 T5NR2E, knoll on terrace over [redacted] bottoms	Ca. 1920 dump of hospital employees on moderate density Early Archaic-Woodland camp/village	Baca, Brookes 1993	Ineligible, cultivation, construction leveling
22-Ra-628	S24T5NR1E, [redacted] bottom terrace, Prairie	20th century glass, ceramics, architectural debris on Early Archaic-Woodland camp/village	Baca 1994	Ineligible, cultivation, construction, leveling
22-Ra-631	S26T6NR2E, Prairie, terrace	Early-mid 20th century, plain white ceramics, clear glass, green tinted whiteware with minor lithic scatter	Lauro 1997	Ineligible, cultivated, shovel tests negative
22-Ra-633	S18T6NR3E, terrace, Prairie	Late 19th-early 20th cen: brick, solarized glass, plain whiteware	Lauro 2002 (02-266)	Ineligible, forestry, destroyed
22-Ra-635	S18T6NR3E, upland terrace, Prairie	Woodland lithic scatter with possible historic component	Lauro 2002 (02-266)	Ineligible, disturbed
22-Ra-637	S11T5NR2E, upland, Prairie	Early 20th cen: privet, cedar, structure remains, brick, sheet metal, earthenware, bottle glass, tool	Lilly 2002 (03-015, 03-315)	Not evaluated
22-Ra-639	S19T6NR3E Silt loam ridge, Prairie	1 flake, 17 brick, ceramic	Starnes and Lauro (03-075)	Ineligible construction
22-Ra-642	S27T5NR3E silt loam terrace, Prairie	Early 20th cen. Whiteware with Archaic-Woodland points	Starnes and Lauro (03-075)	Ineligible, destroyed, 7/24 shovel tests positive
22-Ra-645	S27T5NR3E,silt loam terrace, Prairie	House site: 29 plain white ceramics, 13 brown earthenware, brick, metal	Lauro and Starnes (03-086)	Ineligible
22-Ra-646, JAI-Loc3	S11T5NR2E silt loam upland, Prairie	Brick chimney, well or cistern, not on maps, shingle hatchet, ceramics, glass	Lilly 2003	Ineligible
22-Ja-647, JAI-Loc 6	S35T6NR2E, ridge, Prairie	Late 20th cen.midden, glass, concrete, plastic with low density lithic scatter	Lilly 2003	Ineligible, construction forestry,

				no topsoil
22-Ja-648, JAI-Loc 8	S35T6NR2E silt loam ridge	1905-1980 building complex: brick, glass, boiler	Lilly 2003	Ineligible, forestry
22-Ja-659, Bullock	S21T5NR3E, ridge, Prairie	Ca. 1830 Harper house with architectural files, midden: whiteware, porcelain, transfer, shell edge, yellowware, clear and olive glass	Jenkins and Abbott 2003	Eligible?, destroyed?

THIS PAGE LEFT INTENTIONALLY BLANK

V. Project Methods

Here we discuss the sources used for the project background search and describe how field work and lab work was carried out. The lithic and ceramic artifact typologies are described. We also list key project personnel and thier roles in the project.

Literature Research Methods

Initial searches of the MDAH site file and project reports were made by Mary Evelyn Starr in August 2003. Additional historic map search was made at the three county courthouses and libraries, the MDAH collections, and GLO plats and notes. Dan Allen also obtained some historic document and cartographic information. In February 2006, Kristen Kinsella conducted further document search via the internet.

We have used the ca.1821 GLO 1905 15' map, late 19th and ealy-mid 20th century Sanborn Insurance Company plats, the 1918 and 1926 soil surveys, 1976 soil survey air photos and the current (1998) 7.5' quadrangles.

Geomorpology Methods

The geomorphic features in the LeFleurs Lake Study Area were mapped at a scale of 1:24 on U.S.G.S 7-1/2 minute topographic maps. The geomorphic interpretations and delineations were accomplished using U.S.G.S topographic maps, aerial photography (12-16-1940), color infrared photography and U.S. Department of Agriculture (USDA), Soil Conservation Service (SCS) soil maps and aerial photography. The basic geomorphic framework for the Pearl River in central Mississippi was developed as a part of the Shoccoe Dam Study. For the current study the geomorphic features were mapped along the Pearl River from the Ross Barnett Reservoir Dam southward to just below I-20. Four topographic profiles accompany the geomorphic map. The geomorphic features will be discussed in more detail in Part III.

Field studies consisted of site investigations, which were coordinated with ongoing archaeological surveys when possible. The objective of the geomorphic fieldwork was to gather geologic and soils data from the various surfaces and depositional environments along the Pearl River. The studies were designed to provide a better understanding of the geomorphic processes and their relationship to cultural occupation. The soil sampling of the various surfaces and environments was limited to shallow one-inch diameter hand auger borings, archaeological shovel tests and 1meter deep excavations.

Laboratory analyses consisted of preparing boring logs, measuring soil pH, and conducting grain size tests for selected intervals. The pH values were obtained using a Hellige-Truag Soil Reaction (pH) Tester kit. The pH values indicate the decay potential for soils responding to a range of geo-chemical conditions. The grain size tests were used to delineate soil horizons and interpret geologic environments of deposition. Radiocarbon dating tests were conducted during the Shoccoe Dam study, but were not conducted during this study. The radiocarbon dates from the Shoccoe Dam study were useful in making preliminary interpretations for this study and for defining sites suitable for obtaining additional radiocarbon dates. Another objective of the fieldwork was to locate potential areas for collecting pollen and plant macrofossils for analyses. Paleoecological analyses conducted for the Shoccoe Dam study proved helpful in the paleogeomorphic reconstruction of that reach of the Pearl River.

Archaeological Field Methods

The project area consists of low-relief alluvial floodplain. Deeply buried deposits were expected, but in most cases, particularly on the slightly higher terraces where sites are most often found, it appears that the landforms have long been stable and subject to soil formation processes, probably throughout the Holocene. The project included some auguring, coring, and deep shovel pits.

MDAH guidelines state that survey "must include a systematic pedestrian examination of all exposed ground surfaces, as well as shovel testing and screening of all vegetated ground surfaces in the entire area of potential effects." There was as expected very little surface visibility in the project area, so shovel testing was almost exclusively the method of site discovery and delineation employed. Given the alluvial setting, many of these tests were, as expected, .5-1 m deep. Tests were backfilled. Many tests were 50 cm site boundary/assessment tests on the known sites in the project area. We have provided additional descriptive information and enlarged and corrected site boundaries as needed, and assess previous suggestions concerning eligibility.

As stated in the initial scope of services (Appendix A), to avoid the time and expense of complete shovel test coverage, the project area is to be given varying survey coverage by site probability level (Figures 81,82). Only areas considered to have a high probability of containing sites will be subjected to the standard 30 m interval, 30 cm diameter screened shovel tests. Low probability areas will have walk-over survey with intuitively placed shovel tests only. Areas of low to moderate probability were sampled on 50 m intervals and intuitively, if called for, along the same 30 m crew transect patterns. The eastern level floodplain area to be covered with spoil is considered a low probability area and has only been covered on a 50 m interval. Probability was assessed intuitively by the technicians while transecting based on elevation and distance to channel (occupied or abandoned). Unfortunately, soil surveys (Cole et al. 1979, Cole et al. 1987, Scott 1984) map most project area soils in insufficient detail (Casilla-Arkabutla association, frequently flooded) to be of use in stratifying our sample.

Guidelines also state that "if predictive modeling is used during any part of a ...survey, the model must be verified through field testing." This author also takes this to mean that a sample of the low-probability areas subjected to low-intensity investigation must be subjected to the standard 30 m interval shovel testing. This validification rule must also apply to the areas of previous survey coverage that are being excluded from general re-survey. We have found sites in many of the previous survey areas when we have overlapped with them. In most cases, field methods are not explicitly stated by these

[redacted]

previous surveys, but the 1993 reconnaisance survey was conducted with 50 m transects and unscreened shovelpits; it found sites largely through the limited surface exposures. Anticipating the final chapter, this indicates that resurvey of the low-intensity coverage areas is called for.

Topographic maps indicate acomplex meander belt topography in the project area. As expected, like the soil surveys, the available 1:24,000 scale topographic quadrangle maps were not adequate for our needs. The complex relief found in the feild was below the 5' contour interval, and so quadrangles proved laregly inadequate for beginners' field navigation. Crews are instructed to plot transects and positive shovel tests and sites on enlarged copies of the quadrangle for inclusion with thier shovel test records; this proved beyond thier capabilities. GPS readings of site locations were taken as part of a site documentation proceedure that includes sketch maps, a detailed site form, and in some cases, 50x50 cm and/or 1x1m test units. Standard field forms were used. They are printed on acid-free paper. These include shovel test log, core/auger log, site form, and test unit level and feature forms (Appendix B). Each worker maintained a daily notebook and was instructed to record transect bearings, environmental conditions including flora and fauna, sketch maps of areas and sites, additional information about specific tests, and names and contact information for any possible informants encountered.

The MDAH code states that digital images are not suitable as a form of record and that slides are preferred, but implies that black-and-white is acceptable. Each worker is instructed to obtain a disposable black and white camara to record shovel tests, sites, landscape features, vegetation, fieldwork, and other observations. A photo log was kept for each camara. Due to thick foliage, most site documentation photography is fairly worthless (Figures 83,84).

Standard 30 cm diameter shovel tests were excavated. They were screened though ¼" hardware cloth. Shovel tests were backfilled after recording (Figure 85b). Materials from each shovel test or other provenience are bagged separately. All artifactual materials from shovel tests were collected, expect where brick, burned earth, slag or similar materials form a large part of the soil matrix. A sample of pea gravel, soil concretions, and recent burned material was also collected, but most of it is non-artifactual. Less experienced workers were instructed to collect any materials they were in doubt of. A master bag list was kept in the lab and bags were logged weekly. Upon beginning analysis, bags containing non-artifactual material were deleted from the bag list. Workers were instructed to label bags with project, county, site number, shovel test number, excavator, and date.

Investigations at each site identified have attempted to be sufficient to evaluate each site's potential NRHP significance. This has included the excavation of .5x.5 or 1x1m test units (Figure 85a). Sites have been tested on 5 and/or 10 m intervals, based on how large the site seemed likely to be.

Figure 83. Typical survey conditions, thickets and ridges.

Figure 84. Typical survey conditions, sloughs and seasonally dry swamps.

Figure 85. Field procedures a. a shovel test by Kris Underwood, b. back filling an excavation unit, Nash Harris, Matt Barrett, Mary E. Starr.

One form of investigation to evaluate site potential and significance has been soil sampling. Both particle size and pH samples were taken from 1x1m test units, in conjunction with profile drawing/description and photography (Figure 86).

Laboratory Methods

Artifacts were washed and rebagged, then sorted by classed and materials from each classed bagged separately. At that time, artifacts were counted, weighed and tabulated on standard forms for ceramics and lithics. As MDAH guidelines state that laboratory personel must have at least a BA in anthropology, Starr conducted most of the laboratory work. Sherry Russel, (graduate of Lafayette County High School) helped with the weighting and rebagging of artifacts. These forms were compiled into artifact data tables by Margaret Lauro.

Soil samples were processed by Nash Harris (see Figure 86), James May, and James W. Starr. Graphic presentations of the results of these analyses are found in the pertinent site descriptions.

A MDAH site card was filled out for each site and submitted for the official site numbers required for the final report. No site numbers were requested for isolated finds or modern debris.

Prehistoric Artifact Typology

As lithic debitage was the main artifact class recovered, it is useful to carefully consider several analytic schemes that have been used in Mississippi and to evaluate thier strengths and weaknesses. The scheme used by University of Mississippi professor J. K. Johnson (1986) and his students is more complex than some schemes, but it appears to have great interpretive potential. Peacock (2003) reviews critiques of lithic analytic schemes, and agrees that the "PST" (primary-secondary-tertiary) scheme is faulty, but uses it anyway. We will also do so here.

Lithic typology is designed to give an understanding of which portions of the lithic production and use cycle were carried out at a site. Definitions for lithics are:

Tested pebble: Chert pebble with cortex from which no more than three flakes have been removed.
Core: Mass from which more than 3 flakes have been removed, i.e. has negative flake scars. Pebble cores retain more than 50% cortex. Amorphous cores have less than 50% cortex and flakes oriented in various directions. Bifacial cores have flakes removed in a regular pattern around the perimeter of a flattened, two-sided object.
Debitage: all knapping debris; such as flakes and shatter.
Flake: Piece of debitage with negative internal flake scar and striking platform.
Decortication flake: flake with cortex on external surface. Greater than 75% cortex=primary decortication flake. Less than 75% =secondary decortication flake.
Internal flake: flake with cortex or simple platform, but no dorsal cortex.

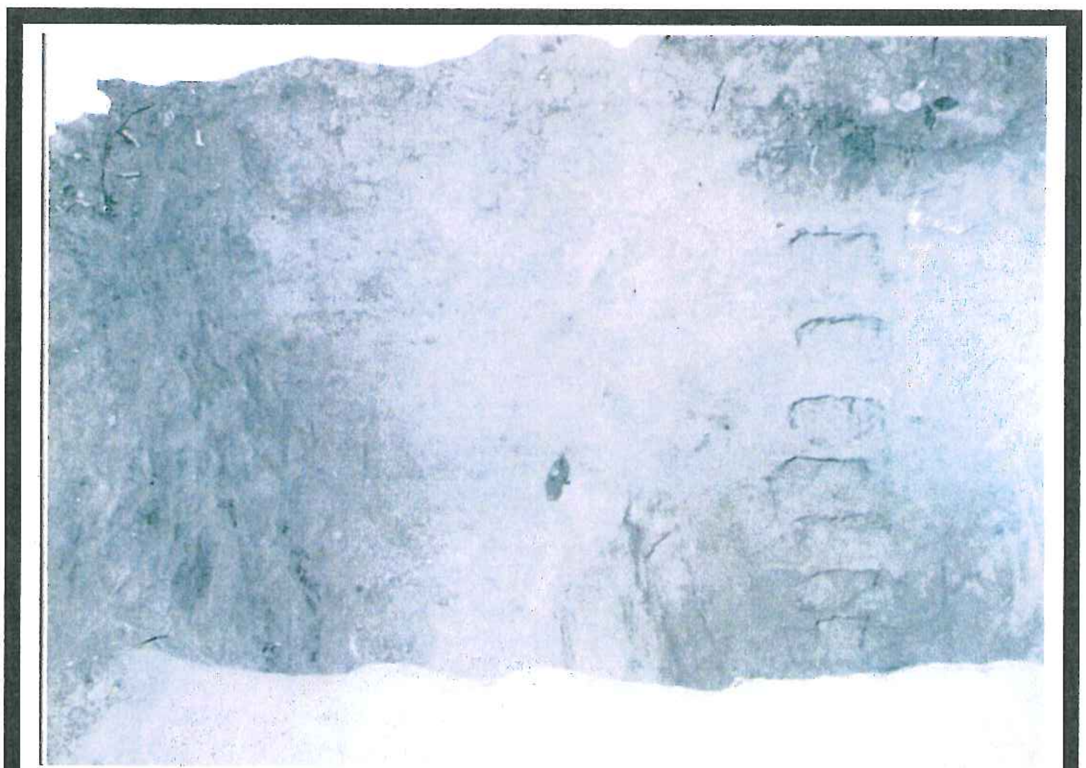


Figure 86. Soil sampling procedure, Nash Harris, completed column.

Biface thinning flake: flake with faceted platform, but no dorsal cortex.
Flake fragment: Distal or medial section of flake-like mass, lacking a striking platform.
Shatter: Angular fragments of debitage that lack platforms and may have negative as well as positive flake scars.
Projectile point/knife types are used primarily to assign chronological position to sites. There are some other formal lithic tools that are also useful for determining site chronology. References are McGahey 2000.
Prehistoric Ceramic types are classified first by clay body tempering agents and secondarily by surface finish, whether from manufacturing technique (cordmarking) or decorative intent (incising, punctations, slipping, etc.). Grog-tempered pottery welded with a cord-wraped paddle is refered to as Mulberry Creek Cordmarked. Smooth wares with the same paste are called Baytown Plain. These have been the primary types recovered. Some grog-tempered pottery with wide, U-shaped, widely-spaced curving incisions are attributed to the type Marksville Incised. Baytown Plain and Mulberry Creek Cordmarked were made over a period of about 1000 years of the Woodland period, and so are not very good temporal diagnostics. However these are the primary types recovered, along with small amounts of sand- and fiber-tempered and rare shell-tempered pottery.

Historic Archaeological Categories

The Architectural and Furnishings functional classes contain materials from domestic occupations and other buildings. Brick and nails are the primary materials recovered. Bricks and nails are further classified by manufacturing process, which is useful for chronology of site construction and occupation/modification. Cut nails (flat, stamped from sheet metal with squared head) are indicative of 19th century occupation; they were replaced with wire nails (round, pointed, flat headed) 1890-1910. The commonest Furnishings on Mississippi sites appear to be coal oil lamp bases (also possibly classified with Table Glass) and chimneys (also possibly classified with Bottle Glass [vials]).

The Kitchen Functional Class includes utensils, ceramics, bottle glass, table glass, food bone. Bottle glass is primarily further subdivided by color and when possible, manufacturing technique or details. Colors of glass are 1) dark or olive green 2) aqua (blue-green), 3) light green, 4) amber or brown, 5) white, 6) cobalt or dark blue, and 7) bright green including emerald. There are also solarized, formerly-clear manganese-decolored glass (also known as "desert," "amethyst" or "purpled") and true clear glass (early or modern leaded/flint glass as well as modern selenium-decolored). Glass is classified as Bottle Glass unless a more exact functional class can be assigned (flat clear or light green tint=window pane (Architecture), specific items when recognizable as serving rather than storage vessels (tumblers and decorative pieces) are Table Glass, lamp reservoir/bases and chimneys are Furniture, and amber square cork-top snuff bottles are classified with Tobacco.

Historic ceramics are used primarily for site chronology and secondarily for function. Historic ceramics like prehistoric ceramics are classified first by ware (clay body), secondarily by surface finish (glaze and decoration), and if possible, by vessel form (plate, cup, bowl, etc.). Here ceramics are arranged for convenience in order of firing regime, with coarse earthenwares being closest in composition and achieved temperature to the prehistoric ceramics and proceeded through hotter processes until vitrified (fused) porcelain is achieved.

Coarse earthenware includes redware and yellowware. Functionally, these forms are typically kitchen bowls. Redware is a typical eighteenth and early 19th century product with dark brown to bright orange generally sandy body and clear to yellow brown lead glaze, often only on the interior. Yellowware is a typically mid 19th century slip-cast ware, often with white or sometimes brown or black engine-turned slip banding and overall clear glazes. It also occurs with marbled or streaked brown Rockingham glazes as a kitchen preparation/storage or sanitary (spittoon) ware.

Refined earthenware includes all porous white-bodied ceramics for serving and eating/drinking. There are many decorated types useful for chronological placement of the site. Decorative techniques are typically arranged by order of their cost, with plain white ceramics being the cheapest. Moulding is generally used to add simple rim patterns. Sponge decoration, resulting in a blue, red or green mottled surface is also considered a cheap form of decoration, and in fact much sponge decoration came from the small Scottish pottery industry. Edge decoration ("shell" or "feather" edged) is typically early through mid 19th century in date, and occurs on plates and platters, and rarely other flat-rimmed serving dishes, and is almost always seen in association with moulding (some late 19th century forms lack moulding). Blue and green are virtually the only forms seen in the area, with green being limited to the period ca. 1810-1840. Engine banded vessels are typically food preparation (large bowls) and kitchen serving (pitchers and mugs) vessels. Colors include brown, blue-grey, tan, black bands of varying width as well as larger marbled, feathered or trailed elements. Transfer printing is the use of underglaze tissue glaze transfers on the interior and/or exterior of serving, eating and display vessels. The primary color has always been blue; other colors may be more chronologically sensitive; however, transfer printing has seen numerous revivals, making the type a poor subject for chronology except in the context of a larger assemblage. Brown was first used in the late 18th century. Red is typical of the ca. 1820-1840 period, but was also popular ca. 1930-1950. Green was used in the early-to-mid 19th and early-to-mid 20th century. Black was most common in the late 19th century. Handpainting was common in the late 18th and early 19th centuries. Cobalt blue only, geometric patterns are considered earlier; followed by and overlapping polychrome floral fine-line sprigs in the early 19th century; then polychrome broadline floral extending through the 20th century. Functionally, handpainting appears to be particularly associated with tea service (cups, saucers, teapots). Sometimes moulding, transfer printing, and handpainting are seen in combination. These complexly embellished items are seen as the most expensive to produce. In the early 20th century, impermanent overglaze decals became common, as do overall, colored glazes ("Fiesta"). Refined earthenware was also widely used in the early-mid 20th century for slip-cast art pottery decorated in various glazes and techniques.

Semiporcelains are nearly impervious, partly vitrified white bodied ceramics. The range of decoration typically found on semiporcelain is limited. Semiporcelain is also widely referred to under the early 19th century trade name "ironstone [china]"and the late 19th century functional type "hotel ware". Because of the high firing temperature primary decoration means are largely limited to overglaze enameling (often green bands). Moulding is also seen as a decorative embellishment.

Stoneware is a grey, orange, buff, or brown bodied, impervious or nearly impervious ware. Slight permeability of vessel walls is countered with slips and glazes, as in coarse and refined earthenware. The earliest Euro-American tradition stoneware glaze is salt fuming or glazing. This clear treatment can be used over cobalt stencils or painting. Brown clays ("Albany"or "Michigan") slips vitrify better than some local clays, and are used for an impervious surface on the interior and/or exterior of a vessel. Cream, grey or white zinc compound chemical glazes ("Bristol") are used for similar purposes, as well as sanitary appearance. Albany slip can occur in combination with salt glazing or Bristol glazing. A final class are alkaline or ash (translucent yellowish) glazes, which occur in a wide range of stoneware traditions, including Chinese, South Carolina-Upland South, and industrial beer bottles. Stonewares are functionally kitchen vessels, for the manufacture (churns and large crocks), storage (canning jars, small crocks) and preparation (bowls) of foods.

Porcelain is an impervious white-bodied ware, translucent and fully vitrified when thin. Underglaze decoration is limited to cobalt paining or transfers. Overglaze enamels are impermanent.

The Clothing, Personal, Arms, Tobacco, and Activities/Tools classes generally make up only a small part of a surface collection assemblage. Clothing includes buttons. Personal includes such items as writing slates, and Toys (marbles, china dolls). Arms includes lead balls and slugs, brass casings, and shotgun shell primers. Tobacco includes clay pipes and, when recognizable from general Bottle Glass, square snuff bottles. Activities include coal, burned earth, gravel and other cultural stone. Agriculture-related items include tools, harness, and machines.

Project Personnel

The vitas of key project personnel are given in Appendix C.

The principal investigator is James Lauro. Lauro is a graduate of Rhode Island College (B.A. 1973) and Florida State University (M.A. 1975). He worked as an archaeological consultant in Rhode Island and Massachusetts from 1975 to 1978 and then as an MDAH staff archaeologist responsible for the NRHP program from 1978 to1988. Lauro has been in private consulting as Archaeology Mississippi, Inc., since 1988. He has also served as an adjunct professor of anthropology at Milsaps College (1988-1998) and was the 1998 Rhode Island College anthropology honoree as an outstanding alumnus. Lauro is a long-term member of the Southeastern Archaeological Conference and the Mississippi Archaeological Association.

James May is our geological consultant. He received a B.A. in Geology (1970) from Mississippi State, a M. A. in Geology (1980) from the University of Southern Mississippi, and a PhD in Engineering Geology (1988) from Texas A & M. He is currently adjunct professor at Mississippi State and Texas A & M. He has extensive experience in geologic interpretation and mapping in Mississippi, Louisiana, and numerous other locations in the U. S. and in other countries. As a supervisory geologist with the Army Corps of Engineers, he supervised geomorphic mapping efforts in the valleys of the South Platte, Mississippi, Red, Yazoo, and Pearl River Basins. Dr. May was a recent President of the National Association of Engineering Geologist and is a member of the Mississippi Archeological Association.

Dan Allen is our historical geography consultant. He received a B.A in History (1979) and M.A. in Geography (1989) from the University of Georgia, and a Ph.D. from Louisiana State University (Geography 1997). Allen has provided archival and historical geographical services for a variety of cultural resource surveys in Georgia, Mississippi, and Louisiana. He has also been involved in a number of industrial archaeological projects in mid-to-late nineteenth century Georgia cities and charcoal iron production in northwest Georgia and the New Jersey Highlands. Dr. Allen's work in Mississippi includes archival work to support the nomination of the U.S. Army Corps of Engineers Waterways Experiment Station to the National Register of Historic Places and an architectural tour of the historic Belhaven and Belhaven Heights neighborhoods.

The field director is Mary Evelyn Starr. Starr is a graduate in anthropology of Mississippi State University (B.A.1989) and The University of Memphis (M.A. 1994) and has over 20 years of experience in Southeastern archaeology. Her interests include Mississippian sites, geomorphology, and the lumber industry. Starr has directed several other large-scale surveys, including in the Falls Zone of Virginia and North Carolina, the Savannah River valley of South Carolina, and at Ft.Polk/Kisatchie National Forest in Louisiana. Starr has worked in the Mississippi, Tombigbee, Arkansas, and Red river alluvial valleys, and has in the last few years been working in upland Mississippi, including several surveys in the Jackson metropolitan area. Starr has been a member of the Southeastern Archaeological Conference and numerous regional and state archaeological associations since 1983.

Ryan Hardy serves as field assistant. He graduated Mississippi State University in anthropology (B.A. 2002). Hardy took archaeological field school in 2000, followed by experience on an archaeological excavation in Tueplo, Mississippi, the same year. He has been working as technician for Archaeology Mississippi since January, 2004, conducting numerous small surveys in south and central Mississippi.

Many people have made contributions as field technicians surveying and digging shovel tests.

Matthew Barrett is a graduate of Millsaps College with a degree in Psychology (B.S. 2004). This was his first experience in archaeology.

Steven Glasgow attended the Federal Job Corps Building Trades Technology program. He was introduced to field archaeology when sent out by the engineering firm he was working for to lay out a grid on a data recovery project. Since 1998 he has been active in field archaeology. He has surveyed at Fort Cambell in Kentucky and Tennesee. Glasgow has participated in historical excavations in Kentucky and West Virginia and has also participated in prehistoric excavations.

Nash Harris is a graduate of Millsaps College with a degree in Anthropology (B.A. 2004). His experience in archaeology includes participation in two field schools with Millsaps held near Harpers Ferry, West Virginia-searching for artifacts from both the 18^{th} and 19^{th} centuries. Harris has participated in a GIS mapping project at Millsaps as well.

Shawn Millet graduated Andrew Jackson High School, Chalmette, Louisiana (1996). He has worked in plumbing, construction and dragline work and enjoys weighlifting and sports. He is enrolled in Hinds Community College, majoring in sports medicine. This is his first experience in archaeology.

Mark Orsbun began working on archaeological sites at age 10, on Mayan sites in southern Mexico and Guatamala. He attending West Arkansas Community College, earning a A.A.S. in engineering graphics (1983). He has worked towards at B.A. in anthropology at Henderson State University, under the instruction of Dr. Ann Early. He also worked for the Arkansas Archaeological Survey for three years at Parkin Archaeological State Park as a senior technician. He has for the last 7 years worked as a crew chief for TRC Garrow and Associates. His interest include protohistoric mortuary studies, corporate lineal burials, and battlefield archaeology. He also has experience collecting archaeomagnetic, OCR, and pollen samples.

James Starnes is a graduate of Millsaps College in Geology (B.S. 1996) and is an employee of the Mississippi Office of Geology, mapping Miocene, Pliocene, Pleistocene, and Holocene surface geology on a 7.5' scale in south Mississippi. He took an archaeological field school from the University of Alabama (1992), and has been an archaeological technician for the past 6 years for Arcaeology Mississippi and has done various volunteer field work for the Mississippi Department of Archives and History, resulting in a coauthored publication in Southeastern Archaeology. His interests include native lithic materials, geologic resource availability, and cultural usage.

Michael Starnes is a graduate of Mississippi State University with degree in Computer Science (B.S. 2004). His experience in archaeology includes work as a field technician for the Archusa Water Park survey in Quitman, Mississippi, and on a survey near Grenada, Mississippi, both for Archaeology Mississippi, Inc.

Kris Underwood is a graduate of the Anthropology B.A. program of Mississippi State University. He is an inhabitant of Scott County, Mississippi, and has worked in the local agricultural and forestry industries. He is an avid hunter and outdoorsman.

Kristen Kinsella is a graduate of the B.A. program of Millsaps College (2001). She has worked on the Mayan archaeology projects in Central America under Dr. George Bey (Millsaps College, Dean of Arts & Sciences).

MDAH requires that the amount of work conducted be documented. A total of 4698 shovel tests were excavated. Note that some time was spent in digging test units and collecting soil samples, particularly by Starr's crew, and that some of the time billed was for lab and paper work.

VIII. Project Results

The results of the archaeological survey will be discussed, then the survey of standing structures. Forty-eight new site numbers are discussed; in a few cases these possibly coincide with previously recorded sites, but conflicting or lacking locational data indicated that new numbers should be assigned. Five previously recorded sites were revisited and descriptions corrected or modified; these include two mound sites (22-Hi-672 and 22-Ra-505). Four commercial/industrial buildings and three residences along Town Creek are described. One of these, Jackson City Water Treatment Plant, has previously been declared significant by the MDAH. None of the abandoned houses is eligible for the NRHP.

Results of Archaeological Survey

<u>Madison 1 (22-Md-768; possibly also recorded as J. Starnes 22-Md-680)</u>. Based on consultation with MDAH archaeologists Jenkins and Abbot, this may be a site previously reported by James Starnes (See Figure 75), however, [redacted] The site was discovered on the first 30-m interval transects excavated by Starr, Hardy and Harris, beginning on 10 July 2004 and continuing through 11, 13 and 14 July (Figure 89). Approximately 60 man-hours were spent on the site at this time. Due to high artifact density (Figure 88), the site was a good opportunity to train crew members on artifact identification through screening. The site was found on the initial 30 m interval shovel test transects excavated by Starr, Hardy and Harris. The site was further delineated on a 5 m interval along and perpendicular to these initial transects. This site covers [redacted] The location has elm poles, privet, grapevines and abundant pokeweed and other brush but little timber. There is very little duff, but the only surface exposures are armadillo holes that comprise the main source of biological impact to the top 30 cm of the site. The surrounding flats are noticeably siltier.

The location is a high, steep sand knoll on the edge of the Holocene floodplain and is interpreted as an isolated terrace remnant. The site was visited by project geologist May, who states a belief that this sand knoll is a terrace remnant that has been undergoing pedogenesis including the weak accumulation of organic material. He states no opinion on weather artifacts are in situ or have percolated downward, but does note that deflation is to be expected on such a terrace remnant and that (organic or ceramic) artifact preservation should not be good in such well-drained deposits. However, it should be noted that while downward peroclation of artifacts is to be expected in very sandy soils, artifacts were recovered in evident stratification, with ceramics and heat-treated debitage near the top and an transitional Paleo-Archaic point near the bottom.

Thirty-four positive shovel tests were excavated on a landform defined by slopes and swales on all sides (Figure 87). Positive shovel tests were Starr 11-26, Hardy 12, 15-18, and 22-26, and Harris 7, 9-19, and 21 (See Table 18).

Two 1x1 m test units were excavated. TU 1 was excavated by Starr and Hardy on 15 July 2004. Level 1 (to 30 cmbs) consisted of homogeneous 2.5YR3/3-3/4 loamy sand with moderate to low amounts of debitage and fire cracked rock. Level 2 (30-50 cmbs) consisted of homogeneous 5YR3/4 loamy sand with a low density of artifacts. Level 3 (50-70 cmbs) was homogeneous 5YR4/4 reddish brown loamy sand with a low density of artifacts including burned earth. Level 4 (70-90 cmbs) was fairly homogeneous 5YR4/8 yellowish red loamy sand with coarse weak mottling and a low artifact density. Level 5 (90-112 cmbs) was 5YR5/6 yellowish red with a smooth abrupt transition to 5YR7/2 pinkish brown. Artifact recovery was limited. Level 6 (112-136 cmbs) was homogeneous 10YR7/4 very pale brown with only one flake recovered.

On 7 October 2004, Starr, Barrett and Harris returned to the site to excavate a second test unit to obtain a soil sample column. Level 1of TU2 extended to 20 cmbs. Soils were described as 10YR4/4 sandy silt that was very easy to screen. Artifacts were fairly sparse. Level 2 (20-40 cmbs) was 10YR3/6 silty sand with fairly dense flakes and rocks. Level 3 (40-60 cmbs) was 10YR4/6 sandy silt with a medium to high density of flakes and rocks. Level 4 (60-80cmbs) was 10YR5/6 sandy silt with sparse flakes and rocks. Level 5 (closing depth not recorded, presumably 100 cmbs) was 10YR5/6 with a transition to sterile while sand. No artifacts were recovered. Description of the profile presents a smooth continuous grading from 10YR4/3 through 4/4 to 4/5 with a much lighter 10YR8/3 being reached at about 100 cmbs. The Ao horizon is a dense rootmat to about 15 cmbs. The mass of the deposit is loamy fine sand, weakly cemented from about 75-110 cmbs. A corner of the unit was shoveled out without screening to reveal the unmodified overbank sands of the C horizon parent material (Figure 90).

Archaeological deposits extend to at least 80 cmbs. The site is extremely sandy. The analysis of soil samples from TU1 excavated to 150 cmbs shows the percentage of sand in the 70-80% range, with the exception of increased clay (ca. 25%) at 20 cmbs. (Figure 91). The highest percentage of silt occurs at this same level. Given the otherwise rather homogeneous profile, this peak in silt and clay content is interpreted as the result of weathering of a sand knoll deposited largely during the late Pleistocene/early Holocene.

The ferruginous sandstone from ST Harris 13 is burned. The 219 g sandstone cobble from TU1L5 (91-112 cmbs) may be a tool, as most of the cortex is abraded away. One of the petrified wood fragments from ST Harris 15 appears to be chipped, perhaps for use as a wedge; as is the petrified wood from ST Starr 19. Another petrified wood wedge comes from ST Starr 13. A fragment of a quartzite hammerstone comes from ST Starr 23. A fragment of a pitted stone/anvil (quarter of a quartzite cobble) comes from ST Starr 16. Three of the four flakes from Hardy 23 appear to be from the same rock, and look old (weathered). The two decortication flakes from ST Harris 14 are from the same core. Four flakes of rough chert from ST Starr 19 appear to be from the same core. The glossy white shatter from ST Hardy 25 may be Burlington or Kaolin chert (Missouri/Illinois source, but sometimes found further south in gravels). The large untempered sherd from ST Starr 14 is from a jar rim with simple rounded lip. The fiber tempered sherd from ST Harris 13 is curving and has apparent dentate stamping and fine-line incising or cross-hatching. The shell tempered sherd from ST Harris 14 is compact, smoothed, with oxidized surfaced and a reduced core. It could perhaps be classified as Bell Plain, given wide latitude. The charcoal from ST Harris 19 and ST Starr 21 is hickory nuthull.

Evidence of historic occupation is limited. Cans, bottles, shell casings, clothing and automotive parts were widely noted on the surface and some modern materials were recovered in shovel tests. All is attributable to trailer park residents playing in the area. A fragment of solarized glass came from ST Starr 23.

Abundant fire-cracked rock (chert, quartzite, sandstone, and petrified wood) and burned silty earth indicate that this was a base camp during the ceramic-using periods. It should be noted that site soils are too sandy to hold together, so this burned earth must derive from elsewhere, probably from the silty deposits in the surrounding swales. Besides the San Patrice point (Figure 92) indicative of transitional Paleo-Archaic occupation, Baytown Plain pottery indicates Middle or Late Woodland occupation. A formal endscraper from TU1, L2 (20-50 cmbs) may also be indicative of Early Archaic (Dalton culture) occupation; it looks old due to patination, including accreted black spots. A large flake from TU1, L6 (112-136 cmbs) also is patinated. Additional ceramic evidence includes untempered (Early Woodland period, Tchula culture), fiber tempered (Gulf Formational/Early Woodland period, Wheeler series), other grog tempered (Middle to Late Woodland periods), and shell tempered (Mississippi period) sherds (Figure 93).

This site is considered potentially eligible for the National Register because of its high density, stratified deposits, and great potential to provide significant new information about prehistory extending back to the Early Archaic, as well as site formation processes on the margins of the floodplain. The site should be avoided or subjected to further investigations at the Phase II level.

[redacted]

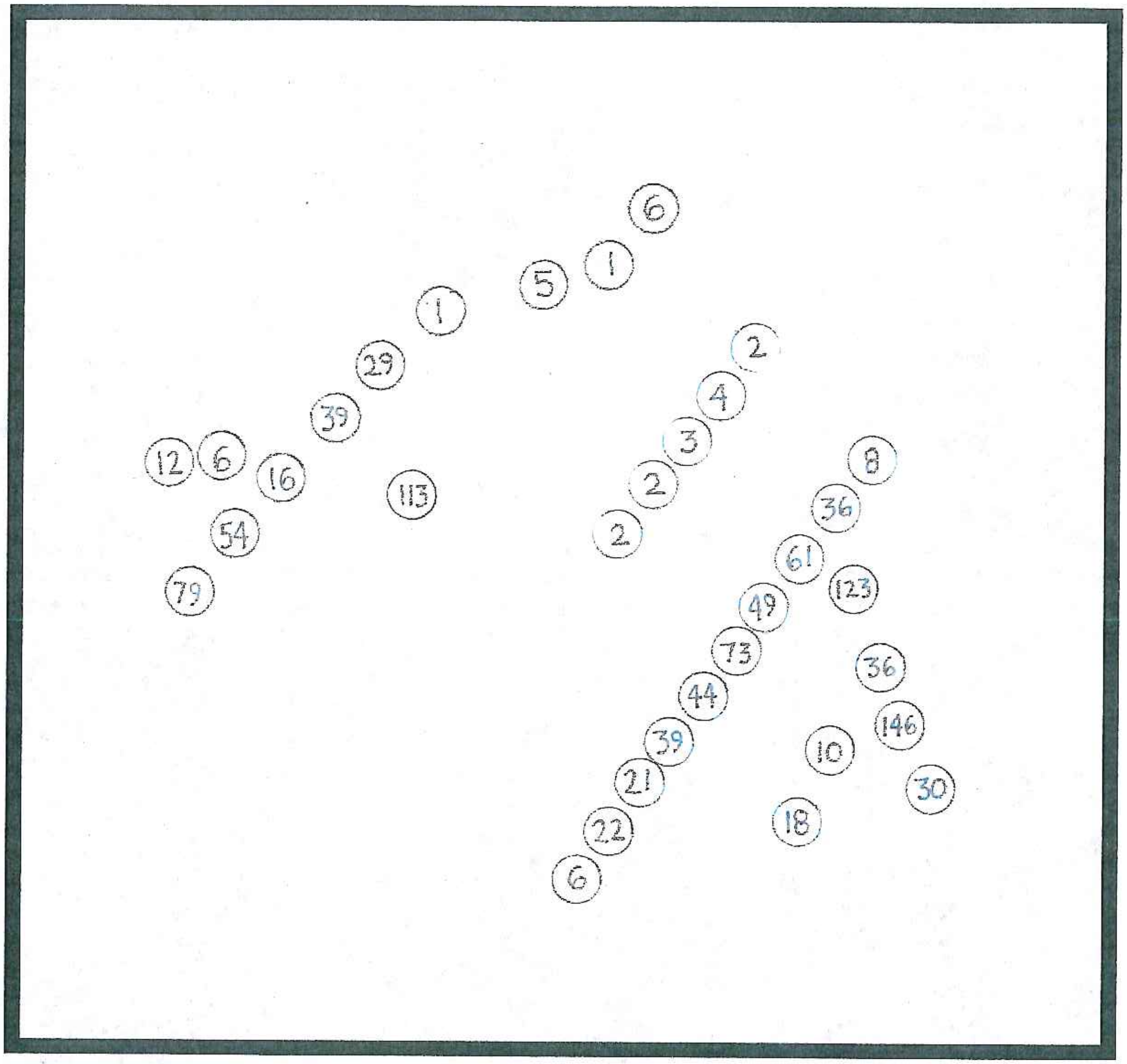


Figure 88. Madison 1 (22-Md-768) distribution map.

Figure 89. Madison 1 (22-Md-768); a. ST Starr 11, turtle faster than GPS, b. general view.

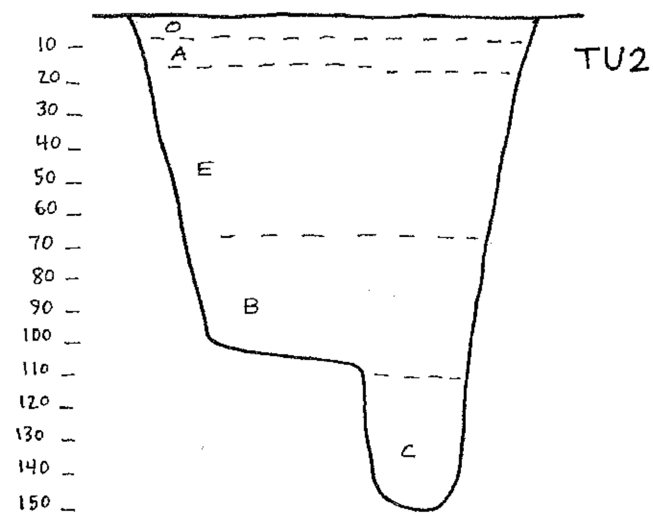


Figure 90. Madison 1 (22-Md-768)Test Unit 2 Soil Profile.

Key to Figure 90. Madison 1 (22-Md-768), Test Unit 2 Soil Profile.

Horizon	Color	Texture	Structure	Inclusions/mottles	Boundary
O	10YR4/3	loamy fine sand	massive	rootmat	smooth, continuously grading lighter
A	7.5YR4/3	loamy fine sand	massive, loose		smooth, continuously grading lighter
E	7.5YR4/4	loamy fine sand	massive		smooth, continuously grading lighter
B	10YR5/4	loamy fine sand	massive slight cementation		smooth, continuously grading lighter
C	10YR8/3	loamy fine sand	massive		

Figure 91. Madison 1 (22-Md-768) TU1 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Madison 1	TU 1	10	73.30	20.00	6.70
Madison 1	TU 1	20	46.60	26.60	26.80
Madison 1	TU 1	30	80.00	20.00	0.00
Madison 1	TU 1	40	73.30	23.30	3.40
Madison 1	TU 1	50	80.00	16.60	3.40
Madison 1	TU 1	60	80.00	16.60	3.40
Madison 1	TU 1	70	73.30	13.30	13.40
Madison 1	TU 1	80	80.00	16.60	3.40
Madison 1	TU 1	90	73.30	13.30	13.40
Madison 1	TU 1	100	80.00	13.30	6.70

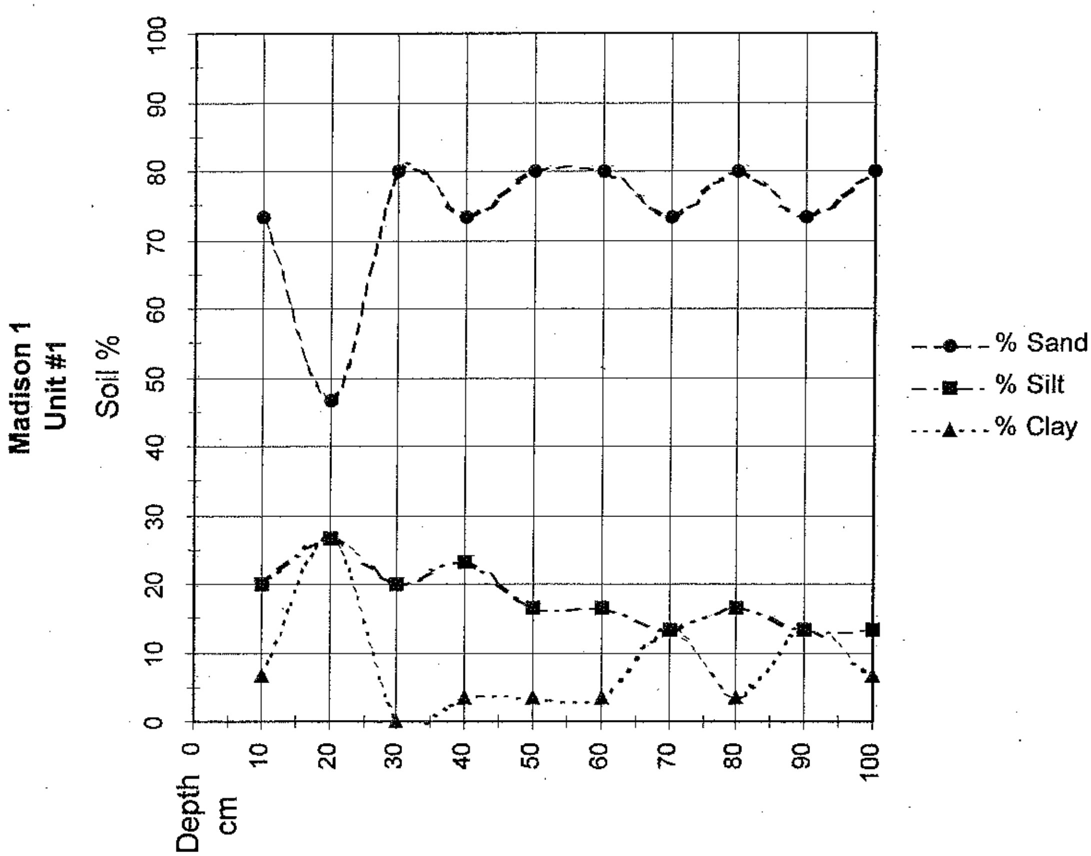


Table 17. Madison 1 (22-Md-768) pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	pH
1281	Madison 1	70	5.0

Table 18. Madison 1 (22-Md-768) Total Artifact Recovery from shovel tests (see Appendix Table).

Lithics	Total
Debitage	
Primary decortication flake	10
Secondary decortication flake	58
Internal flake	16
Biface thinning flake	166
Flake fragment	111
Shatter	12
Cores/bifaces	
Tested pebble	1
Amorphous core	3
Biface preforms	2
Projectile point/knives	1
Other bifacial tools	1
Biface fragments	2
Other worked stone	
Unifacial tools	
Pitted stone fragment	1
Wedge	1
Hammerstone shatter	1
Unmodified stone	
Fire cracked rock	83
Chert pebble	19
Ferruginous sandstone	21
Arkosic sandstone	4
Hematite/siltstone	4
Petrified wood	15
Quartz	38
Quartzite	1
Burned earth	576
Charcoal	34
Ceramics	
Untempered plain	1
fiber incised/stamped	1
grog eroded	2
grog plain	4
shell eroded	2
Shell plain	1
Total	**1192**

Table 19. Madison 1 (22-Md-768) Artifact Recovery TU1.

	Bag 35 TU1 L1		Bag 36 TU1 L2		Bag 37 TU1 L3		Bag 38 TU1 L4		Bag 39 TU1 L5		Bag 40 TU1 L6		Total
	#	g	#	g	#	g	#	g	#	g	#	g	
Lithics													
Debitage													
Primary decortication flake	2	1.6	2	0.8									4
Secondary decortication flake	5	5.7	2	1.6	2	3			1	2.1			10
Internal flake					3	3.5							3
Biface thinning flake	7	4.6	3	1	8	2.4	2	0.75	3	1.5	1	1.7	24
Flake fragment	11	5.6	4	2	3	1.8	6	2.7	1	0.4			25
Shatter					3	7.6	1	0.7	1	0.4			5
Cores/bifaces													
Pebble core			1	75.3									1
Biface fragments	1	3.1			1	2							2
Other worked stone													
Unifacial tools			2	5.2									2
Unmodified stone													
Fire cracked rock	12	17.9	1	0.4	4	3.7			2	0.7			19
Chert pebble			2	23.3									2
Ferruginous sandstone	1	6.2			2	10	1	12.7					4
Arkosic sandstone									1	219.2			1
Hematite/siltstone					3	2.55	1	0.5	1	0.5			5
Petrified wood	2	13			2	3.8	1	5.8					5
Quartz pebble	3	2.5							1	0.8			4
Quartzite													
Other mineral													
Burned earth	23	15.8	14	8	38	51.9	5	2.4	3	1.7			83
Total	67	76	31	117.6	69	92.25	17	25.55	14	227.3	1	1.7	199

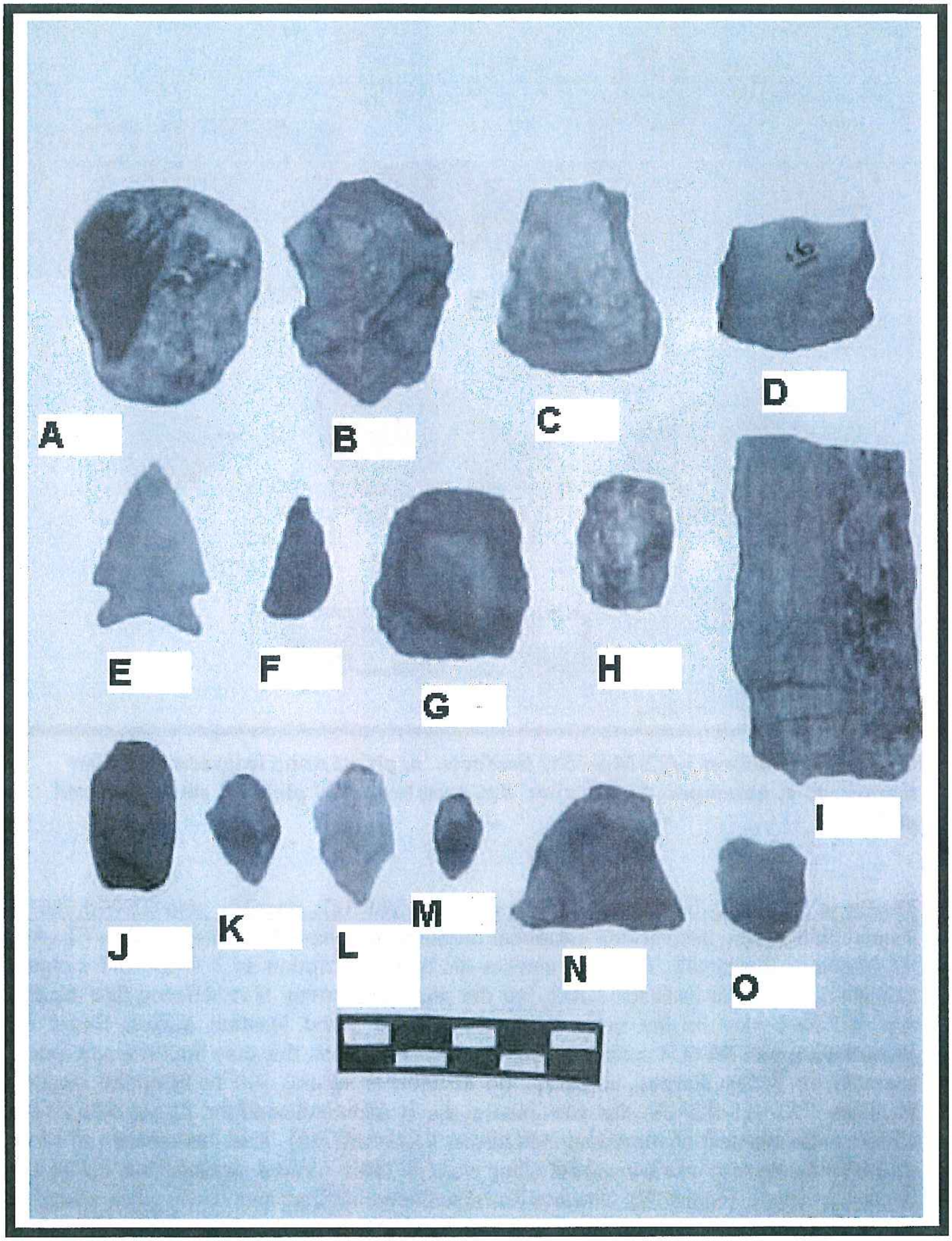


Figure 92. Madison 1 (22-Md-768) Lithics. a. tested pebble; b-c. amorphous core; d.biface preform; e. projectile point/knife; f. biface fragment; g. biface tool "adze"; h,i. petrified wood tools; j. uniface tool "bipolar wedge/limace"; k-o. utilized flake/uniface tool.

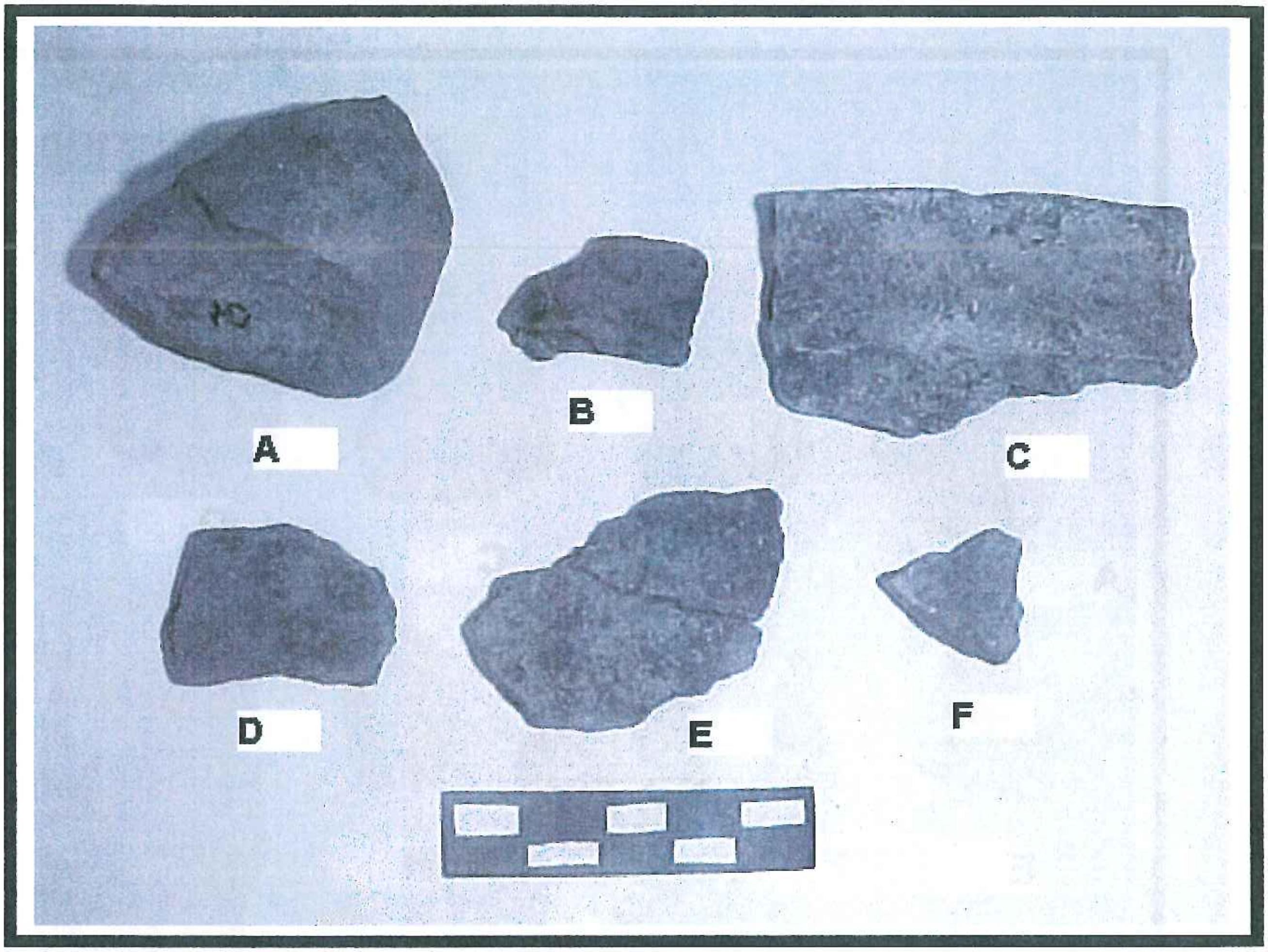


Figure 93. Madison 1 (22-Md-768) Artifacts. a. pitted stone fragment; b. fiber tempered; c. untempered plain rim; d,e. grog tempered plain; f. shell tempered plain.

<u>Madison 2 (22-Md-769) (probably same as 22-Md-517; possibly also 22-Md-680?).</u> Rands'1958 survey has various locational problems that have been discussed in Chapter VI (Previous Research). This site matches his brief description as 3 Woodland mounds (22-Md-517, Wright or Black Lake), but the section is wrong. It is believed that the site reported here may be the same site, although the stated location differs. Based on consultation with MDAH archaeologists Jenkins and Abbot, this may be a site previously reported by James Starnes, however; [redacted] this is closer to the mapped location than is Madison 1 (22-Md-768). This site consists of a low to moderate density artifact scatter lying west of three conical mounds that lie on the bank of a bayou (Figure 94). The site was discovered by Starr and Hardy when initiating 30 m interval transects extending south from the foot of the dam. When the initial positive shovel tests were encountered, delineation on 5 and 10 m intervals began. Some 46 positive shovel tests are reported (See Figure 94). Including part days contributed by Harris, about 60 man-hours were spent on the delineation and initial testing of this site. [redacted] The

mounds have been dug into on their tops/centers, but because most features (tombs or crematory basins) of Middle Woodland mounds lie below the original ground surface these disturbances have probably not reached the most significant deposits.

The site is defined on the east and south by water (a deadwater bayou cut off and plugged with reddish sandy clay during construction of the dam) (Figure 97). To the north [redacted] The site extends across a flat area to the west. This natural levee and backswamp flat is geologically stable with soil formation. Soils are thin with a possible old plowzone definable as a 10-15 cm thick organic horizon. Soils are sandier along the natural levee and siltier to the lower western portion of the site. The site elevation is 280' amsl. The site has some mature pines with an understory of hardwood poles (mostly hickory) and some remnant cedars indicative of a formerly more open woodland. The site surface is covered with thick pine straw, so surface visibility was poor, but a small grab collection was made from limited surface exposures.

Mound A is about 30 m in diameter and 2 m tall.

Three test units were excavated. TU1 was atop Mound A (Figure 96) and was excavated by Starr and Harris on 20 July 2004. TU2 was at ground level between Mounds A and B. TU3 was located south along the bankline southwest of Mound C (See Figure 94).

TU1 was excavated in 3 levels to 50 cmbs (Figure 100). Level 1 (to 20 cmbs) contained sherds and natural soil concretions, indicating that the mound fill derived from weathered soils. Soils were mottled 7.5YR3/2 dark brown and 7.5YR5/6 strong brown loamy sand. Some artifacts were recovered. Level 2 (20-40 cmbs) was mixed, basketloaded 7.5YR5/6 strong brown clayey sand loam, with some darker patches with abundant concretions. Sparse flakes and a large Baytown Plain sherd were recovered. Level 3 (40-50 cmbs) was mixed and mottled basket loaded soil as in the previous level. Excavation was discontinued at this point to avoid further unnecessary impact to intact mound deposits.

Starr, Hardy and Harris returned to the site on 13 October 2004 to excavate TU2. TU2 was excavated to at least 80 cmbs (Figure 102). Paperwork is missing for 0-50 cmbs. The 50-60 cm level was homogeneous brown silt with weak concretion development. Probable postholes and a burned area were noted, but very little other material. The 60-70 cm level was homogeneous brown silt with burned (oxidized) soil continuing along the south side of the test unit. This burned area is interpreted as a burned tree stump. No artifacts were found and the soil contained very weak 1-2 mm concretions. There is no information for the 70-80 cm level. Soil Ph (Table 20) and particle size soil samples were collected from this unit (Figure 98). The possible feature (probably a burned stump) was covered with black plastic before the unit was backfilled. Even if this is a burned tree, it could still be a cultural feature associated with mound construction. Particle size analysis reveals increased clay in the 50-70 cm level with minimal clay above and the percentage of clay in the 5-15% range below (Figure 103).

The percentage of silt is also increased at 50-80 cmbs. The clay maxima is interpreted as the result of illuviation of clay from 0-40 cmbs with redeposition from extensive weathering below 50 cmbs. By 110 cmbs, sand is nearly 70% and it exceeds 90% by 150 cmbs. This is typically indicative of deposition in fast-moving water.

TU3 was excavated in 6 arbitrary 10 cm levels by Hardy, Barrett and Harris on 14 October 2004 (Figure 101). This unit, for some unknown reason, lies at or beyond the south boundary of the site and it produced no artifacts. Level 1 (to 10 cmbs) was homogeneous 10YR3/3 loam with abundant roots and no artifacts. Level 3 (10-20 cmbs) was homogeneous 10YR3/6 silt loam with fewer roots and no artifacts. Level 3 (20-30 cm) was homogeneous 10YR3/6 silt loam with few roots and no artifacts. At level 4 the unit was reduced to 50 x 100 cm. Level 4 (30-40 cmbs) was homogeneous 10YR4/4 loam with few roots and no artifacts. Level 5 (40-50 cmbs) was homogeneous 10YR4/4 silt loam with few roots and no artifacts. Level 6 was homogeneous 10YR5/6 clay loam with few roots and no artifacts. The results of particle size analysis for TU3 show a pronounced peak in clay at about 55% at 40 cmbs (Figure 104). This is far more extreme that that shown in the TU2 column, and the layers above do not show clear depletion of clay. The profile only extends to 130 cmbs, but too appears to show the beginning of a pronounced increase in sand by the bottom of the column. This is to be expected as this unit also lies on the old natural levee.

Numerous flakes come from ST Hardy 48 (0-95 cmbs); some are extensively patinated with black spots (Table 21). Biface thinning flakes from Hardy 32 (0-50 cmbs) are from the same rock. Internal flakes from Starr 36 (0-15 cmbs) are from the same rock. A white chert biface thinning flake from ST Starr 53 appears to be non-local material (Burlington/Kaolin?). A tan chert projectile point/knife comes from ST Hardy 33 (0-40 cmbs). The preform from TU1, L1 (Mound A) appears to be for a Gary cluster pp/k (Table 22). A quartzite cobble hammerstone (330 g) comes from ST Starr 34 (0-25 cmbs).

The five sand-tempered sherds from Mound A (TU 1, L1) have coarse temper; they are dark and appear to be from the same vessel. The coarseness of the sand may indicate southern (Gulf Coastal) origins rather than northern (late Gulf Formational period, Alexander series). The Baytown Plain sherds from ST Starr 42 (0-20 cmbs) are hard, compact, and well-smoothed with oxidized surfaces and reduced core. The Baytown Plain rim from Hardy 49 (0-70 cmbs) is hard, reduced and well-smoothed; apparently a typical Marksville rim. The Mulberry Creek Cordmarked sherd from ST Starr 36 (0-15 cmbs) is hard and reduced. The three Mulberry Creek Cordmarked sherds from ST Hardy 38 (0-75 cmbs) appear to be from the same vessel. The Mulberry Creek Cordmarked sherds from Hardy 47 fit together; they are thin, silty/sandy and may include some bone in the temper. All 9 Mulberry Creek Cordmarked sherds from Hardy 48 (0-95 cmbs) appear to be from the same vessel. Two of the sandy/silty Mulberry Creek Cordmarked sherds from Hardy 52 mend; these possibly have some bone in the temper. Heterogeneous tempered cordmarked pottery from ST Starr 49 (0-30 cmbs) has grog and bone temper. Some of the Baytown Plain from TU1, L1, may also have some bone flecks. Heterogeneous tempered sherds from TU1, L2 have grog and sparse shell temper.

Seven fragments (4 g) of amber bottle glass was recovered in ST Starr 28. More amber glass comes from Starr 44. Barbed wire was recovered from Hardy 49.

Artifact density is generally low though covering an extensive area. Prehistoric ceramics and lithics including fire cracked rock and burned earth were recovered. Otherwise, evidence of historic land use is limited to logging trails. Evidence of historic occupation was limited to bottle glass, and drink cans, cigarette butts and pieces of hardware cloth probably used for illicit artifact screening. The site is moderately disturbed, with impacts including biological and other natural causes, pothunting, dozer work associated with dam construction north of the site, forestry and occasional flooding.

A Gary point (Figure 105), Mulberry Creek Cordmarked pottery and other grog-tempered pottery are commensurate with interpretation of this site as dating to the Middle Woodland period. The majority of the ceramic material recovered is grog tempered, but sand tempered and shell tempered sherds are also present. The grog/bone temper is commensurate with Middle Woodland occupation. However, note that no Marksville Incised was recovered, and the light scatter around the mounds, as well as the mound fill itself is not necessarily indicative of the construction date of the three mounds. Immediately across (east) of the bayou, Marksville Incised pottery was recovered (small and sparse Site 3). Burned material (rock and earth) and tools such as a hammerstone indicate that the site includes occupation areas. The only potential non-local stone, often considered a Marksville diagnostic, recovered was a single white chert flake.

This site is considered potentially eligible for the National Register because the mounds have considerable potential to provide significant new information about religious/funeral practices in the Pearl River basin.

Madison 3 (22-Md-770). This site was recorded by Hardy on 22 July 2004. This minor manifestation [redacted] A second, larger slough with gum trees lies immediately to the east. The site area is a thicket in cut-over forest. Four positive shovel tests (Hardy 55,67, 70, Harris 66) are reported. A total of 3 pieces of debitage and 4 sherds were collected. [redacted] The sherd from ST Hardy 53 is very sandy with three medium with lines in a concentric circle or spiral motif. This is an atypical sherd for Marksville Incised. The sherd from ST Harris 66 was silty with grog and ground concretions; the soft paste was easily eroded by hard scrubbing during artifact processing.

The recovery of 2 sherds of Marksville Incised pottery indicates that the site is probably associated with Site 3 (22-Md-770) (considered likely to be a Marksville site, producing Gary points, Baytown Plain and Mulberry Creek Cordmarked, but lacking Marksville Incised sherds). Most shovel tests at this location produced recent charcoal, burned earth and concretions.

Due to low density, disturbance and minimal artifact recovery, the site is considered not eligible for the National Register. The site [redacted] Negative shovel tests produced burned earth and charcoal probably also associated with land clearing for construction. The limited significance of the site lies in increased interpretive background for Site 3. No further work is recommended.

[redacted]

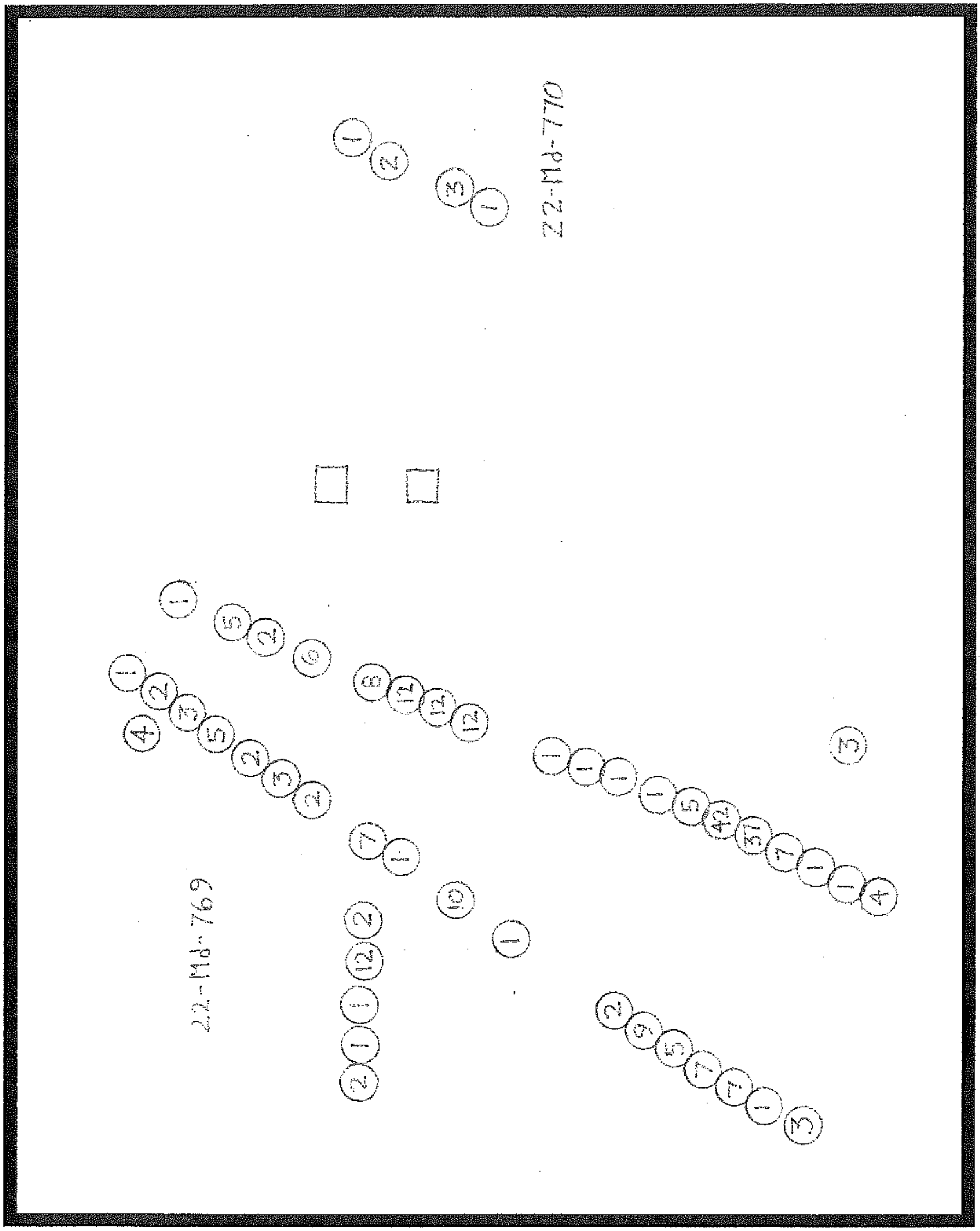


Figure 95. Madison 2 (22-Md-769) and Madison 3 (22-Md-770) distribution map.

Figure 96. Madison 2 (22-Md-769); a. general view of mounds in thicket b. Mound A TU1 completed showing darker basket load.

Figure 97. Madison 2 (22-Md-769); dead water bayou from mound top, view east.

Figure 98. Madison 2 (22-Md-769) TU2 southeast wall showing soil sample column.

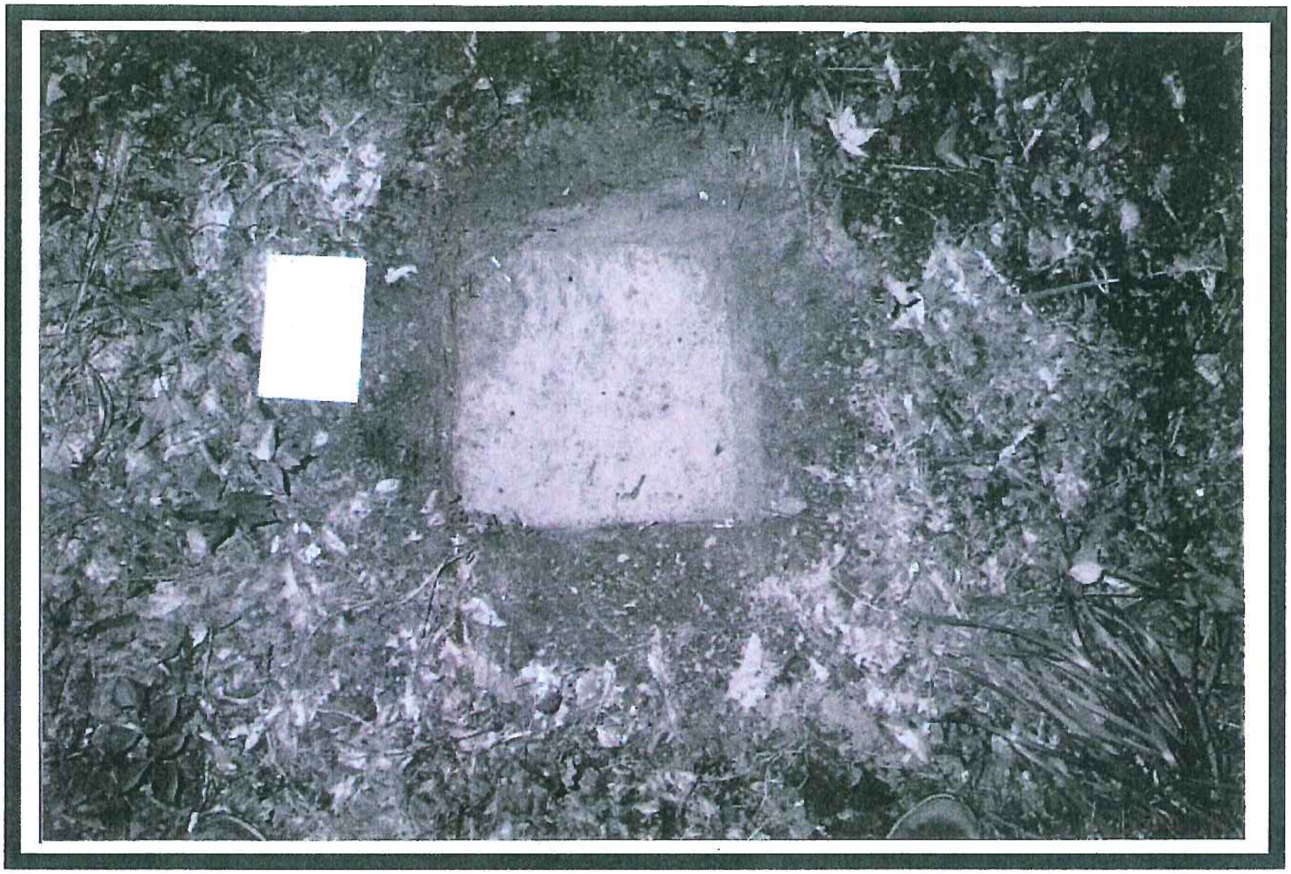


Figure 99. Madison 3 (22-Md-770) ST Hardy 70.

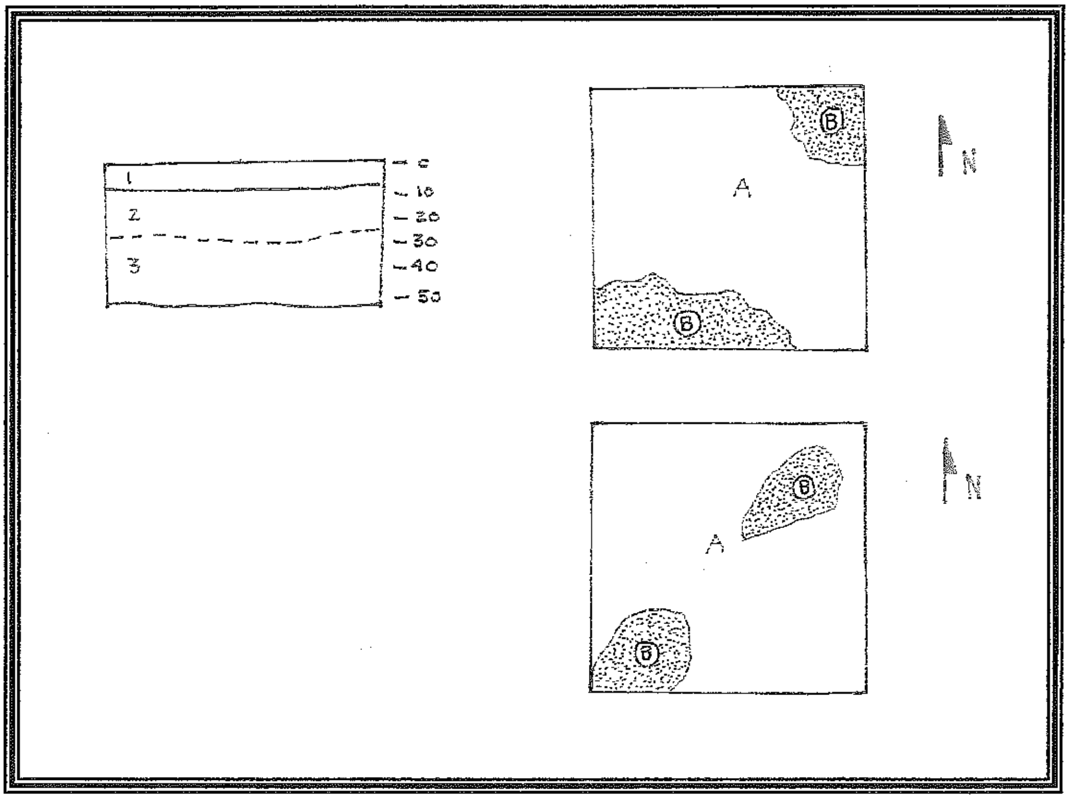


Figure 100. Madison 2 (22-Md-770) TU1, Mound A.

Profile:

1. **grey loamy silt**
2. **brown loamy silt**
3. **strong brown clayey silt loam**

Plans: 7.5YR4/4 brown

A. **clayey silt loam with concretions, mixed soils**
B. **7.5YR3/3 dark brown clayey silt loam with more concretions, some charcoal, the few artifacts found come from these darker basket loads**

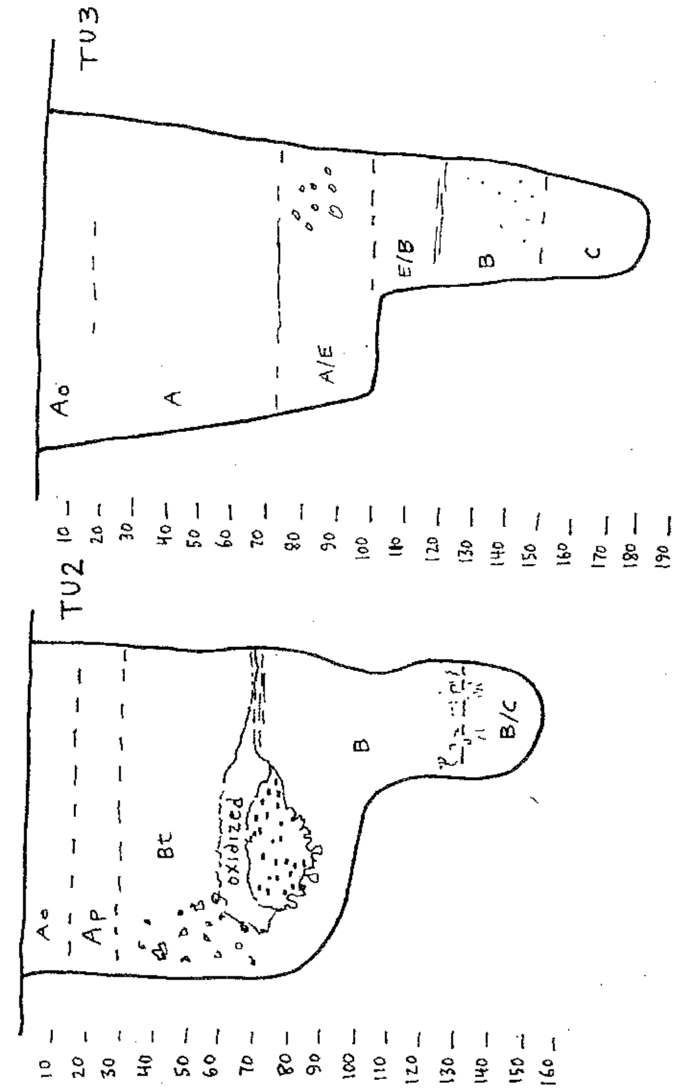


Figure 101. Madison 2 (22-Md-769) soil profiles.

Key to Figure 101. Madison 2 (22-Md-769) Test Unit 2 Soil Profile.

Horizon	Color	Texture	Structure	Inclusions/mottles	Boundary
Ao	10YR2/2	loamy sand		homogeneous	diffuse smooth
Ap	7.5YR2.5/3	loamy sand	very weakly granular	common small and large white oak roots to 70 cmbs	diffuse smooth
Bt	7.5YR4/6	sandy loam, increasing clay	moderate to coarse blocky	light distinct mottles, less intense bioturbation	clear smooth
Burned feature	2.5YR4/1 7.5YR2.5/2	sandy loam-sandy clay loam	fine granular and moderate coarse blocky	charcoal and burned flecks	clear
B	10YR7/3 to 10YR4/6	sandy clay loam-sandy loam	clay fills most pores strongly coarse angular to moderately blocky easily friable		diffuse burrowed
B/C	10YR7/3 to white	fine sand	massive	few faint bio traces, very fine grains unweathered black mineral	

Key to Figure 101. Madison 2 (22-Md-769) Test Unit 3 Soil Profile.

Horizon	Color	Texture	Structure	Inclusions/mottles
Ao	7.5YR4/4	loamy sand	fine granular	few concretions
A	7.5YR3/4	sand loam grades to silty clay loam	fine granular	few concretions
A/E	10YR6/6	silty clay loam	weak coarse granular	slight bio traces
E/B	10YR6/6	silty clay loam	slight silica cementation	extreme reduction-oxidation features
B	2.5Y8/2	loamy sand		few weak concretions, weak rare reduction-oxidation features
C	10YR6/4	sand		

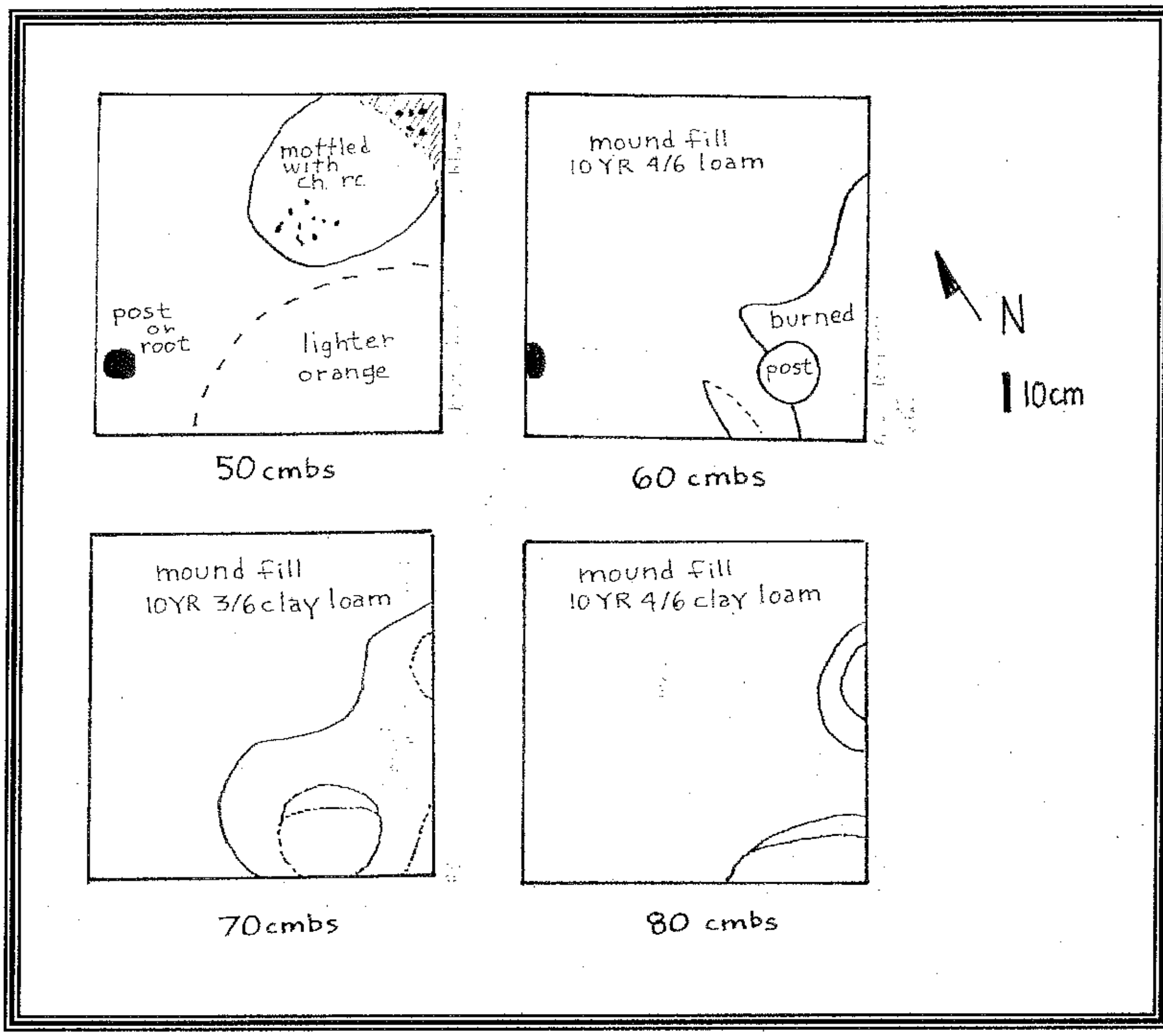


Figure 102. Madison 2 (22-Md-769) TU2 Soil Profile.

Figure 103. Madison 2 (22-Md-769) TU2 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Madison 2	TU 2	10	70.00	30.00	0.00
Madison 2	TU 2	20	66.60	33.30	0.10
Madison 2	TU 2	30	66.60	30.00	3.40
Madison 2	TU 2	40	66.60	26.60	6.80
Madison 2	TU 2	50	40.00	40.00	20.00
Madison 2	TU 2	60	43.30	40.00	16.70
Madison 2	TU 2	70	43.30	33.30	23.40
Madison 2	TU 2	80	50.00	46.60	3.40
Madison 2	TU 2	90	53.30	40.00	6.70
Madison 2	TU 2	100	56.60	33.30	10.10
Madison 2	TU 2	110	66.60	26.60	6.80
Madison 2	TU 2	120	66.60	23.30	10.10
Madison 2	TU 2	130	73.30	10.00	16.70
Madison 2	TU 2	140	86.60	6.60	6.80
Madison 2	TU 2	150	93.30	3.30	3.40
Madison 2	TU 2	160	93.30	1.60	5.10

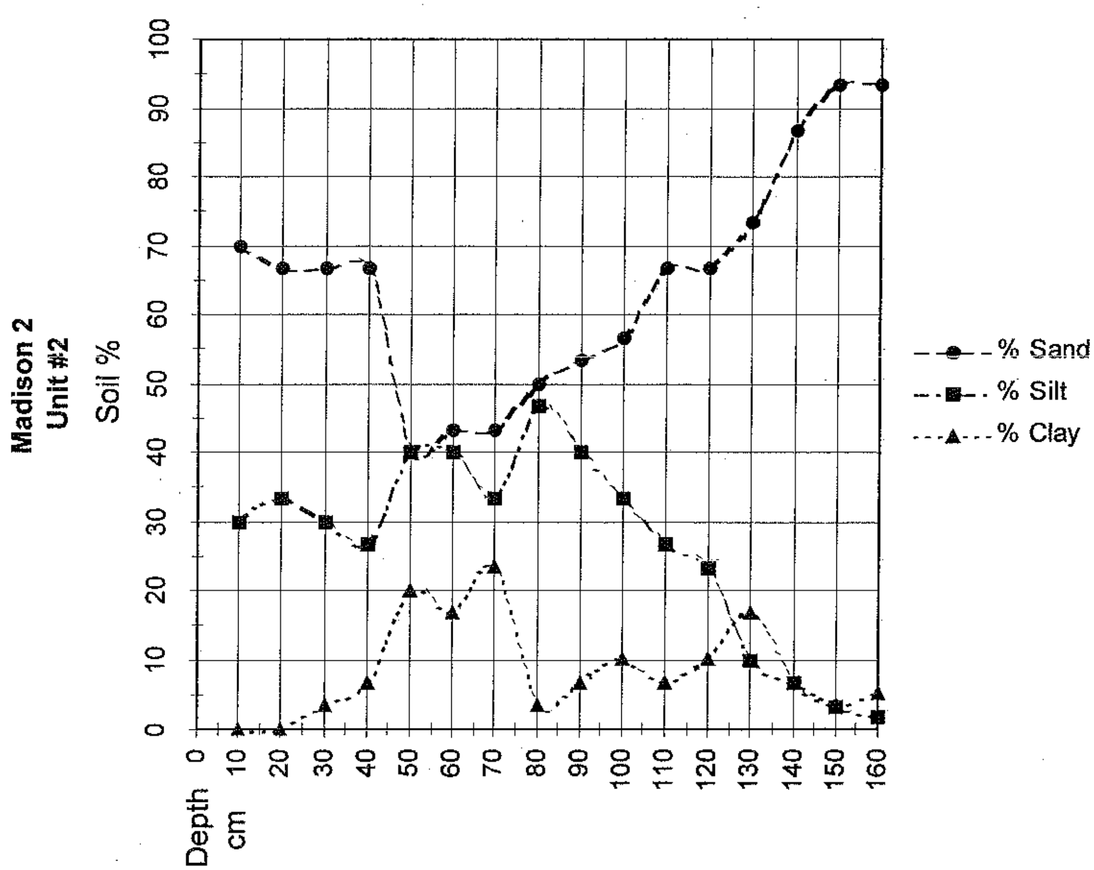


Table 20. Madison 2 (22-Md-769) pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	pH
1276	Madison site 2 TU2	10	5.0
1277	Madison site 2 TU2	40	5.0
1278	Madison site 2 TU2	76	5.3
1282	Madison site 2 TU3	6	5.5
1283	Madison site 2 TU3	70	4.5
1279	Madison site 2 TU3	110	5.1
1284	Madison site 2 TU3	130	5.2
1280	Madison site 2	9?	4.8

Figure 104. Madison 2 (22-Md-769) TU3 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Madison 2	TU 3	10	53.30	40.00	6.70
Madison 2	TU 3	20	40.00	40.00	20.00
Madison 2	TU 3	30	53.30	40.00	6.70
Madison 2	TU 3	40	26.60	16.60	56.80
Madison 2	TU 3	50	40.00	26.60	33.40
Madison 2	TU 3	60	46.60	33.30	20.10
Madison 2	TU 3	70	53.30	40.00	6.70
Madison 2	TU 3	80	40.00	50.00	10.00
Madison 2	TU 3	90	33.30	53.30	13.40
Madison 2	TU 3	100	40.00	40.00	20.00
Madison 2	TU 3	130	53.30	30.00	16.70

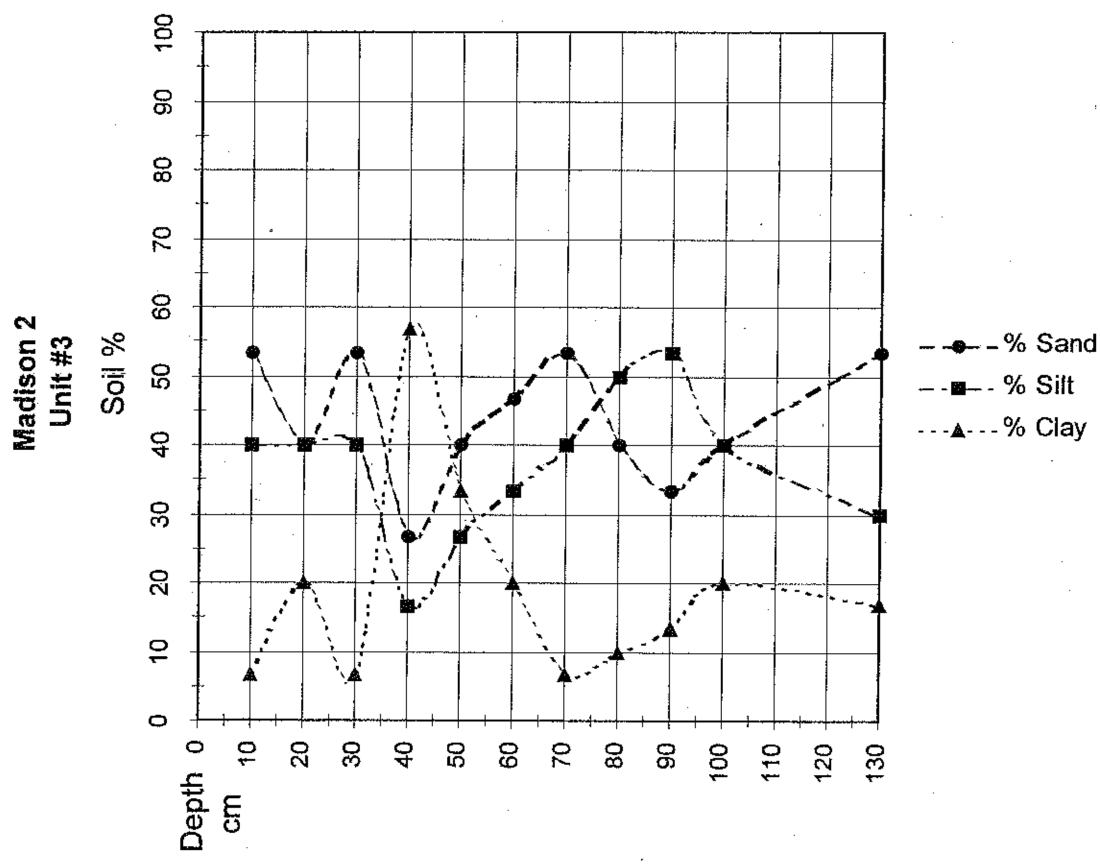


Table 21. Madison 2 (22-Md-769) Total Artifact Recovery from shovel tests (see appendix table)

Lithics	Total
Debitage	
Primary decortication flake	12
Secondary decortication flake	33
Internal flake	18
Biface thinning flake	73
Flake fragment	31
Shatter	3
Cores/bifaces	
Tested pebble	1
Pebble core	1
Amorphous core	2
Biface preforms	1
Projectile point/knives	1
Wedge	1
Other worked stone	
Unifacial tools	3
Hammerstone	1
Unmodified stone	
Fire cracked rock	16
Chert pebble	6
Ferruginous sandstone	3
Petrified wood	3
Quartz	8
Burned bone	3
Burned earth	52
Charcoal-wood	12
Ceramics	
grog eroded	3
grog plain	8
grog cord marked	19
Heterogeneous cord marked	1
Other unmod. Stone	1
Total	316

Table 22. Madison 2 (22-Md-769) TU1 Artifact Recovery.

	Bag 85		Bag 86		Bag 87		
MOUND A	TU1 L1		TU1 L2		TU1 L3		Total
	#	g	#	g	#	G	
Lithics							
Debitage							
Primary decortication flake			2	2.5			2
Secondary decortication flake	9	15.2	2	0.8	1	1.7	12
Internal flake			2	0.6			2
Biface thinning flake	17	10.1	4	5.4			21
Flake fragment	13	0.7	4	1.5			17
Shatter	2	1	1	0.7			3
Cores/bifaces							
Biface preforms	1	8.1					1
Unmodified stone							
Petrified wood	1	0.35					1
Burned bone	1	0.55					1
Charcoal	6	1	1	0.2	4	.5	11
Ceramics							
sand eroded	2	1.6					2
sand plain	3	7.4					3
grog eroded	6	11.5					6
grog plain	7	30.4					7
Heterogeneous plain			2	58.3			2
shell eroded	1	0.6					1
Total	69	88.5	18	70	5	2.20	92

Table 23. Madison 2 (22-Md-769) TU2 Artifact Recovery.

	Bag 956		Bag 957		Bag 958		
	TU2 L1		TU2 L2		TU2 L3		Total
	#	g	#	g	#	g	
Lithics							
Debitage							
Primary decortication flake	1	1					1
Biface thinning flake			2	1.6			2
Flake fragment	1	0.2	1	0.1			2
Shatter					1	44.2	1
Unmodified stone							
Ferruginous sandstone			1	1.2			1
Arkosic sandstone			2	4.6			2
Ceramics							
grog broad incised	1	2.7	3	8			4
shell eroded	3	3.9	9	15.5	1	44.2	13
Total	6	7.8	18	31	2	88.4	26

Table 24. Madison 3 (22-Md-770) Artifact Recovery from shovel tests.

	Bag 74		Bag 75		Bag 76		Bag 78		
	Hardy 55		Harris 66		Hardy 67		Hardy 70		Total
	#	g	#	g	#	g	#	g	
Lithics									
Debitage									
Primary decortication flake							1	20	1
Internal flake					1	0.6			1
Biface thinning flake					1	0.1			1
Unmodified stone									
Chert pebble	1	15							1
Ceramics									
grog eroded	2	5.35							2
grog broad incised	1	8.8	1	12.4					2
Total	4	29.15	1	12.4	2	.70	1	20	8

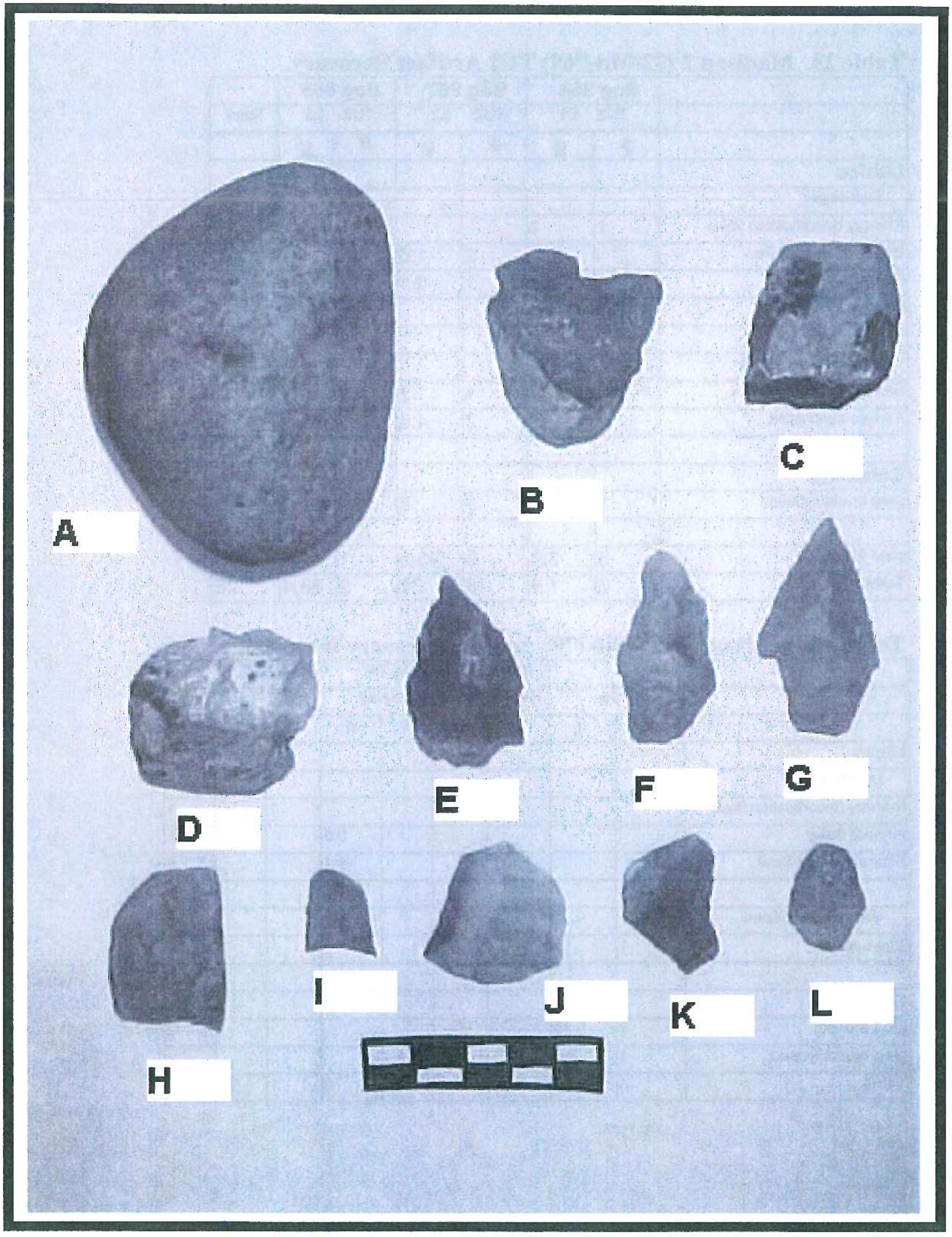


Figure 105. Madison 2 (22-Md-769) Lithics. a. hammerstone; b. tested pebble; c. pebble core; d. amorphous core; e,f. biface preform; g. projectile point/knife; h. bifacial tool "wedge"; i. formal uniface tool "graver"; j-l. utilized flake/uniface tools.

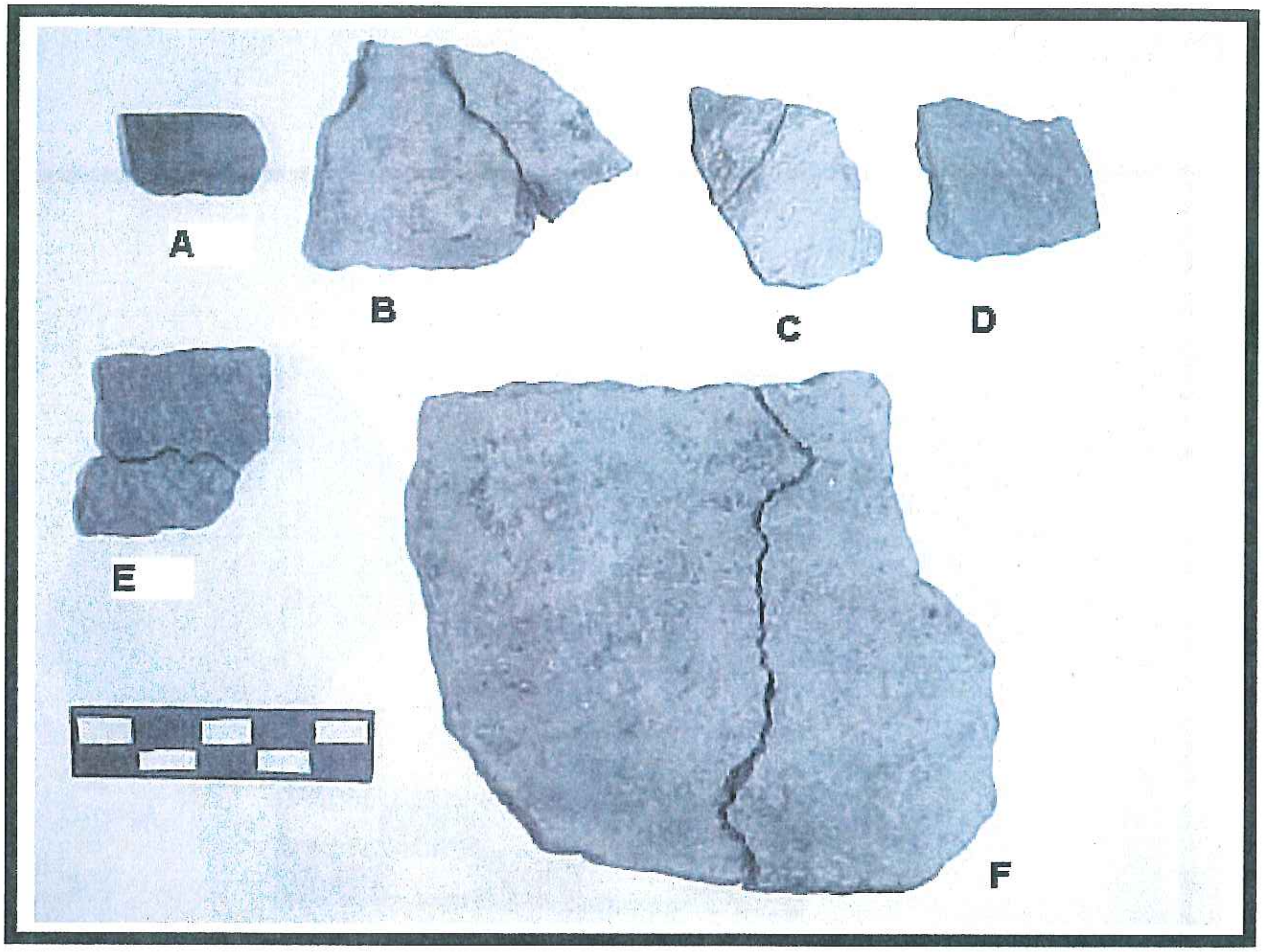


Figure 106. Madison 2 (22-Md-769) Ceramics. a. grog tempered plain rim; b. grog tempered plain; c,d. heterogeneous (grog & bone) tempered cord marked; e. grog tempered cord marked; f. heterogeneous (grog & shell) tempered plain (Mound A TU1).

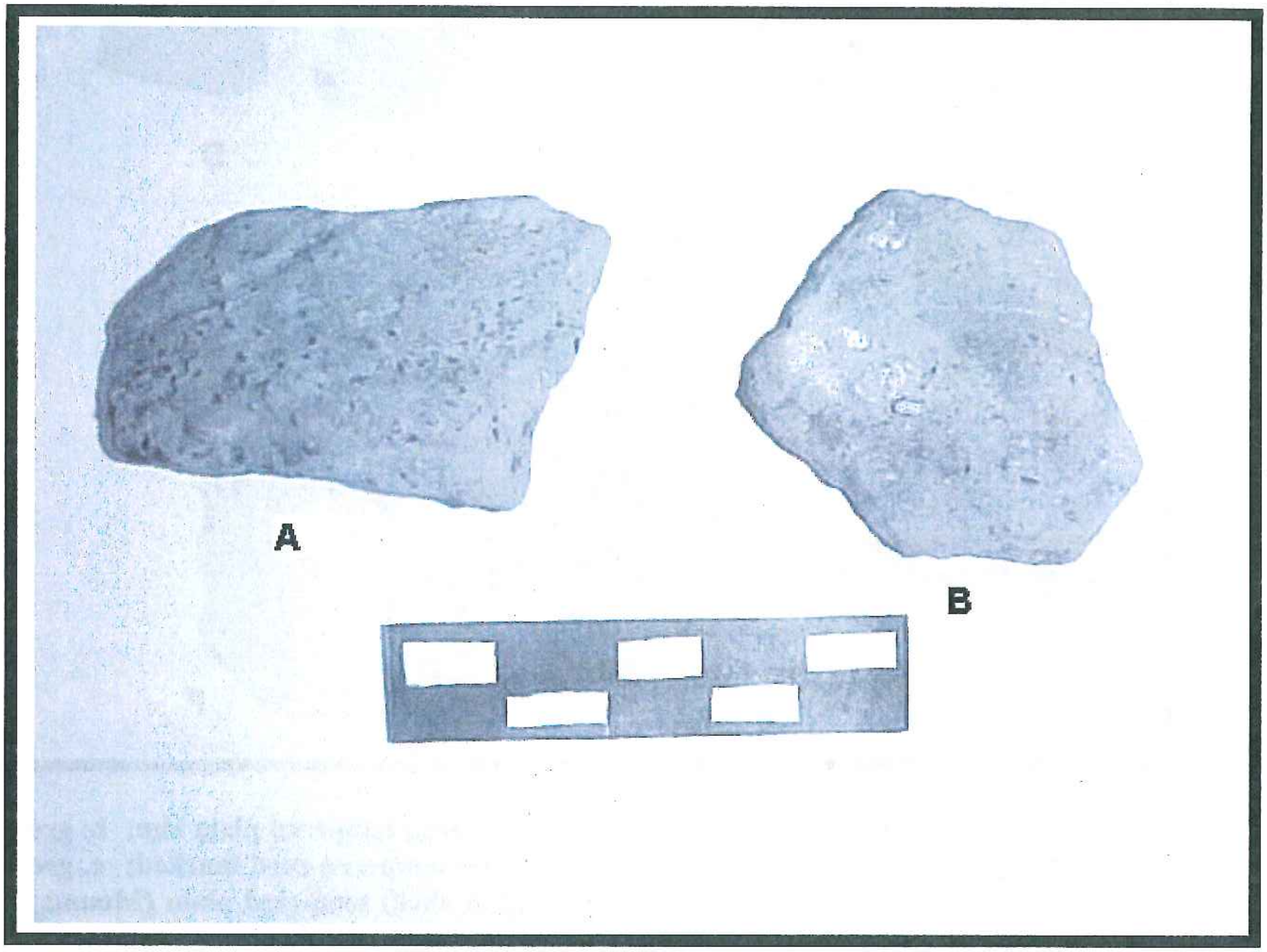


Figure 107. Madison 3 (22-Md-770) Artifacts. a. grog incised; b. heterogeneous incised.

Madison 4/5 (22-Md-771). This large, generally thin prehistoric scatter [redacted] Three 30 m interval shovel test transects were excavated across this site. The site was delineated between 23 and 28 July 2004. Positive shovel tests were recorded on Hardy's and Starr's transects, while all tests on Harris' line between these other two transects were negative. Harris was assisted by Millet, who also began working part days on this site. Twenty seven positive shovel tests were logged (Hardy 72-76, 80, 84, 85, 87-89, 94, 100-103; and Starr 78-81, 83, 86, 93, 101) (Figure 108). [redacted]

The [redacted] There is some overbank deposition during periods of flooding, suggesting that deposits may be considered as lightly buried by backswamp deposits. The active channel is about 180 m to the east. The site is a wooded area last cut perhaps 25 years ago. The oldest hardwoods appear to be 40-50 years old. Hickories and white oaks predominate, with an understory of ironwood/hophornbeam, pawpaws and grapevines. The site has a heavy leaf litter with some grass where light reaches the forest floor. The woods are fairly open here, but surface visibility was poor and no surface collection was made.

On 16 October 2004 Starr, Harris and Barrett returned to the site to excavate a 1x1m test unit. TU1 was excavated in three 10 cm arbitrary levels. Level 1 (to 10 cmbs) corresponded to the Ao horizon; soils were loose, soft 10YR3/3 sandy loam. No artifacts were recovered. Level 2 (10-20 cmbs) was 10YR4/4 sandy silt loam. Level 3 (20-30 cmbs) was 10YR4/6 silt loam (Figure 109).

Much of the debitage from Shovel Test Hardy 74 appears to be from a single core (Table 25). Most of the debitage from ST Hardy 102 looks to be from one core. The biface thinning flake from ST Hardy 75 may be Dover chert (Middle Tennessee). A flake fragment from ST Starr 80 is clear chalcedony, perhaps not non-local in origin, as such materials can be found in the Coastal Plain agates. ST Hardy 85 produced 2 untempered sherds and a fiber tempered sherd. The Tchula-like pottery has lamellar structure, as is typical for the type, and is harder than the Wheeler sherd, which had limited fiber voids in it. Shovel Test Hardy 100 also produced five untempered sherdlets with contorted paste also classifiable as Tchula ware. The 22 eroded untempered sherdlets from TU1, L3, are thin, soft, sandy-silty, and yellowish (Table 26). They are perhaps classifiable as Tchula period ware. The two fiber tempered sherds appear to be from the same Wheeler vessel base. The grog tempered sherd from ST Hardy 80 is thick, with coarse temper, oxidized exteriors, and reduced core. The shell tempered sherd from ST Hardy 101 had a medium amount of coarse shell and is classifiable as Mississippi Plain. Some of the charcoal from ST Starr 79 (0-50 cmbs) is hickory nuthull.

The site produced debitage and petrified wood, prehistoric ceramics, charcoal and burned earth as well as some recent historic bottle glass and steel and aluminum cans, lead bullets and .22 shell casings. ST Starr 80 produced a piece of amber bottle glass. Starr 86 produced a possible wire nail. Hogwire and barbed wire were noted on the site, indicating that the area was formerly rough pasture.

Fiber tempered pottery is indicative of middle Gulf Formational period, Wheeler culture, and sand temper probably indicative of later Gulf Formational, Alexander culture. Untempered pottery may belong to the Early Woodland period, Tchula culture. There is abundant evidence of early ceramic occupation. Grog tempered pottery is indicative of Middle to Late Woodland occupation. This is one of the relatively few sites to produce shell tempered pottery indicative of Mississippi period occupation. Impact to the site is minor and takes the form of biological and other natural causes, occasional hardwood timbering, a low-impact recreational trail along the bankline, and occasional flooding. The site is interpreted as a multi-component, low-intensity use base and/or gathering/resource extraction camp. The multi-component nature of the site, lacking vertical stratification, means that interpretation would be complicated. While the site is well preserved, artifact density is low and shallow. The site appears to have limited potential to provide additional new significant information. The site is therefore considered to not be eligible for the National Register. No further work is recommended.

[redacted]

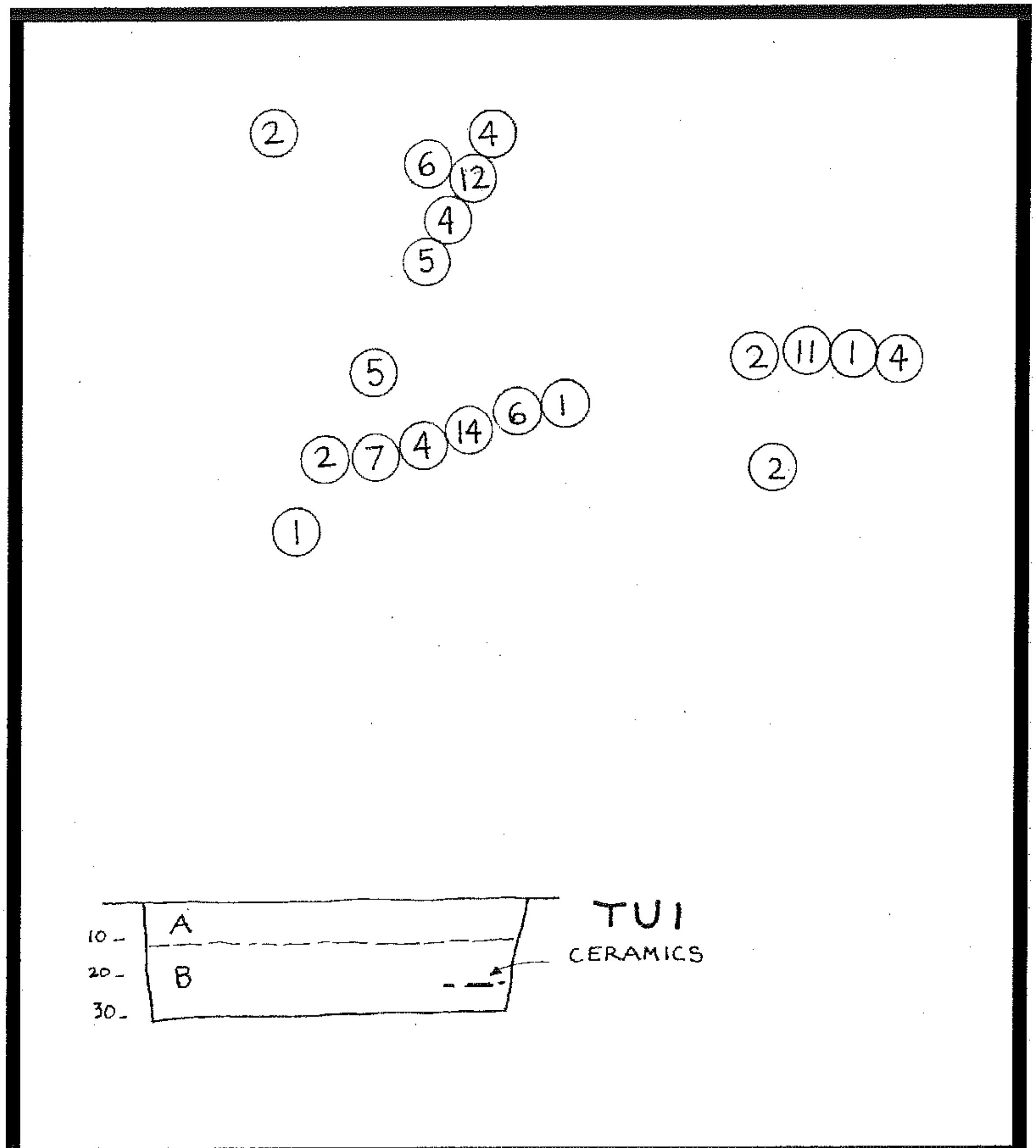


Figure 109. Madison 4 (22-Md-771) distribution map and Test Unit 1 profile.

Figure 110. Madison 4 (22-Md-771) general view.

Table 25. Madison 4 (22-Md-771) Total Artifact Recovery from shovel tests (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	3
Secondary decortication flake	4
Internal flake	2
Biface thinning flake	17
Flake fragment	10
Shatter	2
Other worked stone	
Unifacial tools	1
Unmodified stone	
Fire cracked rock	4
Chert pebble	4
Petrified wood	3
Quartz	6
Charcoal	11
Ceramics	
Untempered eroded	8
Untempered plain	1
fiber eroded	1
grog eroded	8
grog plain	2
Shell plain	6
Total	93

Table 26. Madison 4 (22-Md-771) Artifact recovery TU1.

	Bag 129		Bag 130		
	TU1 L2		TU1 L3		Total
	#	g	#	g	
Lithics					
Debitage					
Primary decortication flake	1	0.7			1
Secondary decortication flake	1	2.7			1
Internal flake	1	0.2			1
Biface thinning flake	1	0.35			1
Flake fragment	1	0.7	1	0.25	2
Unmodified stone					
Chert pebble			6	22	6
Quartz	2	1.1	2	1.1	4
Charcoal	2	0.6			2
Other burned earth			7	10.8	7
Ceramics					
untempered eroded			22	31.8	22
fiber eroded			1	14.5	1
fiber plain			1	11.3	1
sand eroded	6	2			6
grog eroded	2	2.9			2
shell eroded	2	1.3			2
Total	19	12.55	40	91.75	59

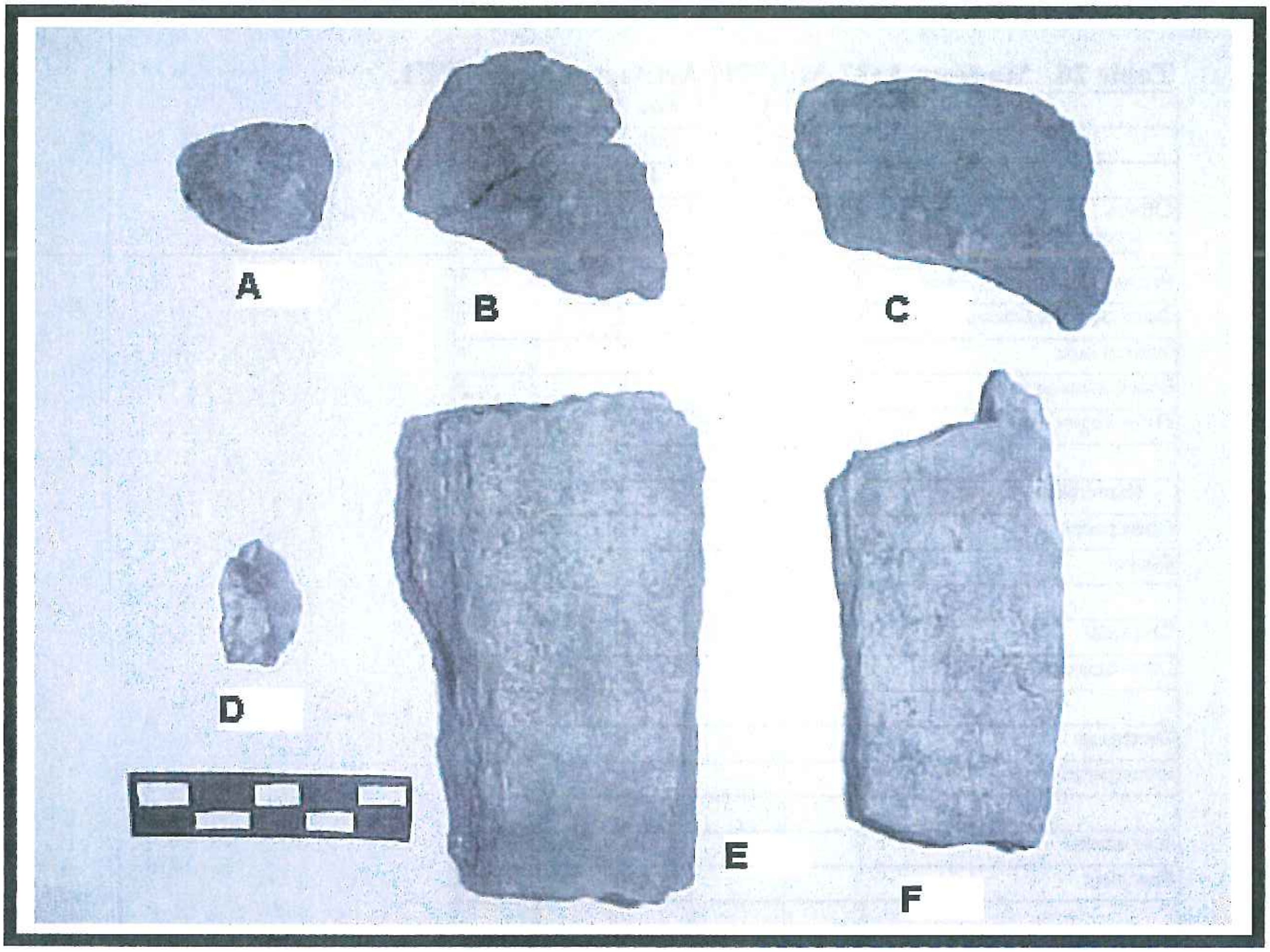


Figure 111. Madison 4 (22-Md-771); a. untempered plain; b. grog tempered plain; c. shell tempered plain; d. utilized flake; e,f. knapped petrified wood.

Madison 6 (22-Md-772). This small, shallow, low density prehistoric site was discovered by Starr on 3 August 2004 in the course of a 30 m interval shovel test transect (Figure 112). The site boundary was determined by 5 m interval shovel testing and by natural topography. Seven positive shovel tests were excavated (Starr 110-112, 114, 115,117,118). [redacted] The site is considered to be a level Holocene terrace remnant with a pronounced point bar or ridge and swale expression on the silty terrace surface. Such pronounced ridge and swale topography, not evident on quadrangle maps, was found to be typical of most terrace surfaces in the project area. The area is geologically stable with marked soil formation under way.

The site has unimproved young hardwoods without much commercial value. The site has a hickory-oak canopy with an understory of elms, sweetgum, switch cane, weeds and vines. The site surface was covered with a heavy leaf litter including abundant hickory hulls, so surface visibility was poor and no surface collection could be made. Soils were soft silt loams that screened easily.

Prehistoric ceramics and lithics were recovered (Table 27). There was only one sherd, which was sand tempered (ST Starr 111) and 4 pieces of debitage. The remainder of the assemblage is unmodified chert and quartz pebbles, sandstone and petrified wood, which may or may not be artifactual.

There is little sign of any mechanized disturbance from forestry activities and impacts to the site are limited to biological and other natural causes including occasional flooding. The site is interpreted as a transitory hunting/extraction camp that has seen limited duration or repetition of occupation. The only indication of chronology is a sherd, probably from the later Gulf Formational Alexander series, although the inadequate regional chronology and the presence of other regional sand-tempered traditions make this uncertain.

As a potential single-component site of limited size, with good preservation, the site is considered potentially eligible for the NRHP if its chronological placement can be determined and if the single component nature can be confirmed. Additional testing is recommended if the site is to be impacted by construction.

[redacted]

Table 27. Madison 6 (22-Md-772) Artifact recovery from shovel tests.

	Bag 122 Starr 110		Bag 123 Starr 111		Bag 124 Starr 112		Bag 125 Starr 114		Bag 126 Starr 115		Bag 127 Starr 117		Total
	#	g	#	g	#	g	#	g	#	g	#	g	
Lithics													
Debitage													
Internal flake									1	0.5			1
Biface thinning flake	1	1.5											1
Flake fragment					1	0.2					1	0.25	2
Unmodified stone													
Chert pebble			1	4.3	1	26.9	1	3.3					3
Ferruginous sandstone			1	0.75									1
Petrified wood							2	2.15					2
Quartz			1	3.1	3	6.1	1	0.5					5
Ceramics													
sand eroded			1	1.1									1
Total	1	1.5	4	9.25	5	33.20	4	5.95	1	.5	1	.25	16

Madison 9/10 (22-Md-773). Madison Site 9/10 was discovered on 21 September 2004 by Hardy (T 48 ST 534) and Barrett (T 38 ST 244) while shovel testing on 30-m interval transects. ST Barrett 282 was expanded to a .5x.5 m unit to recover a fragmented prehistoric vessel (Figure 120). The site was further investigated by Starr, Harris and Barrett on 21 September 2004 with 10 m interval site delineation shovel tests. A contiguous 4 square meter area was excavated by Starr, Hardy, Barrett and Harris on 15 and 16 October 2004 (Figure 115). [redacted]

This site [redacted] The area is dominated by a bayou with tupelo gum and cypress and a ridge with younger pulpwood and hardwoods (white and red oaks, hickory, elm, and sweetgum) under some remnant older pines and hanging moss. It appears to have been a long time since the site was last cut over. The surface was obscured by thick duff, so surface collection was made due to poor visibility. All artifact recovery was by excavation.

The site testing consisted of 4 1x1 m test units, all excavated in arbitrary 10cm levels (Figure 116). These were undertaken to attempt to enlarge the artifact sample recovered and to ascertain if a discrete feature outline could be discerned. Apparently, the original enlarged shovel test recovered most of the vessel fragment present; there was however evidence of horizontal patterning around this location, including variation in the quantity of small quartz pebbles in the artifact-bearing horizon (Table 30).

Test Unit 1 [redacted] It was excavated in 4 10-cm arbitrary levels (Figure 117). Level 1 was 10YR3/4 homogeneous loam with roots and 4 sherds. Level 2 was homogeneous 10YR4/6 silt loam with few roots, 2 flakes and 3 small potsherds. Level 3 was homogeneous 10YR5/6 loam with few roots and one sherd. Level 4 was homogeneous 10YR5/6 clay loam with few roots and no artifacts. This unit was shoveled out to 120 cmbs for a soil particle size column (Figure 119). The soils are fairly homogeneous from 120 to 50 cmbs, but above this ratios shift markedly, with a decrease in clay and an increase in sand around 20-30 cmbs (Figure 119). The 10 cm surface layer is more similar to the deeper portions of the deposit. There is a peak in clay at 40% at 40 cmbs which is interpreted as the result of weathering and downward transportation of clay.

Test Unit 2, [redacted] was excavated in 3 arbitrary 10-cm levels (Figure 118). Level 1 was homogeneous 10RY3/3 silt loam with lots of roots. This level more or less corresponds to the natural Ao horizon. Few flakes, sherds and pebbles were recovered. Level 2 was homogeneous 10YR4/4 silt loam with roots, a few sherds and lots of pebbles. Level 3 was homogeneous 10YR3/6 silt loam with very sparse inclusions.

Test Unit 3, [redacted] and the area east of it, was excavated in 3 levels. Level 1 was homogeneous 10YR4/4 silt loam with many roots including a small decayed stump in the southeast corner. Several sherds and a few flakes were recovered. Level 2 was 10YR3/4 silty loam with only two flakes. Level 3 was 10YR3/6 silty loam. While there was no clear sign of a feature in the soil, the soil in the area is looser and there were mottled indications of an old tree stump. Only two small sherds were found and these were next to the original shovel test.

Test Unit 4 was excavated in three levels. Level 1 was homogeneous dark brown (10YR 3/3) silt loam with roots. Many sherds, a few pebbles and a Collins arrow point (Figure 120) were recovered. Level 2 was homogeneous 10YR3/4 silt loam with few roots and seven small flakes. A nest of pink soil snakes was found. Level 3 was homogeneous 10YR4/6 silt loam with few roots.

The initial find of cordmarked and eroded grog tempered pottery (Barrett 282,0-60 cmbs) has many refitting pieces. The material is oxidized on the exterior and reduced in the core, thin, and silty/fine sandy, which probably indicates local manufacture. Vessel form is not apparent, but probably a bag-like jar is indicated; no rims were recovered. A stemmed Collins arrow point from TU2, L1 (0-10 cmbs) is indicative of Late Woodland occupation (Figure 120). The heterogeneous temper sherd From TU2, L1 has grog, sand and shell; the rough surface may be indicative of burning. The plain grog tempered sherd from TU4 L2 (10-20 cmbs) is thick and probably from a vessel base.

Density varies from dense to moderate. Besides the ceramic concentration, the site produced lithics and apparently natural pebbles. Based on shovel test results, the deposit reaches up to 60 cmbs, however this may be the result of a stumphole encountered in this location. However, test units indicate that the main artifact bearing horizon is about 20 cmbs. Soils were very dry and were passed through ¼" drys screen. The Holocene alluvium is a ridge or old natural levee in a nearly level to gently undulating area.

Disturbance is minimal and consists primarily of natural causes (roots and soil organisms) and intermittent flooding. A piece of clear bottle glass from Starr 400 is the only indication of historic land use, but a mid/late 20th century dump was found immediately east of the site. Site surface conditions were good, with minimal ruts or stumpholes. The below-surface soils were compact brownish yellow to brown silt.

Mulberry Creek Cordmarked ceramics and a Collins arrow point indicate a single component Late Woodland period occupation. The debitage and ceramics are taken to indicate that this is a base camp or temporary hamlet. Site 22-Md-773 is considered potentially significant due to the presence of a feature (pottery concentration) and the relatively undisturbed condition. Phase II testing is recommended if the site is to be impacted by the proposed construction.

[redacted]

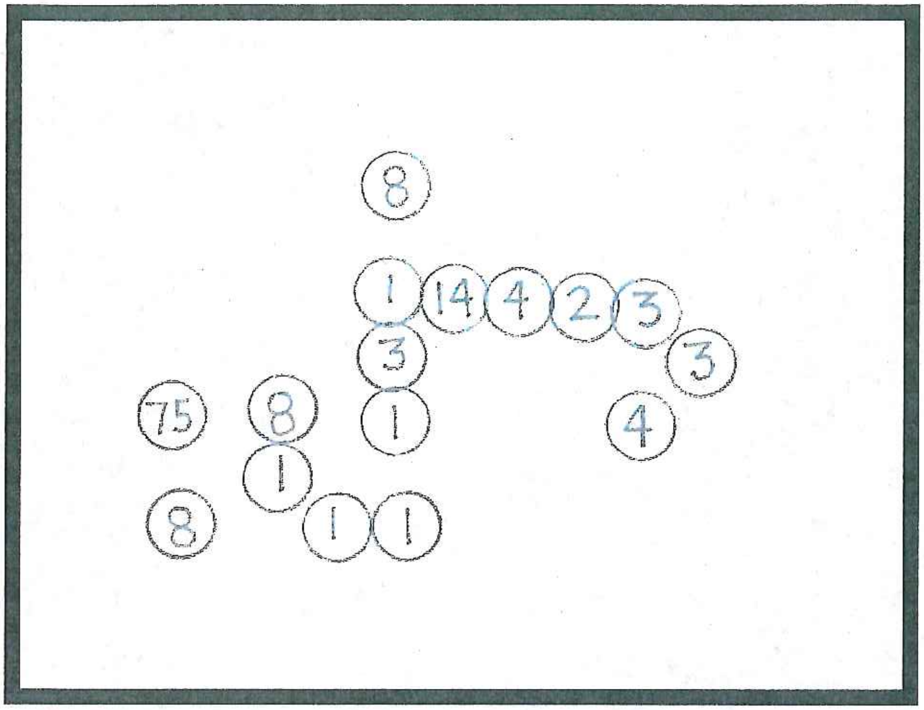


Figure 114. Madison 9/10 (22-Md-773) distribution map.

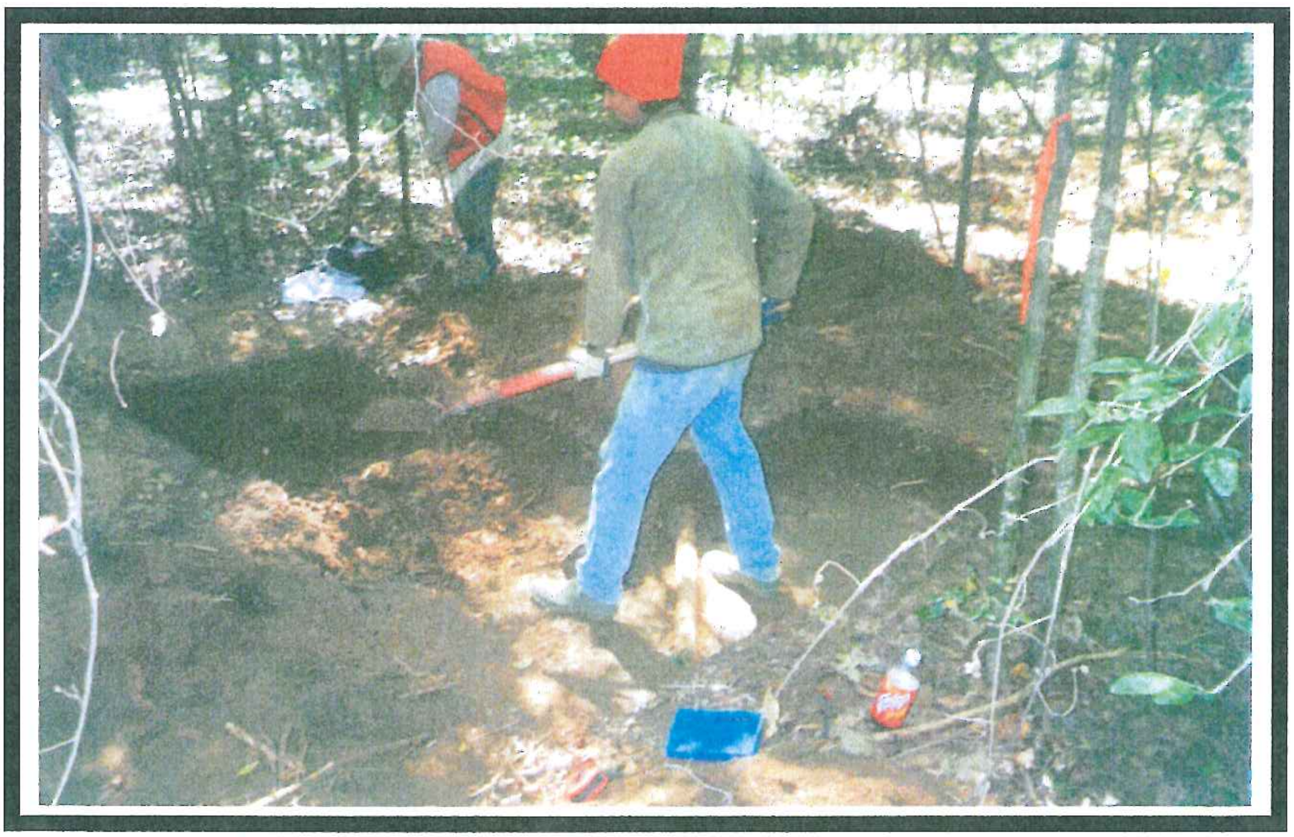


Figure 115. Madison 9/10 (22-Md-773); a. view east along ATV trail at south edge of survey transect; b. backfilling four 1x1 test units at ceramic concentration, Mary E. Starr and Matt Barrett.

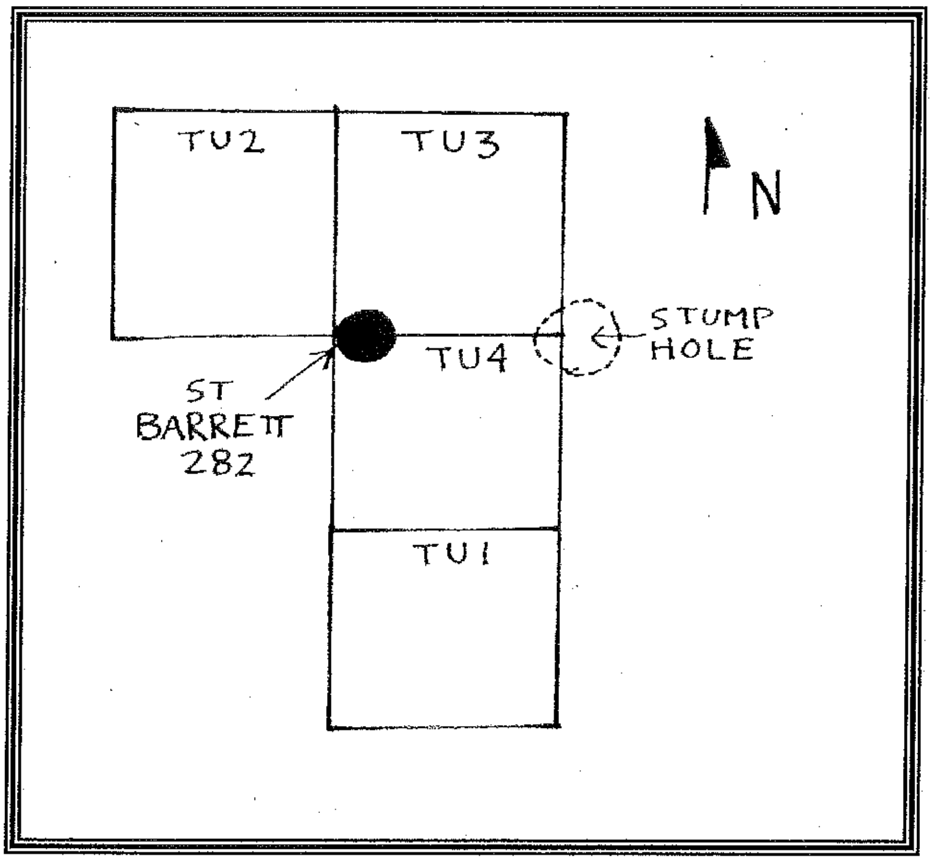


Figure 116. Madison 9/10 (22-Md-773) plan of excavations.

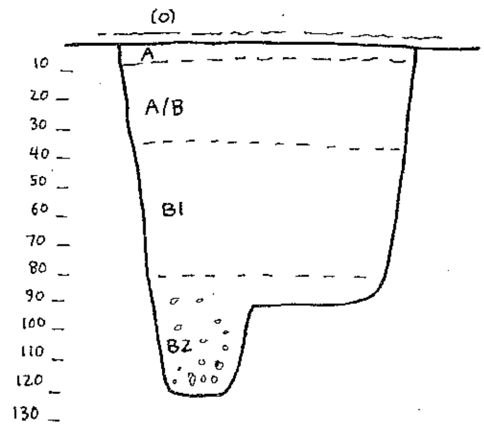


Figure 117. Madison 9/10 (22-Md-773) TU1 Soil Profile.

Key to Figure 117. Madison 9/10 (22-Md-773) TU1 Soil Profile.

Horizon	Color	Texture	Structure	Inclusions/Mottle	Boundary
A	7.5YR2.5/2	loam	moderate fine granular, loose, soft	homogeneous artifacts	clear, smooth
A/B	7.5YR2.5/3	silt loam	moderate coarse granular-blocky	abundant small-medium roots	gradual, smooth
B1	10YR4/4-10YR5/6	clay loam	strong coarse blocky subangular, dry, very compact but friable	some large roots	gradual, wavy
B2	10YR5/6	clay loam	strong coarse blocky subangular	highly mottled	

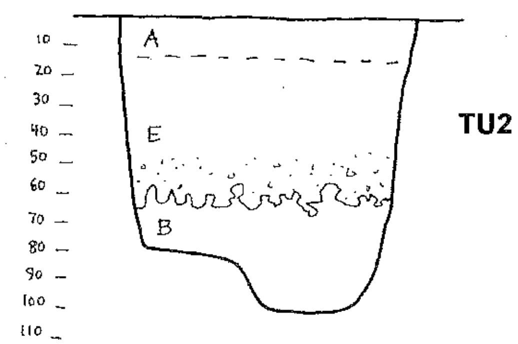


Figure 118. Madison 9/10 (22-Md-773) Test Unit 2 Soil Profile.

Key to Figure 118. Madison 9/10 (22-Md-773) Test Unit 2 Soil Profile.

Horizon	Color	Texture	Structure	Inclusion/Mottles	Boundary
A	10YR4/3	organic fine sandy loam	granular	common roots	gradual
E	10YR4/6 grading to 10YR5/6	silt loam	strongly coarse blocky subangular, common pore space	fine roots, few medium concretions	weak reduction oxidation features increase
B	Whiter than 10YR8/1	silty very fine sandy loam	blocky subangular, dense, common silt skins in cracks/pore space		

Figure 119. Madison 9/10 (22-Md-773) TU1 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Madison 9-10	TU #1	10	40.00	33.30	26.70
Madison 9-10	TU #1	20	66.60	26.60	6.80
Madison 9-10	TU #1	40	40.00	20.00	40.00
Madison 9-10	TU #1	50	40.00	40.00	20.00
Madison 9-10	TU #1	60	40.00	46.60	13.40
Madison 9-10	TU #1	80	46.60	36.60	16.80
Madison 9-10	TU #1	100	43.30	36.60	20.10
Madison 9-10	TU #1	110	53.30	33.30	13.40
Madison 9-10	TU #1	120	50.00	43.30	6.70

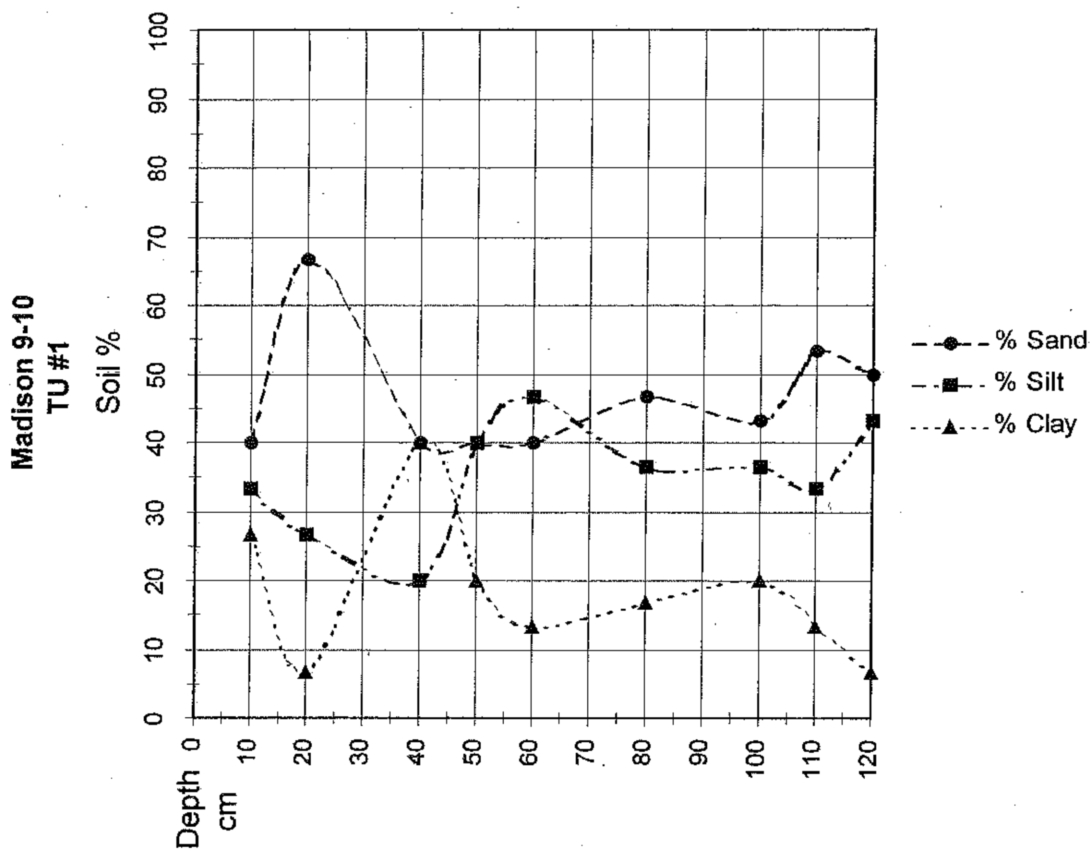


Table 28. Madison 9/10 (22-Md-773) pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	pH
1120	Madison 9/10 TU1	No depth	4.7
1121	Madison 9/10 TU1	30	5.2
1122	Madison 9/10 TU1	75	4.7
1123	Madison 9/10 TU1	120	4.9
1124	Madison 9/10 TU1	130	4.9

Table 29. Madison 9/10 (22-Md-773) Total artifact recovery from shovel tests (see appendix table).

Lithics	Total
Debitage	
Primary decortication flake	3
Secondary decortication flake	5
Internal flake	4
Biface thinning flake	8
Flake fragment	5
Shatter	2
Unmodified stone	
Chert pebble	3
Petrified wood	1
Quartz	4
Bone	1
burned earth	1
Ceramics	
grog eroded	38
grog plain	3
grog cord marked	59
TOTAL	137

Table 30. Madison 9/10 (22-Md-773) total artifact recovery Test Units 1, 2, 3, and 4 (see appendix table).

Lithics	Total
Debitage	
Primary decortication flake	3
Secondary decortication flake	1
Biface thinning flake	2
Flake fragment	2
Cores/bifaces	
Projectile point/knives	1
Other worked stone	
Unifacial tools	1
Unmodified stone	
Fire cracked rock	5
Chert pebble	8
Quartz	12
Ceramics	
grog eroded	15
grog plain	1
grog cord marked	39
Heterogeneous eroded	1
Other burned earth	3
TOTAL	94

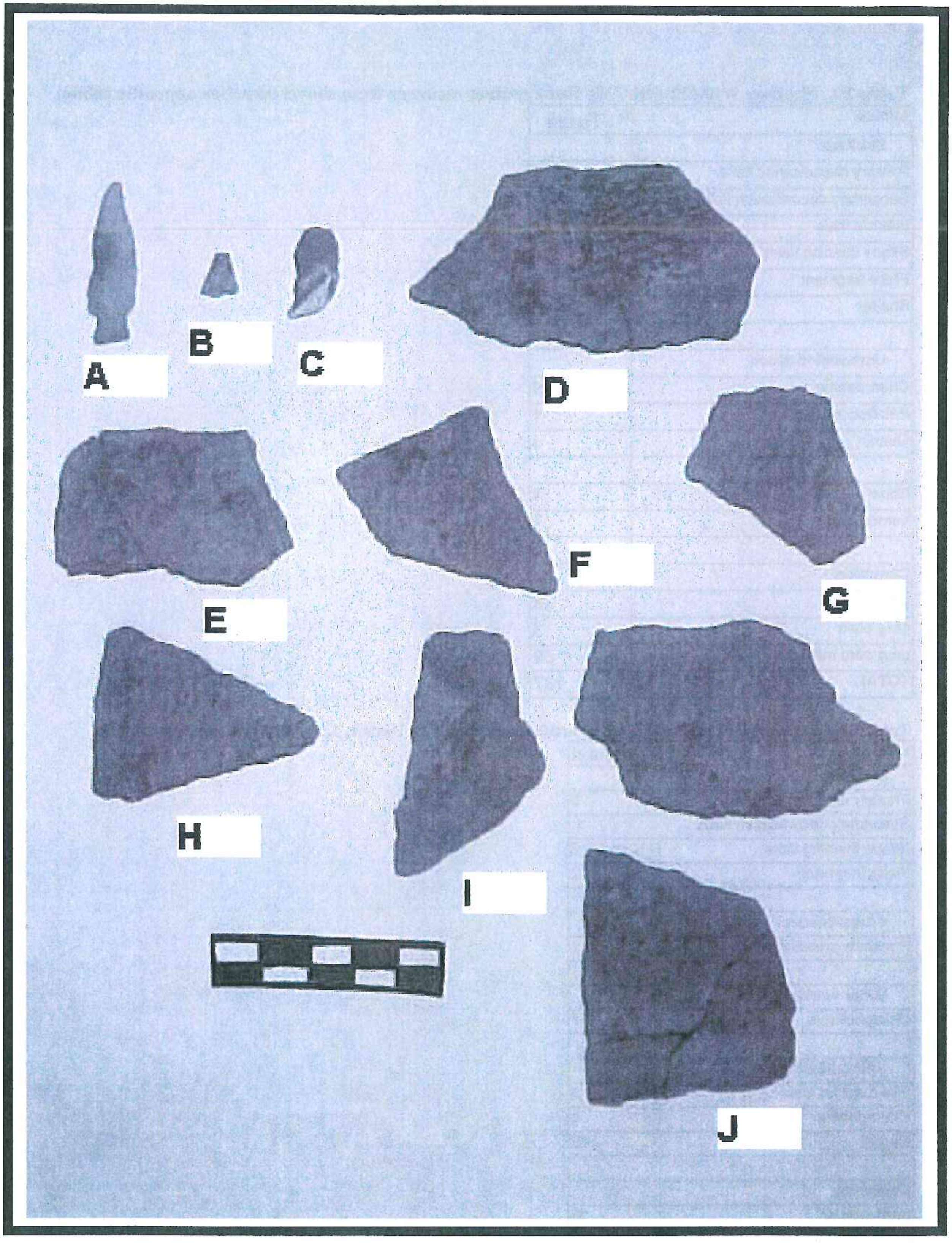


Figure 120. Madison 9/10 (22-Md-773) Artifacts. a. arrow point; b. biface fragment; d-k. some of the sherds from a portion of a grog tempered cord marked (Mullberry Creek cord marked) vessel fragment (ST Barrett 282 0-60 cmbs).

Madison 11 (22-Md-774). This site was discovered by four eastward-oriented, 30-m interval transects (beginning with Starr ST 302, Harris ST 337, Hardy ST 558, and Barrett ST 244). It was recorded by Starr on 18 September 2004. On the day of the initial visit for transecting, site delineation was also begun on a 10-m interval, and some .5x.5 m enlarged shovel tests were dug, as these were short transects ending at a bayou. On 21 September, an additional day was spent investigating the site. All soils were ¼" dry screened, with very dry blocky loamy silt soil. All artifact recovery was from excavated contexts as no surface collection was possible. Two adjacent 1x1m test units were excavated. [redacted]

The site minimally measures 90 m in diameter. The site [redacted] The area is unimproved hardwoods, some about 30-40 years old, with hickory poles and some brush. The main trees were water oak, shagbark white oak and a few pines, with an understory of bay/laurel, huckleberry, sweetgum, maple, holly and ironwood. Surface cover consisted of wild bean, grapevine, green briar and switch cane. Abundant wildlife was observed, including deer, beaver, armadillos, woodpeckers and skinks. The site area is level in the interior with side slopes 2-3 m down into adjacent surrounding drainages which surround the site on all sides (Figure 121). The vegetation is hardwoods with resulting thick duff. As there were no active trails or other exposed surface disturbances, surface visibility was poor and no surface collection could be made. Sinking stump holes, a few tip-ups and some old ruts were noted.

Two 1x1 m test units produced few artifacts (Table 34). Test Unit 1 [redacted] It was excavated in four 10 cm arbitrary levels (Figure 124). Level1 was homogeneous 10YR3/4 silt loam with abundant roots and one rock. Level 2 was homogeneous 10YR4/4 silt loam with abundant roots with a few flakes and pottery, petrified wood and some charcoal. Level 3 was homogeneous 10YR4/6 silt loam with fewer roots and no artifacts. Level 4 was 10YR4/6 loam and no inclusions. Test Unit 2 [redacted]. It was excavated in two natural levels. Level 1, the Ao horizon, extended from 7 to 10 cmbs. Soils were homogeneous 10YR4/3 loam with lots of roots, sherds, concretions, pebbles and a few flakes. Level 2, the A/E horizon, extended to 15 to 20 cmbs. Soils were homogeneous dark yellowish brown (10YR4/4) silt loam with roots, sherds and flakes. Excavation was discontinued due to the discovery of an area of darker soil with some hardwood charcoal. The soil was very dark greyish brown (10YR3/2) fine sandy loam. This is perhaps a natural tree stump stain, but is considered a possible cultural feature. It measured 40 x 60 cm in plan and extended to 70 cmbs. It was 13 cm wide at base and was mottled with abundant roots and insect holes indicating considerable age. A few sherds and heat-treated flaked were recovered from this stump/taproot or amorphous pit.

There is a thin scatter of debitage across the landform, with some areas of considerable density. In the 50x50 cm Shovel Test Starr 368, 3 of the 9 pieces of debitage probably come from decortication of the same pebble. The two flakes from ST Hardy 560 appear to be from the same core. One of the quartz pebbles from TU 2, L2 (0-15/20 cmbs) is battered, perhaps in an attempt to split it or get it to produce a flash. These fragmented quartz pebbles are common on Delta Marksville sites; the only credible explanation for this is the desire to produce a flash as they do not appear to have use wear on the fragmented surfaces/edges. The site has produced mostly Middle/Late Woodland period Baytown Plain with some Mulberry Creek Cordmarked (see discussion in Chapter IV) and grog tempered eroded, but only a few fragments of Early Woodland period Wheeler series pottery (plain and eroded, totaling 6.6g) were found in Starr 369 (Figure 125). The 13 Mulberry Creek Cordmarked sherds from Hardy 562 (the area of the two 1 x 1's) likely all come from the same vessel. A thick plain Mulberry Creek Cordmarked base from Barrett 275 is sandy (cf. *Thomas* paste), as are Baytown Plain sherds from Hardy 578 and Harris 367. The 8 grog tempered cordmarked sherds from TU2, L2 (0-15/20 cmbs) are all hard, thin and dark.

Table 31. Cores/bifaces

Provenience	**Class**	**Comment**	**Dimensions**	**Weight**
Starr 369	Biface fragment	Heated, distal		.9 g
Starr 387	PP/K		L,3.7; W.6; T.5	1.8 g

Table 32. Unifacial Tools

Provenience	**Debitage class**	**Modification**	**Dimensions**	**Weight**
Starr 370	Secondary	Lateral		.5 g
Harris 341	secondary	Lateral, steep		
Harris 341	secondary	Lateral and distal, extensive		
Harris 341	secondary	Lateral and distal		
Barrett 250	secondary	Both lateral		.6 g
Hardy 562	secondary	lateral		1.5 g

Evidence of historic land use is minimal. A .22 short rimfire with "U" headstamp comes from Starr 370. An expended 2.3g .22 bullet comes from Starr 394. Two expended lead shots (totaling 4.3 g) come from TU 2, L1 (0-7/11 cmbs).

Site conditions are generally good, with minimal disturbance from natural causes, logging truck ruts and periodic flooding. While impact appears to be low, site soils are thin and deflating along the sloping margins of the site. A Collins arrow point as well as the ceramics recovered indicate Late Woodland occupation. Other evidence (hard, dark ceramic pastes; fragmented quartz pebbles) is perhaps more indicative of Middle Woodland occupation. The range of artifacts recovered, including utilized flakes and other debitage, petrified wood and fire cracked rock indicate that this is an intensively occupied site that functioned as a base camp or semi-permanent hamlet. Sherds were often large, also indicating low impact. Site 22-Md-774 is considered potentially significant due to the potential for horizontal artifact patterning. If the site cannot be avoided during construction, it should be tested at the Phase II level of investigation.

[redacted]

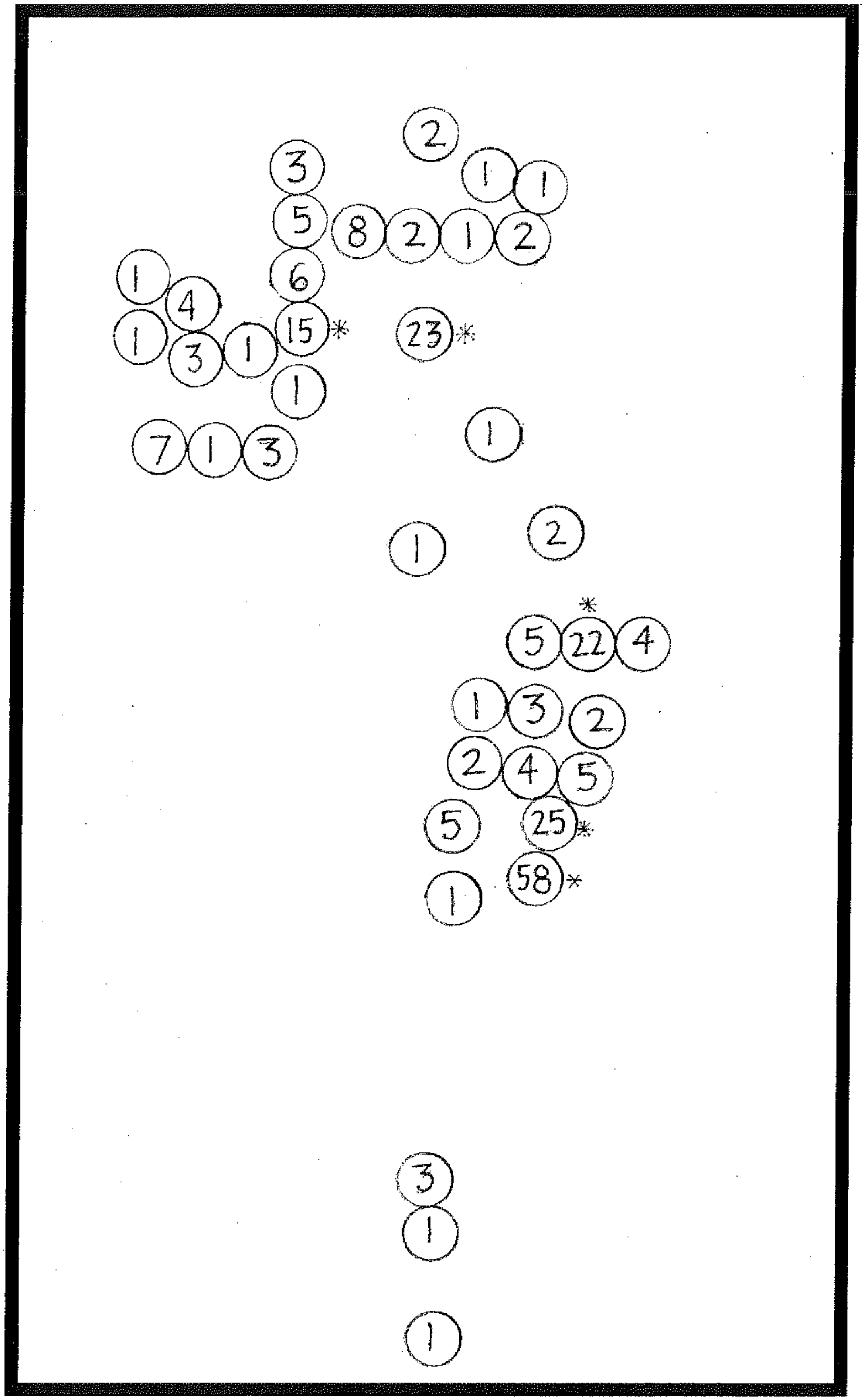


Figure 122. Madison 11 (22-Md-774) distribution map.

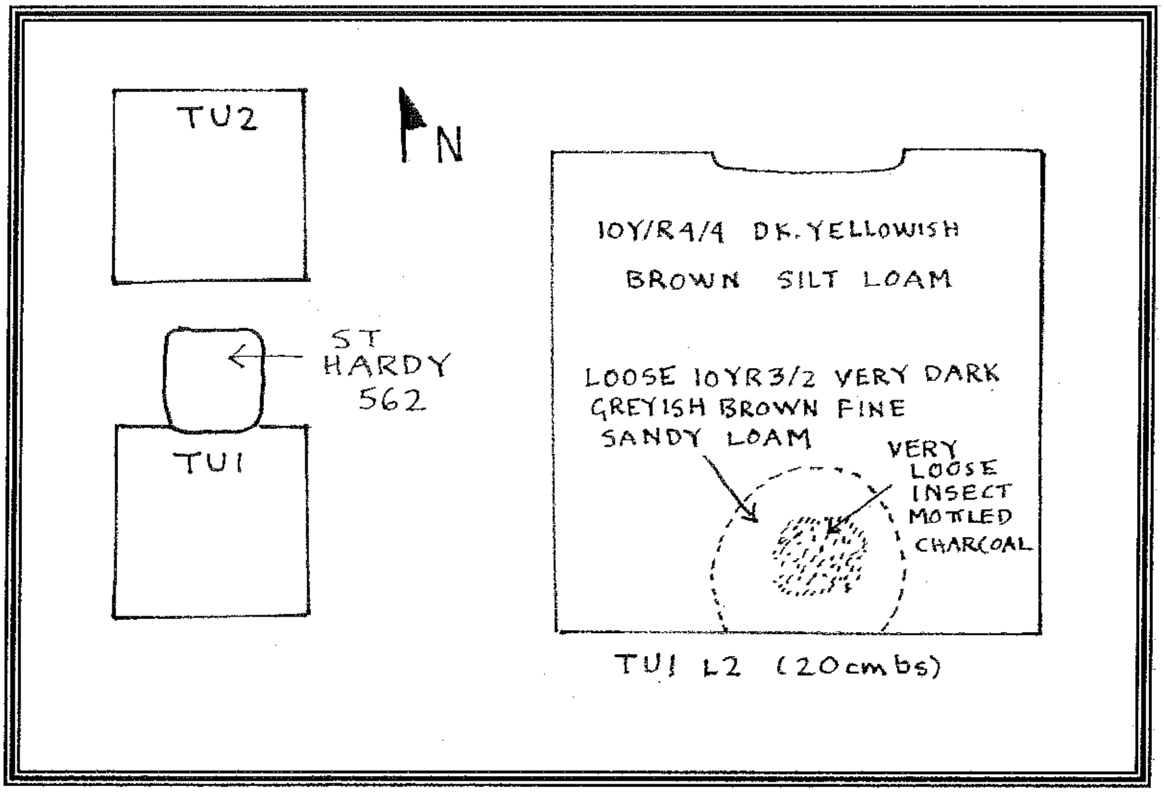


Figure 123. Madison 11 (22-Md-774) plans of excavations.

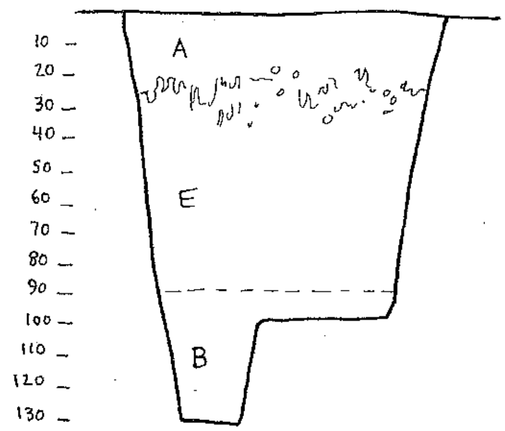


Figure 124. Madison 11 (22-Md-774) TU1 Soil Profile.

Key to Figure 124. Madison 11 (22-Md-774) Test Unit Soil Profile.

Horiz on	Color	**Texture**	**Structure**	**Inclusions**	**Boundary**
A	10YR3/4	loamy sand	moderate fine granular	Rare 2-4 mm common roots spherical black concretions, artifacts	Gradual burrowed
E	10YR4/4	loam to dry loam at base	moderate course blocky grades to strong coarse subangular	Homogeneous, few roots, charcoal, artifacts	Gradual
B	10YR4/6	loamy silt	strong course angular, pore space filled with silt	Increasingly coarse pale reduction oxidation mottles	

Table 33. Madison 11 (22-Md-774) Total artifact recovery from shovel tests (see appendix table).

Lithics	
Debitage	**Total**
Primary decortication flake	**14**
Secondary decortication flake	**46**
Internal flake	**8**
Biface thinning flake	**37**
Flake fragment	**17**
Shatter	**3**
Cores/bifaces	
Biface fragments	**1**
Other worked stone	
Unifacial tools	**6**
Unmodified stone	
Fire cracked rock	**10**
Chert pebble	**8**
Ferruginous sandstone	**3**
Petrified wood	**3**
Quartz	**23**
Quartzite	**3**
Burned earth	**7**
Charcoal-wood	**1**
Ceramics	
fiber eroded	**2**
fiber plain	**1**
grog eroded	**21**
grog plain	**13**
grog cord marked	**16**
Total	**243**

Table 34. Madison 11 (22-Md-774) Artifact recovery from TU2.

	Bag 1174 TU2 L1		Bag 1175 TU2 L2		Total
	#	g	#	g	
Lithics					
Debitage					
Secondary decortication flake			3	3	3
Biface thinning flake			1	0.3	1
Flake fragment	1	0.7			1
Cores/bifaces					
Biface fragments			1	0.1	1
Unmodified stone					
Chert pebble	1	12.1			1
Quartz	1	0.4	2	1.1	3
Ceramics					
grog cord marked			8	13.4	8
Total	3	13.2	15	17.9	18

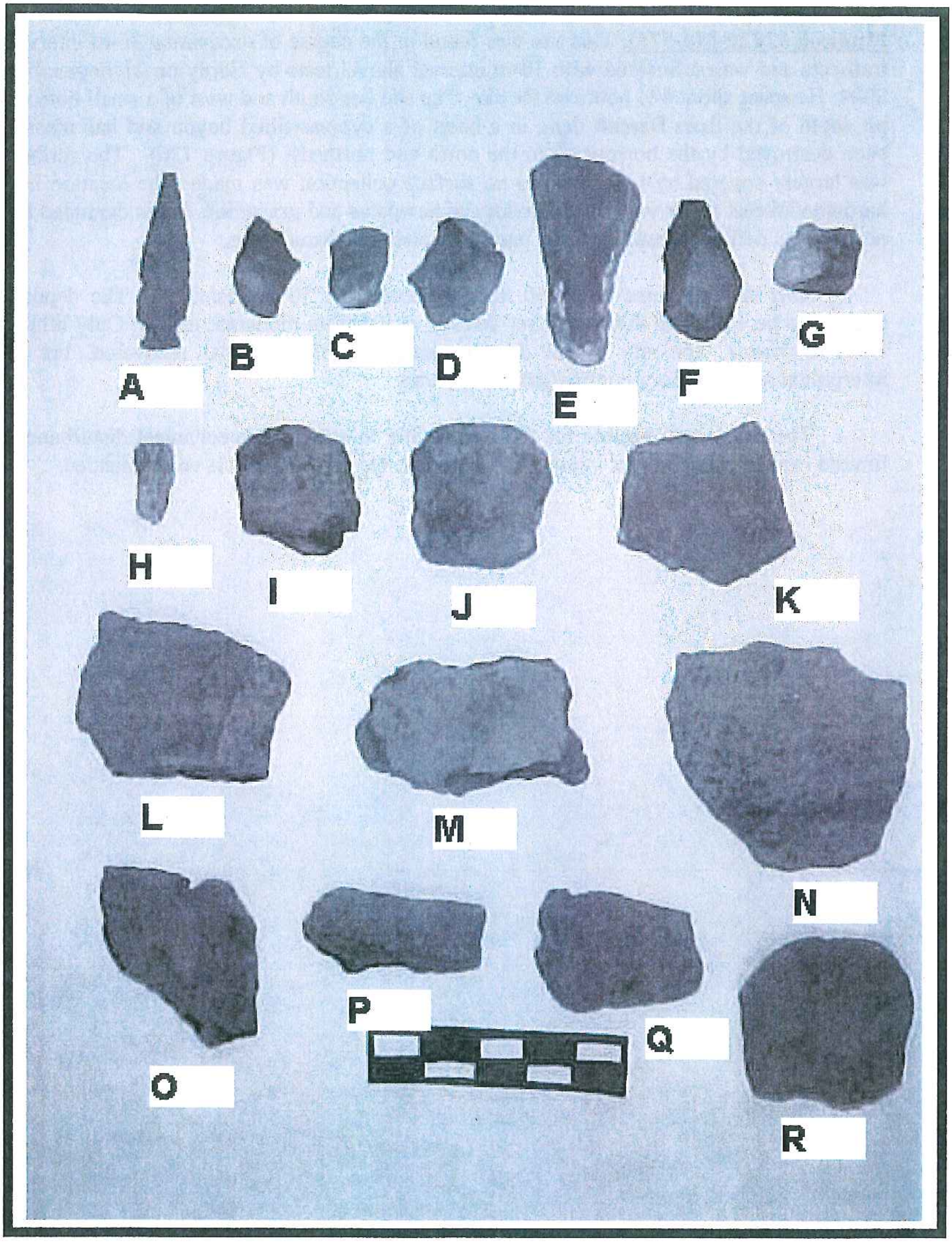


Figure 125. Madison 11 (22-Md-774) Artifacts. a. arrow point; b. biface tip; c-h. utilized flake/uniface tools; i. fibre tempered plain; j-m. grog tempered plain; n-r. grog tempered cord marked.

Madison 12 (22-Md-775). This site was found in the course of excavating 30-m interval transects and was delineated with 10-m interval shovel tests by Hardy on 21 September 2004. He spent about 4 ½ hours on the site. The site [redacted] The surface was largely covered by leaf litter, so no surface collection was made. The location has hardwood forest cover with an understory of pawpaws and grapevine, but is degraded by erosion and deflation resulting from patchy mechanical disturbance.

[redacted] The deposit appears to be 15-25 cm thick. Artifact density varied from moderate to low. Only lithics were recovered. The site is not dateable based on the material recovered, but is interpreted as a transitory hunting/gathering camp.

The site is not eligible for the NRHP due to extensive mechanical disturbance, limited recovery and limited interpretive potential. No further work is recommended.

[redacted]

Figure 127. Madison 12 (22-Md-775); a. general view north with push piles from borrow pit; b. oxbow to east.

Table 35. Madison 12 (22-Md-775) Artifact recovery from shovel tests.

	Bag 725 Hardy 582		Bag 726 Hardy 583		Bag 727 Hardy 586		Bag 728 Hardy 587		Bag 729 Hardy 588		Bag 730 Hardy 591		Bag 731 Hardy 594		Total
	#	g	#	g	#	g	#	g	#	g	#	g	#	g	
Lithics															
Debitage															
Internal flake									1	1.25					1
Biface thinning flake			1	0.1	1	0.5	1	1							3
Flake fragment	1	0.2	1	1.1			1	0.5							3
Other worked stone															
Chipped petrified wood													1	1.2	1
Unmodified stone															
Fire cracked rock											3	1.8			3
Chert pebble											1	4.6			1
Petrified wood													1	4.9	1
Total	1	0.2	2	1.2	1	0.5	2	1.5	1	1.25	4	6.40	2	6.10	13

22-Hi-672 (City Mound). The City Mound site was nominated to the National Register of Historic Places under criterion D by James Lauro of the Mississippi Department of Archives and History on 24 October 1988. The site was subsequently listed as an NRHP property. [redacted] The findings of our fieldwork must challenge these interpretations, as this appears to be a rectangular platform mound that does have associated off-mound occupation debris. In contrast, the nomination form states "shovel testing and solid core augering was conducted in the area directly adjacent to, and in the vicinity of the mound, revealed no cultural materials and no aboriginally discolored midden soils suggesting there is no immediate habitation (or village) area." Our screened systematic shovel testing revealed artifact scatter around the mound, including a low "midden mound" immediately to the east. This midden mound was recorded and tested in 1990 by Archaeology Mississippi, Inc. for Engineering Associates, Inc. under the direction of James Lauro. The NRHP nomination form likewise notes that Marksville Stamped and Marksville Incised pottery have been recovered, indicating Middle Woodland construction. Flat-topped mounds with at least partially non-mortuary purposes are not unknown in Marksville, Miller and other Middle Woodland contexts as discussed in Chapter IV (Prehistoric Culture History). The nomination form also states that "several holes have been dug...into the mound...disturbing only a small portion of the mound near the surface." These numerous small potholes were evident when the site was revisited. Also, "some type of heavy equipment was used to clip off about 10% of the western flank of the mound." This disturbance was also noted, and soil profiles were cleared along this minor disturbance. The nomination suggests that stratigraphic excavations be undertaken to recover a sample of ceramics for comparison to defined Mississippi valley ceramic sequence (See Figure 43), as a preliminary to the potential designation of a Pearl River/Jackson Prairie Middle Woodland period (AD 1- AD 300), Marksville culture phase. This is still a valid recommendation, and further information gathering pertinent to the question since 1988 has been minimal. Finally, "burials can be expected at the City Mound as human skeletal fragments have been recovered from relic collectors' backdirt." This indicates that any work on the mound should be conducted in consultation with the Mississippi Band of Choctaw Indians' NAGPRA representative. The location of this mound is improperly recorded in the MDAH site files and on the 1988 NRHP nomination form. The indicated location is in a channel scar. The mound was found to be south of the indicated location. A revised NRHP nomination should be submitted to reflect these new data and other information to be discussed below.

The mound site [redacted] The pond does not appear on the 1977/1979 version of the topographic sheet. Starr, Hardy, Barrett, Harris and M. Starnes spent a total of 25 man-hours on the site, digging shovel tests to find site boundaries, and making a tape and compass map. Twenty-four positive shovel tests are reported as Hardy 185-187, 189-191; Harris 62-64, 67,68,70; Barrett 23-26,30, 31; M. Starnes 38-42, 44. In addition, a large chunk of quartzite was collected from the site surface. The site produces ceramics, debitage, pebbles and burned earth (Table 37). [redacted]

As noted above, the southwest corner of the mound has been disturbed; soil profiles were cleared along this dozer cut and soil samples were taken from the exposed profiles (Figure 132). The cut edge of the mound shows disturbed mound fill above 30 cmbs (not sampled). Below this point, sand increases from 50-60% to 80% at 80 cmbs. Clay increases from a trace to above 25% at 60 cmbs and then declines again. This is interpreted as a weathering-induced illuvial (B) horizon. Likewise, the nearby deeper cut at the base of the mound (Figure 130) shows a similar decline in clay from 20% at 20 cmbs while sand content increases from ca. 65% to almost pure sand by 60 cmbs. The mound group was thus constructed atop sand loam soils veneering a sand natural levee. The natural land surface of the site is revealed in the profile shown in Hardy ST 629 (Figure 132). No pronounced clay bulge can be discerned in this profile and the composition of the loamy soils vary slightly throughout the 80 cm sampled.

Site 22-Hi-672 is a medium sized oval, flat-topped mound that has been impacted across its surface by looter holes (See Figure 128). This site was shovel tested on a 10 m interval in rays from the mound to limit impact, as the site is already listed on the NRHP and has been investigated to some degree before (Engineering Associates, Inc. and Archaeology Mississippi, Inc., 1990). The loamy soil was easily dry screened. A grab surface collection was made from trail exposures, but surface visibility was generally poor. The site is in an old field pine plantation, so the surface except for trails is covered with heavy duff and pine straw. Shovel test results indicate moderate density of artifacts, with lithics and prehistoric ceramics being recovered (Figures 136,137). Bricks and concrete were also noted, but there is no clear historic occupation of the site. Dense roots prohibited attempts to core the mound.

The site lies on a point of what is apparently Pleistocene-Early Holocene terrace with faint point bar features. The soils appear to be stable, but thin. The site area has been cultivated in the recent past. The site is bounded by a bayou to the east, a recent channel scar of the Pearl to the south, the active Pearl channel to the east, and a slight swale to the north. The surface surrounding the mound is generally level at about 275' amsl. Besides the planted pines and the cypress in the bounding sloughs, the site has a cover of hickory; red, white and pin oaks, some with hanging moss; grasses; and vines.

The pine plantation is ready to cut. Besides agriculture and forestry, the site has been disturbed by archaeological excavations as well as apparently being a well-known location for looters or pothunters. The many holes on top of the mound have been further disturbed by armadillos. Besides the surface trails, there is a bulldozer cut into southwest corner of the mound. The road across the northern part of the site, shown passing through a clearing on 1962 maps, is still evident as a wide series of ruts. This trail goes down the river in a notch cut or eroded into the river bank.

The NRHP-listed City Mound (22-Hi-672) is apparently a Marksville ceremonial center. Other flat-topped mounds of Middle Woodland date are known in Mississippi and surrounding states. The mound possibly contains tombs or crematory basins. Material recovered includes debitage, pebbles, burned earth and pottery (Baytown Plain, Mulberry Creek Cordmarked, and Marksville Incised). Other probably associated sites in the immediate vicinity are discussed below; any additional fieldwork in the area should focus on the artifact scatter that covers most of the terrace where the mound lies. As the site is listed on the NRHP (1988), it should be protected from any construction activities associated with this project. If it cannot be avoided, Phase III mitigation excavations should be carried out at this site.

[redacted]

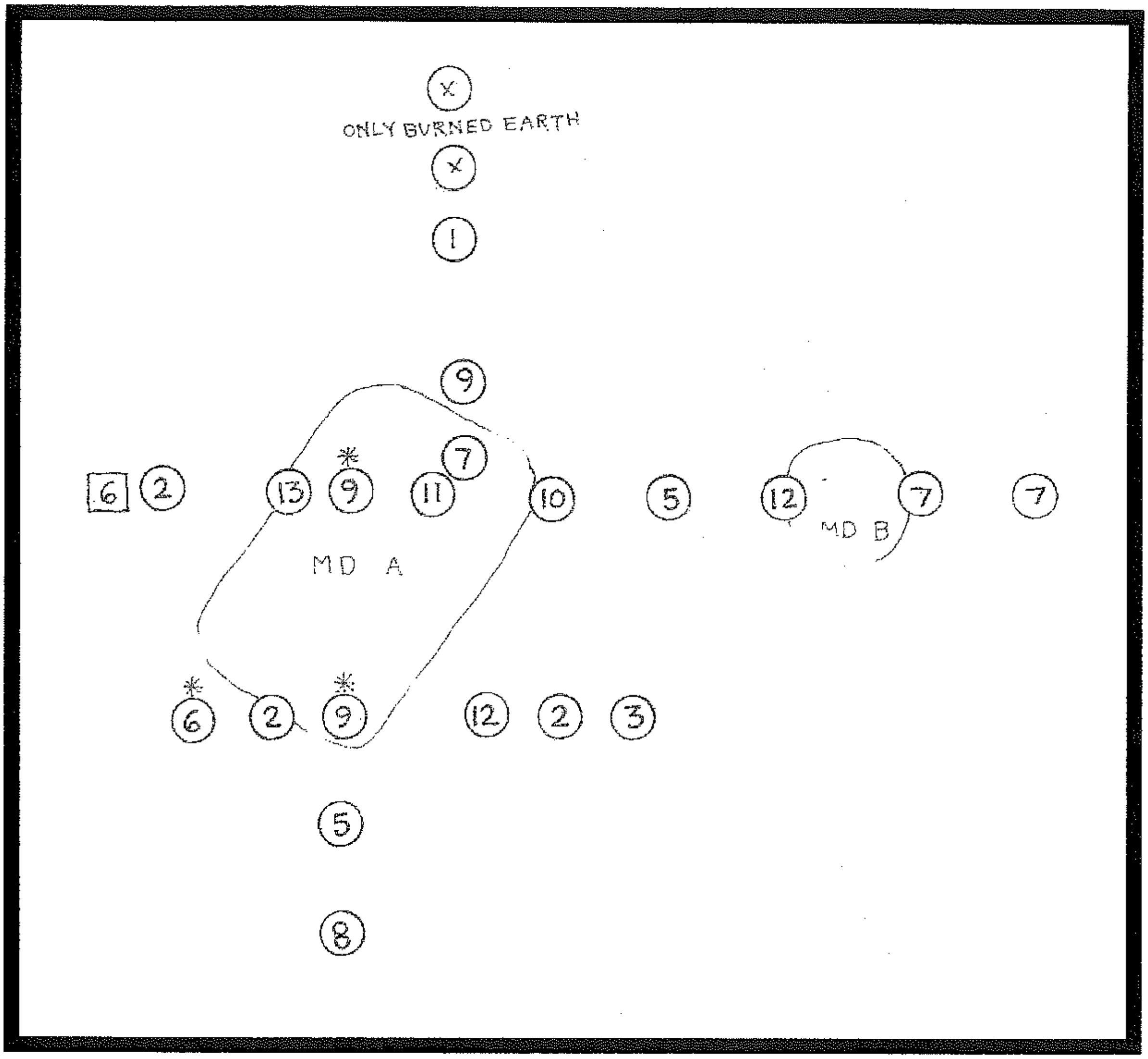


Figure 129. 22-Hi-672 distribution map. *** Marksville Incised sherds**

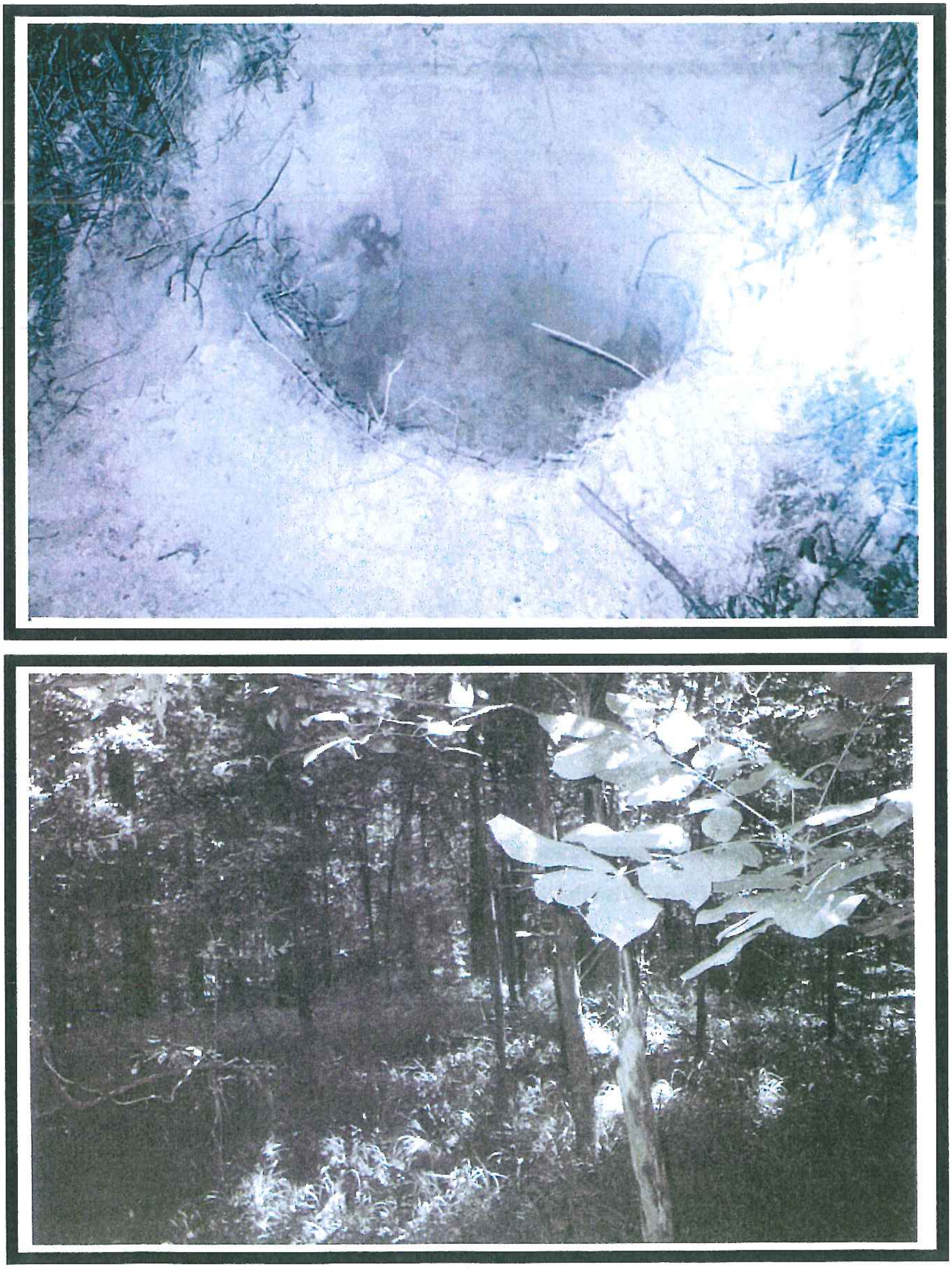


Figure 130. 22-Hi-672; a. City Mound, soil profile cut at base of mound; b. mound top.

Figure 131. 22-Hi-672 a. old river; b. drain from pond

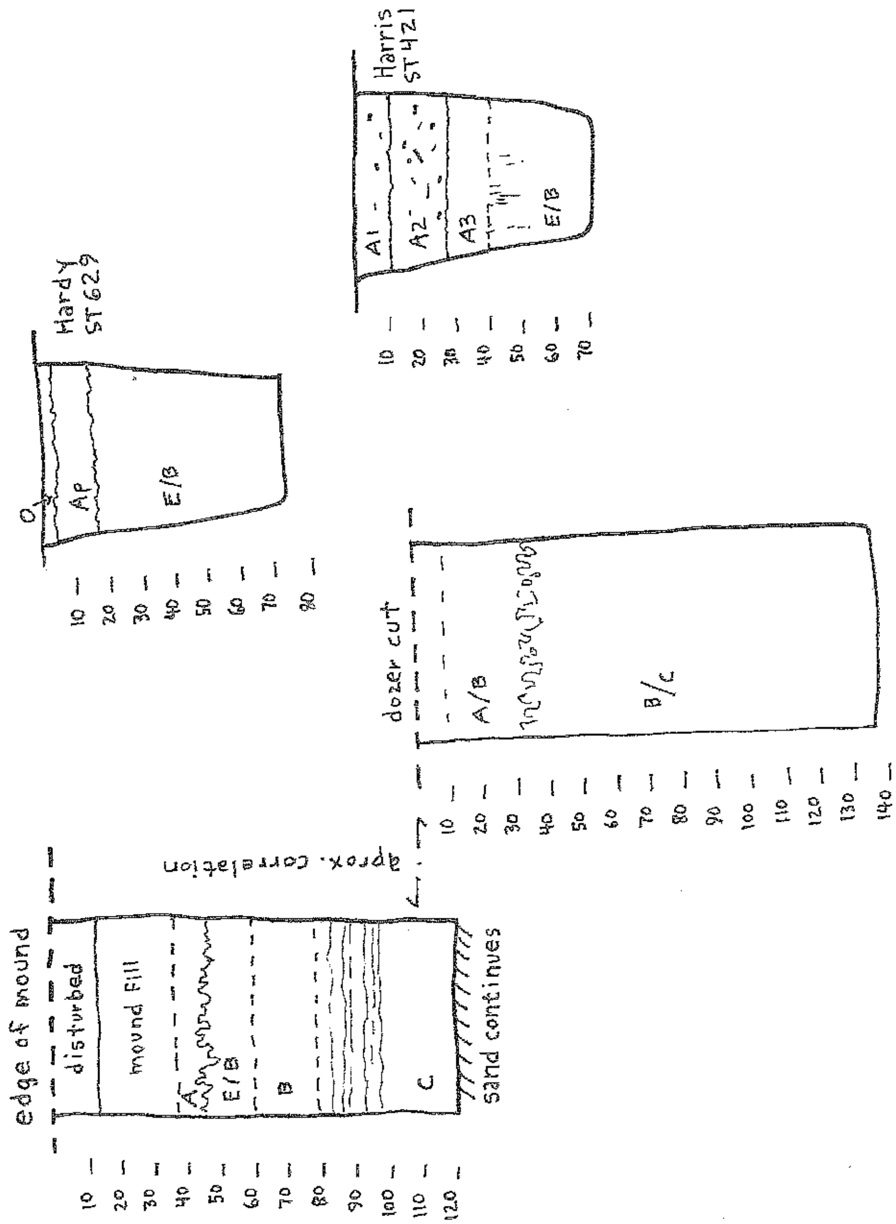


Figure 132. 22-Hi-672 Soil Profiles.

Key to Figure 132. 22-Hi-672 Soil Profile (edge of mound)

Horizon	Color	Texture	Structure	Inclusion/Mottles	Boundary
Disturbed					
Mound fill	10YR4/3 brown	sandy loam	friable weak granular to blocky angular	charcoal flecks, artifacts, burned earth flecks otherwise homogeneous	gradual burrowed
A	Darker brown at base			few medium roots, medium root/burrow reduction and concentrations of sand	
E/B	7.5YR4/6 strong brown	loamy sand increasing sand	very compact	homogeneous, few charcoal flecks	
B	10YR5/6 yellowish brown	loamy sand	compact but friable		smooth
C	10YR8/3 very pale	dark silt lenses then fine rounded-subround well sorted sand	rare pyrite? Grains and mica	silty sand laminae	

Key to Figure 132. 22-Hi-672 Soil Profile (dozer cut)

Horizon	Color	Texture	Structure	Inclusion/Mottles	Boundary
A/B	10YR5/6 yellowish brown	loamy sand	massive to weakly blocky subangular, abundant fine biopores, silt skins	few medium roots, still junebug/locuts holes at 80 cmbs	gradual burrowed
B/C	10YR8/3 very pale brown	fine to medium subrounded sand, well sorted quartz		very few root traces and insect casts	

Key to Figure 132. 22-Hi-672 Soil Profile, Hardy ST629 (off mound 50 x 50)

Horizon	Color	Texture	Structure	Inclusion/Mottles	Boundary
O					
Ap	10YR4/3 brown	loamy sand	mixed by traffic		
E/B	10YR5/6 yellowish brown grades to 10YR6/8	sandy loam, less sand at base			

Key to Figure 132. 22-Hi-672 Soil Profile, Harris ST421 (midden mound 50 x 50)

Horizon	Color	Texture	Structure	Inclusion/Mottles	Boundary
A1	10YR4/4	silty loam	mound fill	some fine charcoal	smooth, clear
A2	10YR4/4	sandy loam	mound fill	common fine charcoal and artifacts	smooth, clear
A3	10YR4/4	silt loam	buried A		burrowed
E/B		silt loam	compact	root tracts	

Figure 133. 22-Hi-672 – dozer cut graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Hinds 22 HI 672	Dozer Cut Edge Mount	30	60.00	40.00	0.00
Hinds 22 HI 672	Dozer Cut Edge Mount	40	60.00	33.30	6.70
Hinds 22 HI 672	Dozer Cut Edge Mount	50	53.30	26.60	20.10
Hinds 22 HI 672	Dozer Cut Edge Mount	60	53.30	20.00	26.70
Hinds 22 HI 672	Dozer Cut Edge Mount	70	66.60	13.30	20.10
Hinds 22 HI 672	Dozer Cut Edge Mount	80	80.00	3.30	16.70

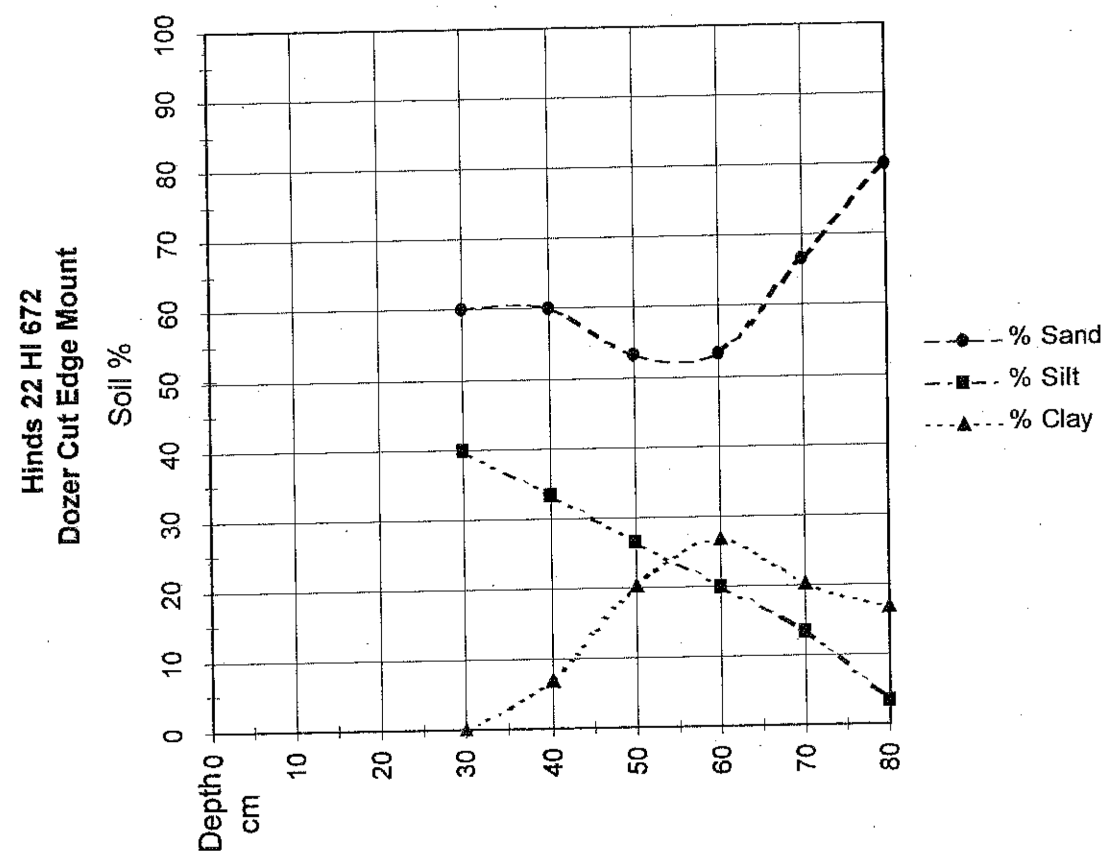


Figure 134. 22-Hi-672 – Soil cut base graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Hinds 22 HI 672	Soil Cut Base	20	66.60	20.00	13.40
Hinds 22 HI 672	Soil Cut Base	40	80.00	6.60	13.40
Hinds 22 HI 672	Soil Cut Base	60	93.30	3.30	3.40
Hinds 22 HI 672	Soil Cut Base	80	93.30	3.30	3.40
Hinds 22 HI 672	Soil Cut Base	100	93.30	1.60	5.10
Hinds 22 HI 672	Soil Cut Base	120	93.30	0.00	6.70
Hinds22 HI 672	Soil Cut Base	140	96.60	3.30	0.10

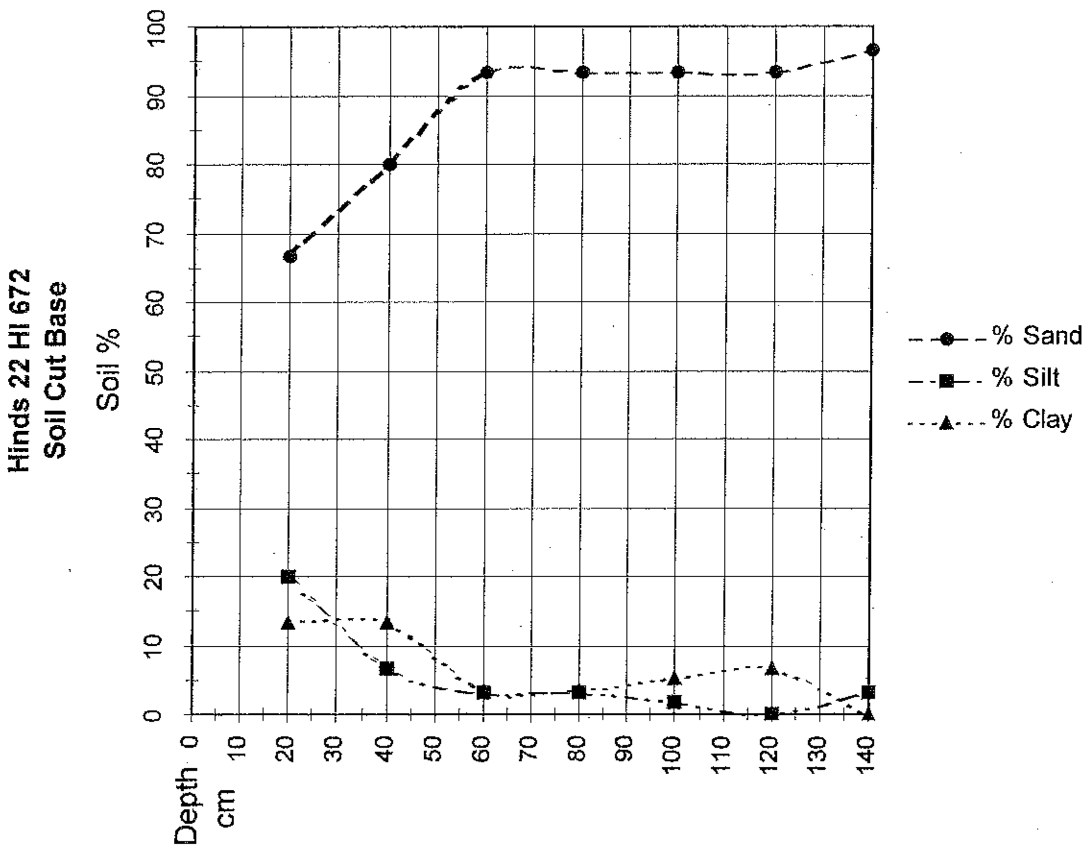


Figure 135. 22-Hi-672 – Hardy ST 629 (off mound 50 x 50) graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Hinds 22 HI 672	Hardy ST 629	10	60.00	33.30	6.70
Hinds 22 HI 672	Hardy ST 629	20	46.60	40.00	13.40
Hinds 22 HI 672	Hardy ST 629	30	56.60	36.60	6.80
Hinds 22 HI 672	Hardy ST 629	40	53.30	30.00	16.70
Hinds 22 HI 672	Hardy ST 629	50	66.60	26.60	6.80
Hinds 22 HI 672	Hardy ST 629	60	66.60	26.60	6.80
Hinds 22 HI 672	Hardy ST 629	80	46.60	40.00	13.40

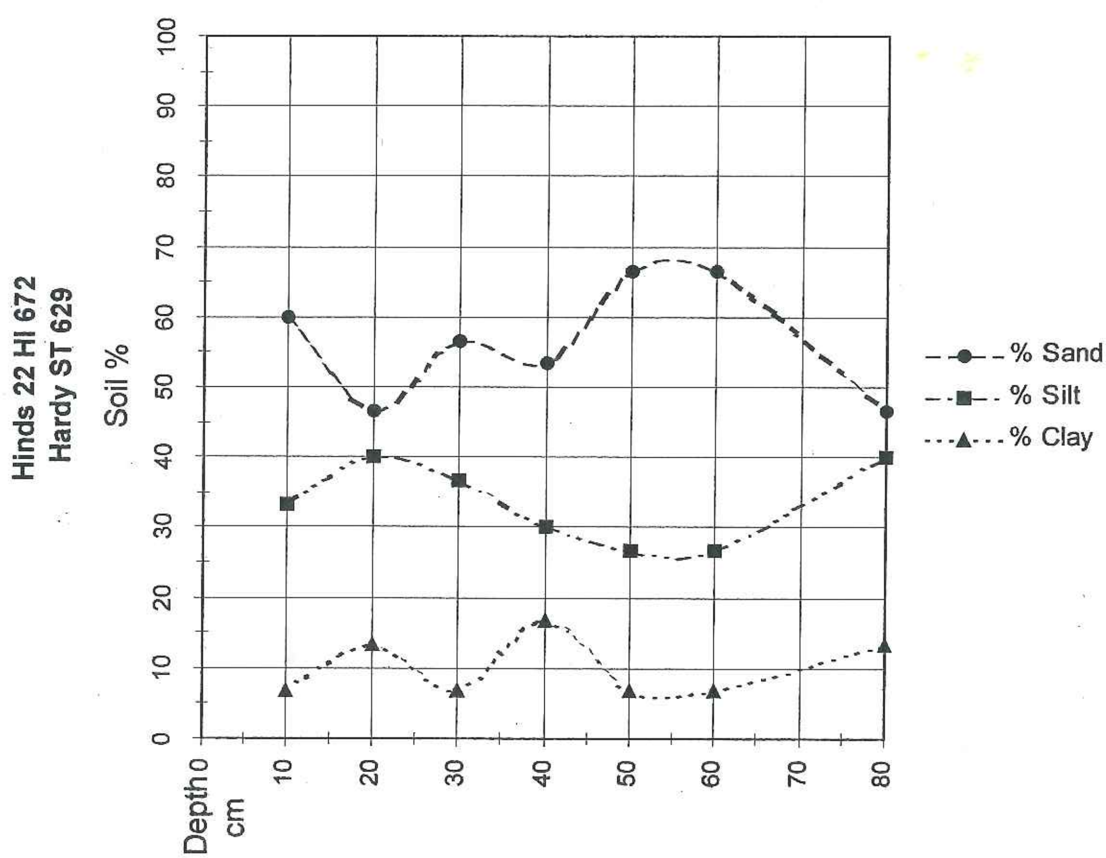


Table 36. 22-Hi-672 Soil pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	pH
817	22Hi672	40	4.8
818	22Hi672	30	4.7
819	22Hi672	30	5.1
823	22Hi672	30	5.5
824	22Hi672	60	7
825	22Hi672	100	6.5
835	22Hi672	30	4.5
836	22Hi672	60	5.8
837	22Hi672	100	5.5
838	22Hi672	A horizon	5.5
839	22Hi672	40	4.6
840	22Hi672	80	4.6
841	22Hi672	65?	4.9

Table 37. 22-Hi-672 Total Artifact Recovery from shovel tests (see appendix table)

Lithics	
Debitage	
Primary decortication flake	4
Secondary decortication flake	14
Internal flake	2
Biface thinning flake	17
Flake fragment	11
Shatter	1
Cores/bifaces	
Biface fragments	1
Unmodified stone	
Fire cracked rock	7
Chert pebble	7
Hematite/siltstone	3
Petrified wood	2
Quartz pebble	5
Quartzite	1
Burned earth	37
Ceramics	
sand plain	1
grog eroded	32
grog plain	18
grog cord marked	10
grog broad incised	4
grog punctate	1
Heterogeneous eroded	4
Heterogeneous plain	1
shell eroded	2

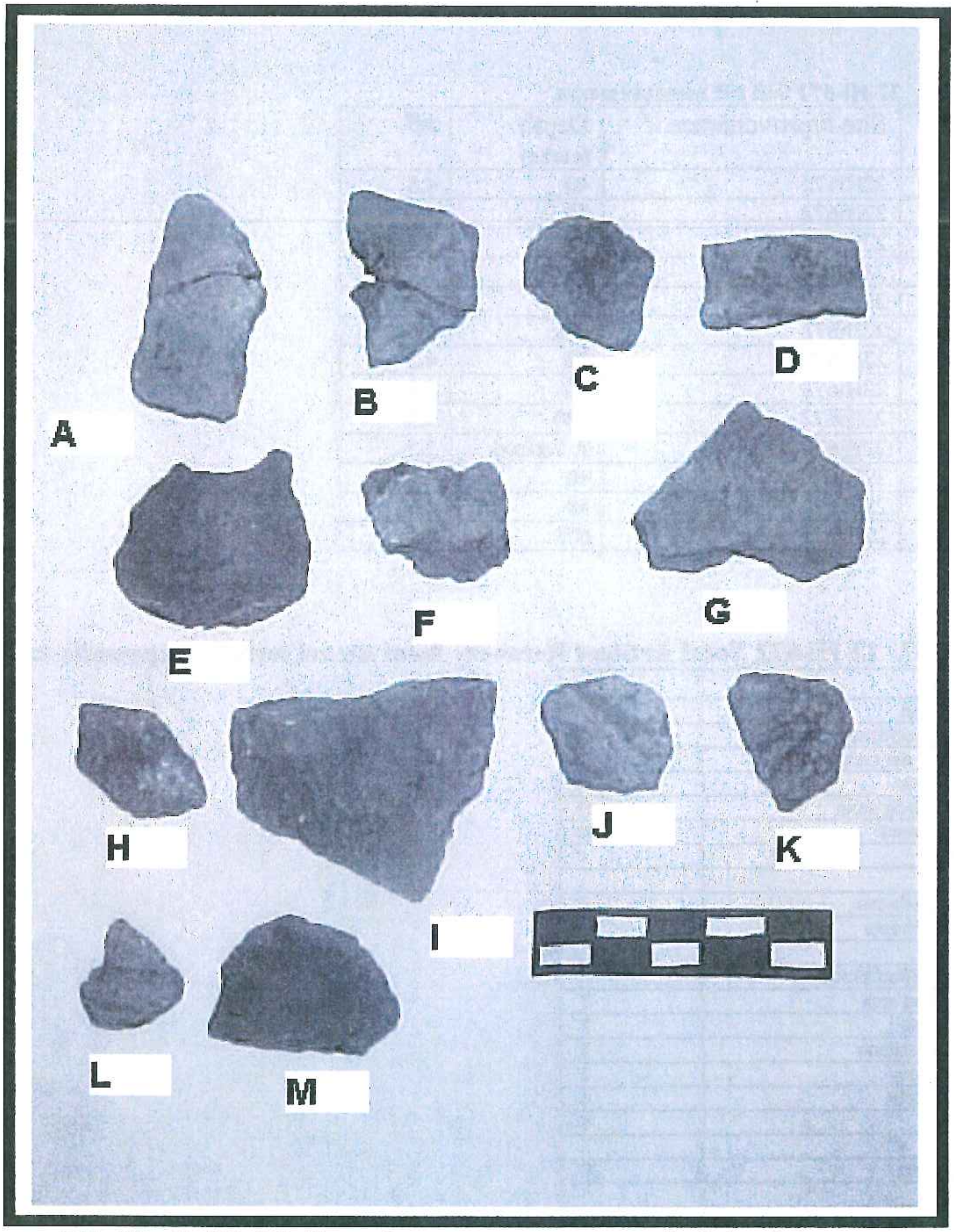


Figure 136. Site 22-Hi-672 Ceramics. a-g. grog tempered plain; h,i. grog tempered cord marked; j-m. grog tempered incised (Marksville Incised).

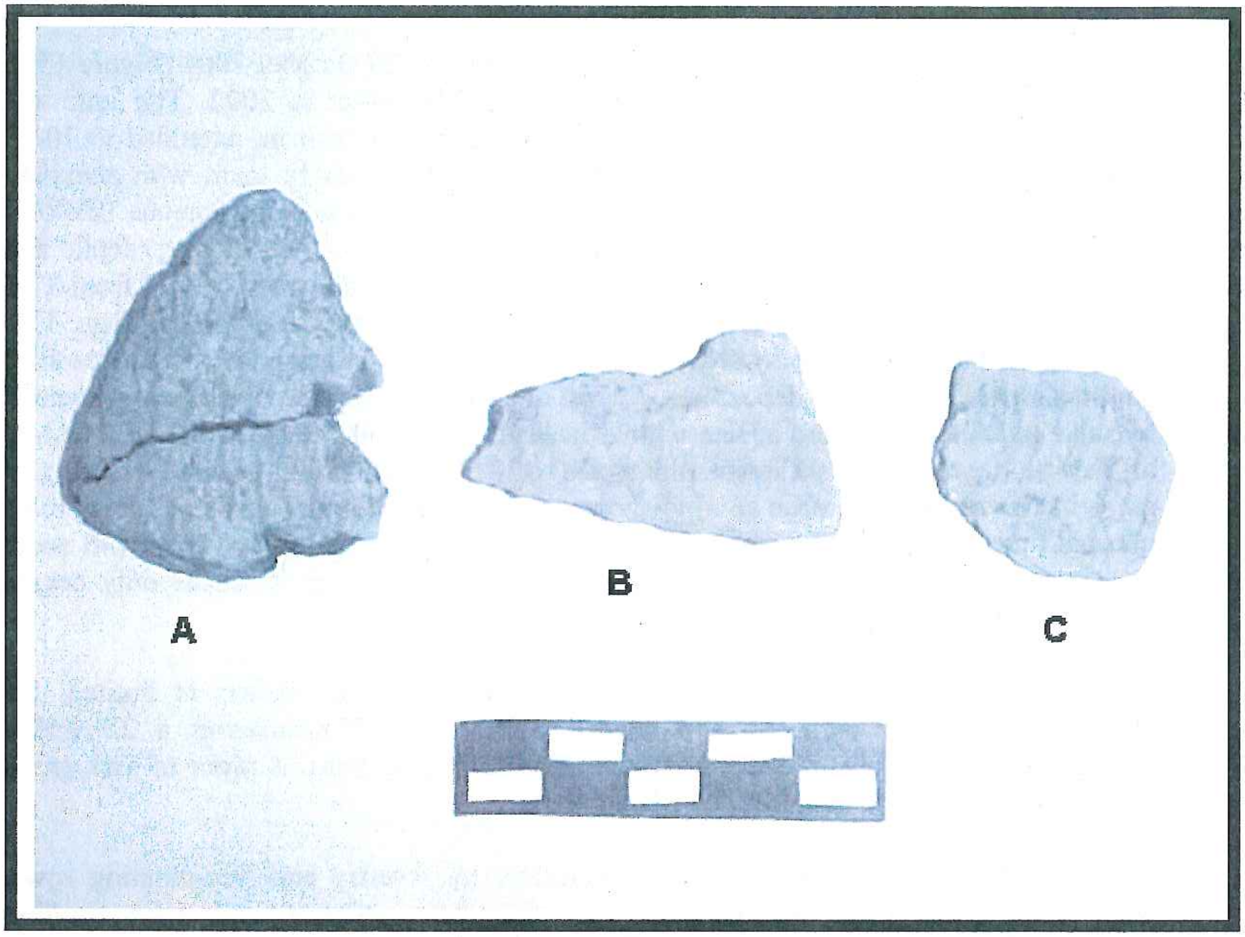


Figure 137. Site 22-Hi-672 Ceramics. a-c. grog tempered cord marked sherds, Harris ST 68 evidently from a single Mulberry Creek cord marked vessel.

22-Hi-780, Sophisticated Playhouse. This site was initially recorded by Mary Evelyn Starr (2002) in the course of a sewer line survey. The site [redacted] By 2004 the treehouse had decayed and been replaced by fortified rifle pits for paintball and many strings of Mardi Gras beads. This site was subjected to additional shovel testing by Starr (T32), Barrett (T18, 20), Glasgow, Underwood and M. Starnes on 1 September 2004. Additional site definition shovel tests were on a 10 m interval. The site boundary has been considerably enlarged (Figure 138). The site has a low artifact density and diversity and surface visibility was poor. Materials were recovered from shovel tests and one 1x1 test unit. Only lithics were recovered, but no diagnostics (Table 38). The site is considered to be a multiple use prehistoric transitory/hunting camp. [redacted]

The site has unimproved hardwood and pine forest along an unnamed intermittent stream adjacent to and east of the site. The west boundary is a housing subdivision. The pines are ready to cut and the understory is water oak, elm and scrub. Soils are stable to deflating.

A test unit was excavated by Hardy and Harris on 20 October 2004 (Figure 139). The location is within the site as initially defined by Starr in 2002. The unit was excavated with shovel and ¼" dry screen. Zone 1, the Ao horizon, extended to 10-13 cmbs (Figure 140). The soil was homogeneous 10YR3/3 sandy loam with abundant roots, a flake and a pebble (Table 39). Level 2, to 20 cmbs, was homogeneous 10YR4/4 silt loam with fewer roots and a few flakes and pebbles. The closing depth and description of Level 3 was not recorded. A particle size column was collected from TU1 (Figure 142). This profile shows an extreme clay content in the 30-50 cmbs range. This seems too extreme to be the result of weathering alone and is interpreted as the result of backswamp/stillwater clay deposition over an old point bar surface which is represented by sand and silt levels more in line with typical profiles at 60 cmbs and below. The top, artifact-bearing zone has silt loam soils typical of the project area in general. This top 20 cm is interpreted in the profile as a plowzone (Ap), but the Bt horizon was not noted to be unusual and is described as homogeneous sandy clay grading to silty clay with some concretions. Strong reduction-oxidation mottling and silt-filling of cracks only begins below the strongly clayey zone (below 60 cmbs).

Besides the treehouse and paint-ball remains, historic debris is limited. ST Underwood 54 produced a .22 short rimfire casing with "U" headstamp, a .22 rimfire casing with "F" headstamp and a fragment of amber bottle glass. A piece of dark green bottle glass came from TU1 L2 (10-13/20 cmbs).

22-Hi-780 has been moderately disturbed by forestry and tree-planting rows, roads and intermittent flooding. It has also been plowed and has resulting erosion/deflation. The enlarged site is still not considered eligible for the NRHP. This is in concurrence with the previous recommendation of the site not being considered eligible. No further work is recommended.

[redacted]

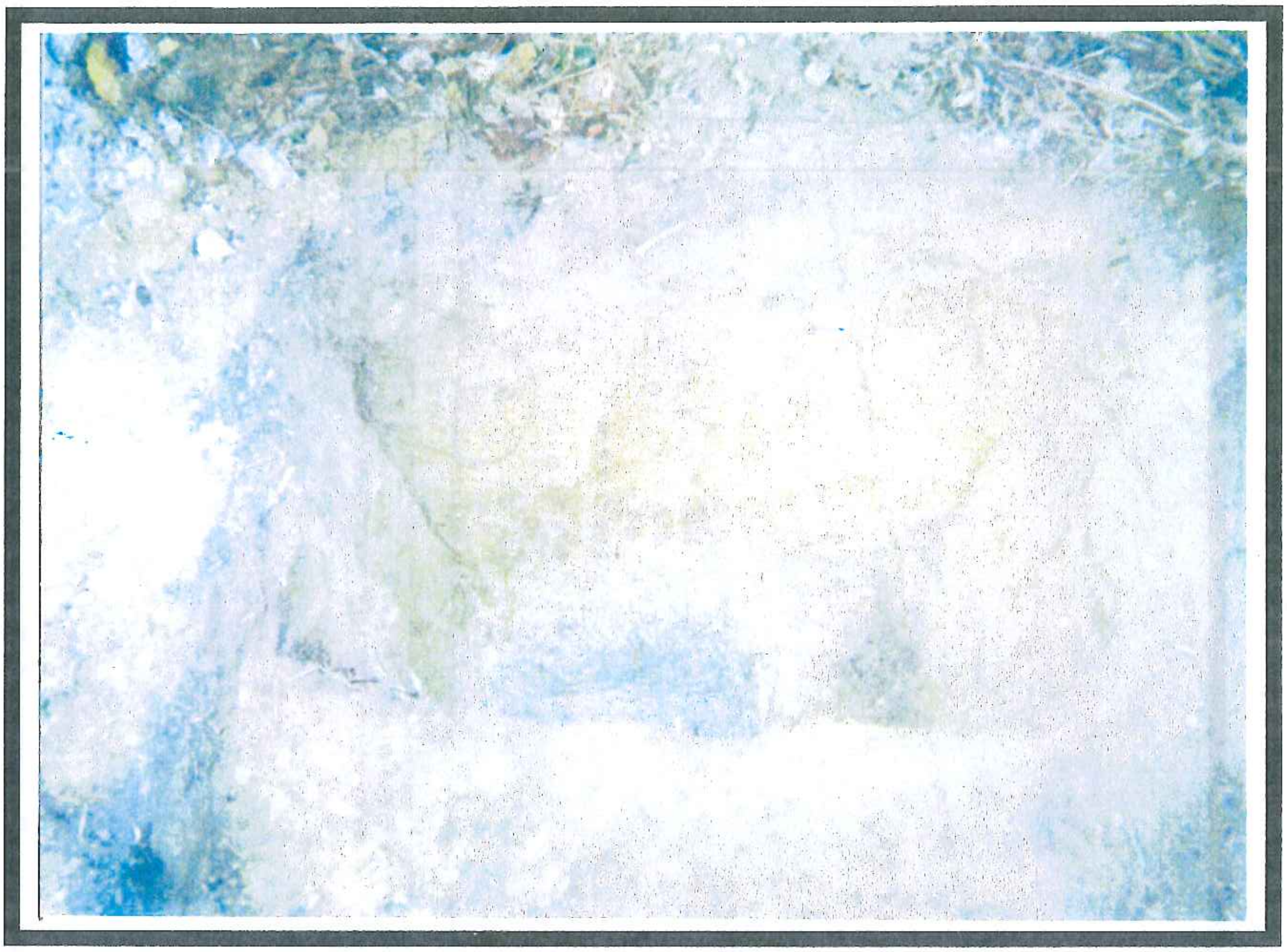


Figure 139. 22-Hi-780 TU1 completed.

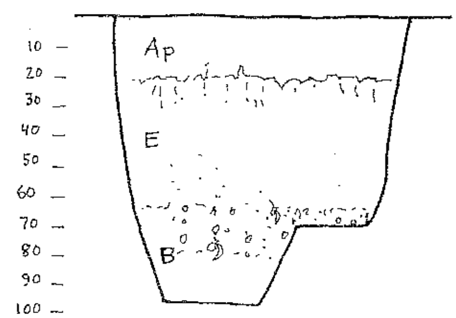


Figure 140. 22-Hi-780 Test Unit 1 Soil Profile

Key to Figure 140. 22-Hi-780 Test Unit 1 Soil Profile

Horizon	Color	Texture	Structure	Inclusion/Mottles	Boundary
Ap	10YR4/4	sand loam	granular	few roots	gradual burrowed
E	10YR4/6	sandy clay loam		homogeneous some concretions	
B	Very light grey	silty clay loam	blocky, at base moist very compact, silt filled cracks prominent	heavily mottled with reduction-oxidation features, by base mostly reduced	gradual irregular

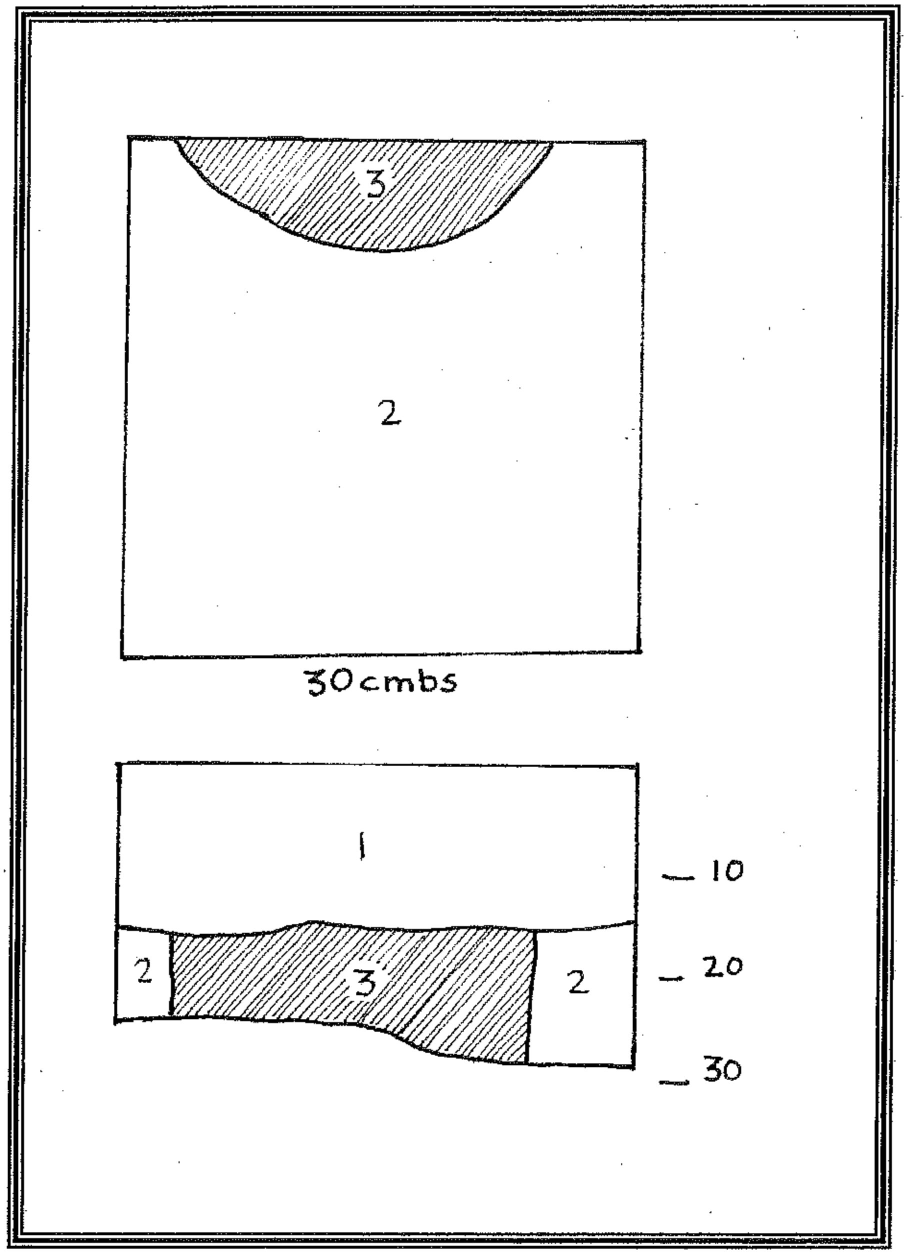


Figure 141. 22-Hi-780 50 x 50 ST Glasgow 91 plan & profile.

1. 10YR413 silt loam plowzone
2. 10YR5/4 sandy loam subsoil
3. 10YR4/2 mixed with 10YR6/2 sandy loam possible feature with high density of flakes

Figure 142. 22-Hi-780 TU1 graph of soil particle size analysis

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Hinds 22 HI 780	TU 1	10	53.30	40.00	6.70
Hinds 22 HI 780	TU 1	20	60.00	26.60	13.40
Hinds 22 HI 780	TU 1	30	10.00	3.30	86.70
Hinds 22 HI 780	TU 1	40	3.30	3.30	93.40
Hinds 22 HI 780	TU 1	50	3.30	5.00	91.70
Hinds 22 HI 780	TU 1	60	43.30	16.60	40.10
Hinds 22 HI 780	TU 1	70	40.00	40.00	20.00
Hinds 22 HI 780	TU 1	80	40.00	40.00	20.00
Hinds 22 HI 780	TU 1	90	33.30	56.60	10.10
Hinds 22 HI 780	TU 1	100	16.60	80.00	3.40

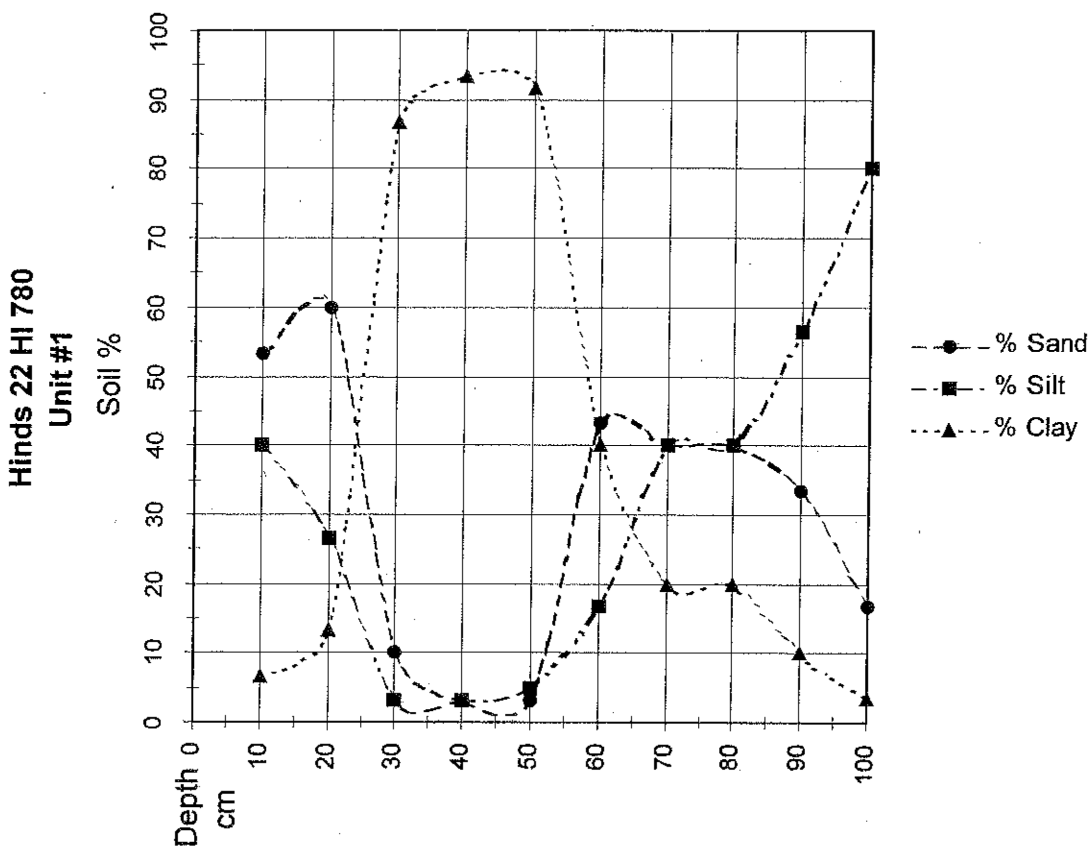


Table 38. 22-Hi-780 Total Artifact recovery from shovel tests (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	9
Secondary decortication flake	23
Internal flake	8
Biface thinning flake	37
Flake fragment	27
Shatter	1
Cores/bifaces	
Biface fragments	1
Other worked stone	
Unifacial tools	1
Unmodified stone	
Fire cracked rock	28
Chert pebble	18
Hematite/siltstone	1
Petrified wood	1
Quartz	3
Shell	1
Ceramics	
grog eroded	2
Total	161

Table 39. 22-Hi-780 TU1 Artifact recovery

	Bag 1371 TU1 L1		Bag 1372 TU1 L2		Total
	#	g	#	g	
Lithics					
Debitage					
Primary decortication flake			1	8.9	1
Secondary decortication flake			2	6.4	2
Biface thinning flake	1	1.7	1	1	2
Flake fragment			1	1.4	1
Unmodified stone					
Quartz	1	1.7			1
Ceramics					
Glass-olive bottle			1	1.4	1
Total	2	3.40	6	19.10	8

Hinds 1 (22-Hi-818). This large occupation area [redacted] The site was discovered by several north-south oriented 30 m interval shovel test transects (Starr, Hardy). Site delineation began on 18 August 2004. The site boundary was determined by 10 and 5 m interval rays from some of the initial positive shovel tests as well as by topographic features. [redacted] The site is crossed by dirt trails (Figure 144a) and there is some modern trash scatter (clothes, appliances), particularly across the north end of the site. No surface collection was made and surface visibility was poor.

The site [redacted] The site is bounded on the east by an abandoned but probably recent river channel (Figure 145) with a sharp and steep bluff. [redacted] To the north, west, and south, it is defined by slight swales, some of which have been ditched. Vegetation besides plantation pines included elms, oaks, and an understory cover of grapevines and poison ivy. Surface visibility was poor besides some trails and no surface collection was made. All artifact recovery was through ¼" dry screening. Shovel tests and .5x.5 m and 1x1 m test units were excavated. The deposit appears to be around 25 cm deep. Moderate artifact density is indicated, but density varies considerably across this large site (Table 43).

Three 1x1 m test units were excavated. Test Unit 1 was excavated by Starr and Hardy on 2 October 2004. Two natural zones were excavated (Figuure 146). Zone 1 was a Ao horizon, 0-15 cmbs, with a 3 cm rootmat and medium granular to subangular, loose, friable ped structure, some concretions and charcoal, but few artifacts. Zone 2, 15-30 cmbs, was homogeneous light yellowish brown silt loam with slight reduction mottling. There were no finds. The test was reduced to 1x.5 m and chunked out without screening to obtain a soil sample column. Test unit produced 13 artifacts, 26 pieces of burned earth and 14 pieces of wood charcoal (Table 44). The burned material is probably recent.

Test Unit 2 was excavated by Hardy, Harris and Barrett on 5 October 2004. It was excavated with a combination of natural and arbitrary levels (See Figure 146). Level 1, 0-8 cmbs, was a 10YR3/4 loamy organic horizon with fairly sparse pottery, flakes and gravel. Level 2, 8-20 cmbs, was yellowish brown (10YR5/4) silt loam with a moderate amount of pottery, gravel and flakes. Level 3, 20-30 cmbs, was 10YR5/6 silty loam with sparse flakes, concretions and pottery. Level 4, 30-40 cmbs, was 10YR5/6 sandy silt with no material recovered. Soil samples were taken from the walls of this unit.

Test Unit 3 was also excavated on 5 October 2004. It was excavated with combined natural and arbitrary levels. Level 1, 0-3 cmbs, was the rootmat, with 10YR3/4 homogeneous loam and only 2 flakes. Level 2, 3-10 cmbs, was homogeneous 10YR6/4 loam with a few flakes. Levels 3, 1-20 cmbs, and 4, 20-30 cmbs, were homogeneous 10YR5/6 loam without inclusions or artifacts.

Analysis of particle size samples (Figures 147,148,149) from all three test units present highly irregular results, although TU3 shows a very strong (70%+) clay peak at

40 cmbs, which is too strong to be the result of downward transport of clay and thus is interpreted as representing episodes of backswamp/stillwater settling of clay (burial of older point bar by backswamp veneer). The other two units do not show marked clay maxima. None of the units displays a strong fining upward profile. These profiles are taken to indicate that the Pleistocene-Holocene depositional environment has varied considerably through time.

TU2 produced 74 items (Table 45); 25.6% from Level 1 (to 8 cmbs), 64.8% from Level 2 (8-20 cmbs), and 9.5% from Level 3 (20-30 cmbs). This unit included 9 grog tempered sherds. TU3 produced only 10 artifacts, 8 from Level 2(3-10 cmbs) (Table 46). All 5 pieces of debitage in Harris 85 probably come from the same biface that failed due to an *outré passe* flake. Several of the 12 flakes in TU2 Level 1 may be from the reduction of the same core. Local quartzite comes from TU2 L3 (n=1) and Starr 199 (n=1). Small sherds classifiable as Marksville Incised come from TU2 L1 (broad, U-shaped line on fine grog paste with possible bone inclusions) and TU2 Level 2 (3 with broad U-shaped lines and 1 with fine cross hatching).

Table 40. Hinds 1 Cores/bifaces

Provenience	Class	Comment	Dimensions	Weight
TU2L2	Biface fragment	Thermal failure		5.3g
Harris 85	Biface fragment	Outré passe		5.3 g
Starr 202	Biface fragment			4.1 g
Starr 203	Pebble core			4.3 g

Table 41. Hinds 1 Unifacial tools

Provenience	Debitage class	Modification	Dimensions	Weight
TU2L2	Biface thinning	Both lateral		.2 g
TU3L2	Biface thinning	Lateral		
TU3L2	Biface thinning	Lateral		
Starr 203	fragment	Distal		1.8 g

Soils are stable but deflated with some weak natural horizonation on the level, formerly-cleared areas and eroding along the bankline due to traffic induced erosion. Lithics were the main materials recovered from the site, along with some grog tempered pottery (cordmarked, broad-line incised, fine-line incised and eroded) indicative of ephemeral Middle Woodland period, Marksville culture occupation (Figure 150). The site is considered to be the result of various transitory uses as hunting/collecting camps, probably during the Archaic and Woodland periods, but no temporally diagnostic tools were recovered. Site 22-Hi-818 has some interpretive significance in that it demonstrates the widespread Marksville culture occupation of the project area, the period during which some of the mounds, including the adjacent City Mound, were built. Due to the impacts and the low density and limited artifact diversity, the site is considered ineligible for the NRHP. No further work is recommended.

[redacted]

Figure 144. Hinds 1 (22-Hi-818); a. A.T.V. trails; b. slough at west side of site.

Figure 145. Hinds 1 (22-Hi-818); a. old pond & levee; b. east of site.

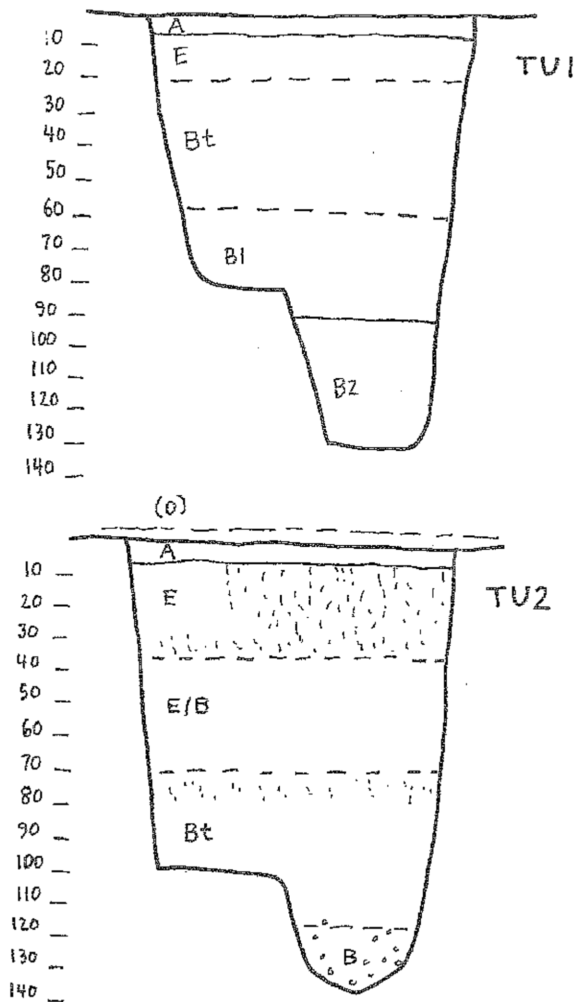


Figure 146. Hinds 1 (22-Hi-818) Soil Profiles.

Key to Figure 146. Hinds 1 (22-Hi-818) Test Unit 1 Soil Profile.

Horizon	Color	Texture	Structure	Inclusions	Boundary
A	10YR4/3	silt loam	fine granular	Abundant roots	smooth
E	10YR4/6	loamy silt	medium-coarse strong blocky subangular	Common medium roots	smooth
Bt	10YR5/6	loamy silt	coarse blocky subangular, compact but grading weaker	Few large roots	smooth
B1	10YR5/6	silt loam	less blocky, friable		smooth
	10YR5/8	markedly sandier loamy fine sand	very weak fine granular where some silt has accumulated, by base friable weak coarse blocky subangular, weak reduced pale brown silt skins on ped faces and in pore space	Abundant very fine dark mineral grains	

Key to Figure 146. Hinds 1 (22-Hi-818) Test Unit 2 Soil Profile.

Horizon	Color	Texture	Structure	Inclusions/ Mottles	Boundary
O		fine sandy duff	loose	Rootmat	
A	10YR4/3-10YR4/2	fine sandy silt loam	Fine weak granular	roots common, artifacts	abrupt smooth
E	10YR5/4, grades redder 30-40 cmbs	fine sandy silt loam	moderate granular to blocky, abundant fine biopores	weak common grey mottles, common medium roots	abrupt smooth
E/B	10YR4/6-10YR5/8 grading darker	very fine sandy loam	weak-massive friable, abundant biopores	few small-medium roots	abrupt smooth
Bt	10YR4/6	fine sandy silt loam	medium-small, weak blocky, subangular abundant small biopores with slight reduced clay/silt skins	weak manganese concentration few roots	abrupt smooth
B2	10YR5/6	silty fine sandy loam	medium, moderate-strong blocky subangular, strong tan-pale brown reduction-oxidation effects on ped surfaces		

Figure 147. Hinds 1 (22-Hi-818) TU1 graph of soil particle size analysis

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Hinds 1	TU 1	10	40.00	46.60	13.40
Hinds 1	TU 1	20	33.30	46.60	20.10
Hinds 1	TU 1	30	66.60	26.60	6.80
Hinds 1	TU 1	40	53.30	26.60	20.10
Hinds 1	TU 1	50	46.60	33.30	20.10
Hinds 1	TU 1	60	60.00	40.00	0.00
Hinds 1	TU 1	70	33.30	46.60	20.10
Hinds 1	TU 1	80	33.30	53.30	13.40
Hinds 1	TU 1	90	53.30	26.60	20.10
Hinds 1	TU 1	100	53.30	30.00	16.70

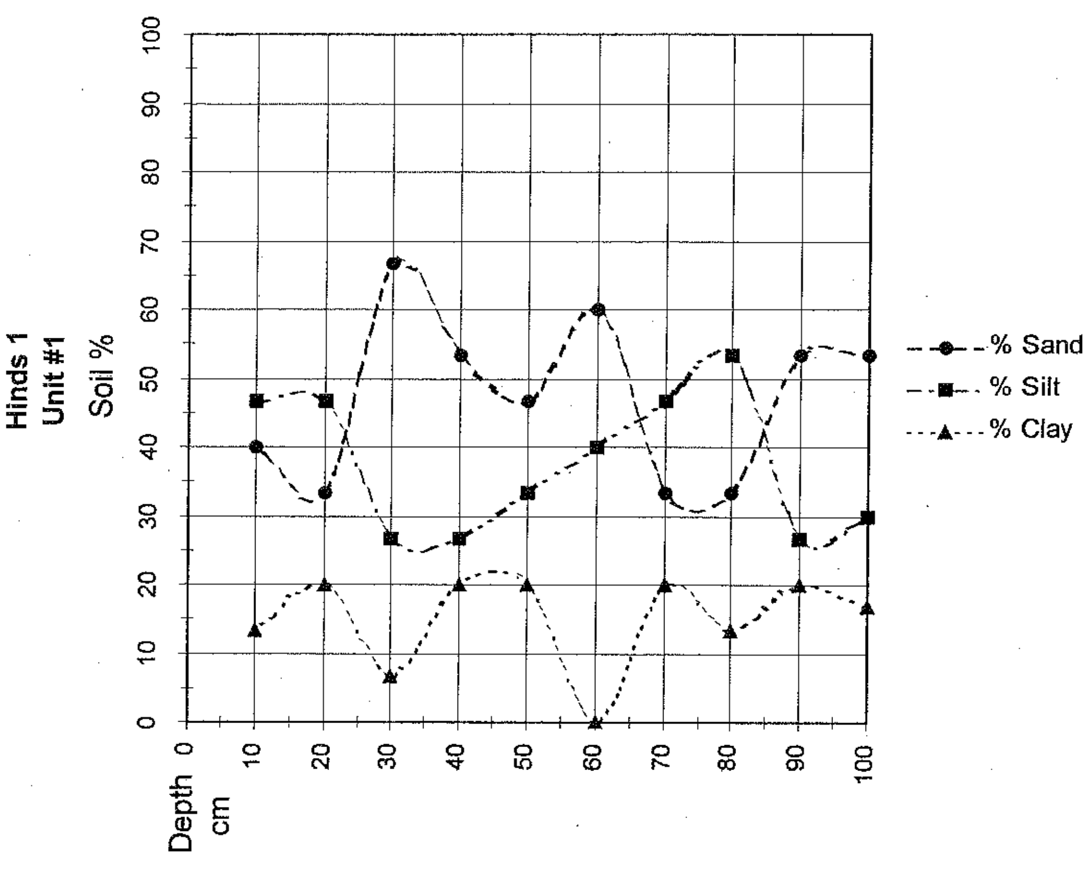


Figure 148. Hinds 1 (22-Hi-818) TU2 graph of soil particle size analysis

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Hinds 1	TU 2	10	66.00	33.00	1.00
Hinds 1	TU 2	20	50.00	43.00	7.00
Hinds 1	TU 2	30	66.00	33.00	1.00
Hinds 1	TU 2	40	46.00	40.00	14.00
Hinds 1	TU 2	50	53.00	26.00	21.00
Hinds 1	TU 2	60	60.00	33.00	7.00
Hinds 1	TU 2	70	66.60	26.60	6.80
Hinds 1	TU 2	80	53.30	40.00	6.70
Hinds 1	TU 2	90	43.30	46.60	10.10
Hinds 1	TU 2	100	43.30	40.00	16.70
Hinds 1	TU 2	110	33.30	26.60	40.10
Hinds 1	TU 2	120	26.60	60.00	13.40
Hinds 1	TU 2	130	26.60	46.60	26.80

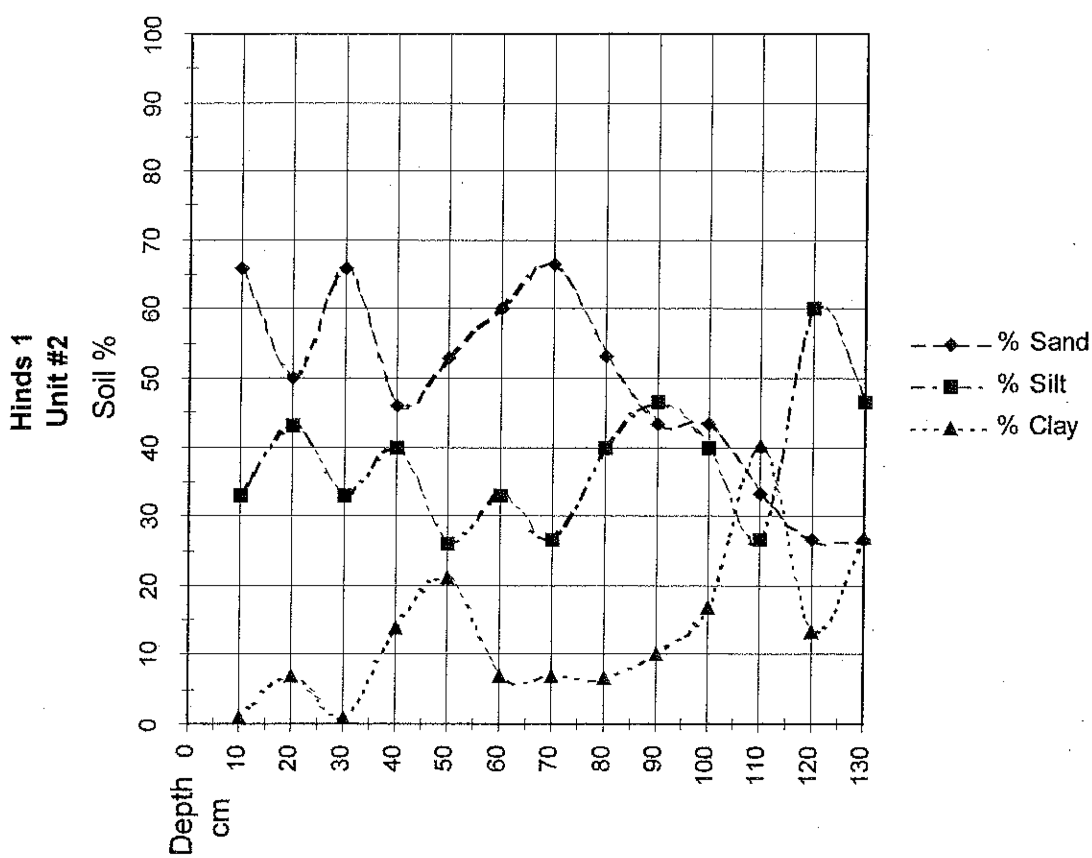


Figure 149. Hinds 1 (22-Hi-818) TU3 graph of soil particle size analysis

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Hinds 1	TU 3	10	46.60	33.30	20.10
Hinds 1	TU 3	20	46.60	46.60	6.80
Hinds 1	TU 3	30	33.30	46.60	20.10
Hinds 1	TU 3	40	10.00	6.60	83.40
Hinds 1	TU 3	50	33.30	40.00	26.70
Hinds 1	TU 3	60	33.30	60.00	6.70
Hinds 1	TU 3	70	36.60	53.30	10.10
Hinds 1	TU 3	80	40.00	53.30	6.70
Hinds 1	TU 3	90	40.00	50.00	10.00
Hinds 1	TU 3	100	50.00	33.30	16.70
Hinds 1	TU 3	110	40.00	40.00	20.00

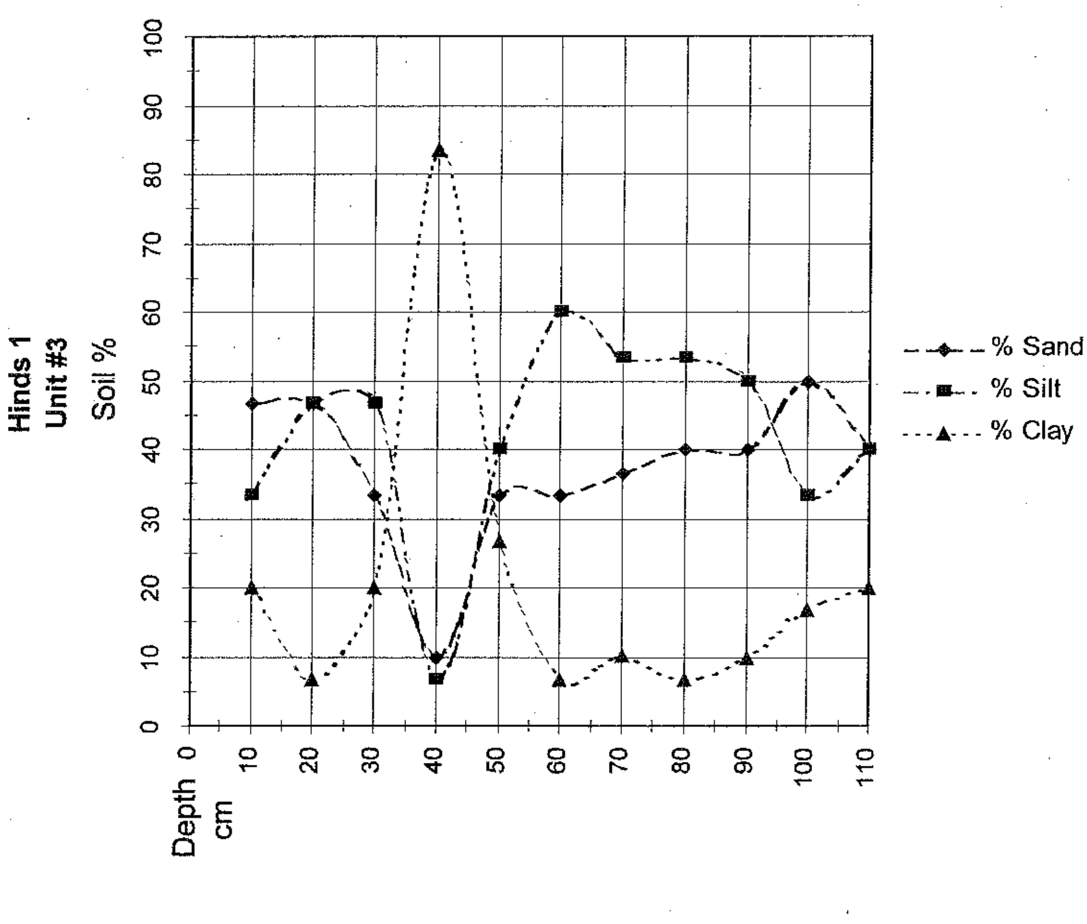


Table 42. Hinds 1 (22-Hi-818) TU1 Soil pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	pH
808	Hinds 1 TU1	10	4.4
809	Hinds 1 TU1	40	4.8
810	Hinds 1 TU1	65	4.4
811	Hinds 1 TU2	20	6.3
812	Hinds 1 TU2	60	4.4
813	Hinds 1 TU2	100	4.5
814	Hinds 1 TU3	20	5
815	Hinds 1 TU3	50	4.7
816	Hinds 1 TU3	100	4.7

Table 43. Hinds 1 (22-Hi-818) Total Artifact recovery from shovel tests (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	3
Secondary decortication flake	9
Internal flake	3
Biface thinning flake	10
Flake fragment	14
Shatter	3
Cores/bifaces	
Pebble core	1
Projectile point/knives	1
Biface fragments	2
Other worked stone	
Unifacial tools	1
Unmodified stone	
Fire cracked rock	7
Chert pebble	3
Quartz pebble	4
Burned earth	89
Charcoal-wood	56
Ceramics	
grog eroded	4
grog plain	5

Table 44. Hinds 1 (22-Hi-818) TU1 Artifact recovery.

	Bag 953 TU1		Total
	#	g	
Lithics			
Debitage			
Internal flake	1	0.3	1
Biface thinning flake	1	1.1	1
Flake fragment	3	1.6	3
Unmodified stone			
Fire cracked rock	1	9.8	1
Quartz	4	2.2	4
Charcoal-wood	14	2.2	14
Other burned earth	26	18.8	26
Ceramics			
grog eroded	3	3.6	3
Total	53	39.6	53

Table 45. Hinds 1 (22-Hi-818) TU2 Artifact recovery.

	Bag 948 TU2 L1		Bag 949 TU2 L2		Bag 950 TU2 L3		Total
	#	g	#	g	#	g	
Lithics							
Debitage							
Primary decortication flake	4	4					4
Secondary decortication flake	2	2.7	2	3.25			4
Biface thinning flake	3	2	8	3.3	1	1.55	12
Flake fragment	2	0.5	8	4.65	2	1.3	12
Shatter	1	0.95			1	0.2	2
Cores/bifaces							
Biface fragments			1	5.25			1
Other worked stone							
Unifacial tools			1	0.2			1
Unmodified stone							
Fire cracked rock			2	1.45			2
Chert pebble	1	5.95	2	10.7	1	30.6	4
Ferruginous sandstone			1	1.9			1
Petrified wood			1	0.7			1
Quartz	1	2	6	12.5	2	1.85	9
Other burned earth	1	0.75					1
Ceramics							
grog eroded	2	1.8					2
grog plain			4	5.7			4
grog cord marked	1	0.95					1
grog broad incised	1	3.65	3	5.1			4
grog fine incised			2	5			2
Total	19	25.25	41	59.7	7	35.50	67

Table 46. Hinds 1 (22-Hi-818) TU3 Artifact recovery.

	Bag 940 TU3 L1		Bag 941 TU3 L2		Total
	#	g	#	g	
Lithics					
Debitage					
Secondary decortication flake			1	1.2	1
Internal flake	2	0.7			2
Biface thinning flake			2	1.15	2
Flake fragment			1	0.4	1
Other worked stone					
Unifacial tools			2	1.8	2
Unmodified stone					
Quartz			2	3.4	2
Total	2	0.7	8	7.95	10

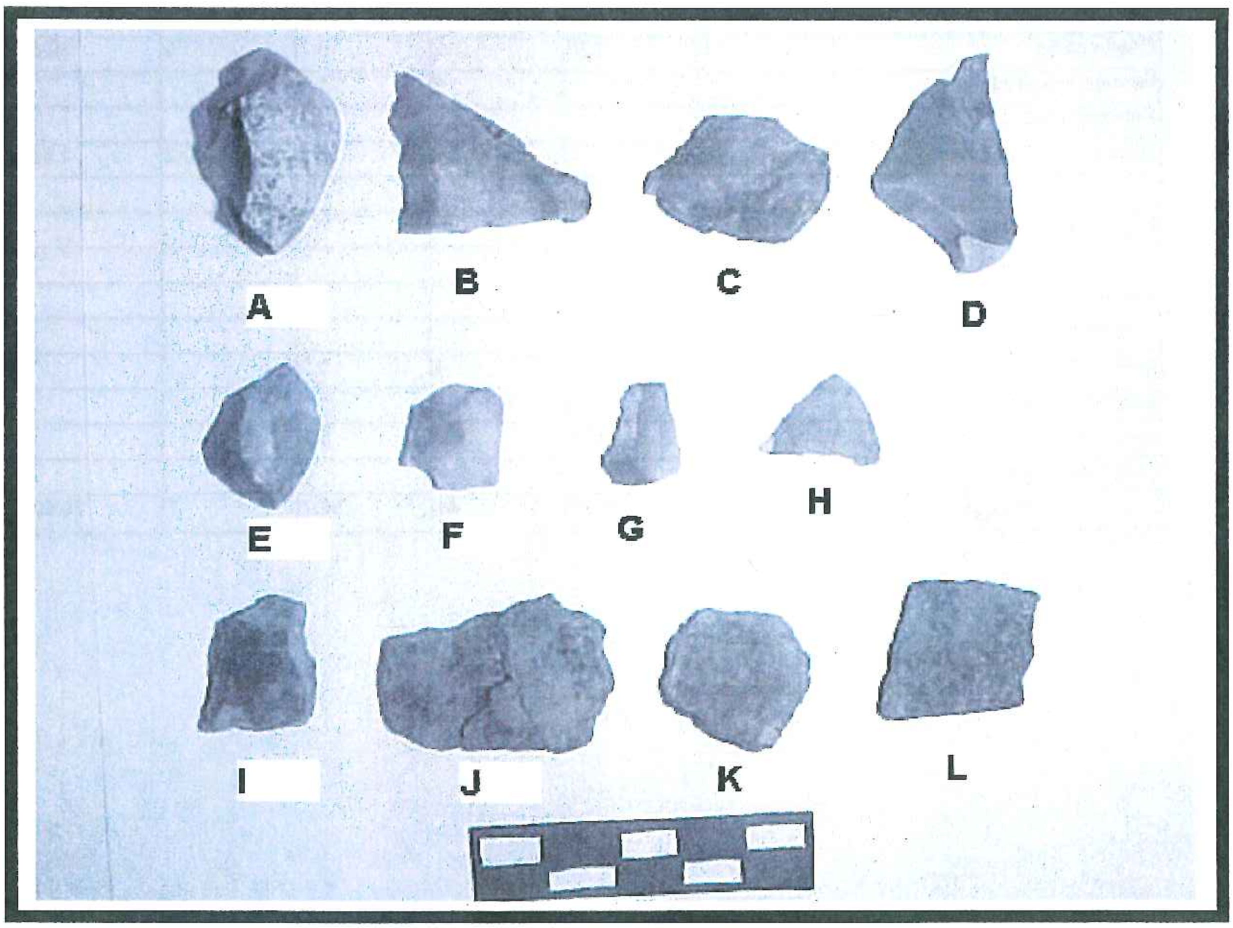


Figure 150. Hinds 1 (22-Hi-818) Artifacts. a. pebble core; b-d. biface fragments, d is *outré passe* flake; e-h. utilized flake/unifaces; i. grog tempered plain; j-l. grog tempered incised (Marksville Incised).

Hinds 2/3 (22-Hi-819). This site was first visited and recorded by Starr (T16, ST 217, 218), Hardy (T9 ST 239, 238), Barrett (T4 ST 62,63, 65), Harris (T12 ST 103) and M. Starnes (T8) on 18 August 2004 for transect shovel testing. About 1.5 hours (7 man-hours) was spent on the site at that time. Site definition shovel tests were on 10 m intervals and later 2 1x1 m test units were excavated. Soil particle size samples were collected from these test units.

This site [redacted] Location 2 [redacted] Location 3 [redacted] The site [redacted] The site is forested with unimproved oak and hardwoods with a sweetgum understory. This timber has not been cut recently. Soils are stable to deflating and the area is level to gently sloping (2-3%). Except for the dirt trails surface visibility was limited by leaf litter so visibility was poor. No surface collection was made and all artifacts were recovered from shovel tests and test units. Artifact density based on shovel testing is low to moderate.

The site was tested on 6 October 2004 by Hardy, Barrett and Harris. The two test units were excavated with shovel and ¼" dry screens (Figure 151). The artifact-bearing deposit appears to be 30 cm thick. Soil samples were taken from the test units.

The first, natural, level of TU 1 extended to 7 cmbs. Soils were homogeneous 10YR4/4 loam with abundant roots. A low density of flakes and fire-cracked rocks was noted (Table 51). Level 2 (7-17 cmbs) was homogeneous 10YR4/6 silt loam with no inclusions noted beside a few flakes and pebbles. TU1 Level 3 (17-27 cmbs) was homogeneous 10YR4/6 silt loam with no inclusions besides a few flakes and sherds. The fourth level, to 37 cmbs, was homogeneous 10YR4/6 silt loam with no artifacts.

Test Unit 2 was excavated in four 10-cm levels. Level 1 was homogeneous 10YR4/4 loam with many roots. A moderate deposit of lithics and natural rock was recorded. Level 2 was homogeneous 10YR4/6 loam with fewer roots but lots of rock, sandstone, flakes and pottery. Level 3 was homogeneous 10YR5/6 silt loam with no natural inclusions but a low density of sandstone, flakes and other rock. Level 4 was homogeneous 10YR5/6 loam without inclusions or artifacts.

Results of the particle size columns are similar but ambiguous (Figures 152,153). Both show clay percentages at or below 20% throughout the 100 cm sampled, and both show shifts from dominance of silt to sand above 70-80 cmbs. Neither shows a fining upward sequence such as is expected in terraces. There is a gradual decrease in clay from surface to 30 or 40 cmbs which could be interpreted as the result of weathering, if a high clay content in the surface layer of TU1 is interpreted as recent backswamp deposition of clay. This potential continual resupply of clay to the near-surface layers complicates the interpretation of such profiles in alluvial settings.

Test Unit 1 produced 27 artifacts; 40.7% from Level 1, 37% from Level 2 and 22.2% from Level 3. This unit included a small amount of grog tempered eroded and heterogeneous temper plain pottery. Test Unit 2 produced 67 artifacts; 22.4% from Level 1 (to 7 cmbs), 56.7% from Level 2 (7-17 cmbs), and 20.9% from Level 3 (17-27 cmbs). Only 10 of these items were debitage and 12 were sherds, while the remainder (67.2%) was natural/minimally modified stone including abundant ferruginous sandstone. Much of the natural stone was burned rock of various types. Untempered and coarse sand tempered sherds were recovered. Local quartzite debitage comes from M.Starnes 167 (n=1). Grey and white novaculite debitage was recovered from M.Starnes 132 (n=2) and TU1 L1 (n=1), L2 (n=1) and L3 (n=1).

Two pieces of clear glass from a recent screw-top glass bottle were collecting from ST Starr 217.

Table 47. Hinds 2/3 Cores/bifaces

Provenience	Class	Comment	Dimensions	Weight
Glasgow 5	Amorphous core			10.4 g

Table 48. Hinds 2/3 Unifacial tools

Provenience	Debitage class	Modification	Dimensions	Weight
Hardy 233	fragment	lateral		.3g
Starr 217	secondary	distal		1.3g

The site is moderately disturbed by erosion, roads, periodic flooding and channelization work. The site dates to the Woodland Period, based on the presence of ceramics, debitage, fire cracked rock and fragmented quartz pebbles as well as unmodified natural stone (Table 50). Fiber tempered eroded fragments (Wheeler series) indicate an Early Woodland/Gulf Formational component. Grog tempered plain and eroded pottery indicates Middle or Late Woodland occupation. Sand and sand/grog tempered sherds are also present. The local quartzite and Ouachita Mountains novaculite may also be associated with a Middle Woodland component. Site 22-Hi-819, like Hinds 1, represent transitory camps or more stable occupation/hamlet contemporary with the City Mound (22-Hi-672) ceremonial area. Phase II testing is recommended as the site appears to be associated in both land form and chronology with 22-Hi-672.

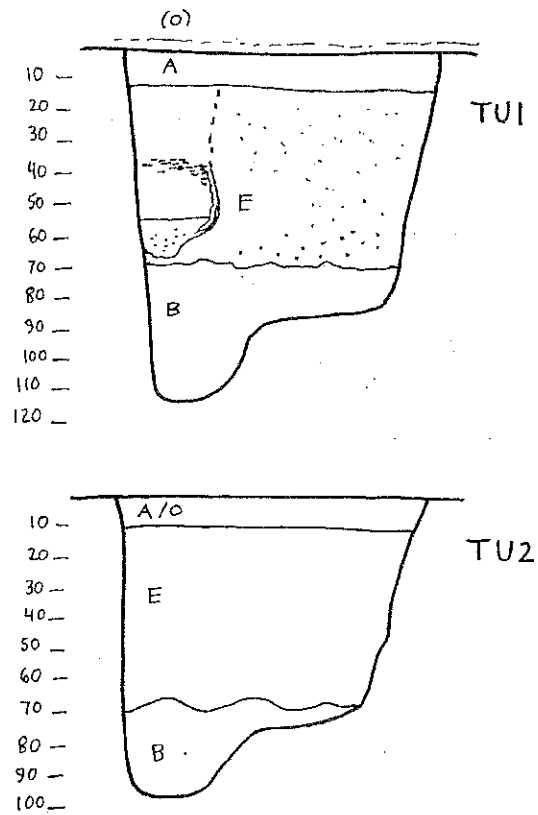


Figure 151. Hinds 2/3 (22-Hi-819) Soil Profiles.

Key to Figure 151. Hinds 2/3 (22-Hi-819) Test Unit 1 Soil Profile

Horizon	Color	Texture	Structure	Inclusions/mottles	Boundary
O					
A	10YR4/2 grey	fine sandy silt loam	weak fine granular	few fine flecks charcoal common large roots	clear smooth
E	10YR4/6	fine sandy silt loam	weak moderate subangular friable	moderate mottling few 2-3 mm Fe/Mg spherical concretions larger manganese concentrations at base	wavy gradual
Burned tree feature	10YR3/6	fine sandy silt loam	base loose	flecks burned earth, top heavily mottled	leached
B	Ped interiors 10YR5/6 silt skins pale brown	fine sandy silt loam	weak moderate subangular, pronounced silt skins and red-ox features on ped faces common medium biopores	some reduction-oxidation features	

Key to Figure 151. Hinds 2/3 (22-Hi-819) Test Unit 2 Soil Profile

Horizon	Color	Texture	Structure	Inclusions/mottles	Boundary
A/O	2.5Y5/4 light olive brown	silty loam	fine granular	common roots	smooth, clear
E	2.5Y5/4 light olive brown	silty loam	well developed blocky subangular	homogeneous, few roots	wavy, clear
B	2.5Y5/4 light olive brown, pale brown silt skins	fine sandy silt loam	weak blocky subangular, moderate common biopores	few roots	

Figure 152. Hinds 2/3 (22-Hi-819) TU1 graph of soil particle size analysis

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Hinds 2-3	TU 1	10	53.30	26.60	20.10
Hinds 2-3	TU 1	20	60.00	40.00	0.00
Hinds 2-3	TU 1	30	40.00	56.60	3.40
Hinds 2-3	TU 1	40	40.00	40.00	20.00
Hinds 2-3	TU 1	50	40.00	46.60	13.40
Hinds 2-3	TU 1	60	53.30	40.00	6.70
Hinds 2-3	TU 1	70	40.00	46.60	13.40
Hinds 2-3	TU 1	80	40.00	53.30	6.70
Hinds 2-3	TU 1	90	40.00	53.30	6.70
Hinds 2-3	TU 1	100	40.00	53.30	6.70

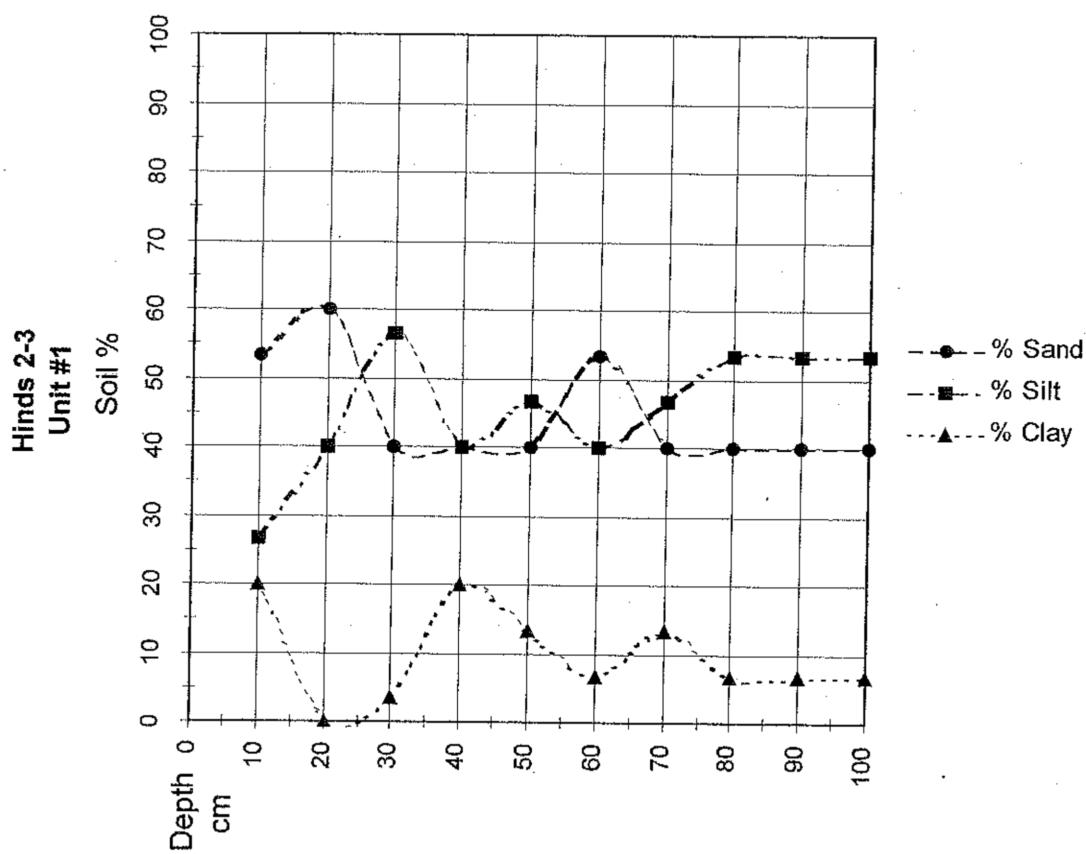


Figure 153. Hinds 2/3 (22-Hi-819) TU2 graph of soil particle size analysis

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Hinds 2-3	TU 2	10	53.30	40.00	6.70
Hinds 2-3	TU 2	20	60.00	33.30	6.70
Hinds 2-3	TU 2	30	53.30	33.30	13.40
Hinds 2-3	TU 2	40	53.30	33.30	13.40
Hinds 2-3	TU 2	50	53.30	33.30	13.40
Hinds 2-3	TU 2	60	36.60	43.30	20.10
Hinds 2-3	TU 2	70	33.30	53.30	13.40
Hinds 2-3	TU 2	80	26.60	53.30	20.10
Hinds 2-3	TU 2	90	33.30	53.30	13.40
Hinds 2-3	TU 2	100	26.60	53.30	20.10

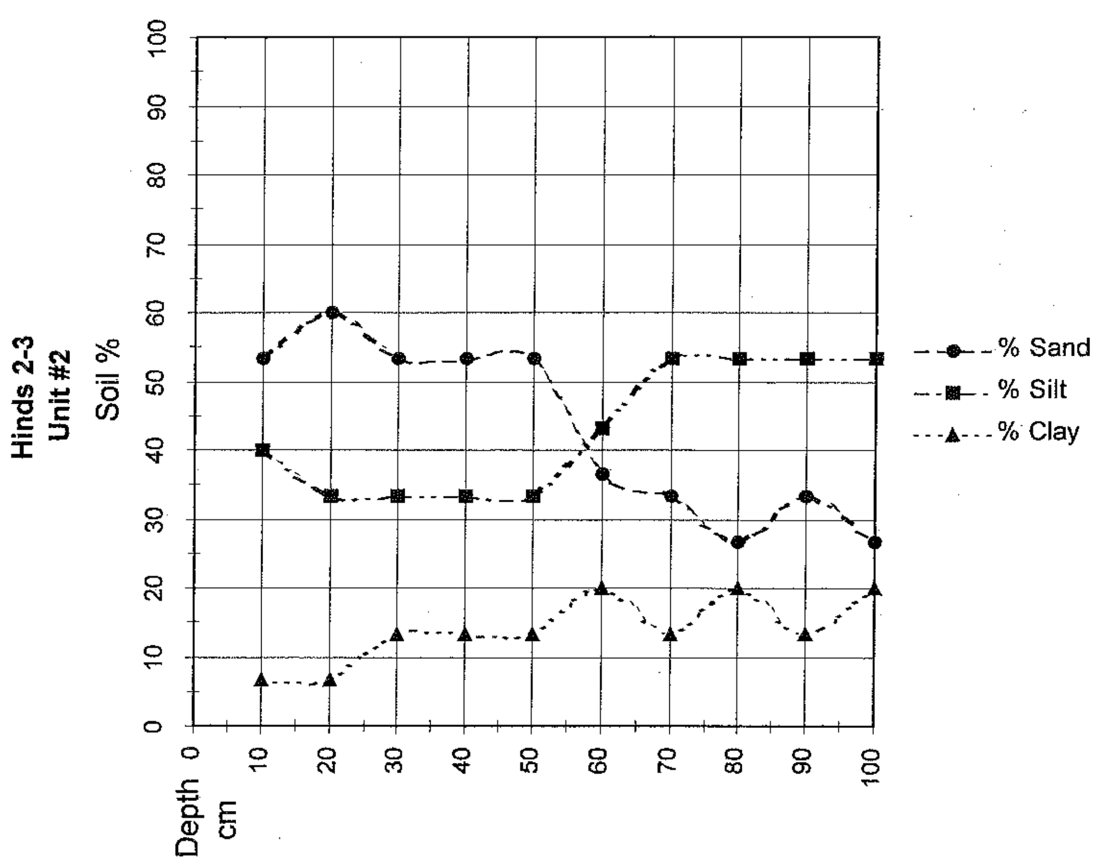


Table 49. Hinds 2/3 (22-Hi-819) pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	pH
1285	Hinds 2/3	2	4.5
1286	Hinds 2/3	100?	4.5

Table 50. Hinds 2/3 (22-Hi-819) Total Artifact Recovery from shovel tests (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	3
Secondary decortication flake	2
Internal flake	1
Biface thinning flake	9
Flake fragment	9
Shatter	1
Cores/bifaces	
Amorphous core	1
Other worked stone	
Unifacial tools	2
Unmodified stone	
Fire cracked rock	18
Chert pebble	22
Ferruginous sandstone	2
Petrified wood	1
Quartz	8
Quartzite	2
Charcoal	5
Ceramics	
grog eroded	3
grog plain	1
other burned earth	32
TOTAL	122

Table 51. Hinds 2/3 (22-Hi-819) TU1 Artifact recovery.

	Bag 942 TU1 L1		Bag 943 TU1 L2		Bag 944 TU1 L3		Total
	#	g	#	g	#	g	
Lithics							
Debitage							
Primary decortication flake	1	14.1					1
Biface thinning flake	2	0.5	1	0.1	3	1.5	6
Flake fragment	3	2.3	1	0.7	1	0.5	5
Unmodified stone							
Fire cracked rock	1	0.4					1
Petrified wood	2	0.7					2
Quartz pebble			1	11.9	1	5.5	2
Burned earth			3	4.7			3
Ceramics							
fiber eroded			3	2.7			3
grog eroded	2	1.4	1	2.1			3
heterogeneous plain					1	3.2	1
TOTAL	**11**	**19.4**	**10**	**22.2**	**6**	**10.7**	**27**

Table 52. Hinds 2/3 (22-Hi-819) TU2 Artifact recovery.

	Bag 945 TU2 L1		Bag 946 TU2 L2		Bag 947 TU2 L3		Total
	#	g	#	g	#	g	
Lithics							
Debitage							
Secondary decortication flake	1	2.7			2	2.5	**3**
Internal flake			2	1.6			**2**
Biface thinning flake	1	1.3	1	0.5			**2**
Flake fragment			1	2.1			**1**
Cores/bifaces							
Tested pebble	2	131					**2**
Unmodified stone							
Fire cracked rock			5	41.9	2	5.5	**7**
Chert pebble	1	15.2	2	9			**3**
Ferruginous sandstone	4	146	13	275.9	5	70.2	**22**
Hematite/siltstone	1	9.3					**1**
Petrified wood			2	4.2			**2**
Quartz pebble	1	1.7					**1**
Quartzite	2	38.5	4	566			**6**
Ceramics							
untempered eroded					3	3	**3**
untempered plain			2	7			**2**
sand plain			6	29	2	10	**8**
Other burned earth	2	3.5					**2**
Total	**15**	**349**	**38**	**937.2**	**14**	**91.2**	**67**

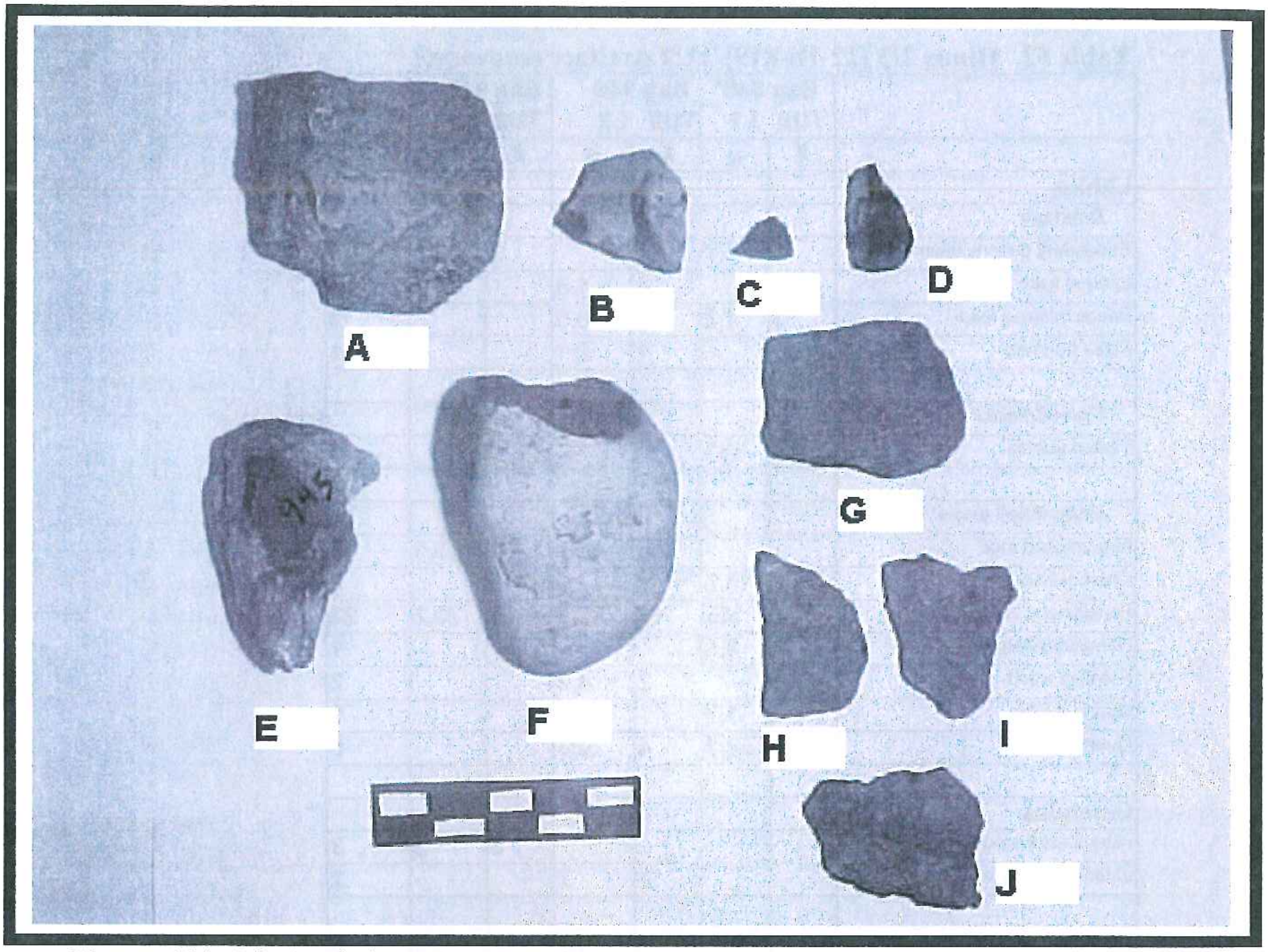


Figure 154. Hinds 2/3 (22-Hi-819) Artifacts. a. knapped petrified wood; b. amorphous core; c,d. utilized flake uniface tools; e,f. tested pebbles; g-j. sand tempered plain, evidently all from one vessel.

Hinds 4 (22-Hi-820). This site was discovered by Harris and Starr (T19 ST 234-237) while conducting 30 m-interval shovel tests on 18-19 August 2004. About 3 hours was spent on the site on the initial visit. The site was further shovel tested by Starr, Harris and M. Starnes on 25 August 2004. Upon encountering the initial positive shovel tests, the interval was dropped to 10 m and the transects were continued on this spacing until the site boundary was reached (Figure 155). [redacted] Ceramics, lithics, shell and recent historic debris were recovered.

The site is bounded on the east by a very minor creek draining from a pond. This [redacted] The landform is stable and soils are moderately developed. A dirt trail runs through the site along its main axis. The site is covered with unimproved, mature (30-35 year old) pines and an understory of water and willow oak, hickory poles, elm, sweetgum, grapevine, greenbriar, and wild peavine. Pine straw and duff limited surface visibility. No surface collection was made and all materials were recovered from shovel tests and 50 cm and 1 m test units. The silty loam soil was easily screened through ¼" dry screens. Artifact density is moderate to high, and the deposit is about 30 cm deep (Table 54).

A 1x1 m test unit was excavated by Starr, Hardy and Barrett on 1 October 2004 (Figure 157). The first 10 cm level was homogeneous, soft, loose 10YR4/3 loam with abundant roots. The bottom of the 10 cm level corresponded roughly with the natural Ao lower boundary. A low density of pebbles, flakes and fire-cracked rock came from the first level. The second zone was excavated to 16 cmbs. The soil was fairly compact, heavily mottled 10YR5/3 silt loam with fewer roots. The soil was much more compact than in the Ao horizon and contained abundant small (2mm) concretions. Flakes, sherds and firecracked rock were recovered (Table 55). Excavation was halted at 16 cm when a possible feature (hearth?) was encountered. Discounting 15 pieces of probably recent burned earth and 7 concretions, 33% of the 63 artifacts recovered come from Level 1 and 66% from Level 2.

On 29 September 2004, a 50x50 cm shovel test (Starr 234) was excavated to provide a particle size column (Figure 158). While amounts of silt and sand fluctuate between 30% and 60% throughout, there is a marked clay bulge at 50 cmbs, which is interpreted as the result of extreme weathering induced pedogenesis. In the field, this same level was interpreted as a Bt horizon with a clay maximum at 50-60 cmbs.

Disturbance is moderate to low, resulting from natural causes, forestry, traffic and intermittent flooding. The 10 m-wide road through the site is the main impact to the deposits. The road is built above surface by hauled-in sand. The road is shown on the 1963 map. Some sparse superficial historic material was noted (glass and building materials such as brick, tile and concrete); this material appears to result from trash disposal and occasional non-habitational (camp/cooking) use of the floodplain and does not constitute a significant impact to the integrity of the prehistoric deposit.

The site was thoroughly investigated at a Phase I level. Gulf Formational (fiber tempered) and Woodland Period (grog tempered plain) diagnostic ceramics were recovered (Figure 159). The diversity of materials (debitage, bifaces, drill, burned earth, ceramics) indicates that is a hamlet or semi-permanent occupation area (base camp). Charcoal and burned earth near the surface may be recent land-clearing debris. Soil profiles were intact and some mussel shell (perhaps prehistoric) was recovered. There is intensive Woodland occupation in the area around the City Mound NRHP property. Site 22-Hi-820 is one of the more heavily occupied areas. It should be considered potentially significant as it contributes to the significance of City Mound (22-Hi-672). The site should be evaluated at the Phase II level if it will be affected by this project and cannot be avoided.

[redacted]

Figure 156. Hinds 4 (22-Hi-820) 50 x 50 shovel test dug for profile.

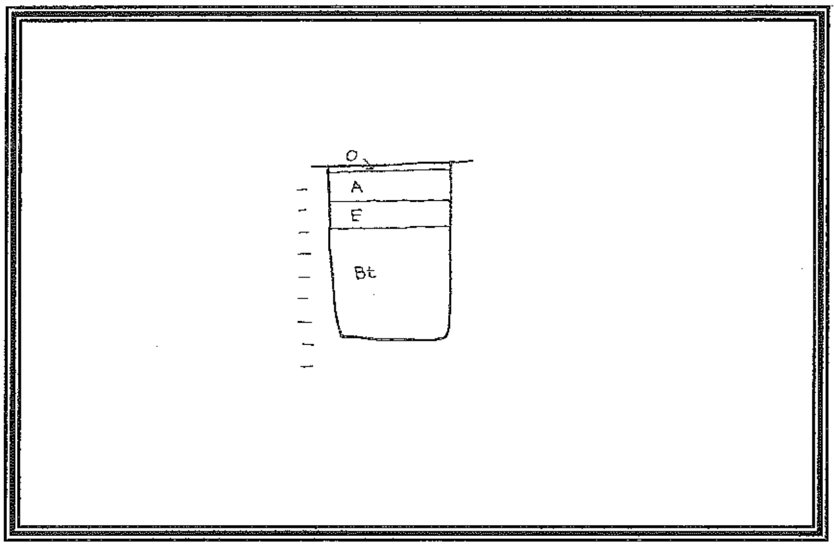


Figure 157. Hinds 4 (22-Hi-820) Soil Profile.

Key to Figure 157. Hinds 4 (22-Hi-820) Soil Profile

Horizon	Color	Texture	Structure	Inclusion/Mottles	Boundary
O		duff			
A	10YR4/3	loam	moderately strong granular	abundant roots and biopores	clear burrowed
E	10YR5/6	sandy loam	blocky subangular		smooth
Bt	7.5YR5/4	loam	weak medium granular with faint discontinous clay skins	common medium biopores	gradually sandier and lighter

Figure 158. Hinds 4 (22-Hi-820) Starr ST 234 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Hinds 4	Starr ST 234	10	53.30	40.00	6.70
Hinds 4	Starr ST 234	20	50.00	46.60	3.40
Hinds 4	Starr ST 234	30	36.60	60.00	3.40
Hinds 4	Starr ST 234	40	53.30	40.00	6.70
Hinds 4	Starr ST 234	50	40.00	33.30	26.70
Hinds 4	Starr ST 234	60	60.00	33.30	6.70
Hinds 4	Starr ST 234	80	43.30	46.60	10.10

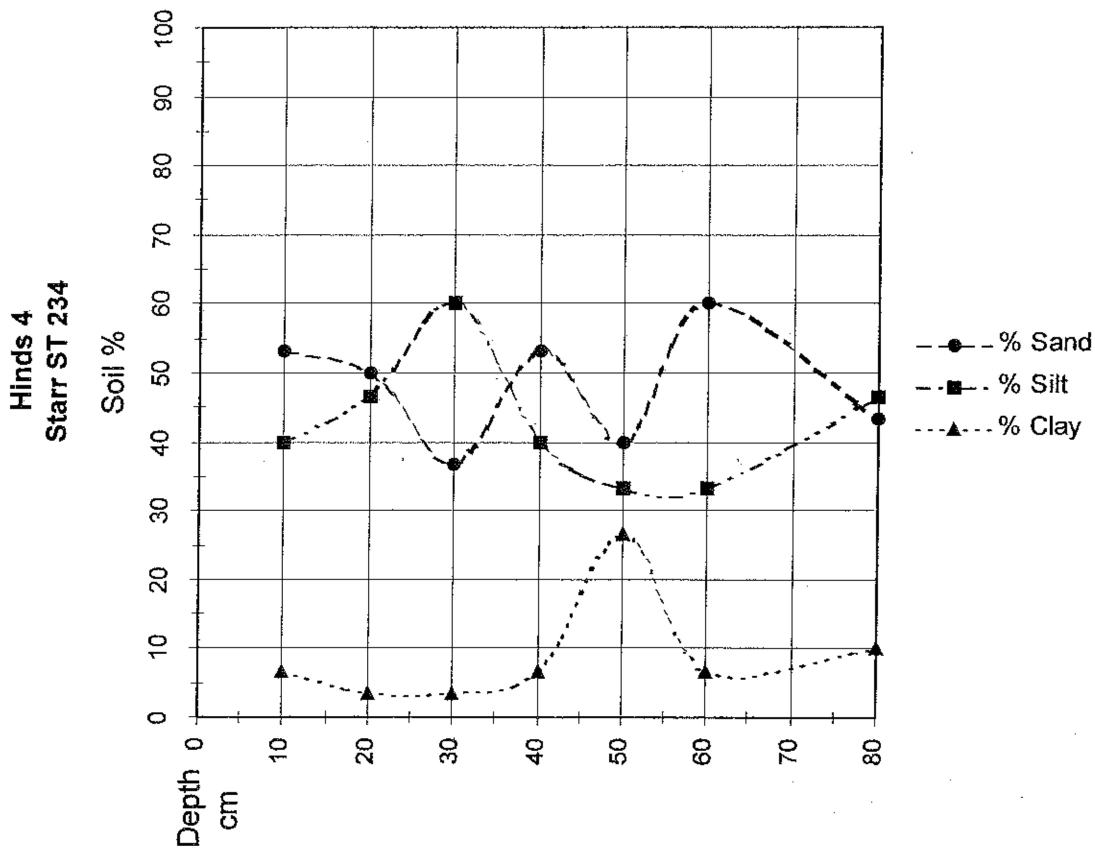


Table 53. Hinds 4 (22-Hi-820) pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	pH
820	Hinds 4	30	4.8
821	Hinds 4	138	4.8
822	Hinds 4	30	4.8

Table 54. Hinds 4 (22-Hi-820) Total Artifact recovery from shovel tests (see appendix table)

	Total
Lithics	
Debitage	
Primary decortication flake	8
Secondary decortication flake	33
Internal flake	16
Biface thinning flake	112
Flake fragment	67
Shatter	11
Cores/bifaces	
Tested pebble	1
Bifacial core	1
Biface preforms	1
Projectile point/knives	1
Other bifacial tools	1
Biface fragments	6
Other worked stone	
Unifacial tools	4
Ground stone	1
Unmodified stone	
Fire cracked rock	50
Chert pebble	12
Ferruginous sandstone	6
Hematite/siltstone	2
Petrified wood	6
Quartz	21
Quartzite	1
Shell	3
Burned earth	20
Charcoal-wood	1
Ceramics	
grog eroded	15
grog plain	8

Table 55. Hinds 4 (22-Hi-820) TU1 Artifact recovery.

	Bag 954 TU1 L1		Bag 955 TU1 L2		Total
	#	g	#	g	
Lithics					
Debitage					
Primary decortication flake	2	2.5	2	3	**4**
Secondary decortication flake	3	1.7	4	12.9	**7**
Internal flake			2	1.8	**2**
Biface thinning flake	2	0.4	4	1.8	**6**
Flake fragment	3	2.5	4	3.5	**7**
Shatter	2	0.9	3	2.85	**5**
Unmodified stone					
Fire cracked rock			3	3	**3**
Chert pebble	2	3.25	2	13.7	**4**
Arkosic sandstone			1	7.25	**1**
Petrified wood	1	0.6	4	6.3	**5**
Quartz	2	0.85	1	1	**3**
Quartzite	4	5			**4**
Other burned earth			15	10.1	**15**
Ceramics					
fiber eroded			1	0.4	**1**
grog eroded			5	4.4	**5**
grog plain			6	9.1	**6**
TOTAL	**21**	**17.7**	**57**	**81.1**	**78**

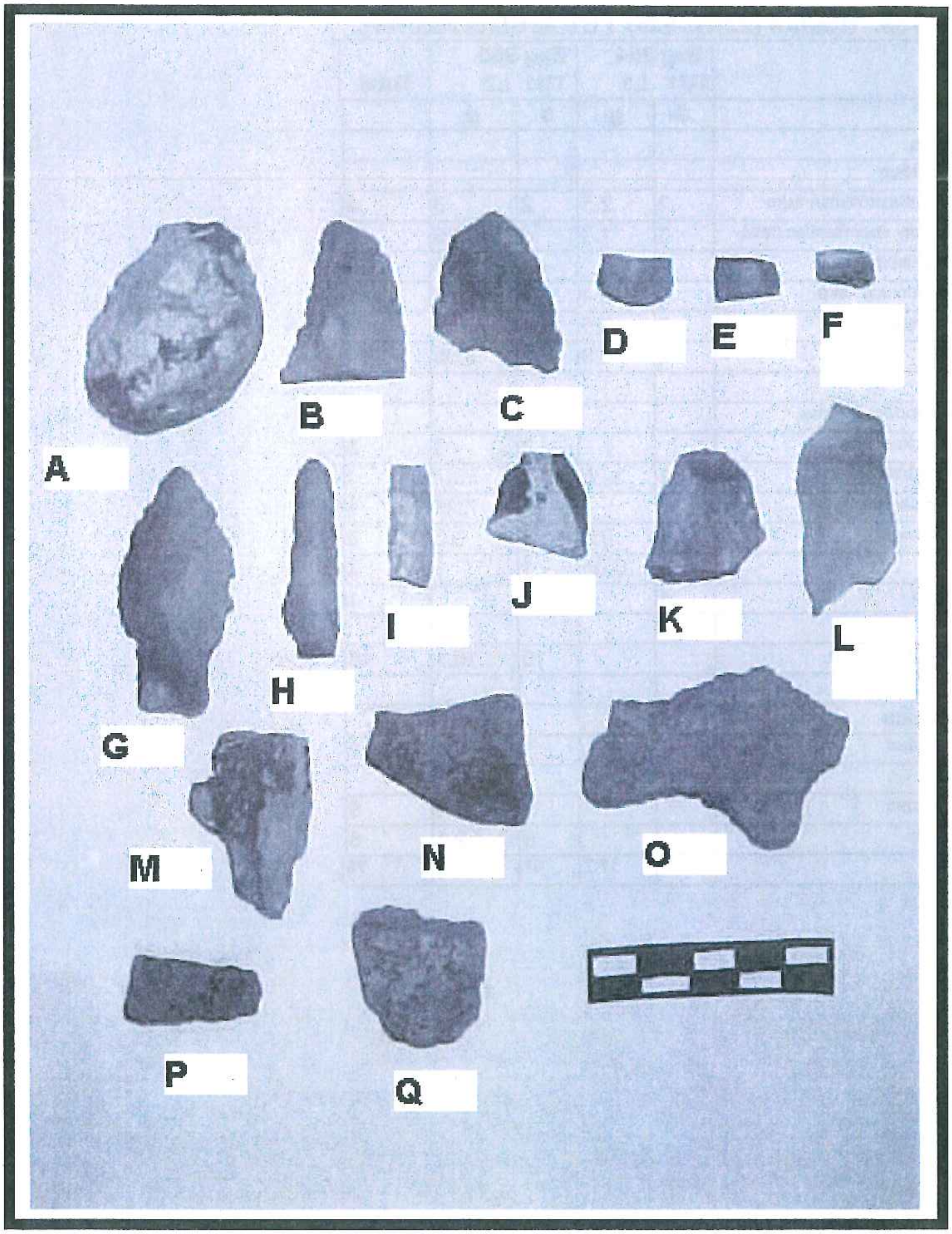


Figure 159. Hinds 4 (22-Hi-820) Artifacts. a. pebble core; b-f. biface fragments (d-f are projectile point stems); g. projectile point/knife; h,i. biface tools "drills"; j-l. utilized flake/uniface tools; m. knapped petrified wood; n-q. grog tempered plain sherds.

<u>Hinds 6 (22-Hi-821)</u>. This site was discovered by M. Starnes (T2 ST 55) while conducting 30 m interval transects oriented north from City Mound (22-Hi-672). The site was tested out by Starr (ST 267, 270), Hardy (ST 313), Harris (ST 182, 183), Barrett (ST 119), M. Starnes (ST 188) and Glasgow (ST 17, 18), with about 6 man-hours spent on the site on 24 August 2004. Additional investigations were conducted on 5 October 2004 by Starr, Hardy Harris and Barrett, comprising about 16 man-hours, at which time three 50x50 test units were excavated for soil columns and increased artifact samples. Recovery was sparse. The site has an oval linear shape based on topography and shovel testing on 10 m intervals (Figure 160). [redacted]

The site area is an old field (shown as cleared in 1963) now grown up in mature pines. The vegetation is open unimproved pine forest (perhaps an old plantation) with hardwood understory of elm, hackberry, hickory and grapevine. The site has an unnamed, dammed stream connected to ditched swales adjacent to it on the west. The site lies on a level spot in a ridge and swale surface on a higher T2 terrace. The landform is stable with soils forming.

Due to heavy duff and pine straw surface visibility was poor so no surface collection was possible. Wet soils were screened through ¼" dry screens. Soil samples were collected from a 50x50 cm shovel test excavated to 50 cmbs (Hardy 638) (Figure 161). Soils are clayier than in most project area locations, but also sandier (Figure 162). The column shows a fining upward sequence from 110 to 50 cmbs, which is then reversed. There is no marked trend in clay redeposition, but clay does decline from around 10% at 10 and 20 cmbs, to around 35% at 60 cmbs. If this is indeed the result of in situ weathering and pedogenesis, this is one of the deeper clay maxima encountered, as might be expected on this high old terrace level. However, as noted above, soils are sandy here, so elluviation of any original clay would have been promoted by the porous and well-drained nature of the soil.

This is a light density lithic and ceramic scatter in an old plowzone. The fact that the site has obviously been plowed makes it a less significant resource, given that many project area sites are well-preserved. Woodland ceramics (grog tempered plain), a few flakes, fire-cracked rock and natural pea gravel were recovered (Table 56). The site is considered to be a camp or temporary hamlet, perhaps associated with ceremonial use of the nearby City Mound (22-Hi-672). There is much burned material (pine charcoal and burned earth) from modern land clearance/timbering and some old pushpiles. Disturbance is moderate, from cultivation, natural agents, trails along the bankline, forestry and intermittent flooding. Site 22-Hi-821 is considered not eligible for the NRHP due to disturbance, low density, low diversity and lack of diagnostics. No further work is recommended.

[redacted]

Figure 161. Hinds 6 (22-Hi-821); a. 50 x 50 cm soil column being excavated by Ryan Hardy.

Figure 162. Hinds 6 (22-Hi-821) Hardy ST 638 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Hinds 6	Hardy ST 638	10	56.60	20.00	23.40
Hinds 6	Hardy ST 638	20	53.30	26.60	20.10
Hinds 6	Hardy ST 638	30	40.00	33.30	26.70
Hinds 6	Hardy ST 638	40	40.00	33.30	26.70
Hinds 6	Hardy ST 638	50	33.30	33.30	33.40
Hinds 6	Hardy ST 638	60	40.00	23.30	36.70
Hinds 6	Hardy ST 638	70	40.00	26.60	33.40
Hinds 6	Hardy ST 638	80	50.00	30.00	20.00
Hinds 6	Hardy ST 638	90	50.00	16.60	33.40
Hinds 6	Hardy ST 638	100	63.30	13.30	23.40
Hinds 6	Hardy ST 638	110	60.00	13.30	26.70

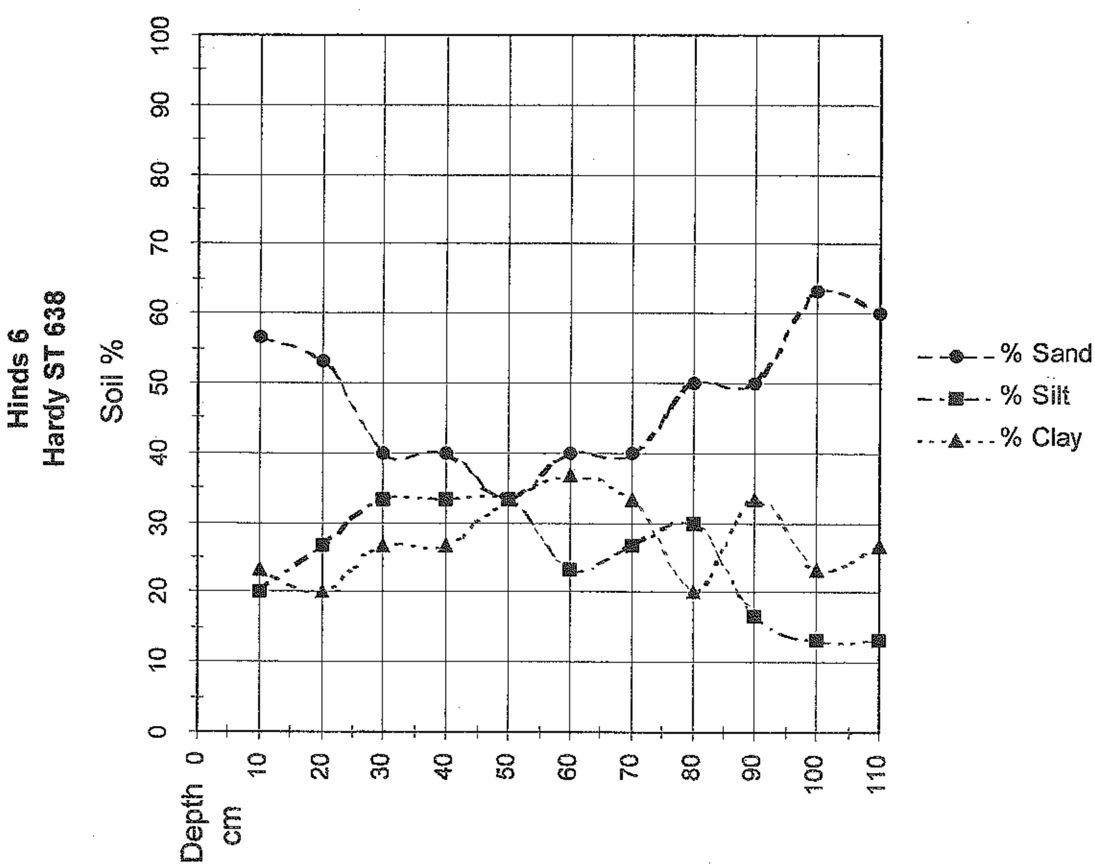


Table 56. Hinds 6 (22-Hi-821) Artifact recovery from shovel tests.

	Bag 307 Starr 267		Bag 308 Starr 270		Bag 309 Harris 182		Bag 310 Harris 183		Bag 312 Barrett 119		Bag 313 Glasgow 17		Bag 325 Hardy 313		Bag 335 M Starnes 55		Bag 932 Hardy 638		Total
	#	g	#	g	#	G	#	g	#	g	#	g	#	g	#	g	#	g	
Lithics																			
Debitage																			
Primary decortication flake															2	1.7			2
Secondary decortication flake	2	6.5													7	7.8			9
Biface thinning flake			4	2	1	1.7	1	0.7			1	0.5	1	0.6	5	2.4			13
Flake fragment			1	1.3			1	1	1	0.4					2	1			5
Unmodified stone																			
Fire cracked rock															2	1.5			2
Hematite/siltstone																	1	32.4	1
Quartz							2	4.5							1	1.3			3
Ceramics																			
grog eroded											1	0.9							1
grog plain															1	4.1			1
TOTAL	2	6.5	5	3.3	1	1.7	4	6.2	1	0.4	2	1.4	1	0.6	20	19.8	1	32.4	37

<u>Hinds 7 (22-Hi-822)</u>. This site was discovered by M. Starnes (ST 52, 53) while running 30 m interval transects north of City Mound (22-Hi0672). The site was delineated by Starr (ST 259, 260, 262), Harris and M. Starnes (ST 177, 180) on 24 August 2004 using 5 and 10 m intervals and expending 4.5 man hours. Additional investigation in the form of two 1x1 m test units was conducted by Starr, Hardy, Harris and Barrett on 1-2 October 2004 because of the recovery of a fragmentary lanceolate base (Transitional Paleo-Indian-Early Archaic) projectile point/knife in Starr ST 259 (Figure 164). [redacted]

The site [redacted] The location [redacted] Except for dirt trails, the site has poor surface visibility due to heavy duff and pine straw, so no surface collection was made. There is extensive surface modification in the general vicinity in the form of ditching of swales. Site vegetation consists of a few mature pines, perhaps from an approximately 30-40 year old field plantation (remnant pines are approaching senesence) and mixed bottomland hardwoods (white and water oaks, hickory, huckleberry and sweet gum). Despite lying at the edge of suburbs and having extensive, daily traffic, much wildlife was observed (deer, coon, skinks, barred owls, crows). The ground cover included wild pea or bean vines, green briar, and grapevine.

Site boundaries are based on topography and shovel testing. The site has a linear oval plan along the bankline. The west boundary is the drainage bank. There is a shallow swale [redacted] The location is a slight rise on the bankline in an area of point bar/ridge and swale terrain on a higher older terrace with soils forming in a mid 20th century plowzone. The sloping terrace edge where cut by this drainage is deflating. Based on the find of the lanceolate base point (and assuming it was in primary context and not an item curated/recycled by Woodland occupants), this surface dates to at least the early Holocene.

The artifact-bearing deposit is 30 cm thick and appears to be limited largely to an old plowzone (Table 58). Some tests were screened to 50 cmbs, without finds below 30 cmbs. Soils were moist during initial shovel testing and screened easily through ¼" screen. During the excavation of test units, soils were tough and very dry. Soil samples were collected from the test units.

Test Unit 1 was excavated in 6 levels well into sterile soil (Figure 166). Level 1 (1-15 cmbs) was the plowzone. Homogeneous 10YR5/6 loam soils had abundant roots, sherds and pebbles (Table 59). Level 2 (15-30 cmbs) was homogeneous 10YR5/8 loam with sherds and pebbles. Level 3 (30-45 cmbs) was homogeneous 10YR5/8 silt loam with pebbles and a few flakes. In Level 4 (45-60 cmbs) the test unit was cut down to 1m x 50 cm. The soil was massive 10YR5/8 sandy silt with numerous mottles of biological origin. Only one flake was recovered. Level 5 (60-80 cmbs) was homogeneous loamy sand with concretions and one flake. Level 6 (closing elevation not recorded) was homogeneous sand. The second 1x1 m test unit was adjacent to the first. It was excavated in three natural levels. The first (0-5 cmbs) consisted of the modern Ao horizon developed on an old Ap horizon. Soils were yellowish brown (10YR4/4) loam with sparse flakes and pottery (Table 60). The A/E horizon (level 2, 5-10 cmbs) was 10YR4/4 silty loam with very sparse artifacts. An apparently natural 11 cm diameter dark stain was noted. The closing depth of Level 3 was not noted. Soils were 10YR4/6 loam and artifact recovery was sparse. The soil particle size column from this unit shows fairly homogeneous depositional conditions, with a fining upward trend as is to be expected in terrace deposition (Figure 167). There is also evidence of clay depletion in the upper 40 cm of the profile, with a peak in illuvial clay at 50 cmbs, as is to be expected in a surface with a long history of weathering.

Prehistoric ceramics and lithics were recovered, along with pebbles and burned earth. Artifact density on this small site is overall moderate, with a single dense sherd concentration. Roughly diagnostic grog-tempered plain sherds and a pp/k were recovered (Figure 168). Very few Fe-Mg concretions or natural stone were noted.

This site was extensively investigated at the Phase I level. The site has been moderately impacted by natural causes, trails, forestry, and intermittent flooding and the upper portion of the site is highly disturbed by cultivation, with a 20 cm plowzone. Besides the ambiguous Late Paleo/Early Archaic component representing a transitory or hunting camp, the site consists primarily of a highly localized high-density concentration of Baytown Plain sherds, also probably representing a temporary camp. As [redacted] ceremonial center, it is considered potentially eligible for the NRHP and further testing of the locality is recommended if it is to be impacted by any construction activities associated with this project.

[redacted]

Figure 164. Hinds 7 (22-Hi-822) test unit under excavation by Ryan Hardy & Matt Barrett.

Figure 165. Hinds 7 (22-Hi-822); completed test unit showing soil sampling column in side wall.

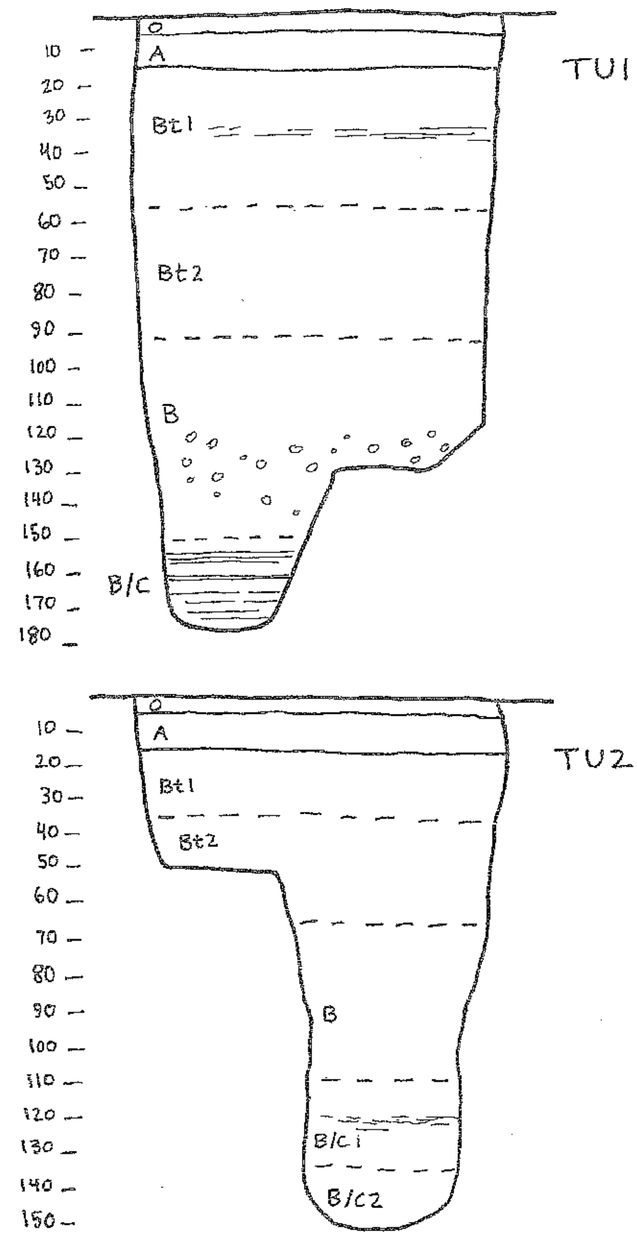


Figure 166. Hinds 7 (22-Hi-822) Soil Profile.

Key to Figure 166. Hinds 7 (22-Hi-822), Test Unit 1 Soil Profile

Horizon	Color	Texture	Structure	Mottles/Inclusions	Boundary
O					
A	10YR4/2	very fine sandy loam	weak fine granular	sparse rock, hardwood root, insects, fine charcoal	clean, smooth
Bt1	10YR5/6	very fine sand loam	moderate, fine blocky subangular	heavy charcoal, insects, few large roots, mg concentrations	gradual smooth
Bt2	10YR5/6	moist loamy fine sand	sandier		gradual smooth
B	Pale brown	loamy fine sand, clay lenses	compact slightly blocky	mica and very fine flecks of organic manganese	clear
B/C	10YR5/8	weakly bedded 2-3mm lenses clayey fine sand loam		still abundant fine biopores, Mg accumulation on top of laminae	clear

Key to Figure 166. Hinds 7 (22-Hi-822) Test Unit 2 Soil Profile

Horizon	Color	Texture	Structure	Mottles/Inclusions
O				
A	10YR4/2	silt loam	blocky subangular	weak incipient concretions
Bt1	10YR5/6	loamy fine sand	less compact/tight, weak fine granular abundant fine biopores	more homogeneous few biotraces, no concretions
Bt2	10YR5/6	sandier loamy fine sand	weak fine granular abundant fine biopores	
B	10YR5/6 pale brown	sand	weak medium rounded grains	unweathered mica and pyrite flecks
B/C1	Pale brown, 10YR5/8 lenses up to 1 cm thick	weakly bedded loamy fine sand 2-3mm lenses clayey fine sand loam	weak fine granular	still abundant fine biopores, some unweathered mica and other mineral grains Mg accumulating on top of laminae
B/C2	Pale brown	loamy fine sand		Mg accumulations on top of laminae

Figure 167. Hinds 7 (22-Hi-822) TU1 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Hinds 7	TU 1	10	60.00	30.00	10.00
Hinds 7	TU 1	20	66.60	26.60	6.80
Hinds 7	TU 1	30	60.00	33.30	6.70
Hinds 7	TU 1	40	60.00	30.00	10.00
Hinds 7	TU 1	50	53.30	26.60	20.10
Hinds 7	TU 1	60	66.60	16.60	16.80
Hinds 7	TU 1	70	73.30	13.30	13.40
Hinds 7	TU 1	80	73.30	20.00	6.70
Hinds 7	TU 1	90	63.30	16.60	20.10
Hinds 7	TU 1	100	73.30	13.30	13.40
Hinds 7	TU 1	110	66.60	20.00	13.40
Hinds 7	TU 1	120	80.00	10.00	10.00
Hinds 7	TU 1	130	93.30	3.30	3.40
Hinds 7	TU 1	140	80.00	16.60	3.40

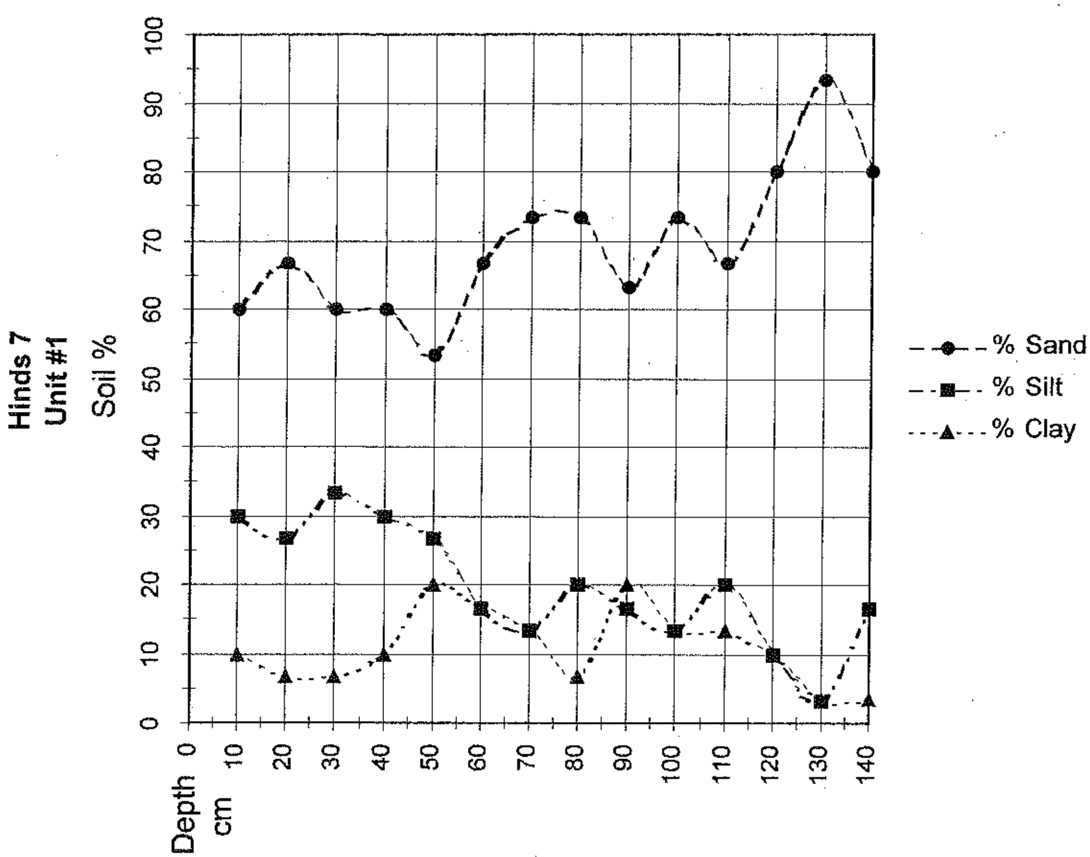


Table 57. Hinds 7 (22-Hi-822) pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	pH
829	Hinds 7 TU1	20	4.9
830	Hinds 7 TU1	40	4.6
831	Hinds 7 TU1	60	4.8
832	Hinds 7 TU1	80	5
833	Hinds 7 TU1	100	5.1
834	Hinds 7 TU1	100	5.1
826	Hinds 7 TU2	A horizon	4.9
827	Hinds 7 TU2	60	4.7
828	Hinds 7 TU2	100	4.8

Table 58. Hinds 7 (22-Hi-822) Artifact recovery from shovel tests.

	Bag 246 M Starnes 53		Bag 302 M Starnes 177		Bag 304 Starr 259		Bag 306 Starr 262		Total
			#	g	#	g	#	g	
Lithics									
Debitage									
Secondary decortication flake					1	1			**1**
Internal flake									
Biface thinning flake	1	0.3	2	1.1			3	1	**6**
Flake fragment					1	0.2	1	0.5	**2**
Cores/bifaces									
Projectile point/knives							1	7.9	**1**
Unmodified stone									
Chert pebble					1	8.9			**1**
Quartz pebble			1	0.8			1	0.5	**2**
Ceramics									
grog plain					6	22.5			**6**
TOTAL	**1**	**0.3**	**3**	**1.9**	**9**	**32.6**	**6**	**9.9**	**19**

Table 59. Hinds 7 (22-Hi-822) TU1 Artifact recovery.

	Bag 933 TU1 L1		Bag 934 TU1 L2		Bag 938 TU1 L3		Bag 939 TU1 L4		Total
	0-15 cmbs		15-30 cmbs		30-45 cmbs		45-60 cmbs		
	#	g	#	g	#	g	#	g	
Lithics									
Debitage									
Primary decortication flake					1	0.35	1	0.65	2
Biface thinning flake					2	0.8			2
Other worked stone									
Unifacial tools					1	0.8			1
Unmodified stone									
Chert pebble	5	25.2	3	10.4	2	2.15	2	2.1	12
Quartz pebble	4	6.7	2	4.3	5	5.8			11
Burned earth	4	1.9							4
Ceramics									
grog eroded	3	2.9							3
grog plain	8	31.2	7	20.1	1	4.4			16
TOTAL	24	67.9	12	34.8	12	14.3	3	2.75	51

Table 60. Hinds 7 (22-Hi-822) TU2 Artifact recovery.

	Bag 935 TU2 L1		Bag 936 TU2 L2		Bag 937 TU2 L3		Total
	0-5 cmbs/Ao		5-10 cmbs/E		10-20 cmbs/E		
	#	g	#	G	#	g	
Lithics							
Debitage							
Secondary decortication flake	1	0.2			1	5	2
Biface thinning flake	1	0.1					1
Charcoal			7	0.95			7
Ceramics							
grog eroded			1	0.9			1
grog plain	1	1.85	1	2.2			2
Total	3	2.15	9	4.05	1	5	13

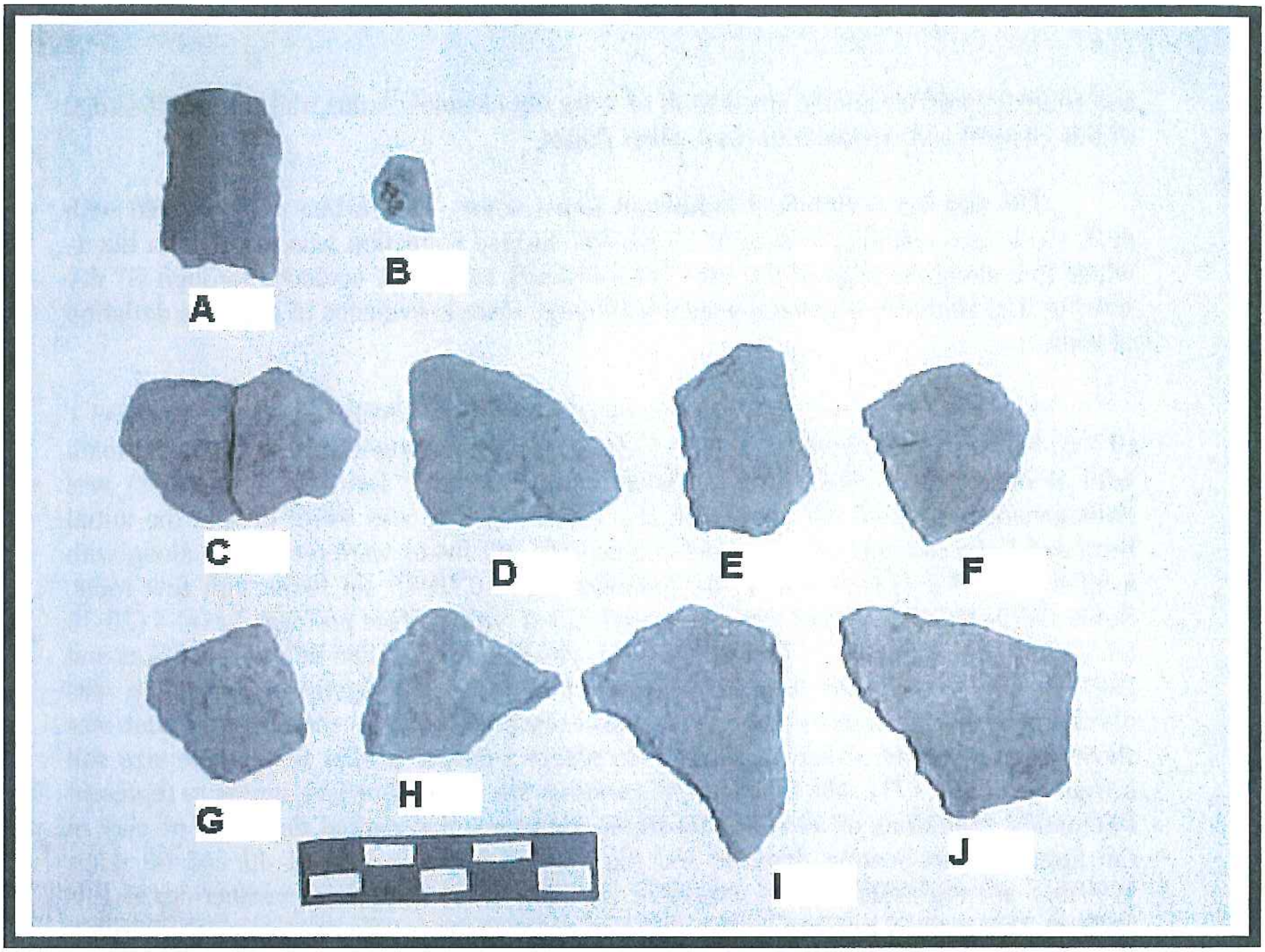


Figure 168. Hinds 7 (22-Hi-822) Artifacts. a. projectile point/knife fragment; b. biface fragment (tip); c-j. grog tempered plain sherds, various contexts, evidently fragments of one Baytown Plain vessel.

<u>Hinds 8 (22-Hi-823)</u>. The site was discovered and delineated on 1 and 2 September 2004 by Starr (T33 ST 298, 299, and 300) during 30 m interval transecting southeast (150 degrees) from the area of 22-Hi-780. About 2 hours was spent on the site on this initial visit, which included an enlarged (50x50 cm) shovel test (Starr ST 299) because of the recovery of a sherd of early 19th century English pottery. Further work failed to recover any additional material demonstrably associated with an early 19th century component, so like most other project area sites, the historic component remains highly ephemeral and ambiguous. The site was delineated by Starr on 28 August 2004 using a 10 m interval. A 1x1 m test unit was excavated on 20 October 2004 by Starr, Hardy, and Harris. [redacted]

This medium sized, dense site lies on a natural levee in a point bar/ridge and swale terrain area with pronounced relief (Figure 169). The site varies from level to sloping along the margins. The site boundary on the west is taken as a bulldozed power transmission line, although there is other lower-density occupation associated with the [redacted] The north, east and south boundaries are the steep bank of a dry old channel. A dirt trail follows the edge of this channel and crosses it to reach other ridges.

The site has bottomland hardwood forest cover. The surface was covered with duff, so surface visibility was poor. A general surface collection was made from the 4-wheel trail along the edge of the site. The moist soil was easily screened through ¼" dry screens. The landform is generally stable, although there is evidence of previous deflation of soils.

A single 1x1 m test unit was excavated in 4 natural levels (Figure 171). Level 1 (0-7 cmbs) was the Ao horizon (Figure 172). Soils were homogeneous 10YR4/4 silt loam with abundant roots. Only 3 small flakes were recovered. Level 2 (7-13 cmbs) was homogeneous 10YR4/6 silt loam with few roots. The soil was softer than in the initial level and large amounts of concentrated potsherds and flakes were recovered, along with a biface. Level 3 (13-20 cmbs) was homogeneous 10YR5/6 silt loam with few roots. Some sherds but more flakes were recovered, along with a biface preform. Level 4 (20-30 cmbs) had homogeneous 10YR5/6 clay loam with sparse roots and only a few flakes and pebbles. Due to time and high level of effort in other investigations, excavation was discontinued before a sterile level had been excavated, but one corner of the unit was shoveled out without screening in order to obtain a deeper profile for particle size soil sampling (Figure 173). The results of this column are ambiguous and appear to represent fluctuating conditions of alluvial deposition. However, the marked depletion of clay in the upper artifact-bearing deposits and the marked peaks in clay at 40 and 60 cmbs probably are representative of extensive leaching from long-term weathering of this surface. This marked increase in clay was also noted in the profile are a gradual transition from clay loam to silty clay around 40 cmbs.

Test Unit 1 produced 230 items not counting soil concretions. Level 1 (to 7 cmbs) contained 1.3%, Level 2 (7-13 cmbs) 73.9%, Level 3 (13-20 cmbs) 19.1%, and Level 4 (20-30 cmbs) 5.6% of the material. Material included abundant debitage and unmodified/minimally modified stone as well as sand and grog tempered pottery and burned earth (Table 64).

Site22-Hi-823 has moderate to dense prehistoric material (Table 63). Prehistoric lithics and ceramics were recovered, along with highly limited historic ceramics. Prehistoric material included debitage, cores and tools, a wide range of natural/minimally modified stone, and abundant ceramics. Several pieces of local quartzite debitage were recovered in Starr 305 (n=2), 314 (n=1), 316 (n=1), 319 (n=1), 321 (n=1), and in TU1 Level 2 (n=1). Starr 308 (n=1), 321 (n=1), and TU1 Level 3 (n=2) and Level 4 (n=1) contained pieces of quartz shatter. Other quartz pea gravel from the site exhibits battering and damage on ends that appears to be cultural. Fragmented quartz pebbles are typical of Marksville and Poverty Point culture sites in the Yazoo Basin. There is a grey flake fragment that appears to be non-local stone in ST Starr 322. Some of the debitage from the large amount (n=24) of debitage in ST Starr 314 appears to come from the same core. Most of the 11 pieces of debitage from ST Starr 317 is probably from one core. Much of the debitage from ST Starr 321 is from a single core of rough material without good conchoidal fracture, hence the high percentage of shatter. About half of the 29 pieces of debitage from ST Starr 325 is from reduction of a single core. A lot of the debitage from TU1 Level 2 (n=60) and Level 3 (n=27), particularly the early stage debitage, appears to come from the reduction of one core. Test Unit 1 Levels 1, 3 and 4 produced sherds of Marksville Incised and Marksville Stamped (two or three vessels are represented), as well as a sand tempered fingernail punctated sherd (Early Woodland Alexander series?) (Figure 174). The unit also produced 2 rim sherds from a large hemispherical Baytown Plain bowl, 3 grog tempered flattened base sherds, and an eroded rim sherd that is probably nicked/punctated

Table 61. Hinds 8 Cores/Bifaces

Provenience	Class	Comment	Dimensions	Weight
Starr 299	Pebble core	fossiliferous		59.2 g
Starr 299	Biface fragment	snapped		4.8 g
Starr 300	Biface preform	poorly thinned		11.3
Starr 325	PP/K			7.3 g
Starr 325	Biface fragment			3.9 g
TU1 L2	Tested pebble			4.6 g
TU1 L2	Biface preform	poorly thinned		9.9 g
TU1 L3	Pebble core			15.1 g
TU1 L3	Biface preform	snapped		17 g

Table 62. Hinds 8 Unifacial tools

Provenience	Debitage class	Modification	Dimensions	Weight
Starr 307	Biface thinning	Distal use		3.9 g
Starr 321	Shatter	use		4.2 g

The early 19^{th} century component remains ambiguous. Despite extensive testing in the vicinity of the initial find, no further historic diagnostics were recovered. The historic component is most easily interpreted as a fishing camp of a Choctaw or slave or as an Euro-American immigrant camp or temporary squatter. Pricing data indicate that monochrome cobalt hand-painted bowls were of low to moderate cost relative to other English ceramic products. Such vessels are commonly collected at Choctaw, slave and Euro-American sites of this period. Evidence of 19^{th} century occupation of the Pearl floodplain was found to be ephemeral throughout the project area.

Disturbance is minor and limited to natural causes and forestry, excluding the power corridor truncating the site on the west. Numerous shovel tests producing multiple pieces of debitage from single cores indicates good horizontal preservation. The site is dense and has a high artifact type diversity, which includes temporally and functionally diagnostic artifacts. Due to the extensive evidence of Marksville culture occupation during the Middle Woodland period, Site22-Hi-823 is considered potentially eligible for the NRHP and should be evaluated at the Phase II level if the site is to be impacted by construction activities associated with this project.

[redacted]

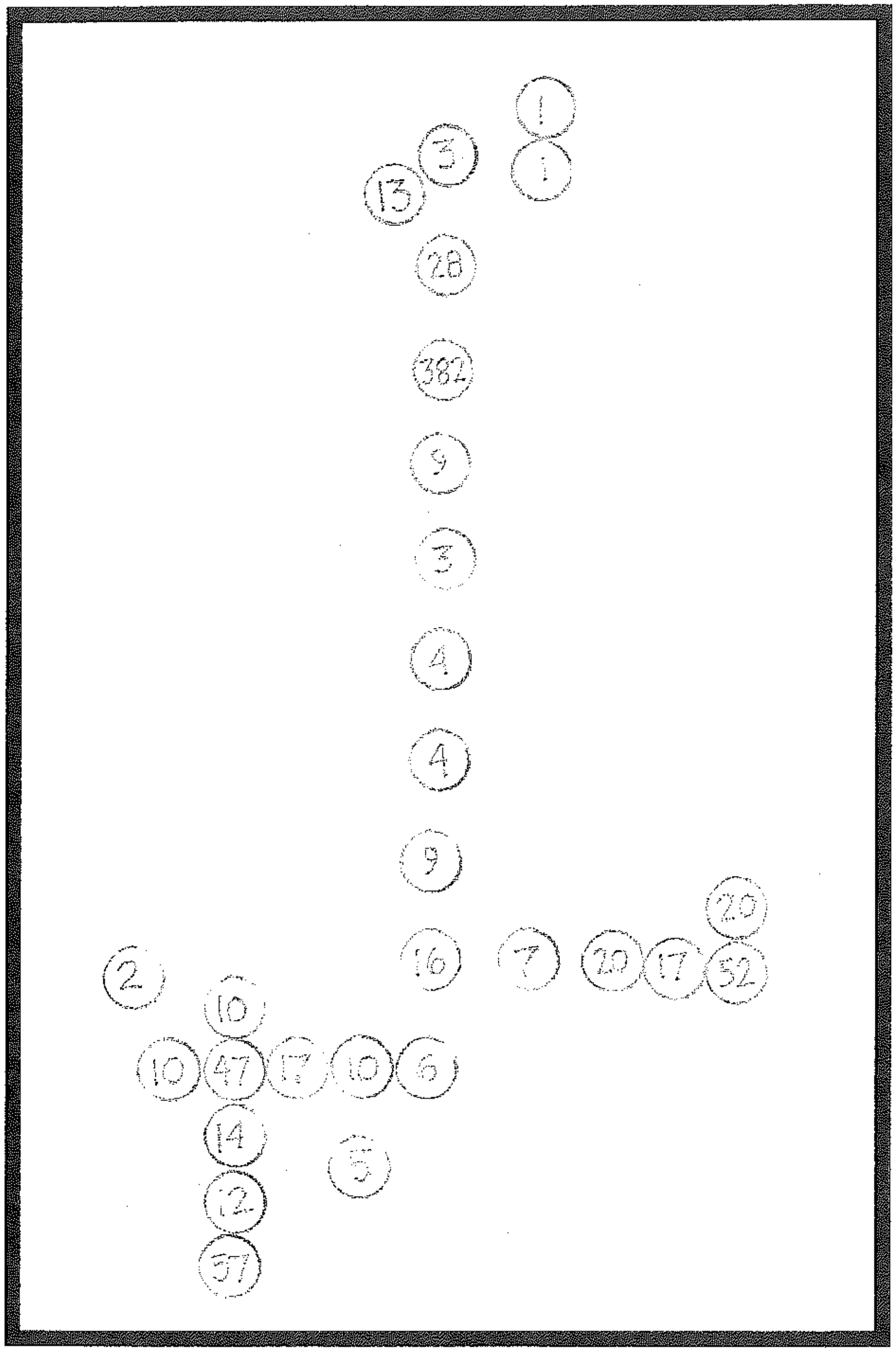


Figure 170. Hinds 8 (22-Hi-823) distribution map.

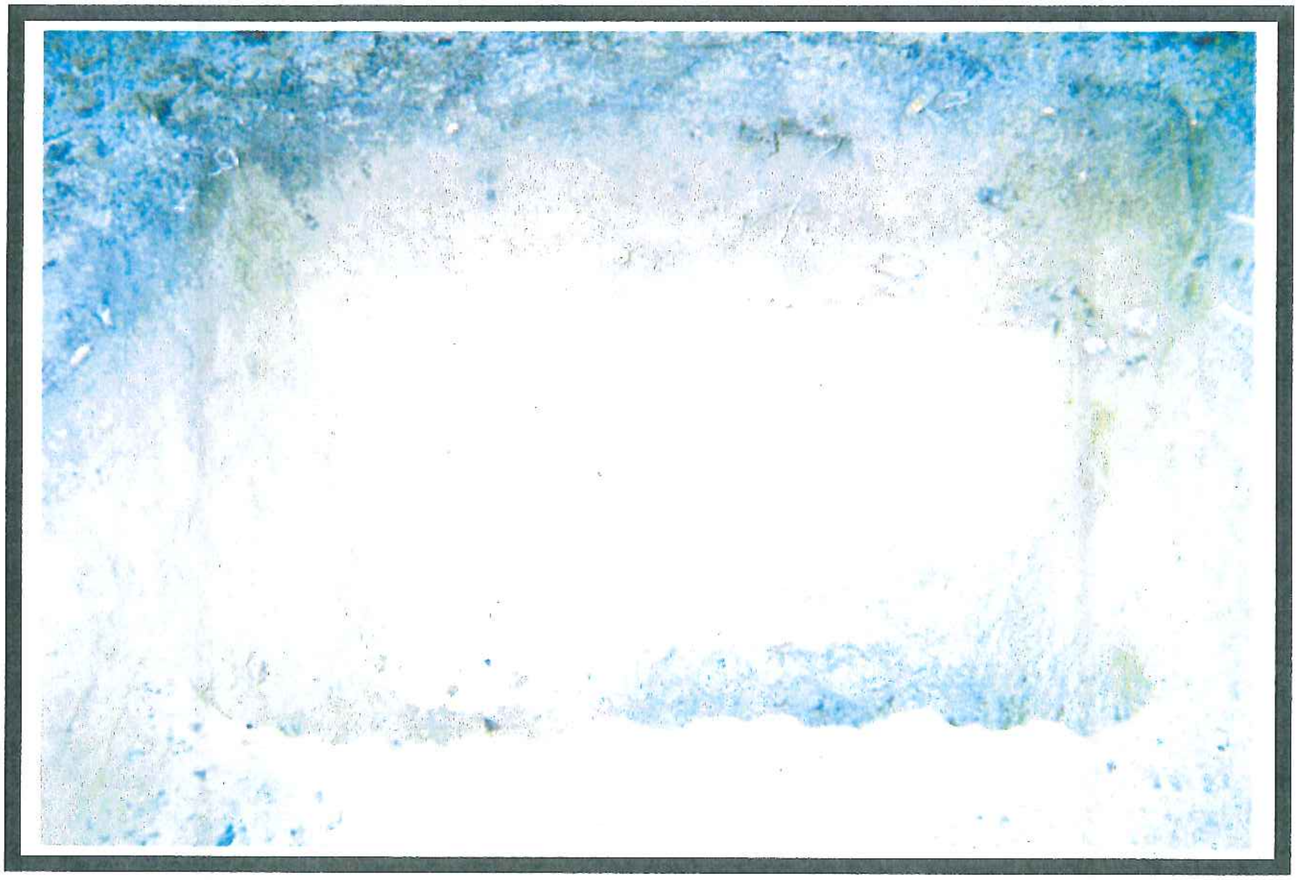


Figure 171. Hinds 8 (22-Hi-823) TU1 completed.

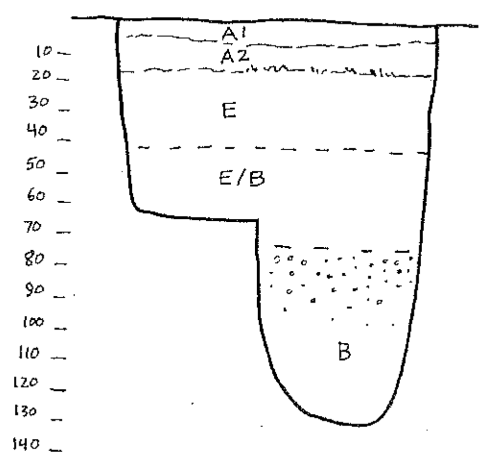


Figure 172. Hinds 8 (22-Hi-823) Test Unit 1

Key to Figure 172. Hinds 8 (22-Hi-823) TU1 Soil Profile

Horizon	Color	Texture	Structure	Inclusion	Boundary
A1	10YR4/2	silt loam	weak granular	thin leaf litter	gradual
A2	10YR4/3	silt loan	weak granular, soft	abundant artifacts some charcoal, large (7-8 mm) soft weak concretions, common roots	gradual
E	10YR4/6	clay loam	weak medium blocky-subangular	homogeneous, many fine roots	
E/B	10YR4/6 - 10YR5/6	silty clay		heavily mottled with orange and white reduction-oxidation features and abundant soft weak concretions	
B	10YT5/6	silty clay	strong coarse blocky moist but increasingly compact	very many concretions	

Figure 173. Hinds 8 (22-Hi-823) TU1 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Hinds Blue Bowl	TU #1	10	53.30	40.00	6.70
Hinds Blue Bowl	TU #1	20	46.60	43.30	10.10
Hinds Blue Bowl	TU #1	30	36.60	40.00	23.40
Hinds Blue Bowl	TU #1	40	33.30	13.30	53.40
Hinds Blue Bowl	TU #1	50	46.60	26.60	26.80
Hinds Blue Bowl	TU #1	60	13.30	3.30	83.40
Hinds Blue Bowl	TU #1	70	26.60	40.00	33.40
Hinds Blue Bowl	TU #1	80	33.30	40.00	26.70
Hinds Blue Bowl	TU #1	90	38.30	46.60	15.10
Hinds Blue Bowl	TU #1	100	26.60	16.60	56.80
Hinds Blue Bowl	TU #1	110	26.60	66.60	6.80
Hinds Blue Bowl	TU #1	120	16.60	46.60	36.80

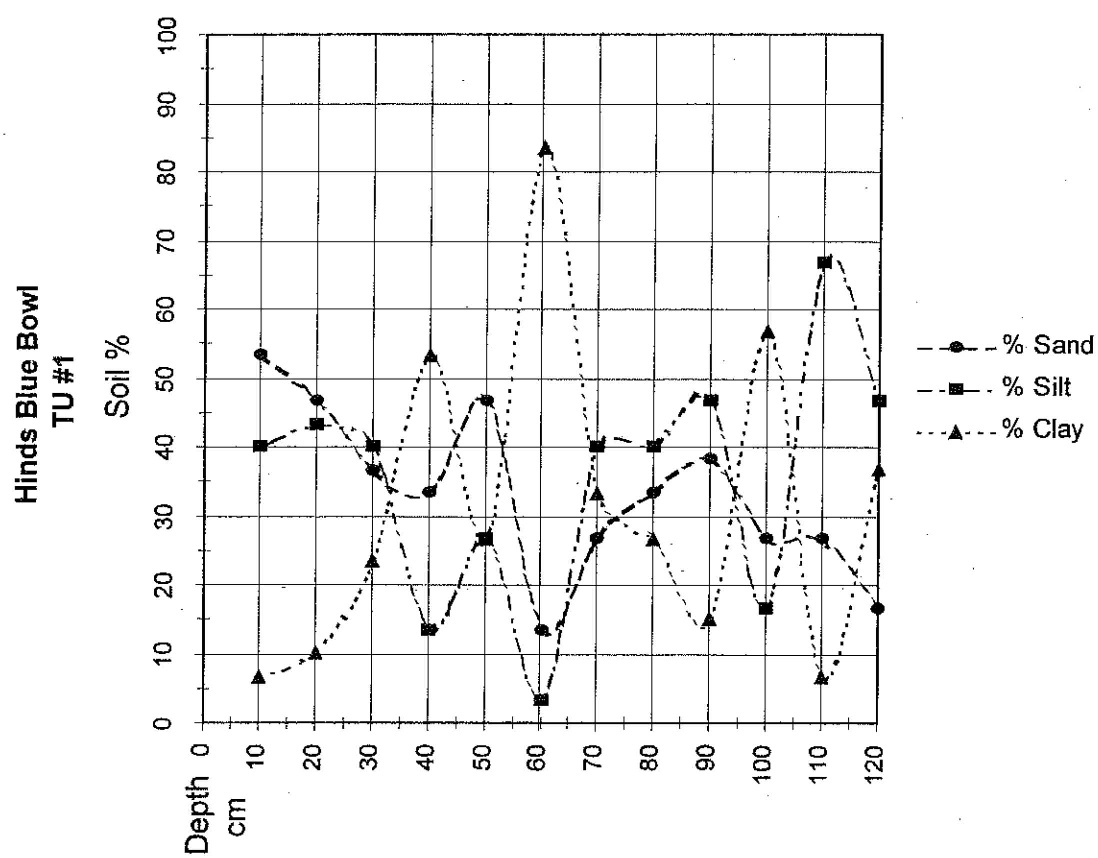


Table 63. Hinds 8 (22-Hi-823) total artifact recovery from shovel tests (see appendix table)

HINDS 8 (22-Hi-823)	
	Total
Lithics	
Debitage	
Primary decortication flake	18
Secondary decortication flake	23
Internal flake	15
Biface thinning flake	114
Flake fragment	60
Shatter	38
Cores/bifaces	
Pebble core	1
Biface preforms	1
Projectile point/knives	1
Biface fragments	2
Other worked stone	
Unifacial tools	3
Ground stone	1
Unmodified stone	
Fire cracked rock	24
Chert pebble	30
Ferruginous sandstone	378
Hematite/siltstone	4
Petrified wood	2
Quartz	19
Ceramics	
fiber eroded	4
sand eroded	1
sand plain	2
grog eroded	6
grog plain	2
Burned earth	11
Charcoal	6
Unidentified	1
TOTAL	767

Table 64. Hinds 8 (22-Hi-823) TU1 artifact recovery.

	Bag 1373 TU1 L1		Bag 1374 TU1 L2		Bag 1375 TU1 L3		Bag 1376 TU1 L4		
	#	g	#	G	#	g	#	g	Total
Lithics									
Debitage									
Primary decortication flake	2	1.2	10	20	4	7.1			**16**
Secondary decortication flake			15	18.5	8	14.4	1	1.6	**24**
Internal flake			2	0.9	1	1.6	1	1.3	**4**
Biface thinning flake	1	1.2	27	27.4	9	7.5	2	0.7	**39**
Flake fragment			13	5.7			2	0.6	**15**
Shatter			3	3.6	5	7.1	1	3.6	**9**
Cores/bifaces									
Tested pebble			1	4.6					**1**
Pebble core					1	15.1			**1**
Biface preforms			1	9.9	1	17			**2**
Biface fragments			1	0.5					**1**
Unmodified stone									
Fire cracked rock			9	39.9	4	7.3			**13**
Chert pebble			10	111	4	48.3			**14**
Hematite/siltstone			2	0.7					**2**
Petrified wood			1	13.3					**1**
Quartz pebble			7	13.8			3	5.5	**10**
Quartzite			1	5.8					**1**
Ceramics									
sand punctate			2	10.3					**2**
grog eroded			21	87.2					**21**
grog plain			23	192	2	31			**25**
grog broad incised			4	16	1	5	1	0.5	**6**
grog incised/stamp			2	18.5					**2**
Burned earth			15	13	3	28.3	2	2.2	**20**
Charcoal					1	0.4			**1**
TOTAL	**3**	**2.4**	**170**	**612.6**	**44**	**190.1**	**13**	**16**	**230**

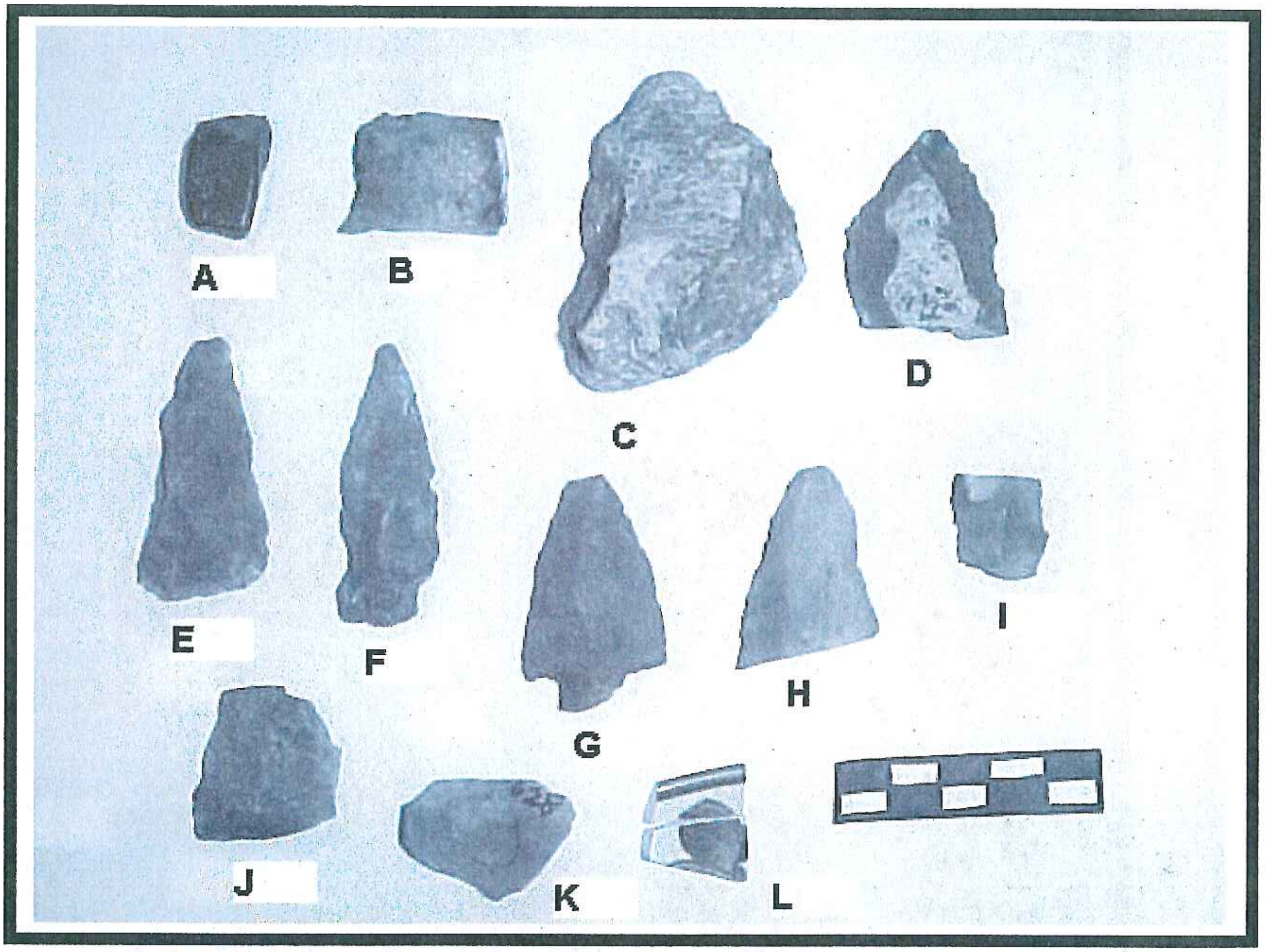


Figure 174. Hinds 8 (22-Hi-823) Artifacts. a. tested pebble; b,c. pebble core; d-f. biface preforms; g. projectile point/knife; h,i. biface fragments; l. cobalt hand-painted refined earthenware (ST Starr 299).

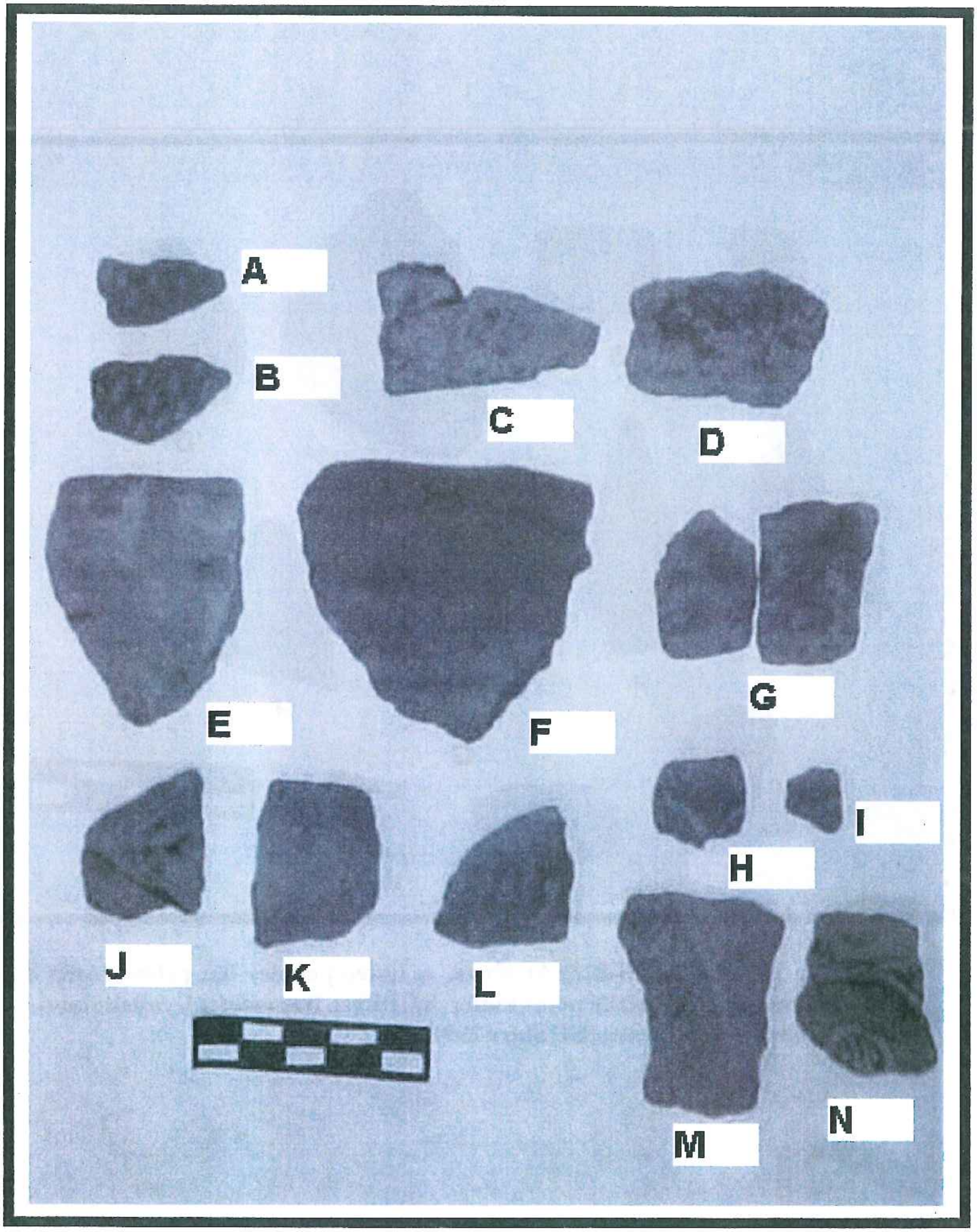


Figure 175. Hinds 8 (22-Hi-823) Ceramics. a,b. sand tempered finger-nail punctated (Alexander Punctated); c-g. grog tempered plain; e,f are rims. g. flat base, most are evidently from a single vessel (TU1); Marksville incised; h-l. grog tempered incised; m,n. grog tempered incised and stamped (Marksville stamped).

Hinds 9/11 (22-Hi-825). This small site was found by Starr (T33 ST 301 and 302) while conducting 30 m interval shovel testing transects on 28 August 2004. Two hours were spent digging and dry screening 2 large deep shovel tests on the initial visit. Hardy and Starr revisited the site for delineation on 2-3 September 2004. Due to the limited nature of the site, delineation was on 5 and 10 m intervals.

[redacted]

Site boundaries are closely defined by topography. The site lies on a large ridge standing in an area of dry swales which surround the site on the east and west (Figure 176). Soils appear to be aggrading due to seasonal overbank flooding of the Pearl River, but parts of the site are cut up and exposed to erosion by 4-wheelers. The site area is uneven and gradually slopes at 3-5 percent into the west into a dry swale and slopes steeply to the east into a cypress bayou that flows into a nearby deep backswamp. The site is crossed by a 4-wheel trail. Otherwise surface visibility was poor due to duff and brush. Vegetation is bottomland hardwood forest in a generally swampy area. Most of the site area is a dense paw-paw thicket. Other vegetation included hackberry, ironwood, hickory, magnolia, water oak, white oak, cypress, green briar, grapevine and wild bean vines.

Soils were moist but stiff, so ¼" dry screening was slow. A 50x50 cm shovel test produced only fire-cracked rock.

Lithics were recovered (Table 65). Deposits are deep (25-45 cmbs), probably indicative of aggradation since the time of occupation, but there is significant disturbance from natural causes such as biological agents and intermittent flooding as well as forestry, and especially 4-wheel trails. The site is interpreted as a transitory hunting camp. The site is considered not eligible for the NRHP due to lack of diagnostics and generally sparse recovery as well as the impact from traffic. No further work is recommended.

[redacted]

Table 65. Hinds 9/11 (22-Hi-825) artifact recovery from shovel tests.

	Bag 394		Bag 393		Bag 473		Bag 474		Bag 475		
	Starr 301		Starr 302		Hardy 394		Hardy 396		Hardy 401		Total
	#	g	#	g	#	g	#	g	#	g	
Lithics											
Debitage											
Primary decortication flake	1	18.9									1
Internal flake							3	2.8			3
Biface thinning flake			1	0.1			1	0.3			2
Flake fragment							2	0.8	1	0.1	3
Cores/bifaces											
Tested pebble					1	59.8					1
Unmodified stone											
Fire cracked rock	3	18.9					6	92.9			9
Ceramics											
heterogeneous eroded	3	3.5									3
Total	**7**	**41.3**	**1**	**0.1**	**1**	**59.8**	**12**	**96.8**	**1**	**0.1**	**22**

Hinds 10 (22-Hi-824). This highly limited prehistoric site was found by Starr (T33 ST 303) on 28 August 2004 while conducting 30 m interval shovel test transecting. On this initial visit about half an hour was spent in digging a large, deep shovel test. [redacted]

This site lies on a pronounced ridge in a geologically recent ridge and swale or point bar terraine. The site has several very large beech trees on it. The backswamp to the east is a deep cypress swamp and the wet swale to the west also has cypress.

Only lithics were recovered (Table 66). The moist, loose deep soil was easily screened with ¼" dry screens. The initial shovel test produced 2 flakes from the 0-35 cmbs level.

Disturbance of the site is minor and limited to intermittent flooding and other natural causes. The site is interpreted as a transitory hunting camp. The site is considered probably not eligible for the NRHP due to lack of diagnostics and generally sparse recovery. No further work is recommended.

Table 66. Site Hinds 10 (22-Hi-824) artifact recovery from shovel test.

	Starr 303	
	#	g
Lithics		
Debitage		
Secondary decortication flake	2	
TOTAL	2	0

Hinds 13 (22-Hi826). This is one of the only mid 20th century sites encountered in the course of our survey. The location also has a prehistoric lithic scatter in addition to the large debris scatter marking the site of a house (Figure 177). A chimney base, concrete piers and other articulated brick is still present, along with extensive surface scatter (Figure 178). Surface visibility was poor and limited by pine straw, duff and sometimes dense understory, but a surface collection was made from the several four-wheel trails crossing the site. Historic ceramics, metal, glass, building materials and shell were all recovered. The initial transects across the site were begun by J. Starnes (T2) and Glasgow on 28 August 2004, with less than an hour spent on the site, but were discontinued due to rain. This site was used to introduce a new potential crew chief, Orsbun, to project methods. Further ¼" dry screen shovel tests were excavated on 11 September 2004. Site delineation was extensive and conducted on a 10 m grid across the site area (crew Orsbun, Starr, Underwood, M. Starnes, Hardy, Harris, and Barrett). [redacted]

The deposit is about 30 cm deep, based on shovel testing, but the area has been highly impacted by pine tree planting rows. This area is a low alluvial terrace in the Pearl River bottoms. The area is a pine plantation with mixed hardwood understory of oaks, elm, hackberry, sweetgum and muscadine vines. It has already been selectively cut at least once. Other disturbances are probable former cropland cultivation, erosion and other natural causes, a ca. 1960 road and subsequent four-wheel trails, and sewer and pond levee construction along the east edge of an elite suburb.

The historic debris scatter was first noted by Starr (2002) as extending along the adjacent power line and pond levee. It was not assigned a trinomial at that time due to recent date. A single prehistoric artifact, a Paleo/Early Archaic unifacial endscraper (Figure 179) was recovered from the backdirt of a posthole being excavated for a new metal pipe fence around this development during the present survey.

Soil in the former house area is rich in charcoal and is black stained, either from anthropogenic midden or from clearance after timbering. Historic materials are summarized in Table 67.

Table 67. Surface collected and shovel test historic debris, Site Hinds 13.

Architecture/Furniture wire nail

5 unidentifiable brick fragments
1 machine-made brick
2 wire nail
1 cast Fe stove part
1 window pane
6 sanitary porcelain
1 plate glass

Kitchen

Ceramics

1 pink interior/exterior slipcast refined earthenware
12 plain refined earthenware, includes 2 cup base
1 moulded refined earthenware
1 overall yellow glaze refined earthenware
1overall speckle and blue stencil refined earthenware

1 blue transfer refined earthenware, "Willow"
2 pink/green floral overglaze decal refined earthenware
2 plain semiporcelain
3 Bristol glazed machine-moulded stoneware, includes 1 large base, 1 straight rim
1 buff body, cobalt tint stoneware
1 moulded, underglaze cobalt, overglaze handpainted porcelain, lid
1 blue rim band porcelain

Bottle Glass

21 amber, includes 1 jug neck
1 aqua
2 cobalt
2 emerald
82 clear, includes 1 cork top liquor bottle, 1 jug neck, 1 soda base "...SON.MS...ENTS 8 FL OZ", 1 screw top bottle, 1 screw top jar
13 light green, includes 4 "Coca-Cola" fluted hobbleskirt
19 bright green
3 white

Table Glass

1 white, plate
2 clear, tumbler bases

Other

1 white glass canning jar seal
6 steel can scrap
1 potmetal salt shaker lid

Clothing

1 shoe heel

Toys/Personal/Tobacco/Arms

1 plastic horse
1 plastic pipe stem
1 redware art pottery, mottled green glaze, Shearwater pottery? alligator tail?
1 lead .22 bullet

Activities

1 misc. cast and wire Fe machine? Part
11 coal/cinders
1 galvanized steel scrap
1 hog wire
9 misc Fe rust

The location is considered as the probable site of an agricultural tenant cabin, but given its position along the floodplain it could also been a camp house for hunting and fishing. The density and range of debris argues for a domestic rather than occasional, special purpose occupation.

The site is not eligible for the NRPH due to significant disturbance of the prehistoric component and the mid 20th century date of the historic component. No further work is recommended.

[redacted]

Table 68. Hinds 13 (22-Hi-826) Artifact recovery from shovel tests.

	Bag401		Bag 403		Bag 685		Bag 686		Bag 699		Bag 960		
	J Starnes 1		J Starnes 4		Hardy 435		Hardy 439		Starr-surface		Underwood 147		
	#	g	#	g	#	g	#	g	#	g	#	g	Total
Lithics													
Debitage													
Biface thinning flake											1	1.3	1
Flake fragment	1	0.4	2	0.2	1	1.1	2	0.7			1	0.6	7
Other worked stone													
Unifacial tools-endscraper									1	1.6			1
TOTAL	1	0.4	2	0.2	1	1.1	2	0.7	1	1.6	2	1.9	9

Figure 178. Hinds 13 (22-Hi-826) views of chimney base, mid 20th century.

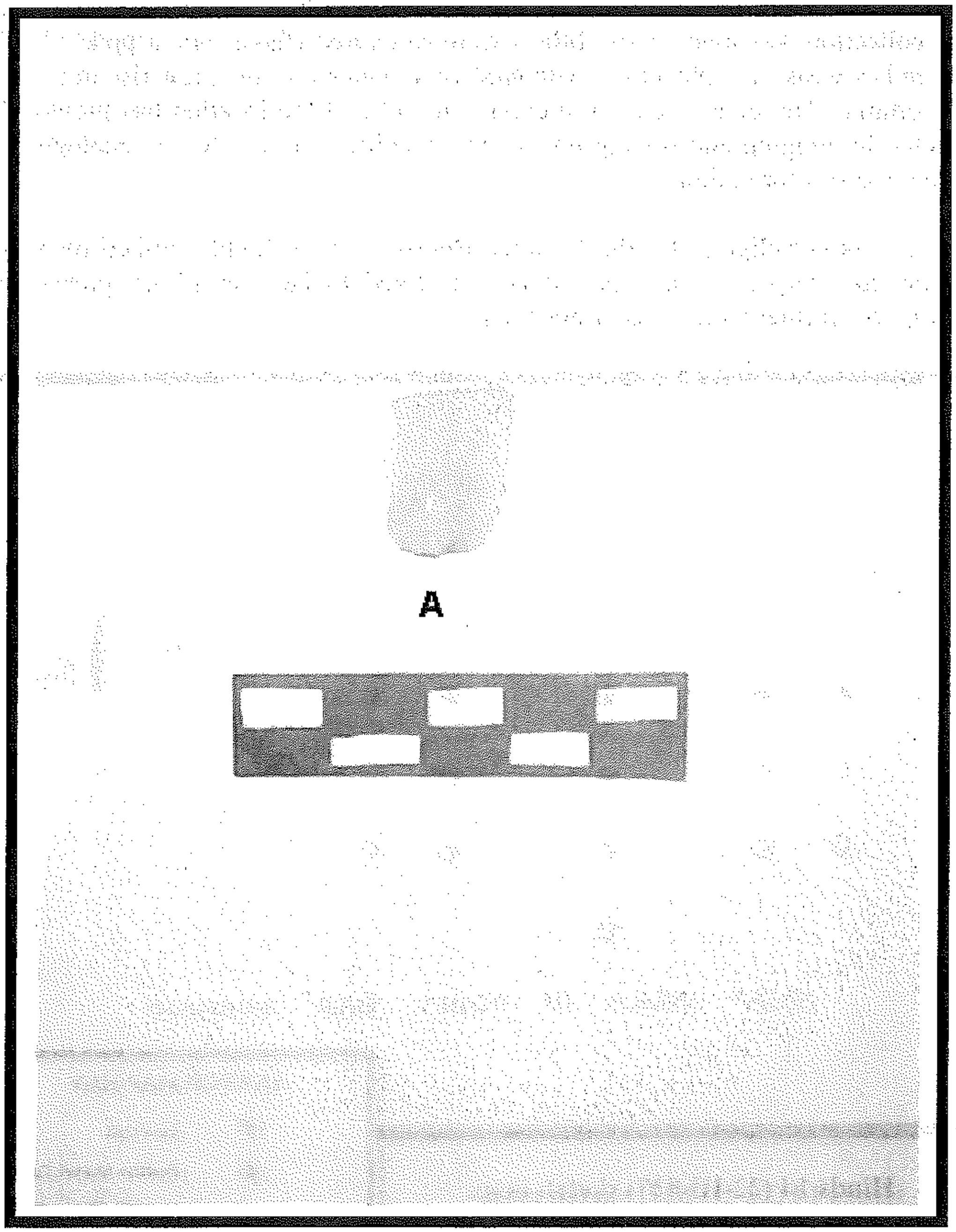


Figure 179. Hinds 13 (22-Hi-826) general surface; uniface endscraper.

Hinds 14 (22-Hi-827). This site was discovered by Underwood (T11 ST 100) (Figure 180). It was visited for delineation on 18 August 2004 by the full crew of 6 persons. This [redacted] Surface visibility was poor due to duff and understory vegetation such as hawthorn and green dragon and no surface collection was made. Only lithics were recovered (flakes and a pp/k) (Table 69). The area is a weak pine plantation with hardwood understory on a low rise in a ridge and swale terraine. The pines are mature enough to cut and the location has previously been impacted by logging and rowing-up for tree planting. The location is geologically stable, with good soil formation.

The site is not eligible for the National Register due to highly limited recovery and thus limited interpretive potential. It is considered to be a transitory prehistoric hunting camp. No further work is recommended.

[redacted]

Table 69. Hinds 14 (22-Hi-827) Artifact recovery from shovel tests.

	Bag 963 Underwood 159		Bag 964 Underwood 162		Bag 702 Starr 339		Bag 500 M Starnes 370		Bag 931 Orsbun 6		Total
	#	g	#	g	#	g	#	g	#	g	
Lithics											
Debitage											
Primary decortication flake					1	3.5					1
Biface thinning flake							1	0.3			1
Flake fragment	1		1								2
Cores/bifaces											
Biface preforms									1	8.5	1
TOTAL	1	0	1	0	1	3.5	1	0.3	1	8.5	5

Rankin Old City Ferry/Landing/Bridges (22-Ra-671). The location of the original Jackson city ferry, landing (Figure 184) and early bridges coincides with the location of the 1928 Woodrow Wilson Bridge. The location was visited for assessment by Starr and project historian Dan Allen on 11 September 2004. The west bank is a steep and gullied area with no surface visibility. Due to extensive engineering modifications in the late 20th century the likelihood of intact 19th century deposits in Hinds County is considered extremely minimal. On the Rankin County side, there is a sandbar area of about 100 x 40 m with extensive debris, some of which appears to be associated with the use of the location for transportation services since around 1820-1830. Deposit depths have not been assessed here either. Mechanized excavation (backhoe trenches) would be required to assess the potential of the area which is badly disturbed.

At the time of the 11 September 2004 visit, a grab surface collection was made of select diagnostic materials. The area has abundant rubble from the demolition of the original NRHP Woodrow Wilson Bridge, as well as riprap and domestic and industrial debris which will be listed and described below (Table 70). Surface visibility was good, with only a few willows and weeds obscuring the surface. Material is dense and includes lithics (limestone rubble), ceramics, glass, metal, building materials, shell and other perishables. A large amount of material was present, but not collected. This includes railroad spikes, plates, nuts and washers; rebar and abundant concrete form nails; and limestone block riprap, brick rubble of many different types and gravel. It is possible that some of the historic artifacts collected were originally deposited as riprap, however, as they appear to be from commercial contexts (boarding houses/hotels/barrooms) as will be reasoned below, the historic deposit may be a secondary (dump) context that is associated with occupation of the adjacent higher ground. Besides mechanical disturbance from the 1970s channelization of the Pearl and whatever work was done to remove the original NRHP listed concrete bridge and replace it with a replica, the area is subject to fluvial redeposition during high water. According to a surveyor met at the site, the original concrete bridge was demolished and replaced by Engineering Associates Inc. ca 1993.

However, in-place butts of creosote poles were noted. These are probably from earlier bridges or perhaps are moorings (See Figure 188b).

The location of the Woodrow Wilson Bridge has been the east-west hub of transport since the establishment of the city of Jackson (Figures 187,188). It was the landing point for river traffic to the city and has had ferries, railroad trestles, pole wagon bridges (the original was covered and burned after use as a prison for U.S. soldiers) (Figures 181,182,183), and apparently telegraph/telephone lines as well as the original automobile bridge. As such this is a highly significant site in the history of the capitol city. While the potential for significant archaeological deposits associated with the antebellum landing/ferry, or the Civil War and Reconstruction era bridges appears to be slight, the location is still listed on the National Register of Historic Places and should be commemorated as such. Placement of an interpretive historical marker would be appropriate.

Table 70. Woodrow Wilson Bridge/Old City Ferry and Bridge Site Grab Collection.

Architecture
- Pole insulators 6
  - Aqua glass 2
  - Solarized glass 1
  - Clear glass 1
    - Porcelain 2
  - Other insulators (porcelain) 4
  - Sanitary porcelain 5
  - Flue and drain tile (stoneware) 1
  - Wrought spike, rosehead 1
  - Concrete form nails (Fe) 5

Kitchen
- Coarse earthenware 1
- Refined earthenware 20
  - Plain 8
  - Embossed/moulded 3
  - Underglaze transfer 1
  - Underglaze flow transfer 2
  - Engine banded 2
  - Moulded/overall colored glazes 4
- Semiporcelain 12
  - Plain 4
  - Underglaze transfer 8
- Stoneware 34
  - Unglazed 1
  - Albany slipped/unglazed, moulded 2
  - Salt fumed/Albany slipped 1
  - Albany slipped 11
  - Albany slipped/Bristol glazed 18
  - Bristol glazed 1
- Porcelain 11
  - Plain 6
  - Embossed 1
  - Underglaze cobalt (Canton?) 1
  - Underglaze cobalt/enamled (Japan) 2
  - Overglaze decal and handpainted (England?) 1
- Bottle and table glass
  - Dark green 7
  - Aqua 20

Amber 18
Emerald 1
Cobalt 1
Solarized 36
White 1
Bright green (stemware) 1
Clear 5

Bag of mussel and oyster shell

Clothing

4-hole button (porcelain) 1

Toys

Pitcher (porcelain)1

Activities

Horseshoes 6
Tube (Cu/Pb) 1
Perforated disk (Cu/Ag) 1
Capped tube (Cu) 1
½" washer (Fe) 1

The nature of the deposits is uncertain. Some materials such as pole insulators may be in primary context, as the bridges would have also likely been the telegraph and later electrical and telephone line crossing point as well. Marked insulators are two aqua glass "Hemming[s] No....Patent May 2, 1892". The concrete form nails may be from the construction of the original Woodrow Wilson bridge. The wrought spike may also be from mid 19th century bridges. Horseshoes, most of which are large and worn through the toe, may be directly associated with this transportation corridor.

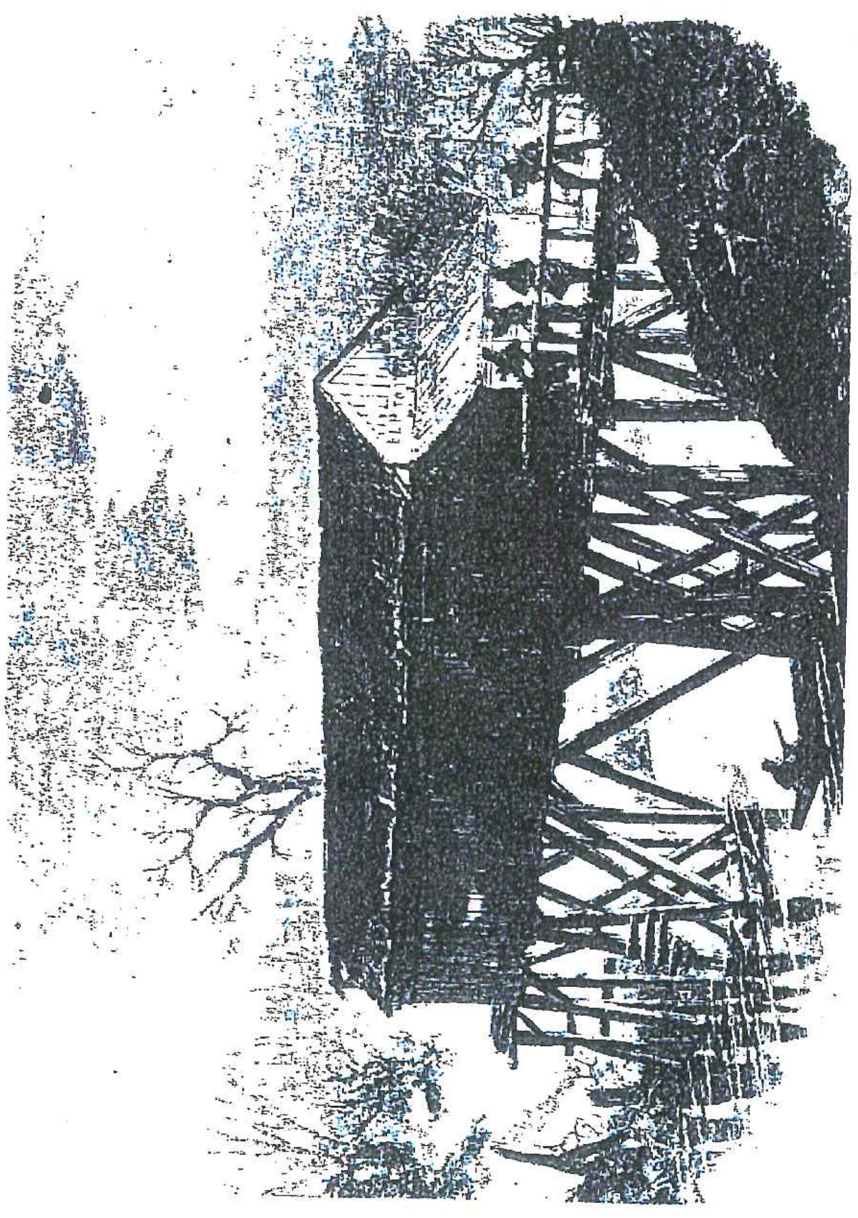
However, the majority of the domestic debris appears to be a secondary (dump) deposit. In Memphis, the river was used for systematic urban trash disposal and this may have been the case in Jackson as well. The deposit appears to represent deposition ca. 1900+25. Ceramics will be described in further detail below. The materials seem commensurate with hotel/boarding house use, as they are often thick and at least one extensive set of thick semiporcelain is represented (Figure 189). Boardinghouses are known to have been along the bluff immediately north of the bridge site (See Appendix D-Jackson city directories). As this was a grab collection focusing on diagnostic sherds, the sample is of minimal statistical significance.

Refined earthenware includes a partial backmark from a Toronto, Ohio, china company (thick deep plate/shallow bowl). Plain or mould-decorated items include flatware (plates, platters, saucers) and hollowware (chamber pot and serving dish). Flow blue (plate and mug) and engine-banded ware (a grey, dark brown and light brown banded pitcher) are typical of the late 19th century. The overglaze and underglaze patterns are open stylized floral motifs typical of the late 19th and early 20th centuries. They include a platter (green) and an oval serving dish (green). Most of the semiporcelain is from a single set of hotel ware with brown open stylized floral rim pattern. Plates and oval dishes are represented, as well as several rim and foot types. The collection includes 4 partial embossed backmarks "...ENWOOD CHINA/TRENTON N.J." Two of these are accompanied with different underglaze decals indicating manufacture for merchants in Chicago (...RT PICK... in black and ...EY & COMPANY...EL DEP'T in brown). The porcelain included plain or mould decorated cup, saucer and plate sherds. The probable Chinese export ware or European imitation thereof has abstract blue patterns on a teabowl form. The Japanese saucer/small plate has general thick blue cobalt field with "cloud" medallions filled with eroded red and pink hand-enameled scenes including three red robed, shaven-headed, Samurai class gentlemen. The overglaze and handpainted flatware has a bold floral pattern and a partial green backmark incorporating a crown, oak wreath and monogram "M." The hard, high-quality, hand-made grey salt fumed crock has "...MAS" maker's stamp and "3" (gallon) capacity stamp (Figure 190). The overall Albany slipped sherds are all buff-bodied and appear to include 3 cone-top jugs. The combined Albany slipped and Bristol glazed sherds include 1 cone-top jug shoulder and 3 dome-top shoulders. There is a single fragment with cobalt stenciling over Bristol slip. This specimen is illegible, but such stenciling was generally placed to advertise retailers rather than manufacturers. The 5 bases (3 definitely moulded) present in the collection also appear to represent jugs. The Bristol glazed specimen is an industrial bottle, probably for wine. The great prevalence of jugs as opposed to crocks or churns is also commensurate with urban consumption of liquor rather than home-preservation of food. The combined brown and white treatment on machine-made jugs or jugs of machine-assisted manufacture is also indicative of late 19th and early 20th century manufacture.

The bottle and table glass also includes a large quantity of liquor bottles (Figure 191). Prohibition of alcohol sales began in Mississippi in 1908, so most of these cork-top, heat-finished quart and pint bottles should date prior to this time, as should many of the gallon stoneware jugs, however, as we have discussed in Chapter V, the East Jackson area immediately east of Woodrow Wilson Bridge had an early-mid 20th century concentration of speakeasys. Aqua bottle glass includes 2 early, heat-finished crown top necks, 6 soda bottle bases (one "A B Co. 4" may be a beer bottle, 4 are Jackson bottling works bottles with one with "ROOT" on base, and one is a "Coca-Cola" bottle). There are also 5 panel bottles, including items embossed "COD LIVER" and "OIL", a wide-mouth milk/commercially canned food jar rim, a large canning jar base, and a prescription finish bottle neck. Use of soda waters and patent medicines (many of which contained alcohol, opium and/or stimulants) increased with prohibition of alcohol.

Solarized glass generally dates prior to WWI, but some manganese and colored items such as reusable soda bottles remained in circulation into the 1920s (Figure 192). The solarized bottle glass collection includes 11 cork-top probable alcohol bottle necks, 1 prescription finish neck and one stopper, 4 wide-mouth milk/commercially canned food bottles, 1 panel bottle embossed "...ER'S EXTRACTS," 2 quart and 3 pint flask bases, and 2 soda bases with embossed "...[BOTTLE]ING [WOR]KS JACKSON MISS." Solarized table glass includes 5 fragments of pressed glass (3 from a single decanter) and a decanter stopper with reversed embossing "EDDY & EDDY MFG CO" inside the rim.

The dark green bottle glass includes a flat base with embossed "...NERS ... TERQUELLE...HUNYADI JANOS." There are also a mould-blown base with kick with no pontil scar, a crown top with tooled heat finish, and a cut wine bottle neck with applied lip stringer. Amber glass includes 2 quart cork-top liquore bottles and a smaller cork-top (licoure?), a crown top, a wide-mouth bottle/jar rim, 3 pint bases, and a "Coca-Cola" bottle body shard. The clear glass is fully machine-moulded and includes a small wide-mouth bottle, probably for shoe-black, a crown top with "NO D[EPOSIT], and a flask with “HALF PINT” probably dating to the second half of the 20th century when Prohibition had ceased to function effectively (Mississippi did not formally institute local-option laws until 1965).The specimen of emerald glass is a panel bottle with embossed “RUM...CHE...” Emerald glass is most typical of ca. 1875. The cobalt glass is from a wide-mouth jar with heat-finished lip. The white glass is from a large ointment/cosmetic pot. The bright green glass is an item of stemware. Other activity classes represented include one clothing item (a porcelain shirt or underwear button), one toy (a child’s tea set) and a few items of uncertain function including a small gilded disc (watch part?) and copper tubing. The smaller porcelain insulators are from peg-and-post systems and include one marked “BRUNT.”



COVERED BRIDGE OVER PEARL RIVER

This bridge, which connected Rankin County with Hinds County at Jackson, was old when the Civil War began in 1861. Using considerable ingenuity, local Confederate soldiers converted the old lattice bridge into a virtually escape-proof prison. Over 400 Union soldiers, including many officers, were incarcerated in this bridge before it was burned by General Grant and General Sherman's troops in May 1863. This sketch was drawn from memory by U.S. Col. Thomas C. Fletcher of the Missouri Wide Awake Zouaves, who was captured at Vicksburg in 1862, and who later was a prisoner in this bridge for over a month. Near the end of the war, Harper's Weekly Magazine published this sketch along with Col Fletcher's memoirs.

Photo courtesy of —*Covered Bridges Of The South* by R.S. Allen

Figure 181. Antebellum wagon bridge converted into Civil War prison, burned May 1863. (Sketch of Col. Thomas C. Fletcher, Missouri Wide Awake Zouaves. *Harper's Weekly Magazine.* (R S Allen, *Covered Bridges of the South*, MDAH File 049-JAC-077.1-x).

Figure 182. 1875 Van Seutler image of post-war wagon bridge (MDAH file).

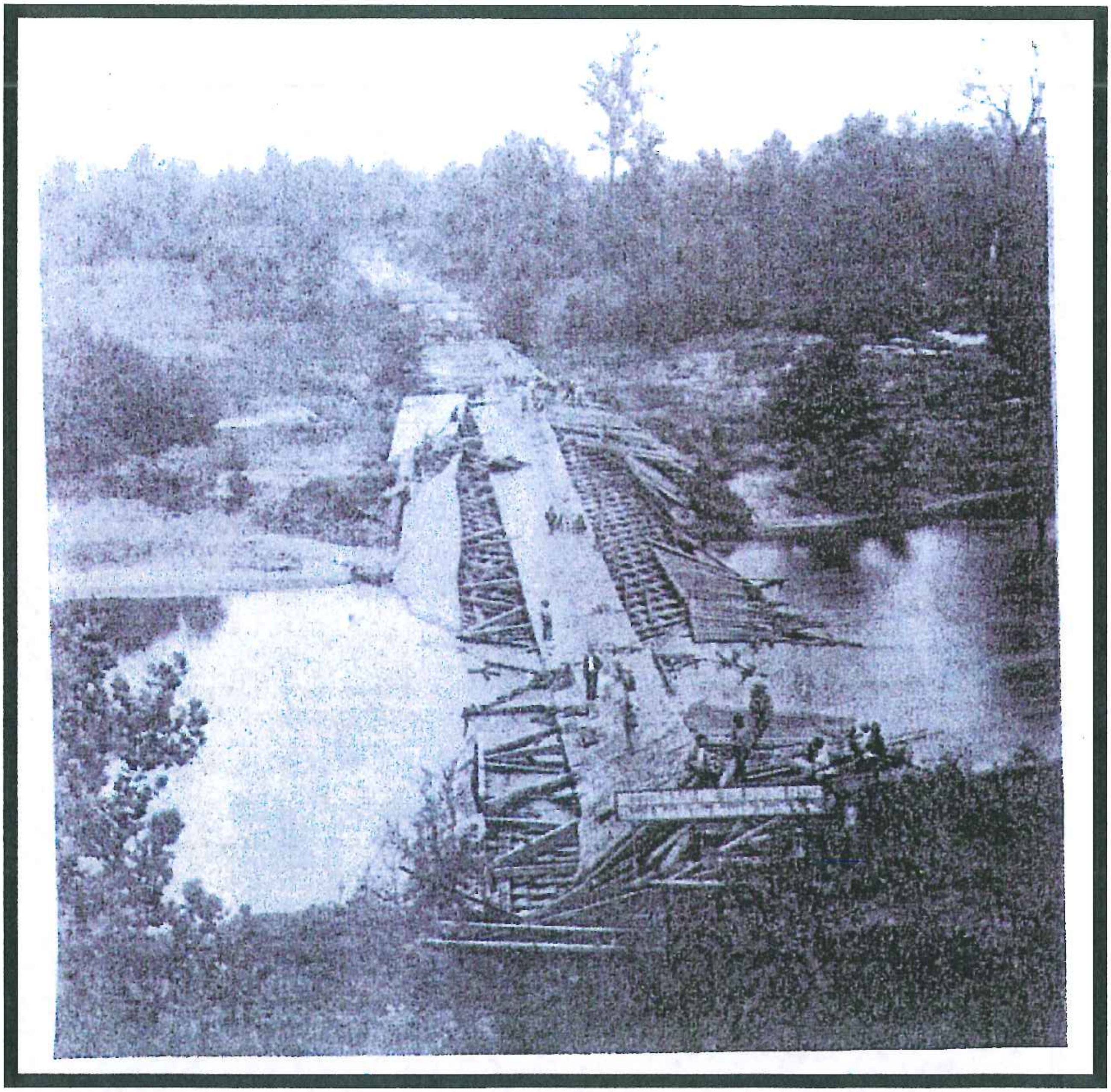


Figure 183. 1875 Van Seutler image of post-war wagon bridge (MDAH file).

Figure 184. City Landing ca. 1900.

Figure 185. Illinois Central railroad at Hinds/Rankin Landing/Ferry (22-Ra-671); a. railroad bridge view east; b. view south.

Figure 186. Illinois Central railroad at Hinds/Rankin Landing/Ferry (22-Ra-671); a. view southwest; b. trestle work on Rankin side.

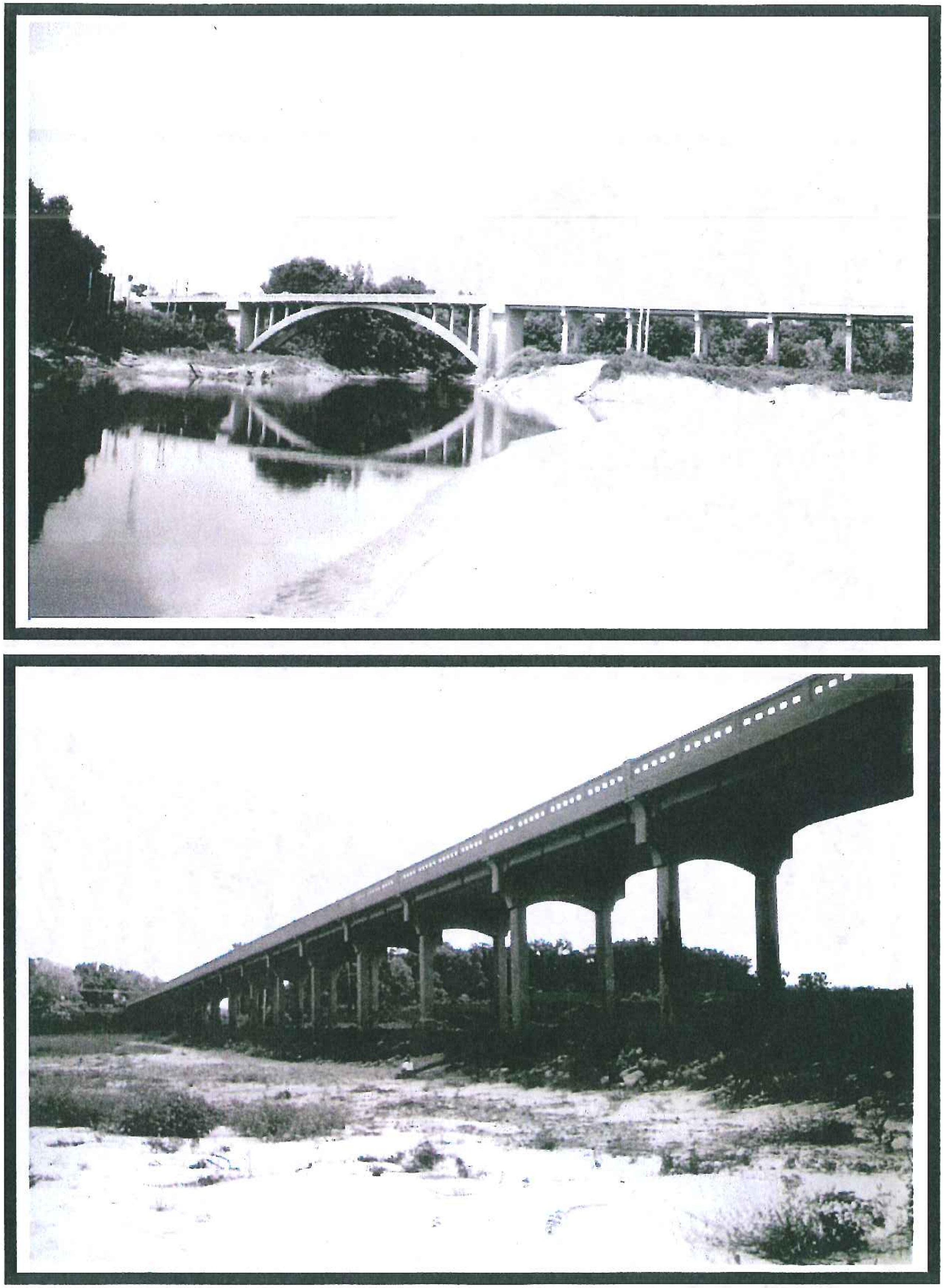


Figure 187. Woodrow Wilson Bridge at Hinds/Rankin Landing/Ferry (22-Ra-671); a. Woodrow Wilson Bridge view northwest; b. trestle work on Rankin side.

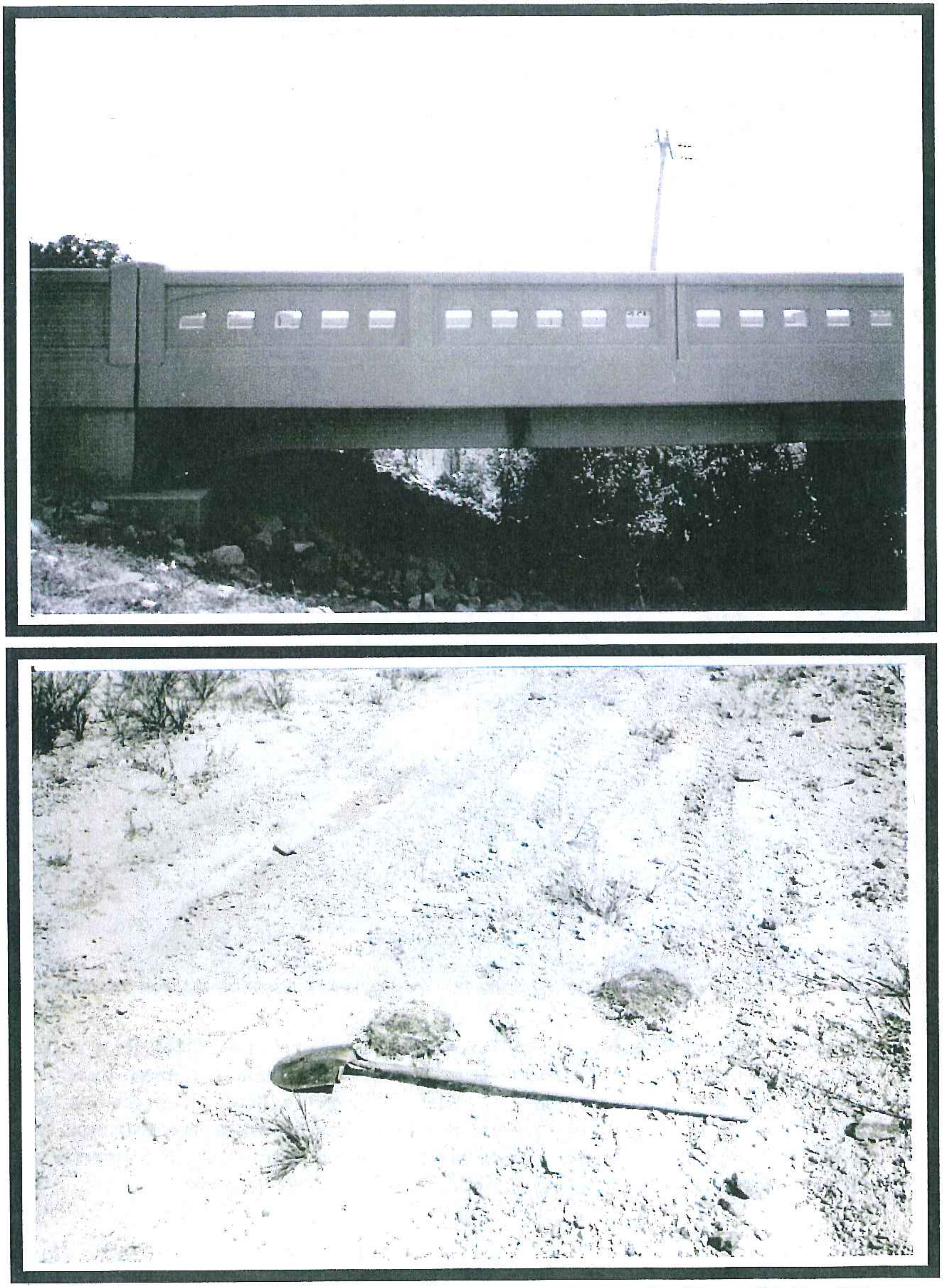


Figure 188. Woodrow Wilson Bridge at Hinds/Rankin Landing/Ferry (22-Ra-671); a. spandrel detail; b. piles in area older bridges.

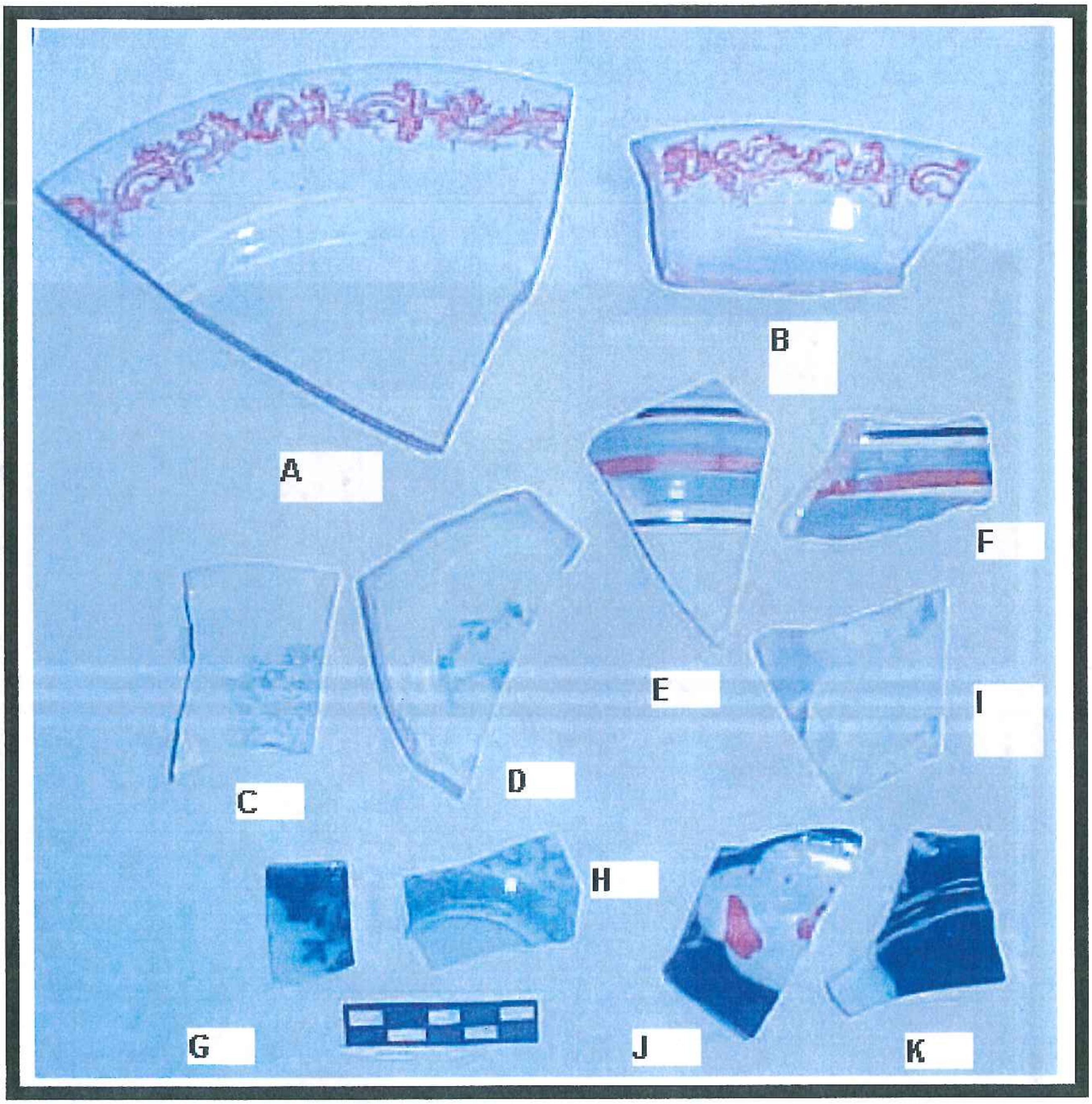


Table 189. Early 20th century ceramics from Landing/Ferry site (22-Ra-671); a, b hotel ware manufactured in New Jersey, plate and serving dish; c, d hotel ware, probably also American manufacturer, platter and serving dish; e, f engine banded hollow ware; g. flow blue revival earthenware; h. blue transfer porcelain cup; i. Anglo or American overglaze decal and hand decorated porcelain; j, k Japanese cobalt and overglaze decorated porcelain (group of four gentlemen).

Figure 190. Early 20th century stoneware from Landing/Ferry site (22-Ra-671); a,b,c, Albany slip/Bristol glaze jugs; d,e,f, Albany slip jugs; g. salt glazed 3 gallon crock, stamped "...MAS".

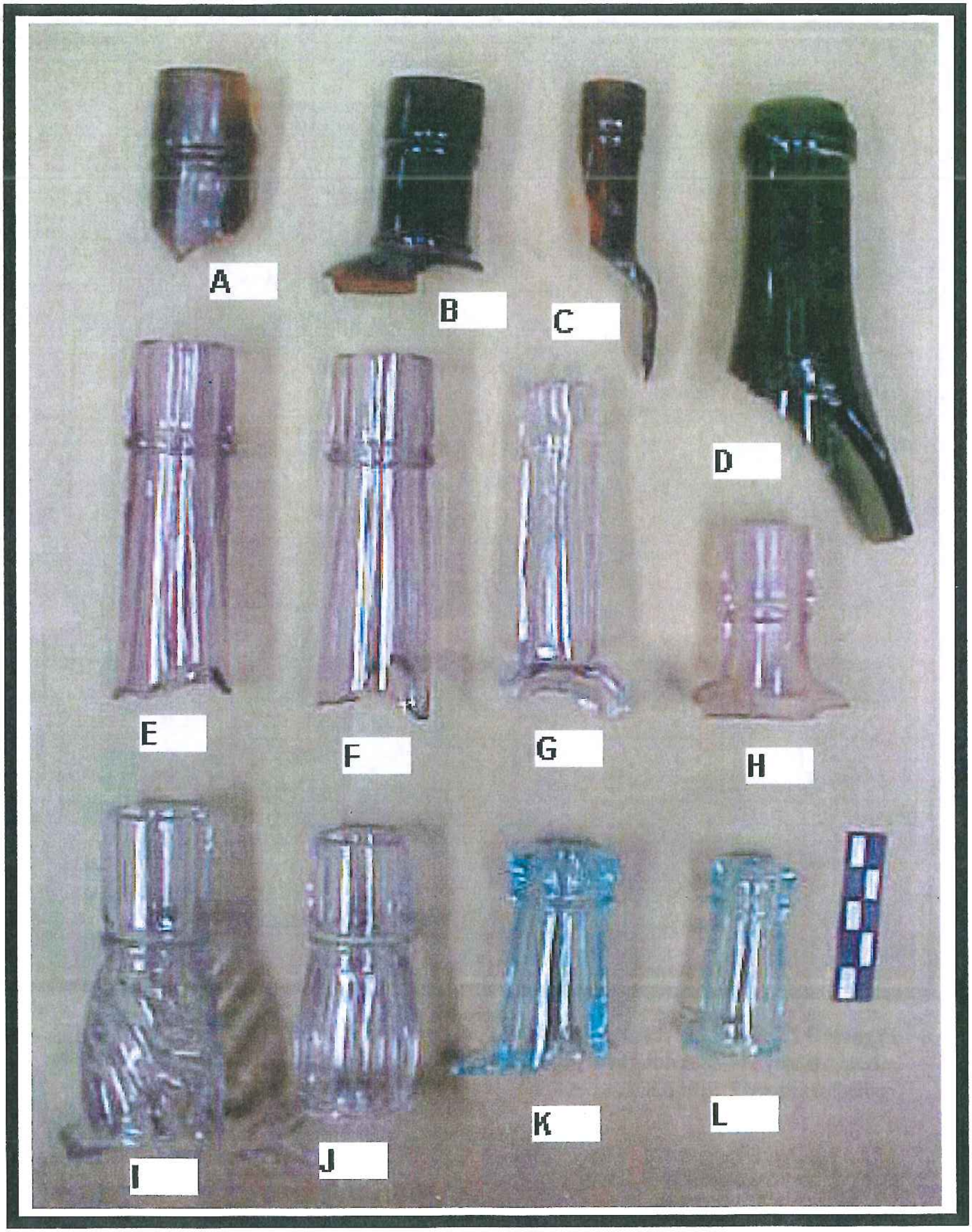


Figure 191. 20th century liquor bottle necks from Landing/Ferry site; a-c, amber glass; d, dark green glass; e-j, solarized glass; k-l, aqua glass.

Figure 192. 20th century glass from Landing/Ferry site; a-e. soda bottles, b-e are Jackson bottling works; f-h, food, ink, etc. bottle; i. cod liver oil bottle; j. decanter top, k. stopper top; l. impressed glass.

Flowood Mounds (22-Ra-502). This previously recorded site lies in a young pine plantation in a formerly cultivated area that was cleared as early as the 1905 15' quadrangle (See Figure 57). The area of prehistoric deposits also includes late 19th-early to mid 20th century farmsteads or tenant farm cabins. The site was first recorded by Rands' (1958) Pearl River Reservoir survey as Rk2, Flowood #1 (See Figure 77). Rands may have dug into the mounds. Some of the previous investigations at the site have been described (Engineering Associates Inc. & Archaeology Mississippi, 1993).

The crew excavated 30 m interval shovel test transects across the site on a south-north orientation on 9 September 2004 (Figure 193). [redacted] The lines were not straight, and most did not report finds. Initial positive shovel tests did include Starr 354-358, and Barrett 205 and 206. Additional shovel tests were excavated from positive shovel tests on these transects to further delineate the area of artifact scatter associated with the mounds. A plow-disturbed low to moderate density scatter was found to extend around the mounds in all directions but the north. The north boundary of the site [redacted] The mounds and surrounding site area was further investigated by Starr, Harris and Barrett beginning on 21 October 2004.

The site has a dense cover of pines about 10 years old with sweetgum and thickly interlaced grapevine and greenbriar. Burningbush and oaks were noted on the mounds. There are traces of east-west oriented rows from the last cultivation.

Two 100 cm soil columns were collected for particle size analysis (Barrett ST 307 and Harris ST 437) (Figures197,198). The profiles both show widely varying percentages of clay, silt and sand which are interpreted as representing highly variable flow rates during deposition of the substrate of the site. This is to be expected as deposits would be received both from the Pearl and from Prairie Branch. Both show clay maxima at about 50 cmbs, which can be interpreted as representing extensive leaching and redeposition of clay from the upper portion of the profile, but results are inconclusive. The extremely high percentage of clay (90%) in Harris ST 437 at 50 cmbs and high (40%) clay at 60 cmbs in Barrett ST 307 is probably best interpreted as the result of extensive slackwater clay deposition in the Pleistocene. Percentages of sand and silt likewise show extreme fluctuations.

Grog tempered pottery (Baytown Plain and eroded) is indicative of Middle/Late Woodland period occupation (Table 71). A piece of local quartzite debitage was found in the 50x50 cm shovel test Starr 357. One of the ferruginous sandstone fragments from the Mound A trench fill has use (battering) on one corner.

Historic maps (see Figure 57, 1905 15' quadrangle and Figure 22, 1926 soil survey) show the extent of changes that were made to the area when Prairie Branch was channelized. Also, the road system supporting these floodplain farmsteads was changed when the railroad was built between 1905 and 1926. Historic materials include ceramics, glass and metal. These come from late 19th-early 20th century Euro/Afro American agricultural occupation of a terrace edge overlooking the Pearl River floodplain. Barrett 206 produced a piece of aqua bottle glass. Barret 305 produced 3 pieces of clear glass. Barrett 307 produced a wire nail and 2 pieces of clear glass. Barrett 308 (0-60 cmbs) produced 1 fragment of an embossed aqua canning jar and a wire nail. ST Harris 432 (0-40 cmbs) produced a 17.5 g wire nail (spike). In addition, a former house location along the railroad grade/borrow pit is marked by remnants of lilies ("surprise" or "spider" lilies).

There have been numerous impacts to the site. These include cultivation including tree-planting rows, biological and other natural causes, non-scientific and scientific excavation including mechanized damage to Mound A, construction of ca. 1900 cabins, trails and borrow pits associated with the railroad south of the site and channelization of Prairie Branch.

This large site has previously been determined to be potentially eligible for the National Register of Historic Places. Archaeology Mississippi, Inc. concurs.

[redacted]

Figure 194. 22-Ra-502 Mound A trench backfill removed; a. general view, b. close up of water lain sediments at base of old trench, and edges of intact fill.

Figure 195. 22-Ra-502, north end of trench stepped at an intact "ash" lens.

Figure 196. 22-Ra-502 Mound B, clearing previous excavation, note old unit continues in floor, also possible old auger/post hole digger hole.

Figure 197. 22-Ra-502 Barrett ST 307 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Pearl 22 RA 502	Barrett ST 307	10	53.30	40.00	6.70
Pearl 22 RA 502	Barrett ST 307	20	40.00	40.00	20.00
Pearl 22 RA 502	Barrett ST 307	30	33.30	60.00	6.70
Pearl 22 RA 502	Barrett ST 307	40	36.60	53.30	10.10
Pearl 22 RA 502	Barrett ST 307	50	33.30	46.60	20.10
Pearl 22 RA 502	Barrett ST 307	60	40.00	20.00	40.00
Pearl 22 RA 502	Barrett ST 307	70	36.60	33.30	30.10
Pearl 22 RA 502	Barrett ST 307	80	46.60	33.30	20.10
Pearl 22 RA 502	Barrett ST 307	90	40.00	53.30	6.70
Pearl 22 RA 502	Barrett ST 307	100	46.60	40.00	13.40

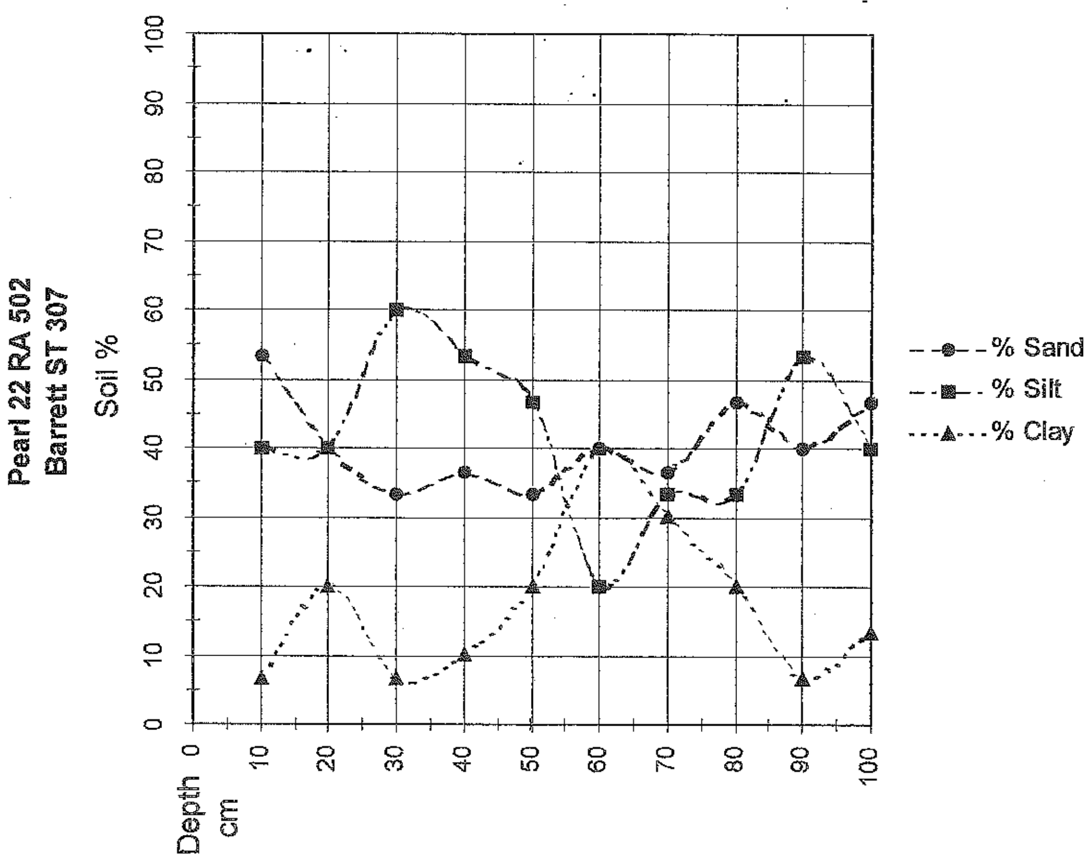


Figure 198. 22-Ra-502 Harris ST 437 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Pearl 22 RA 502	Harris ST 437	10	46.60	33.30	20.10
Pearl 22 RA 502	Harris ST 437	20	53.30	26.60	20.10
Pearl 22 RA 502	Harris ST 437	30	43.30	26.60	30.10
Pearl 22 RA 502	Harris ST 437	40	60.00	33.30	6.70
Pearl 22 RA 502	Harris ST 437	50	5.00	3.30	91.70
Pearl 22 RA 502	Harris ST 437	60	20.00	20.00	60.00
Pearl 22 RA 502	Harris ST 437	70	20.00	20.00	60.00
Pearl 22 RA 502	Harris ST 437	80	53.30	10.00	36.70
Pearl 22 RA 502	Harris ST 437	90	60.00	26.60	13.40
Pearl 22 RA 502	Harris ST 437	100	20.00	13.30	66.70

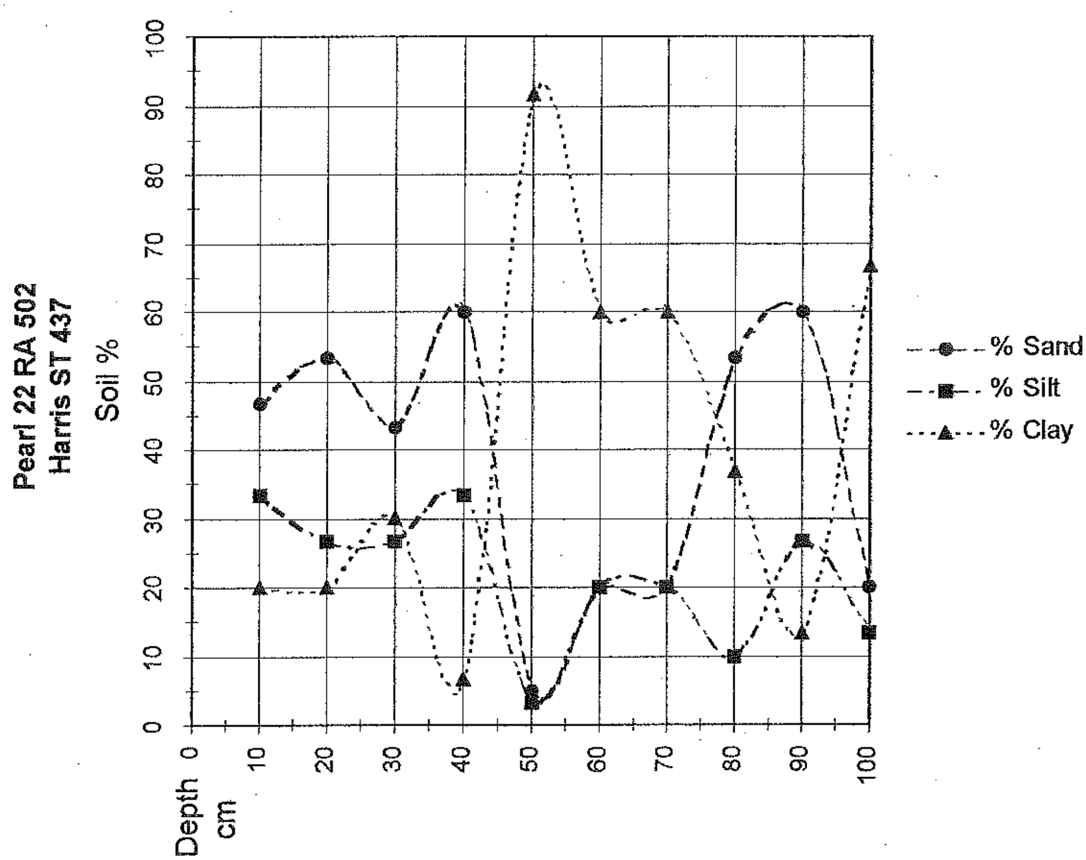


Table 71. 22-Ra-502 artifact recovery from shovel tests.

	Bag 444 Barrett 205		Bag 445 Barrett 206		Bag 447 Starr 354		Bag 448 Starr 355		Bag 449 Starr 356		Bag 450 Starr 357		Bag 451 Starr 358		
	#	g	#	g	#	g	#	g	#	g	#	g	#	g	Total
Lithics															
Debitage															
Primary decortication flake	1	0.2											2	1.5	3
Secondary decortication flake									6	3.7	1	2.4	3	1.5	10
Internal flake					2	2									2
Biface thinning flake			1	0.1	1	0.6	1	0.25			2	0.6	3	1.4	8
Flake fragment			1	0.5			1	0.2							2
Unmodified stone															
Fire cracked rock					1	0.4									1
Chert pebble	1	7.9													1
Hematite/siltstone			1	1.3											1
Ceramics															
grog eroded			2	0.9					3	1.6					5
grog plain			1								1	1.3	1	0.9	3
Burned earth													1	1.2	1
TOTAL	2	8.1	6	2.8	4	3	2	0.45	9	5.3	4	4.3	10	6.5	37

22-Ra-565 (Rankin 12). This previously recorded site was revisited by J. Starnes and Hawkins on 31 July 2004 (ST 89) and Orsbun and 4 other crew members on 18 September 2004. Due to access by boat, a full day of 40 man-hours was expended in these limited investigations. Artifacts were noted eroding into a drainageway as well as in a "bladed road" on the south side of the site. The site [redacted] The site was originally mapped as [redacted] The initial report was made by Samuel McGahey in 1984, based on the private collection of John Lenoir, at which time a Late Archaic component was indicated based on a "classic" chert Pontchartrain point, 2 Tallahatta quartzite Shumla-Cotaco Creek-like points, flakes and petrified wood found in a wash.

The site has a mixed hardwood and pine cover, with red and white oaks 50 to 75 years old forming the canopy. There are numerous large pine cuts left from the last harvest. Elm, magnolia, sweetgum, privet, palmetto and greenbriar form the main part of the understory. Visibility was poor due to duff and understory vegetation covering the surface. This location [redacted]
Site soils are aggrading due to overbank deposition.

Initially, two man-hours were spent on shovel tests to identify the area associated with the reported Late Archaic/Poverty Point materials Lenoir found in eroded deposits in 1984. The site was delineated with 10 m interval shovel tests (Figure 199). Only 6 of the 28 shovel tests excavated at the site produced material (T22 ST "1" (not tabulated), Underwood 261, J. Starnes 54, M. Starnes 525, 527, and Hawkins 41). [redacted]

Ceramics and lithics were recovered (Table 72). The site is about 40 m in diameter, and the northwest and northeast boundaries are defined by swales. The 5 positive shovel tests produced 11 pieces of debitage, 3 unmodified/minimally modified stones, and 8 shell tempered eroded sherds (total only 3.4g).

The site has seen moderate disturbance. The main impacts noted are logging and a graded/pushed dirt road, but the limited site description also indicates that the east slope of the site (at about 10%) into the "drainage" is still undergoing erosion. J. Starnes notes that the "portion of site that lies on crest of hill is probably intact."

Information collected is inadequate for interpretation, but size, date and density indicate that this site should be considered as transitory hunting/gathering site placed for access to fishing or gravel. The previous diagnostic points reported from the Lenoir collection, indicating Terminal Archaic occupation, appear to be supported by additional Tallahatta quartzite debitage (J.Starnes 54, n=1). An ephemeral Mississippi period use is also indicated. Due to evidently limited material, Site 22-Ra-565 is considered probably not eligible for the National Register. No further work is recommended.

[redacted]

Table 72. Rankin 12 (22-Ra-565) artifact recovery from shovel tests.

	Bag 803 M Starnes		Bag 804 M Starnes		Bag 805 J Starnes		Bag 806 Hawkins		Bag 807 Underwood		Bag 222 Hawkins/ J Starnes		Bag 223 Hawkins/ J Starnes		
	525		527		54		41		261		89		Surface		
	#	g	#	g	#	g	#	g	#	g	#	g	#	G	Total
Lithics															
Debitage															
Primary decortication flake							1	2.6							1
Secondary decortication flake					1	0.1	1	1.6					2	0.8	4
Internal flake					1	0.5									1
Biface thinning flake			2	0.3	1	0.4	1	1.3			3	5	1	0.2	8
Flake fragment	1	0.4			2	1.2					1	0.2			4
Unmodified stone															
Fire cracked rock									1	0.7					1
Chert pebble					1	5.5									1
Ferruginous sandstone					1	30.4									1
Ceramics															
shell eroded									8	3.4					8
TOTAL	1	0.4	2	0.3	7	38	3	5.5	9	4.1	4	5.2	3	1	29

<u>**22-Ra-594.**</u> This previously recorded site was revisited by Orsbun, Underwood and M.Starnes on 29 September 2004. The initial positive shovel test was Orsbun T 22 ST 225. The site was delineated on 10 m intervals from this initial find. The site covers approximately 20 m north to south and 70 m east to west.

The site [redacted] This swampy channel [redacted] The site is very overgrown, so surface visibility was poor and no surface collection was made. The landform is only slightly higher than the surrounding area to the north and east. The area is described as ridge and swale terrain on a stream terrace. This thicket is mostly about 10 years old, with some 1-4" hickories and 4-8" oaks, but mostly small scrubby vegetation (tallow tree, privet, blackberry, greenbriar, sassafras and muscadine) with sycamore on the slope into the swamp and cypress in the swamp. The site has been clearcut in the past.

Fifteen of the twenty-nine shovel tests excavated in the area were positive (Underwood 352, 353, 355, 356, 357; M.Starnes 653, 654, 655, 656, 658, 659, 663, 664; Orsbun 225, 226) (Figure 200). The south and west boundaries of the site were defined by "no-digs" representing lower terrain; here the slope is reported by Orsbun to fall "6-8 m in about 3 m".

Prehistoric ceramics and lithics are reported (Table 73). Materials recovered from shovel tests are highly limited. Fragmented quartz pebbles were recovered from ST Underwood 357 and M.Starnes 655 (0-20 cmbs) and 656 (0-15 cmbs). The biface thinning flake from ST M.Starnes 663 (0-10 cmbs) is novaculite, apparently a notch-deepening flake, as is the biface thinning flake from M.Starnes 664 (0-15 cmbs).

A minor historic (19^{th} century) component is represented by a 5.9g cut nail from ST Underwood 355 (0-10 cmbs).

The site is moderately disturbed. Impacts include erosion into the swamp, bulldozer activity on the east side, and clearcutting and other forestry activities.

Material and data recovered is inadequate for interpretation of site function. Ceramics indicate that the site may have been a base camp. Due to disturbance and limited artifact recovery, the site has limited potential for the recovery of significant new information. Therefore it is not eligible for the National Register. No further work is recommended.

[redacted]

Table 73. 22-Ra-594 Total Artifact recovery from shovel tests (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	3
Secondary decortication flake	19
Internal flake	8
Biface thinning flake	29
Flake fragment	14
Unmodified stone	
Fire cracked rock	16
Chert pebble	3
Quartz	2
Burned earth	5
Ceramics	
grog eroded	8
grog plain	5
grog cord marked	2

Table 74. Site 22RA594 pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	pH
1250	Site 22Ra594	10-20	4.7
1251	Site 22Ra594	20-30	4.9

Rankin 1 (22-Ra-672). This minor remnant of a destroyed site lies along the southeast bank of a large borrow pit that had been previously surveyed. The site was found by Hawkins and J. Starnes on 13 July 2004 (T6 ST1). A surface collection was made from the bare and eroding banks of the pit. This collection includes debitage and firecracked rock (Table 75). A single positive shovel test (Hawkins/J. Starnes 21) had one flake. The site was revisited by Starr, Hardy, and Millet (3 man-hours), when 11 additional 10 m interval shovel tests were excavated. Only one (Hardy ST 132) produced artifacts. [redacted]

The site [redacted] Due to extensive disturbance, the geologic and pedologic setting is difficult to interpret, but the site lay in Holocene alluvium on a Pearl River floodplain terrace probably overlain by Pelahatchie Creek natural levee deposits. Site 22-Ra-672 has already been essentially destroyed. No further work is recommended.

Table 75. Rankin 1 (22-Ra-672) Artifact Recovery from shovel tests.

	Bag 132		Bag 204		Bag 205		
	Hardy 132		Hawkins/Starnes 21		Hawkins/ J Starnes (surface)		Total
	#	g	#	g	#	g	
Lithics							
Debitage							
Secondary decortication flake					1	2	1
Internal flake					1	0.3	1
Biface thinning flake	1	1.1	1	0.4	6	2.6	8
Unmodified stone							
Fire cracked rock	9	12.4					9
TOTAL	10	13.5	1	0.4	8	4.9	19

Table 76. Rankin 1 (22-Ra-672) pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	pH
1254	Rankin 1	0-10	4.9
1255	Rankin 1	20-30	4.5

Rankin 4/5 (22-Ra-673). This site was discovered by J. Starnes (ST Hawkins/J.Starnes 41 and 42, T7) while excavating intuitively placed shovel tests in high probability areas within a tract that had been previously surveyed. No site form is available, but material recovered from the initial tests included historic refined earthenware as well as burned earth, burned bone, charcoal, prehistoric ceramics and debitage.

The site was visited by Orsbun on 18 September 2004 for the excavation of a 1x1 m test unit. This unit was excavated at "5 m south of ST10 on S to N line." Four arbitrary levels cross-cutting natural horizons were excavated and screened through ¼" hardware cloth. Level 1 (to 10 cmbs) included a 3 cm 10YR3/2 loam Ao horizon as well as a 10YR4/4 sandy silt loam E horizon. Only 1 sherd was recovered. Level 2 (10-20 cmbs) was 10YR4/4 sandy silt loam. Level 3 (20-30 cmbs) included 10YR4/4 fine sandy loam to 26 cmbs, and 10YR4/6 fine sandy clay loam "C" horizon below. No artifacts were recovered from this level. Level 4 (30-40 cmbs) was 10YR4/6 fine sandy clay loam.

The heterogeneous tempered sherdlet from TU 1, 0-10 cmbs, had grog and sand temper indicative of Woodland occupation. The site is not considered eligible for the NRHP, and no further work is recommended.

Rankin 6 (22-Ra-674). This small, disturbed prehistoric site was discovered by shovel testing of a high probability area within a previously surveyed tract. An initial positive shovel test was excavated by Hawkins and J. Starnes on 21 July 2004 (2 man-hours). The site was revisited for delineation with 10 m interval shovel tests by Starr, Barrett, Harris, Hardy and M. Starnes, when an additional 5 man-hours were spent on the site. [redacted]

The site [redacted] The [redacted] water district and the Big Woods Hunting Club. The area has an unimproved mixed pine and hardwood cover. Hickory, oaks, and isolated mature long-leaf pines form the canopy, with an understory of maple, white oak saplings, hackberry and elms.

The site is covered with duff and humus (Ao horizon) so surface visibility was poor and no surface collection was made. The area is level and there is natural soil development in the colluvial loessial material. Soils are thin and shallow produced by deflation of the terrace surface. Impacts to the site include biological and other natural agents, forestry and occasional flooding/scouring. The thin Ao horizon overlies a leached compact, blocky subangular loamy silt E horizon that contains artifacts and concretions.

Local quartzite was recovered from 2 shovel tests (Hawkins/J.Starnes 51, 52) (Table 78). Hawkins/J.Starnes 51 also produced 4 flake fragments evidently from the same heat-treated core, as well as a fragment of quartzite that appears to be shatter from a hammerstone. These two shovel tests were evidently much larger than the requested standard 30 cm unit. Other standard shovel tests on the same site indicate significantly lower artifact density.

Table 77. Rankin 6 Unifacial tools

Provenience	Debitage class	Modification	dimensions	Weight
Starr 177	indeterminate	microlith		.5 g

Only non-diagnostic lithics were recovered from this site (Figure 202). The site is interpreted as a transitory hunting/gathering camp, probably dating to the Archaic period based on the presence of primarily lithic materials, which include local low-grade quartzites. A small amount of Baytown Plain pottery indicates a minor Middle/Late Woodland period component. The site has also produced small amounts of burned rock, indicative of hearths such as are expected on more intensively inhabited sites. Due to the sparse nature of the deposits and the relatively high level of impact from logging, the site is unlikely to yield significant information. It is considered to not be eligible for the National Register. No further work is recommended.

[redacted]

Table 78. Rankin 6 (22-Ra-674) artifact recovery from shovel tests.

	Bag 141 Barrett 15		Bag 142 Barrett 16		Bag 181 Barrett 11		Bag 210 Hawkins -Starnes 51		Bag 211 Hawkins-Starnes 52		Bag 212 Hawkins-Starnes 54		Bag 238 M Starnes 14		Bag 267 Starr 177		
	#	g	#	g	#	g	#	g	#	g	#	g	#	g	#	g	Total
Lithics																	
Debitage																	
Primary decortication flake									3	5.2							3
Secondary decortication flake							1	0.5	4	4.9							5
Biface thinning flake			1	0.4			3	2.7	9	3.7	2	0.4					15
Flake fragment							13	6.6	8	2					1	1.8	22
Shatter							1	0.7									1
Other worked stone																	
Unifacial tools															1	0.5	1
Unmodified stone																	
Fire cracked rock	1	7.6					3	16.6					2	1.3			6
Chert pebble							1	17.3									1
Arkosic sandstone	2	1.6															2
Petrified wood									1	13.5							1
Quartz			1	4.1													1
Quartzite							1	3.8									1
Ceramics																	
Grog plain			1	1.5	5	13											6
Limestone							1	1.7									1
TOTAL	**3**	**9.2**	**3**	**6**	**5**	**13**	**24**	**49.9**	**25**	**29.3**	**2**	**0.4**	**2**	**1.3**	**2**	**2.3**	**66**

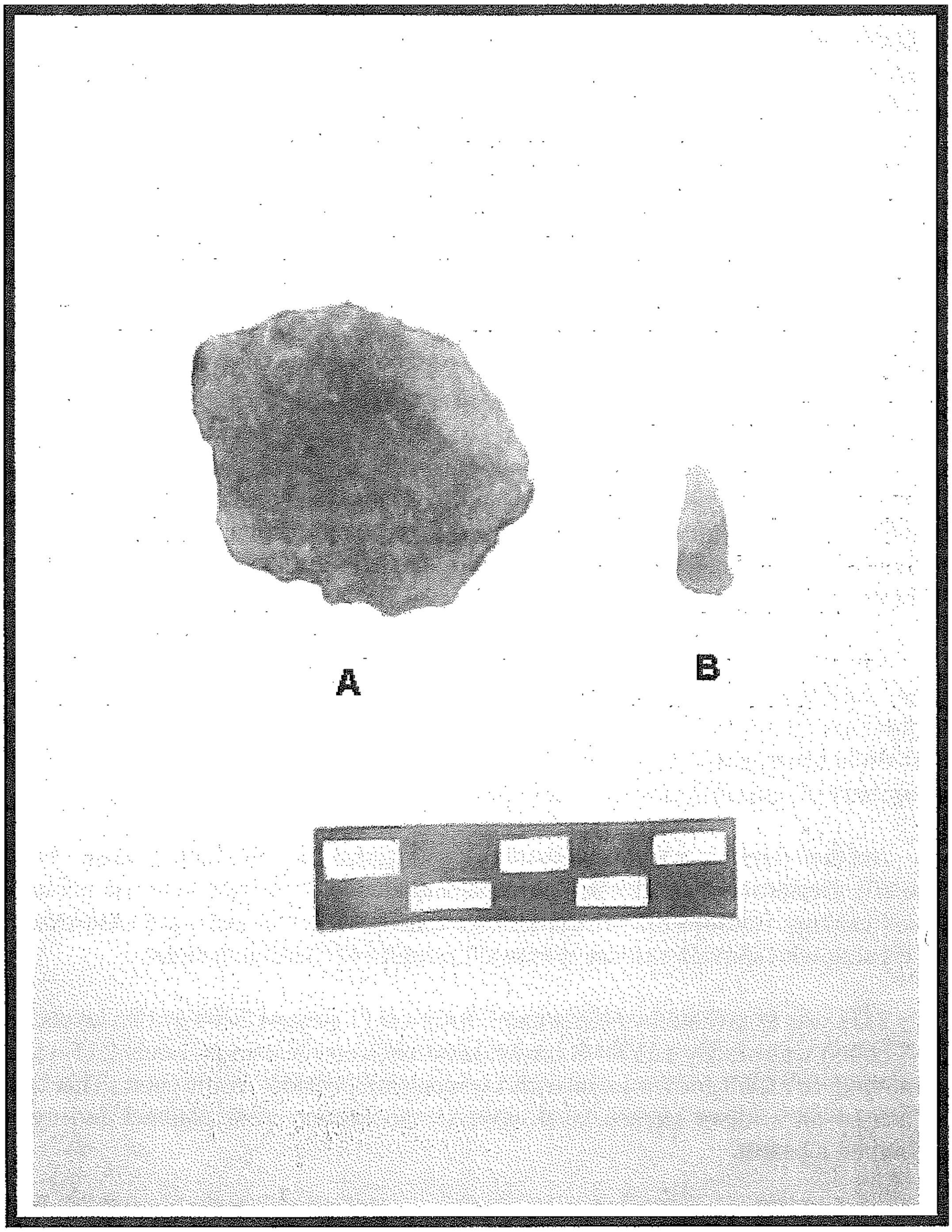


Figure 202. Rankin 6 (22-Ra-674) Artifacts. a, grog tempered plain; b. uniface microlith.

Rankin 7 (22-Ra-675). This prehistoric site was discovered through shovel testing of an evident high probability area within a previously surveyed tract. The site was discovered by Hawkins and J.Starnes on 21 July 2004, when two approximate 50 cm diameter shovel test was excavated (1 man-hour, ST 55 and 56). The site was revisited for delineation by Starr, Hardy, Harris, Barrett and M. Starnes on 10 August 2004 (30 man-hours), when 10 m interval shovel tests were excavated in rays from the initial positive shovel test. [redacted]

The site [redacted] The parent material for site soils is Holocene loessial colluvium in a thick Pearl River alluvial deposit overlying the Eocene Yazoo clay formation. Artifacts were recovered from two terrace levels [redacted] An old meander [redacted] Soils are generally stable and well-developed in silty deposits on this level terrace edge. The site is generally level with a slight northern aspect. However, slopes up to 20% in some areas have undoubtedly led to some erosion and deflation of deposits. Vegetation is mixed unimproved pine and hardwood forest. Oak and hickory are dominant with some longleaf pines on the thin loessial T2 soils and an understory of elm and grapevine.

Site 22-Ra-675 is covered with a thin Ao horizon (leaf litter and thin humus), surface visibility was poor and no surface collection was made. Thin compact soil indicates that there has been little vertical displacement of artifacts, however, this upper A horizon is interpreted as a probable shallow 19th century plowzone with subsequent re-development of natural A horizon characteristics.

Artifact density is moderately high, with ceramics and lithics being recovered (Table 80). Besides a possible early plowzone, evidence of historic land use is limited to .22 shell casings. Because of the high artifact density, 4 1x1 m test units were excavated. All were dug with shovels and dry screened through 1/4" hardware cloth.

TU1 was excavated by Harris and Barrett on 11 August 2004 as two levels. Level 1 (to 5 cmbs) was blocky 10YR4/3 brown loam with no inclusions. Level 2 (5-15 cmbs) was mottled 10YR4/3 brown loam with no inclusions besides burnt chert. This test unit was located on a lower terrace level close to the former creek channel and evidently encountered a hearth.

TU2 was excavated by Starr and Hardy on 11 August 2004 in 4 levels. Level 1 (to 5 cmbs) was the Ao horizon of homogeneous, blocky 10YR5/2 loamy silt with a dry crumbly structure and a clear smooth transition to the underlying inorganic horizon. Sherds, pebbles, flakes and fire cracked rock were observed to begin immediately under the Ao horizon. Level 2 (5-10 cmbs) was a somewhat lammellar (traffic-compacted?) mottled 10YR5/3 loamy silt, grading lighter and brighter in color with depth, and producing abundant fire-cracked rock, debitage and some sherds. Level 3 (10-20 cmbs) was 2.5 YR5/4 slightly loamy silt with fire cracked rock and burned ferruginous sandstone, sherds, debitage, a drill and a small amount of charcoal. Level 4 (20-30 cmbs) was 10YR5/6 loamy silt with slight root and insect mottling that is compact and blocky by the base of the unit. A small number of flakes were recovered. The density of the soil indicates that there should be very little infiltration from the above levels.

TU3 was excavated by Harris and Barrett on 11 August 2004. Level 1 (to 5 cmbs) was mottled 10YR4/3 loam with some artifacts (Figure 204). Level 2 was yellowish brown loam with continued moderate density of artifacts. Level 3 (15-25 cmbs) was yellowish brown clay loam with sparse material.

On 19 October Starr, Hardy, Harris and Barrett returned to the site to excavate another test unit to obtain a profile of soil samples (Figure 205). Two levels of TU4 were screened and then the hole was shoveled out to 100 cmbs. Level 1 (to 7-12 cmbs) was homogeneous 10YR4/2 silt loam with roots, sherds, flakes and pebbles. Level 2 (7/12-25 cmbs) with homogeneous 10YR5/4 clay loam with few roots and sparse flakes, pebbles and pottery sherds. Soils on this site are clayier than most in the area. Analysis of soil samples shows a pronounced clay bulge at 40 cmbs, with an increase from 15-20% above 40 cmbs (highly leached E horizon) to over 40% at 40 cmbs. This is interpretable as an illuvial (B) horizon at this depth, however, given the variation throughout the profile, this clay maxima may just as well be interpretable as deriving primarily from the initial variation in alluvial depositional environments. It is the opinion of this author that an actual E horizon of leached and redeposited clay indicative of a considerable period of weathering is represented. Above this point soils are loams, below this point the sand content is negligible and soils are clayey silts.

The site appears to represent a Terminal Archaic/Poverty Point and Woodland period occupation. Ceramics, fire-cracked chert and burned sandstone, and high artifact diversity (including tools such as adze, drill and pitted stone) indicate fairly intensive occupation interpretable as a base camp (Figure 206). The considerable variation in artifact density between shovel tests indicates that there is considerable preservation of internal artifact distribution patterning. The site is relatively undisturbed with possible shallow 19th century cultivation, natural/biological disturbance, a logging trail and other limited forestry impacts, and occasional flooding. Because 22-Ra-675 appears to be the best-preserved and most informative of the sites discovered by intuitive shovel testing [redacted] this site is considered to have considerable potential to provide significant new information about prehistory in the Pearl basin, and so is recommended for preservation or additional testing if the site is to be impacted by this project construction.

[redacted]

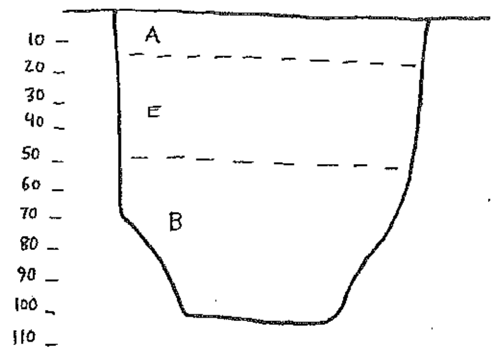


Figure 204. Rankin 7 (22-Ra-675) Test Unit 3 Soil Profile.

Key to Figure 204. Rankin 7 (22-Ra-675) Test Unit 3 Soil Profile

Horizon	Color	Texture	Structure	Inclusion/Mottles	Boundary
A	10YR4/3 brown	silt loam	loose, soft	abundant roots	gradual, grades lighter
E	Yellowish brown	silt loam	soft, moderate granular blocky	moist, some concretions, minor reduction-oxidation at base	gradual
B	Heavily mottled 10YR5/6	silt loam	strong angular course blocky, silt skins in cracks	strong reduction oxidation features	

Figure 205. Rankin 7 (22-Ra-675) TU4 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Rankin 7	TU 4	10	20.00	33.30	46.70
Rankin 7	TU 4	20	13.30	53.30	33.40
Rankin 7	TU 4	30	16.60	53.30	30.10
Rankin 7	TU 4	40	43.30	46.60	10.10
Rankin 7	TU 4	50	30.00	60.00	10.00
Rankin 7	TU 4	60	36.60	46.60	16.80
Rankin 7	TU 4	70	40.00	40.00	20.00
Rankin 7	TU 4	80	40.00	60.00	0.00
Rankin 7	TU 4	90	40.00	50.00	10.00
Rankin 7	TU 4	100	26.60	60.00	13.40

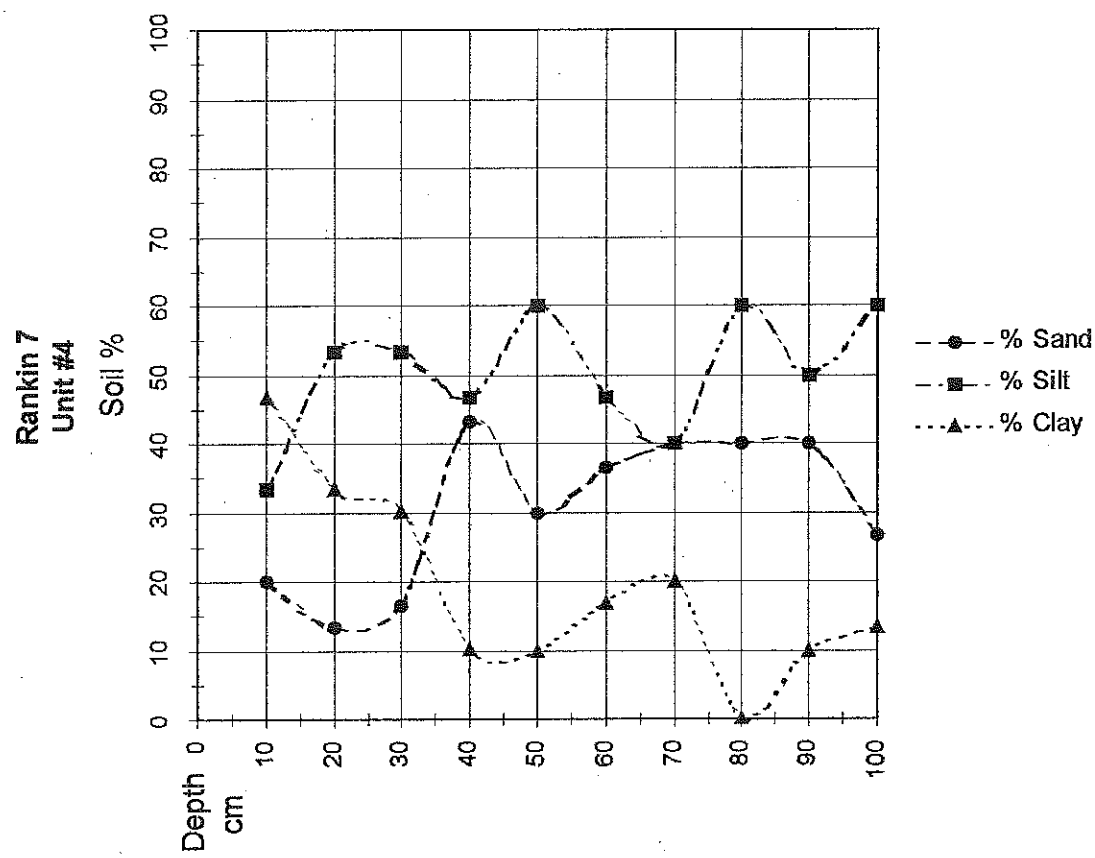


Table 79. Rankin Site 7 (22-Ra-675) pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	pH
1198	Rankin 7 TU4	70-80	5.4
1196	Rankin 7 TU4	(A) no depth	5.6
1197	Rankin 7 TU4	30-40	4.8

Table 80. Rankin 7 (22-Ra-675) total artifact recovery from shovel tests (see appendix table)

	Total
Lithics	
Debitage	
Primary decortication flake	4
Secondary decortication flake	14
Internal flake	5
Biface thinning flake	24
Flake fragment	22
Cores/bifaces	
Projectile point/knives	1
Other bifacial tools	1
Biface fragments	1
Other worked stone	
Ground stone	1
Unmodified stone	
Fire cracked rock	13
Chert pebble	7
Ferruginous sandstone	2
Petrified wood	5
Quartz	8
Burned earth	1
Ceramics	
grog eroded	2
grog plain	1
grog cord marked	1

Table 81. Rankin 7 (22-Ra-675) TU1 Artifact recovery.

	Bag 365 TU1 L1		Bag 366 TU1		Total
	#	g	#	g	
Lithics					
Unmodified stone					
Fire cracked rock	84	142.5	27	80.6	111
Chert pebble			2	29.7	2
Quartz			2	5.7	2
Total	84	142.5	31	116	115

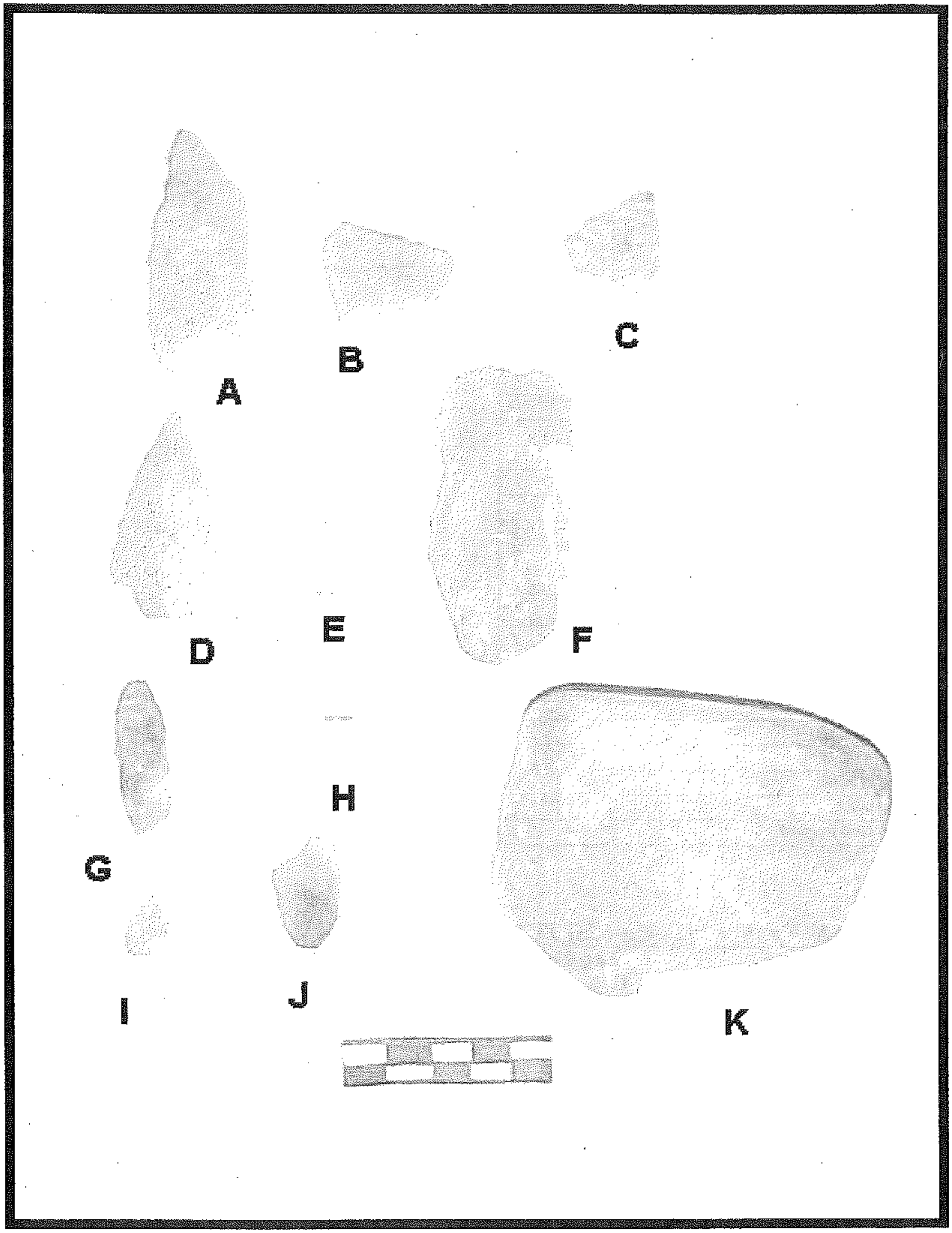


Figure 206. Rankin 7 (22-Ra-675) Artifacts. a-c, grog tempered cord marked sherds; d. projectile point/knife; e. biface tool "drill"; f. biface tool "adze"' g,h. biface fragments; I,j. utilized flake unifaces; k. pitted stone.

<u>Rankin 8/9 (22-Ra-676)</u>. This prehistoric site was discovered through shovel tests in a high probability area within a previously surveyed area. Site 8 was found by Hawkins/J. Starnes on 23 July 2004 (1 man hour, one positive shovel test, ST 61) and Site 9 was found on 29 July 2004 (2 man hours, 2 positive shovel tests 30 m apart, T19 ST 79 and 80). Subsequently the site was revisited by Starr, Hardy and Millet on 7 August 2004 (15 man-hours) for site delineation and these three initial nearby positive shovel tests were found to belong to a single site. [redacted] Hardy and Harris returned to the site on 19 October 2004 for a soil profile and soil samples (4 man-hours). The [redacted]

The site lies on a slight knoll on a level terrace [redacted] This Holocene alluvial terrace is stable with soil formation. The elevation is 275-280' amsl.

Vegetation is unimproved, regenerating bottomland hardwood forest, with hickory, oak, elm, and sweetgum predominant, and an understory of grass, poison ivy, muscadine vines, redbud, beautybush, green briar and a little switch cane. As noted, there is a cypress brake to the immediate east of the T1 site location. The scarp or precipice is stable. The last major logging appears to have been well in the past. The site is covered by leaf litter and a thin humus (Ao horizon) layer, so with the exception of a bare mud trail, surface visibility was poor and no surface collection was made.

The site was delineated on 5 and 10m intervals around the initial intuitively placed shovel tests (Figure 207). Soils are thin, silty, compact and leached, and the artifact-bearing zone is shallow. The archaeological deposits are found between 4 and 25 cmbs. J. Starnes notes soils as being "clayey at depth [and] difficult to screen." Lithics and ceramics were recovered from shovel tests (Table 86). Two 1x1 m test units were also excavated. Test units were excavated with shovels with all soil being dry screened through ¼" hardware cloth. There are no records for TU1 excavated by Barrett on 11 August 2004. Only 4 items, including 3 pieces of natural stone, were recovered from 0-20 cmbs (Table 85).

TU2 was excavated in three arbitrary 10 cm levels on 19 October 2004. Level 1 (to 10 cmbs) was 10YR3/4 homogeneous silty loam with abundant roots, sherds, flakes and pebbles. Level 2 (10-20 cmbs) was homogeneous 10YR5/4 loam with few roots, some sandstone, pebbles, sherds and a projectile point/knife (Figure 209). Level 3 (20-30cmbs) was homogeneous 10YR5/6 clay loam said to be without artifacts or other inclusions. This test unit was then shoveled out down to 100 cmbs for soil samples. The analysis of the soil samples showed a complex alluvial deposit, with a clay maxima at 10 cmbs, indicative of limited weathering (Figure 208). Clay subsequently declines to 15% or less throughout the remainder of the column, so this high clay content (40%) in the surface layer is interpreted as overbank deposits in flood times subsequent to the deposition of the main body of the terrace. A lesser clay maxima at 40-50 cmbs may represent a weak illuvial (B) horizon, but is accompanied by a decrease in sand, so it may simply represent variation in initial depositional environment rather than subsequent soil profile development. Silt content increases throughout the profile.

Three fragments of local quartzite debitage were recovered at ST Hardy 162 (Table 86). Most of the 9 pieces of debitage from Hardy 164 come from a heat treated core (n=3) and a mottled tan chert core (n=4) (Figure 209). A stemmed point from TU2 Level 2 has basal cortex typical of Late Archaic/Early Woodland types. Mulberry Creek Cordmarked and other grog tempered pottery sherds indicate occupation primarily in the Middle or Late Woodland, but smaller amounts of sand tempered pottery (plain, cordmarked and eroded) and mixed sand and grog tempered pottery (plain and eroded) as well as a single 7.9 g shell tempered sherd indicate other cultural components. A grog tempered eroded rim sherd (ST Hawkins/J.Starnes 80) has a squared rim from a straight wall. A large Mulberry Creek Cordmarked sherd (ST Starr 163) is thin and hard with coarse grog. A Baytown Plain sherd (ST Hawkins/J.Starnes 61) is likewise hard and thin. Quartz shatter is likewise commonly associated with Middle Woodland occupations. The minimal Mississippi period component evidenced by the shell tempered sherd in TU2 is typical of other similar ephemeral components that are indicative of low-intensity use of the floodplain during the latest part of prehistory.

Table 82. Rankin 8/9 Cores/bifaces

Provenience	Class	Comment	Dimensions	Weight
TU1L1 (0-20)	Tested pebble			4.9 g
TU2L1 (0-10)	Tested pebble			20.4 g
TU1L1 (0-10)	Pebble core			26.9 g
TU1L2 (10-20)	PP/K	Missing distal		9 g

Table 83. Rankin 8/9 Unifacial tools

Provenience	Debitage class	Modification	Dimensions	Weight
Millet 29	Flake fragment	distal		1.1 g

Evidence of historic use of the site was limited to a shotgun shell primer cap (paper wrapped, headstamp "WESTERN MADE IN U.S.A. No. 12 SUPER X") recovered in a shovel test and a length of cable observed on the surface.

The site is moderately disturbed, with impact from erosion, a trail, logging, a plowed fire break line and intermittent flooding. It is also shallow, with 66% of TU2 artifacts (n=47) coming from Level 1 (to 10 cmbs). This small, localized scatter results from several episodes of occupation as a low-intensity base camp as well as from more transitory camps. Artifact density varies from low to moderate. The site is interpreted as primarily a limited use base camp.

Due primarily to impact and poor preservation as well as low artifact density, Site 22-Ra-676 is considered to have limited potential to contribute significant new information about prehistory. Therefore the site is considered not eligible for the National Register. No further work is recommended.

[redacted]

Figure 208. Rankin 8/9 (22-Ra-676) TU2 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Rankin 8	TU 2	10	30.00	30.00	40.00
Rankin 8	TU 2	20	46.60	46.60	6.80
Rankin 8	TU 2	30	46.60	40.00	13.40
Rankin 8	TU 2	40	40.00	46.60	13.40
Rankin 8	TU 2	50	30.00	53.30	16.70
Rankin 8	TU 2	60	40.00	53.30	6.70
Rankin 8	TU 2	70	33.30	60.00	6.70
Rankin 8	TU 2	80	26.60	66.60	6.80
Rankin 8	TU 2	90	20.00	66.60	13.40
Rankin 8	TU 2	100	26.60	66.60	6.80

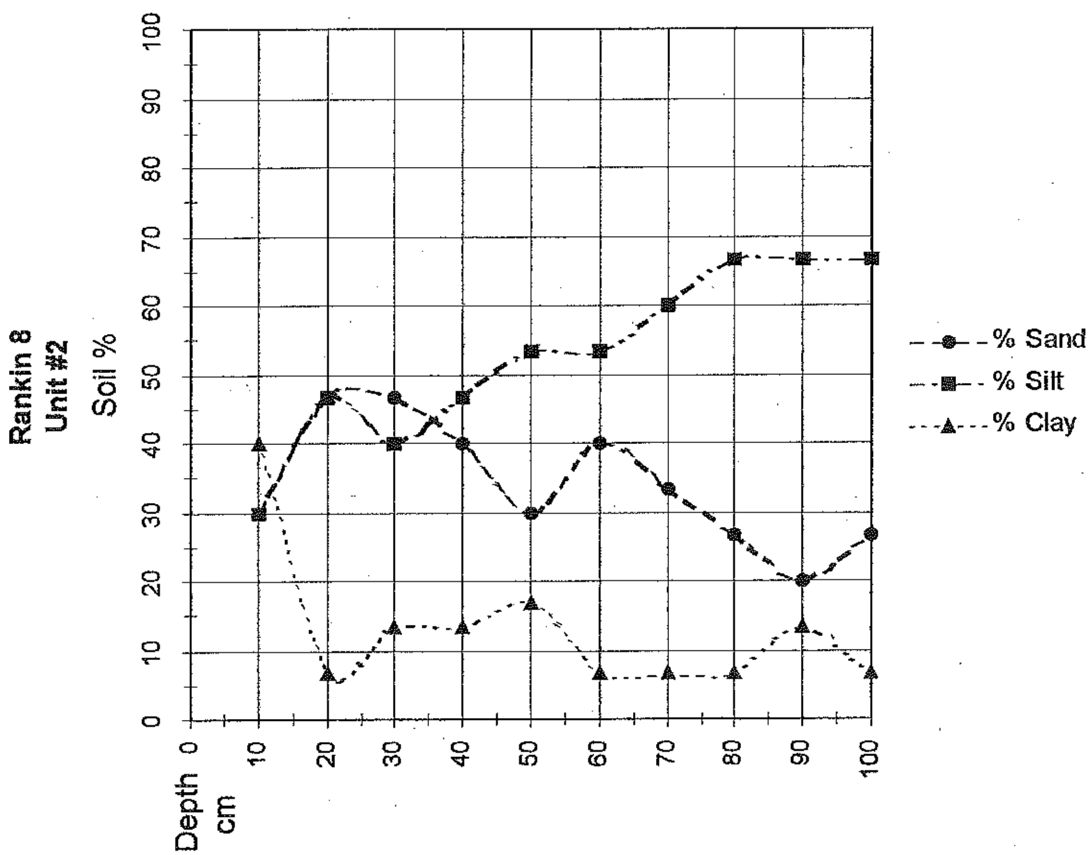


Table 84. Rankin 8 (22-Ra-676) pH measurements

Bag #	Site #/provenience	Depth (cmbs)	pH
1193	Rankin 8 TU2	(A) 0-15	5.5
1195	Rankin 8 TU2	80-90	5.5
1194	Rankin 8 TU2	(E) 30-40	4.9

Table 85. Rankin 9 (22-Ra-676) Artifact recovery from test units.

	Bag 387		Bag 1191		Bag 1192		
	TU1 L1		TU2 L1		TU2 L2		
	#	g	#	g	#	g	Total
Lithics							
Debitage							
Internal flake			1	0.8			**1**
Flake fragment			3	3.2	3	1.6	**6**
Cores/bifaces							
Tested pebble			1	20.4			**1**
Pebble core	1	4.9	1	26.9			**2**
Projectile point/knives					1	9	**1**
Unmodified stone							
Fire cracked rock			6	10	3	21.8	**9**
Chert pebble	1	8.4	1				**2**
Ferruginous sandstone			2	3.4	3	143.2	**5**
Hematite/siltstone			1	5.8			**1**
Petrified wood	1	0.5					**1**
Quartz	1	0.7			2	3.3	**3**
Ceramics							
sand plain			1	1.8			**1**
sand cordmark			1	4.4			**1**
grog eroded			4	7.1	3		**7**
grog cord marked			8				**8**
heterogeneous plain					1	3.5	**1**
shell plain			1	7.9			**1**
TOTAL	**4**	**14.5**	**31**	**91.7**	**16**	**182.4**	**51**

Table 86. Rankin 8/9 (22-Ra-676) total artifact recovery from shovel tests (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	1
Secondary decortication flake	16
Internal flake	1
Biface thinning flake	21
Flake fragment	11
Shatter	1
Other worked stone	
Unifacial tools	1
Unmodified stone	
Fire cracked rock	4
Chert pebble	4
Ferruginous sandstone	1
Quartz	5
Ceramics	
sand eroded	1
grog eroded	3
grog plain	1
grog cord marked	2
heterogeneous eroded	1

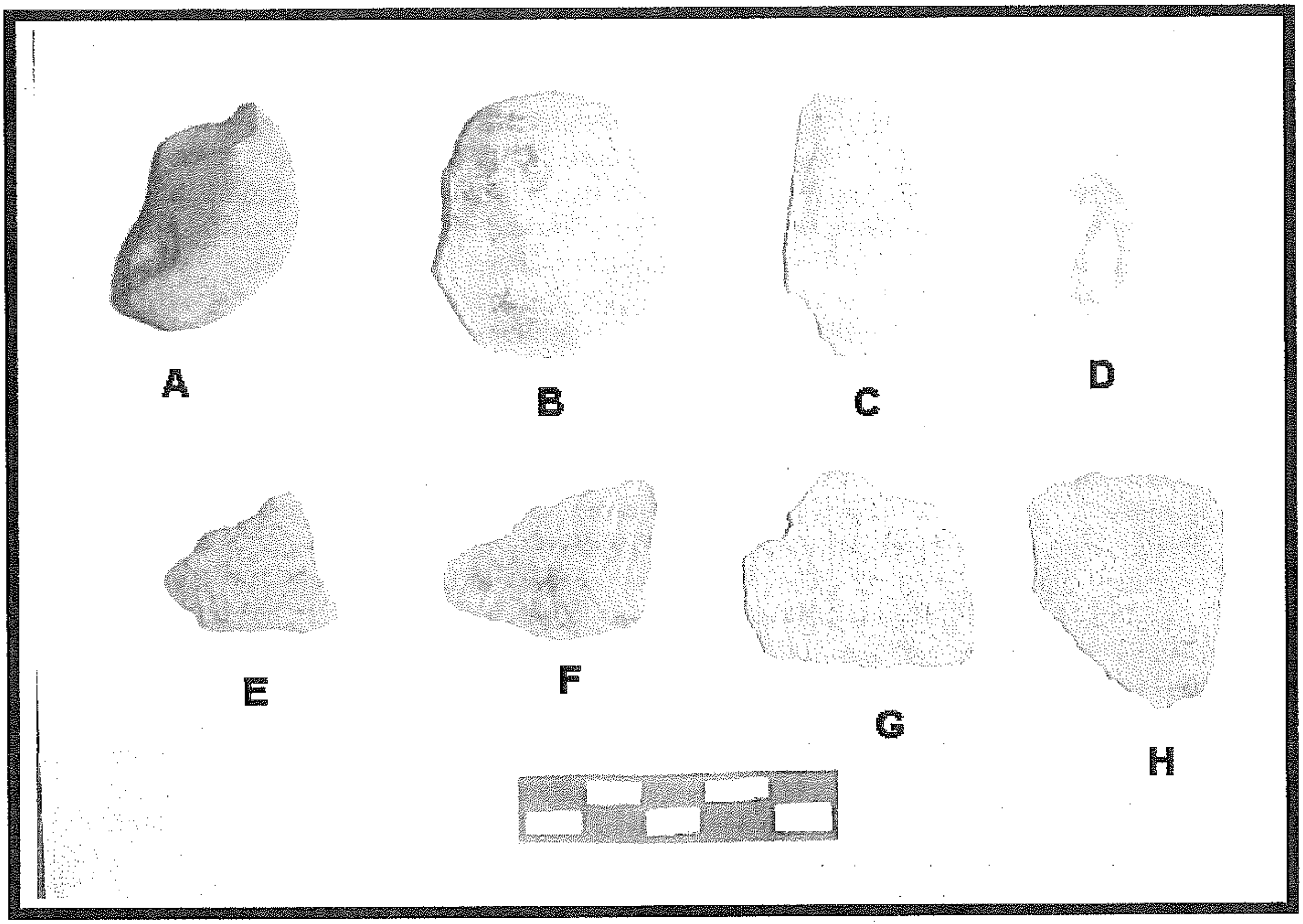


Figure 209. Rankin 8/9 (22-Ra-676) Artifacts. a. tested pebble; b. pebble core; c. projectile point/knife; d. utilized flake/uniface tool; e. sand tempered cord marked; f,g. grog tempered cord marked; h. shell tempered plain.

__Rankin 10/11 (22-Ra-677)__. This large moderate density prehistoric site was discovered through shovel tests in a high probability area within a previously surveyed area on 29 and 31 July 2004. An initial positive shovel test (Hawkins/J.Starnes T20) was flagged as Site 10 while a nearby positive shovel test (Hawkins/J.Starnes T21) was flagged as Site 11. These proved to both be on the same site (Figure 210). About 1 hour was spent on the site on this initial visit, with negative shovel tests being excavated about 30 m inland from the initial positive finds. Subsequent delineation on 5 and 10 m intervals by Starr, Hardy, and Millet (about 9 man-hours total on 6 August 2004) confirmed these as being a single site. The site was revisited by Starr and Barrett for a soil profile and samples from an additional 1x1 test unit on 19 October 2004 (4 man-hours). [redacted]

[redacted] The present run of the creek is nearby to the north and east. [redacted]. The eastern site boundary is a steep bank over this seasonally wet brake in an abandoned creek channel, but the soils and landform are stable away from this bank. The forest is mixed young and old hardwood with hickory and oaks predominant but a few mature pines but little merchantable hardwood timber. The understory is grapevine, switch cane, poison ivy, grass and elm and hickory saplings. The site has a 4 cm-thick accumulation of leaf litter and humus, so surface visibility was poor and no surface collection was made. [redacted] The site is in silty Holocene alluvium at 280' amsl. Soils are well-developed, well stratified, and well-preserved but the artifact-bearing deposit in the A and A/E horizons is thin, with artifacts being largely limited to the zone between approximately 5 and 20 cmbs (Figure 211). This apparent deflation as evidenced by abundant "buckshot" ferromanganese soil concretions appears to be natural due to the position in the landscape, but there is some possibility that the site is deflated due to shallow (approximately 10 cm) 19th century cultivation. A distinct clear boundary interpreted as the base of an early plowzone was observed in test units. The silt loam is compact on the level portion of the site, but looser towards the sloughing bank that forms the east boundary.

Because of the large site area and recovery of temporally diagnostic artifacts (Table 88), fairly extensive investigations were conducted to evaluate the significance of the site. Three 1x1 m test units were excavated in addition to site delineation shovel tests. All test units were excavated by shovel and dry screened through ¼" hardware cloth.

TU1 was excavated in 3 levels by Starr and Millet on 11 August 2004 (Figure 212). Level 1 (to 5 cmbs) was 10YR5/2 to 5/4 homogeneous silt loam without concretions or artifacts, but containing sparse recent forest-clearance derived charcoal. This upper organic horizon continues as darker insect-induced mottles into the next level. Level 2 (5-15 cmbs) was 10YR5/3 to 5/6 dry, crumbly loamy silt that gradually becomes brighter with depth and that is mottled by root and insect activity. A few rocks, flakes and sherds were recovered, but no charcoal or concretions (Table 89). Level 3 (15-25/30 cmbs) was crumbly, soft, dry, homogeneous loamy silt, 10YR5/4 at base, with very few inclusions besides 1-2 mm incipient concretions.

TU2, recorded by Harris on 11 August 2004, was also excavated in 3 levels. Highly contrasting results were obtained in this test unit. Level 1 (to 5 cmbs) was 10YR3/4 dark brown sandy loam with abundant concretions. Level 2 (2-20 cmbs) was 10YR5/4 yellowish brown silt loam with abundant concretions and a considerable quantity of flakes. Level 3 (20-30 cmbs) was yellowish brown clay loam with some concretions and otherwise sparse material.

TU3, recorded by Starr and Barrett on 19 October 2004, was excavated in 3 levels. Level 1 (to 7 cmbs) was a thin duff/grassy turf and a soft, loose, homogeneous loamy Ao horizon. Only 4 flakes were recovered from this level. Level 2 (8-17 cmbs) was a brown loam quickly grading lighter, with some darker mottles from roots and insects. The level had common Fe-Mg concretions, charcoal, pebbles, debitage and a Tallahatta quartzite pp/k stem (Figure 214). Level 3 (17-25 cmbs) had slight insect and root mottles and common Fe-Mg concretions but no artifacts. This unit was shoveled out down to 100 cmbs for soil samples (Figure 213). These reveal the known loamy artifact bearing horizon, and a fairly homogeneous deposit throughout. The clay maxima (20%) is reached at 30 cmbs, somewhat below the base of the shallow artifact bearing zone, which is confined to the elluvial or clay-depleted E horizon. This is taken to indicate that the soil profile development of an illuvial (B) horizon is moderate. This is commensurate with several millennia of soil profile development in homogeneous, loamy Holocene deposits. A 40 cmbs, a pronounced bulge in silt occurs, accompanied by an absence of clay at this same level of the B horizon. Below this depth, the percentage of clay never exceeds 10%, but the percentage of sand increases, indicating deposition by higher-velocity water earlier in the sequence.

The site is relatively undisturbed, with the main disturbance being a logging/4-wheel trail through the site. The site has also seen minor disturbance from biological agents, logging ruts from a few episodes of hardwood timbering, and periodic flooding. The possibility of early shallow plowing with associated erosional deflation was also noted. The temporal position is indicated by projectile point/knife stems attributable to the Late Archaic/Early to Middle Woodland interval. The site is interpreted as a repeatedly and perhaps heavily used hunting/gathering camp. Cordmarked ceramics indicate Middle to Late Woodland period occupation. The site may have served as a base camp during this later interval. Several shovel tests produced many flakes.

Because of the general lack of knowledge about local prehistory and the low level of impact by early cultivation and a few episodes of logging, Site 22-Ra-677 was subjected to fairly extensive investigation. The overall accumulation of artifacts is sparse to moderate over much of this large, multi-component site, and the site has produced diagnostic artifacts. Due to the general lower density and the evidently limited deposits compressing several millennia of the Archaic-Woodland transition, the site is believed to have limited interpretive potential and so is considered probably not eligible for the National Register. No further work is recommended.

[redacted]

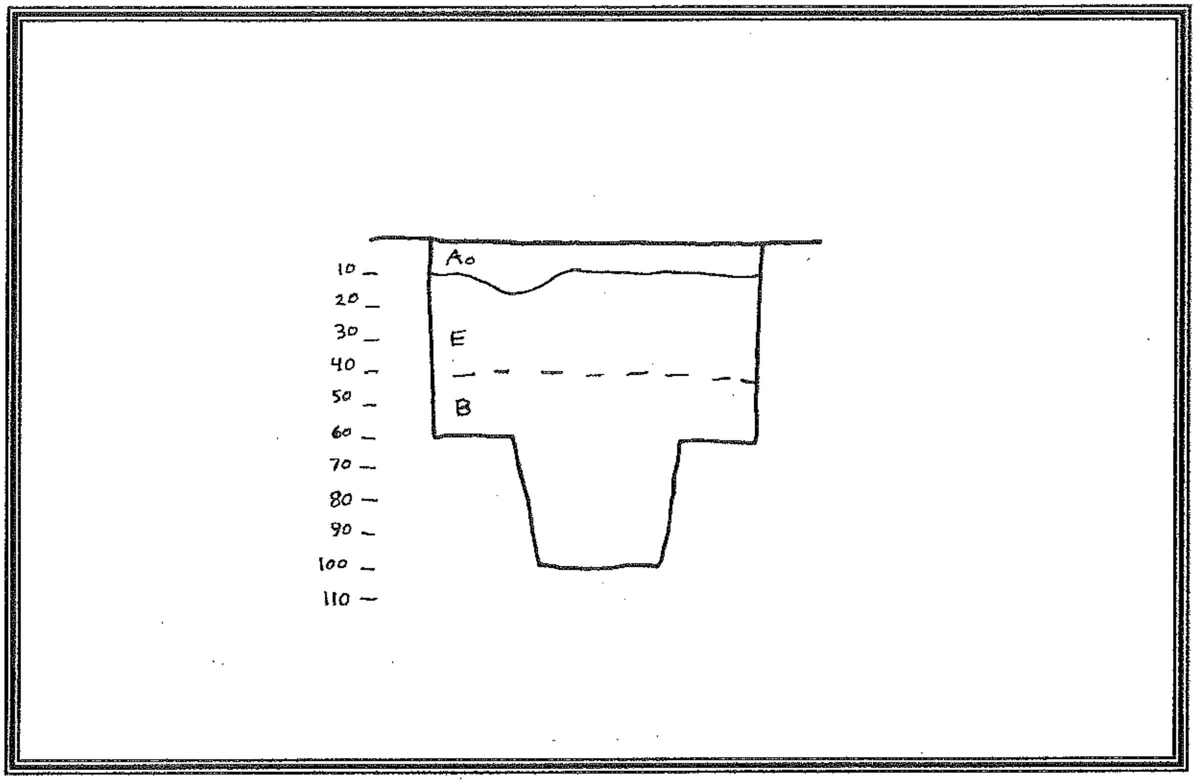


Figure 211. Rankin 10/11 (22-Ra-677) Soil Profile.

Key to Figure 211. Rankin 10/11 (22-Ra-677) Soil Profile

Horizon	Color	Texture	Structure	Inclusion/Mottles	Boundary
Ao	7.5YR2.5/2	silt loam with very weak duff	weak fine granular	homogeneous, some charcoal	gradual, smooth
E	10YR4/4	silt loam	friable moderate blocky abundant pore space	fine to medium roots, 3mm manganese concretions	concretions common and larger at base
B	10YR4/4	silt loam	strong blocky subangular well developed cracks with some silt filling, moderate biopore space	few roots, strong reduction-oxidation features	

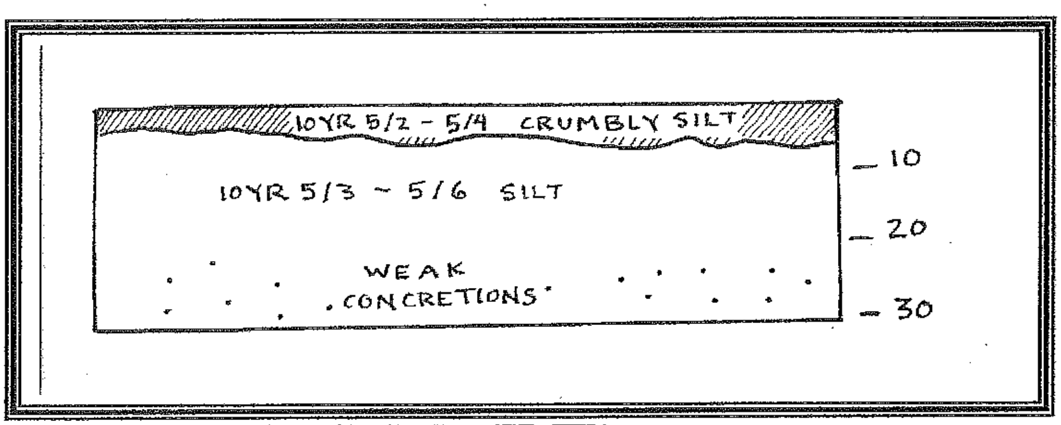


Figure 212. Rankin 10/11 (22-Ra-677) TU1.

Figure 213. Rankin 10/11 (22-Ra-677) TU3 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Rankin 10-11	TU 3	10	33.30	50.00	16.70
Rankin 10-11	TU 3	20	33.30	53.30	13.40
Rankin 10-11	TU 3	30	26.60	53.30	20.10
Rankin 10-11	TU 3	40	33.30	66.60	0.10
Rankin 10-11	TU 3	50	40.00	50.00	10.00
Rankin 10-11	TU 3	70	40.00	53.30	6.70
Rankin 10-11	TU 3	80	33.30	60.00	6.70
Rankin 10-11	TU 3	100	26.60	66.60	6.80

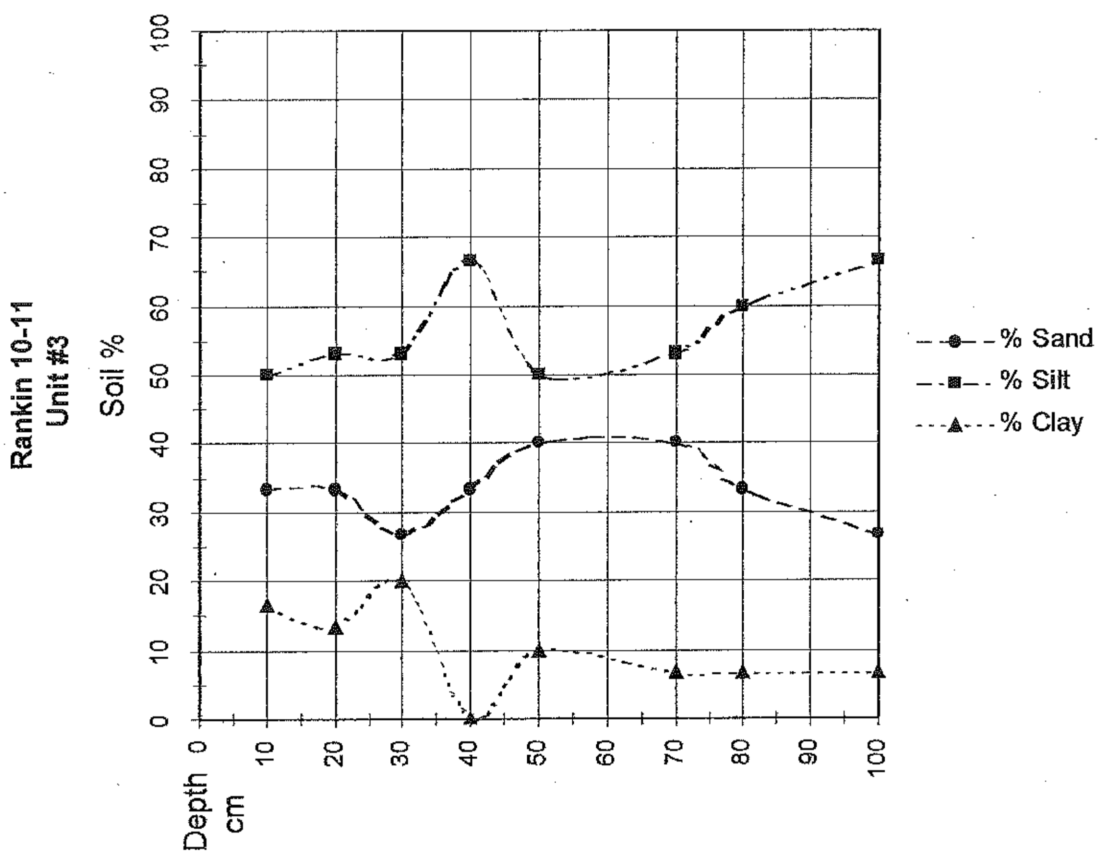


Table 87. Rankin 10/11 (22-Ra-677) pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	pH
1179	Rankin 10/11 TU3	(A) 0-20	5.0
1180	Rankin 10/11 TU3	(E) 30-40	4.5
1181	Rankin 10/11 TU3	(B) 80-90	5.3

Table 88. Rankin 10/11 (22-Ra-677) total artifact recovery from shovel tests (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	7
Secondary decortication flake	13
Internal flake	3
Biface thinning flake	13
Flake fragment	8
Shatter	1
Cores/bifaces	
Biface fragments	1
Other worked stone	
Unifacial tools	1
Unmodified stone	
Fire cracked rock	2
Chert pebble	9
Petrified wood	1
Quartz	5
Ceramics	
untempered eroded	1
grog eroded	4
grog cord marked	1
heterogeneous eroded	3

Table 89. Rankin 10/11 (22-Ra-677) Artifact recovery from test units.

	Bag 273		Bag 370		Bag 371		Bag 372		Bag 1177		Bag 1178		
	TU2 L3		TU1 L2		TU1 L3		Crew 2		TU3 L1		TU3 L2		
	#	g	#	g	#	g	#	g	#	g	#	g	Total
Lithics													
Debitage													
Primary decortication flake	1	0.5	1	7.5					1	0.2			3
Secondary decortication flake	1	1.3	2	6					1	0.4	7	15.7	11
Internal flake			1	0.7							1	0.3	2
Biface thinning flake	2	0.6	2	0.5			3	1	2	0.9	8	4.6	17
Flake fragment			3	1	1	0.2					4	1	8
Cores/bifaces													
Projectile point/knives											1	8.2	1
Biface fragments							1	0.5					1
Unmodified stone													
Fire cracked rock	1	0.3			2	1.6							3
Chert pebble											1	28	1
Hematite/siltstone			2	15.2							1	0.7	3
Petrified wood											1	9.9	1
Quartz			1	0.7							4	5.3	5
Concretions	7	2.4					2	0.6			3	1	12
Ceramics													
grog eroded			2	4.3			1	0.5					3
grog cord marked							2	5.2					2
TOTAL	**12**	**5.1**	**14**	**35.9**	**3**	**1.8**	**9**	**7.8**	**4**	**1.5**	**31**	**74.7**	**73**

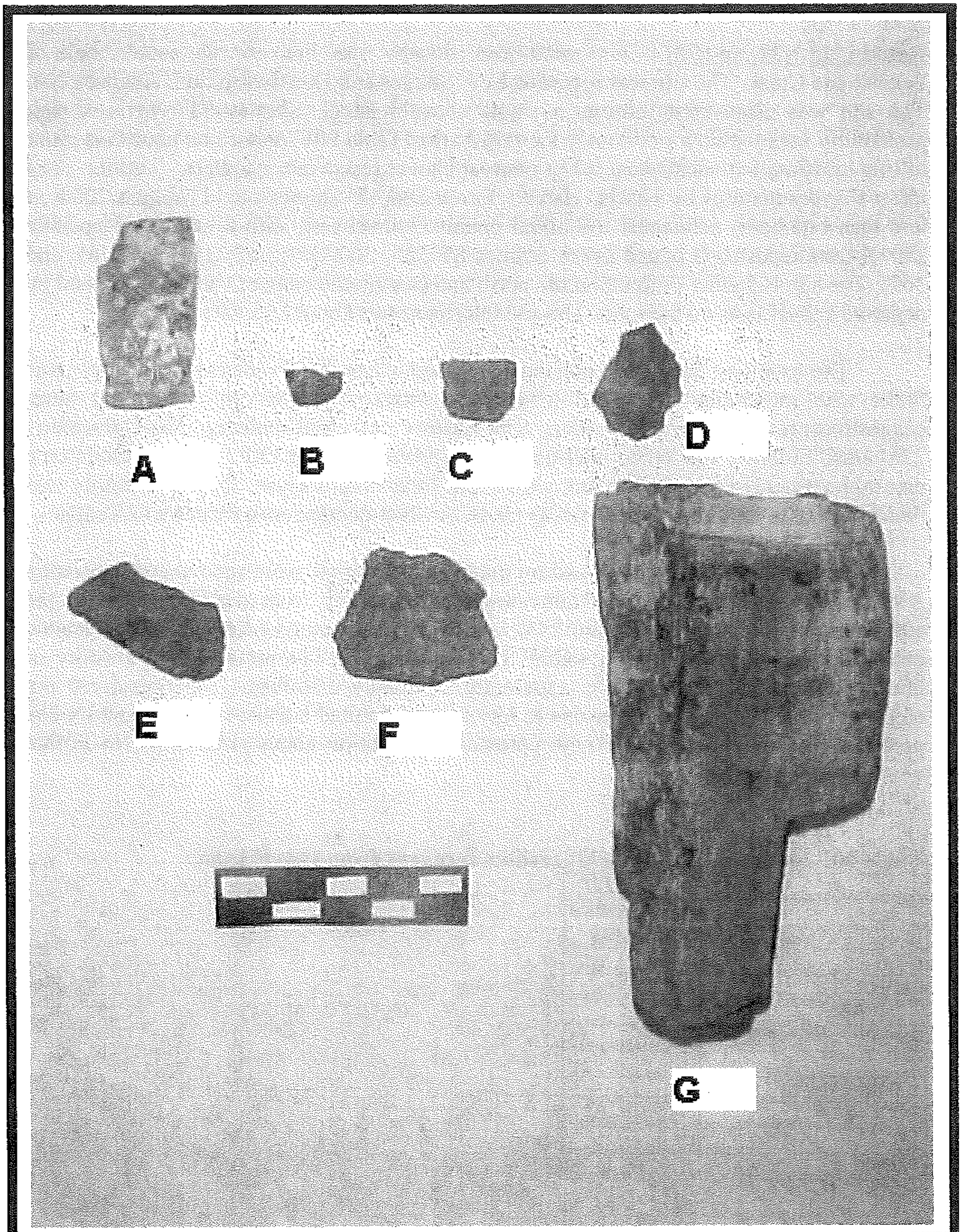


Figure 214. Rankin 10/11 (22-Ra-677) Artifacts. a. quartzite projectile point knife; b,c. biface fragments (projectile point stems); d. utilized flake uniface; e,f. grog tempered cord marked; g. knapped petrified wood.

Rankin 13 (22-Ra-678). This small low, density site [redacted] The site was recorded by J. Starnes and Duckworth on 2 August 2004. The site was discovered through a single shovel test (J. Starnes ST 94) in a high probability area within a previously surveyed area (Table 90). About one hour was spent in this location, but subsequent 30 m interval shovel tests were negative. Further 10 m interval investigations by Hardy, Harris, Barrett and M. Starnes on 11 August 2004, in less than one hour, delineated the initial positive shovel test, with 8 additional positive shovel tests reported (Logged as M. Starnes ST 355, 360, 361, 362, 365, 364, 365, and 367). The site is further defined on the north and east by the edge of the landform and by negative shovel tests on the west. [redacted]

The area has heavy bottomland hardwood cover with a dense understory cane brake with muscadine vines and briars. The forest is mixed old and young trees, suggesting previous selective cutting, with hickory and elm dominant. The elevation is 275' amsl. Soils are stable and well-developed in fine sandy to silty soils deposited on a natural levee in Holocene alluvium, with a leaf litter-humus layer. Surface visibility was thus poor and no surface collection was made. Artifact depths range from 5 to 25 cmbs.

Only lithics are reported, and no diagnostic materials were recovered, suggesting Archaic period occupation, but this interpretation is far from definitive due to the sparseness of the material (Figure 215); a later special purpose/non-habitation ceramic period occupation is likewise possible. This small site is interpreted as a transitory or hunting camp. Site 22-Ra-678 is apparently minimally disturbed, it is considered not eligible for the National Register due to low density, limited artifact recovery and limited potential to provide significant new potential information about prehistory. No further work is recommended.

Table 90. Rankin 13 (22-Ra-678) artifact recovery from shovel tests.

	Bag 227	
	Duckworth-J Starnes 94	
	#	g
Lithics		
Debitage		
Secondary decortication flake	1	2.4
Cores/bifaces		
Pebble core	1	67.6
TOTAL	2	70

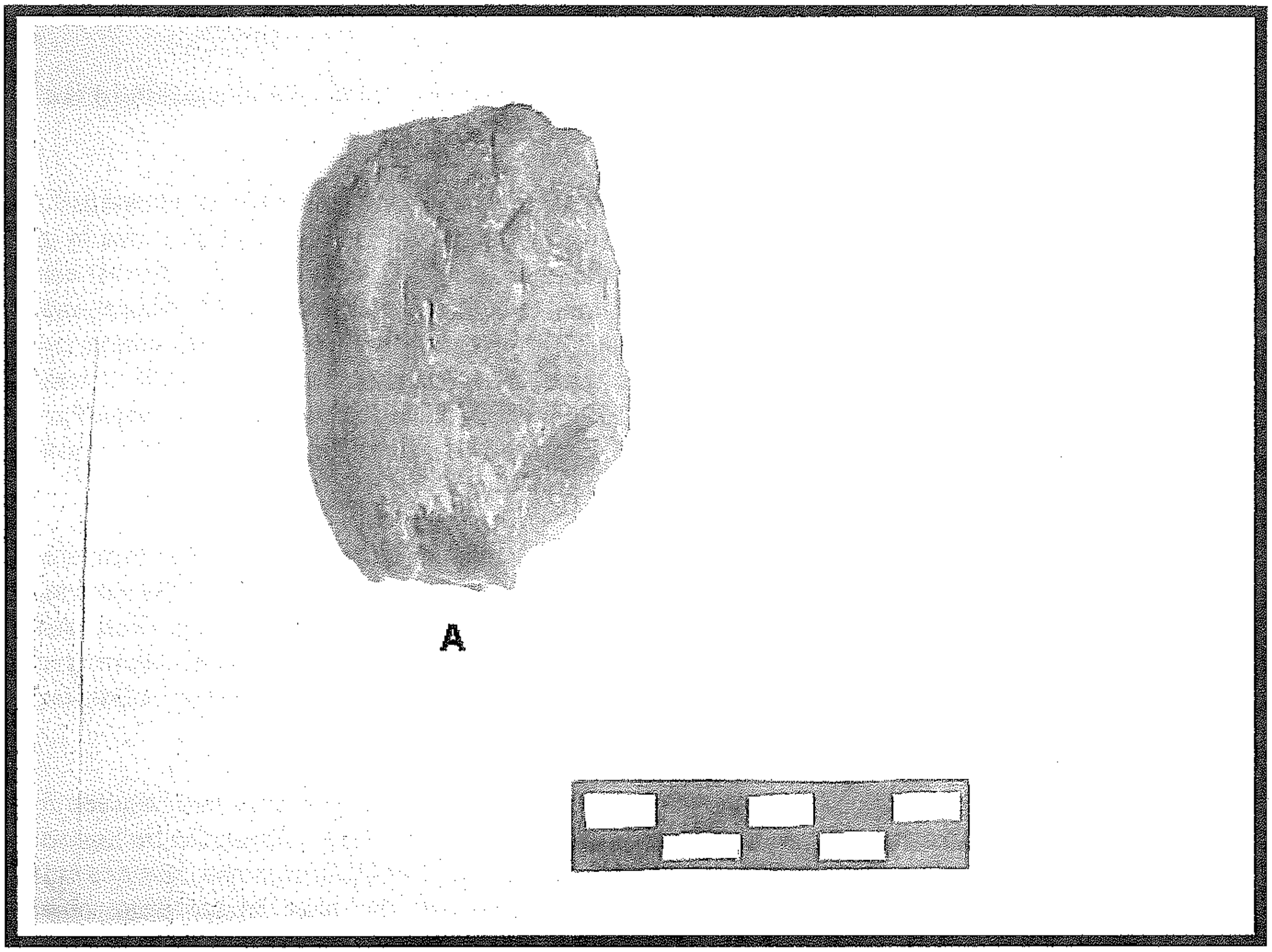


Figure 215. Rankin 13 (22-Ra-678) Artifacts. a. pebble core.

Rankin 14 (22-Ra-679). This location was identified by shovel testing by Hawkins and J. Starnes on 7 August 2004. Four man-hours were spent on the site at that time. The site was delineated on 10 m intervals by Orsbun, Underwood, J. Starnes, Hawkins and M. Starnes on 18 September 2004. There are only three positive shovel tests recorded at this location (ST Hawkins/J. Starnes T26 ST 97, 99 and ST J. Starnes 67). Seven additional negative shovel tests were also excavated. [redacted]

This site [redacted] The two locations should probably have been combined into a single, highly disturbed site. The east boundary is a overgrown clearcut with deflated soils. The site has mixed pine and oak forest that has been selectively cut. The surface is covered with muscadine vines, leaf litter and a humus layer.

A small quantity of prehistoric ceramics and lithics were recovered (Table 91). The deposit appears to lie between 5 and 25 cmbs. The site is considered to be a transitory hunting/gathering camp or work station dating to the Woodland period. Due to impact from timbering and the limited materials recovered, 22-Ra-679 is considered not eligible for the NRHP. No further work is recommended.

Rankin 15 (22-Ra-680). This minor manifestation was initially recorded by Hawkins/J. Starnes on 7 August 2004 when the location was spotted as a high-probability area in a previously surveyed tract while they were looking for 22-Ra-565. A single shovel test (Hawkins/Starnes ST 102) was excavated and two flakes were recovered. About one man-hour was spent at the site at this time. The site was revisited for delineation by Orsbun, Underwood, Hawkins, M. Starnes and J. Starnes on 18 September 2004. It was delineated on 10 m intervals (See Figure 216). Nine additional shovel tests were negative. Only one additional positive shovel test (J. Starnes 66) was reported. [redacted]

[redacted] A gravel road forms the south boundary of the site. The site has mixed hardwood and pine forest cover that has seen previous selective cuts. Red and white oaks, elm and sweetgum were noted. The understory consists of cane. There is a thick leaf litter and humus layer, so surface visibility is poor and no surface collection was made.

Prehistoric lithics were recovered (Table 92). The artifact deposit lies between 5 and 25 cmbs. The land form and site soils are stable. The density appears to be low to moderate. [redacted] There is no information for the temporal affiliation of the site, and it is interpreted as a transitory hunting/gathering camp or work station. Due to the limited nature of the deposit and apparent high degree of disturbance, 22-Ra-680 is considered ineligible for the National Register. No further work is recommended.

[redacted]

Table 91. Rankin 14 (22-Ra-679) artifact recovery from shovel tests.

	Bag 224 Hawkins-J Starnes 97		Bag 225 Hawkins-J Starnes 99		Bag 526 J Starnes 67	
	#	g	#	g	#	G
Lithics						
Debitage						
Biface thinning flake			2	0.7		
Flake fragment			4	0.8		
Ceramics						
grog plain	1	1.8			1	3.6
grog cord marked			1	3.8		

Table 92. Rankin 15 (22-Ra-680) artifact recovery from shovel tests.

	Bag 226 Hawkins-J Starnes 102		Bag 1574 J Starnes 66	
	#	g	#	g
Lithics				
Debitage				
Secondary decortication flake	1	1.9	1	0.7
Internal flake			1	1
Biface thinning flake	1	0.7		

Rankin 17 (22-Ra-681). This site was recorded by Orsbun, Underwood and M. Starnes on 17-21 September 2004. The site was identified at Orsbun T23 ST 106 and was delineated on 5 m intervals. The site is about 35 m in diameter. Seventeen positive shovel tests are mapped: Orsbun 106, 134, 138, Underwood 248, 250, 252, 255,257, 258, 280 and M. Starnes 507, 508, 509, 514, 515, 520, 549. Test Unit 1 was located near negative shovel tests Orsbun 135, 136, and 141 but was an expansion of Orsbun 146 (Figure 217). [redacted] A trail on the spoil bank of the drainage canal provides access to the site. The area is a mature/sensecent pine plantation with mixed hardwoods (red and white oaks) with maple, palmetto, sweetgum and privet as the understory. The surface is covered with duff so visibility was poor and no surface collection was made. Site soils were considered to be stable and well developed.

A 1x1 m test unit was excavated in 4 arbitrary 10 cm levels (Figure 220). Level 1 (to 10 cmbs) was homogeneous 10YR3/2silt loam with ferro-manganese concretions and charcoal. This level is interpreted as containing the Ao horizon and the transition to the E horizon below 5 cmbs. Artifacts were dense and included a stemmed point (Figure 221). Level 2 (10-20 cmbs) was homogeneous 10YR3/2 silt loam E horizon with Fe-Mg concretions and dense artifacts including a pp/k distal fragment. Level 3 (20-30 cmbs) was homogeneous 10YR3/2 silt loam with Fe-Mg concretions. This level was interpreted as including the transition from the E to the B horizon at about 25 cmbs, where artifacts "tapper out." Level 4 (30-40 cmbs) was homogeneous 10YR4/6 silty clay loam with Fe-Mg concretions (Figure 219a). This level was interpreted as B horizon and was archaeologically sterile.

Site 22-Ra-681 has a low to medium density of prehistoric lithics (Table 95). Most shovel tests produced only one artifact. Artifacts were particularly dense at ST Orsbun 146 (10-25 cmbs). This shovel test was included in/expanded into TU1, so the density in the test unit is not fully representative. The test unit produced 409 artifacts; if Orsbun 146 (n=27) is included this is 436 items. Level 1 (to 10 cmbs) produced 13.4%, Level 2 (10-20 cmbs) 81.1% and Level 3 (20-30 cmbs) 5.3% of the material (n=409) attributable to levels. Many of the large, early stage flakes from TU1 Level 1 appear to be from the same core. This unit also had much burned rock, indicating a hearth. The test unit indicates considerable density of debitage and other natural/minimally modified stone (fire cracked rock, ferruginous sandstone, hematite, petrified wood, chert pebble). Fragments of local quartzite debitage were recovered in ST Underwood 250 and ST M.Starnes 507.

Table 93. Rankin 17 Cores/bifaces

Provenience	Class	Comment	Dimensions	Weight
TU1L1	PP/K			4
TU1L2	Biface fragment	distal		5.6
TU1L3???	Biface fragment			
M.Starnes	PP/K, arrow	Heat-treated		.8 g

Table 94. Rankin 17 Unifacial tools

Provenience	Class	Modification	Dimensions	Weight
Orsbun 146	Secondary	Distal use		2.7 g

The site is well preserved, with selective cutting having been the main impact. A stemmed point from TU1 is tentatively identified as Middle/Late Archaic (Table 96). The mass of material, including burned rock, may be associated with the earlier component. The Collins arrow point indicates Late Woodland/Mississippian occupation. The Tallahatta quartzite could be indicative of either the Middle Archaic or Late Archaic/Woodland components. Note that no ceramics are reported from this site, indicating transitory late prehistoric use. Due to moderate to high artifact density and high diversity including tools as well as debitage, the site has the potential to provide significant information. Therefore the site is potentially eligible for the National Register and should be evaluated at the Phase II level if it is to be impacted by this project.

[redacted]

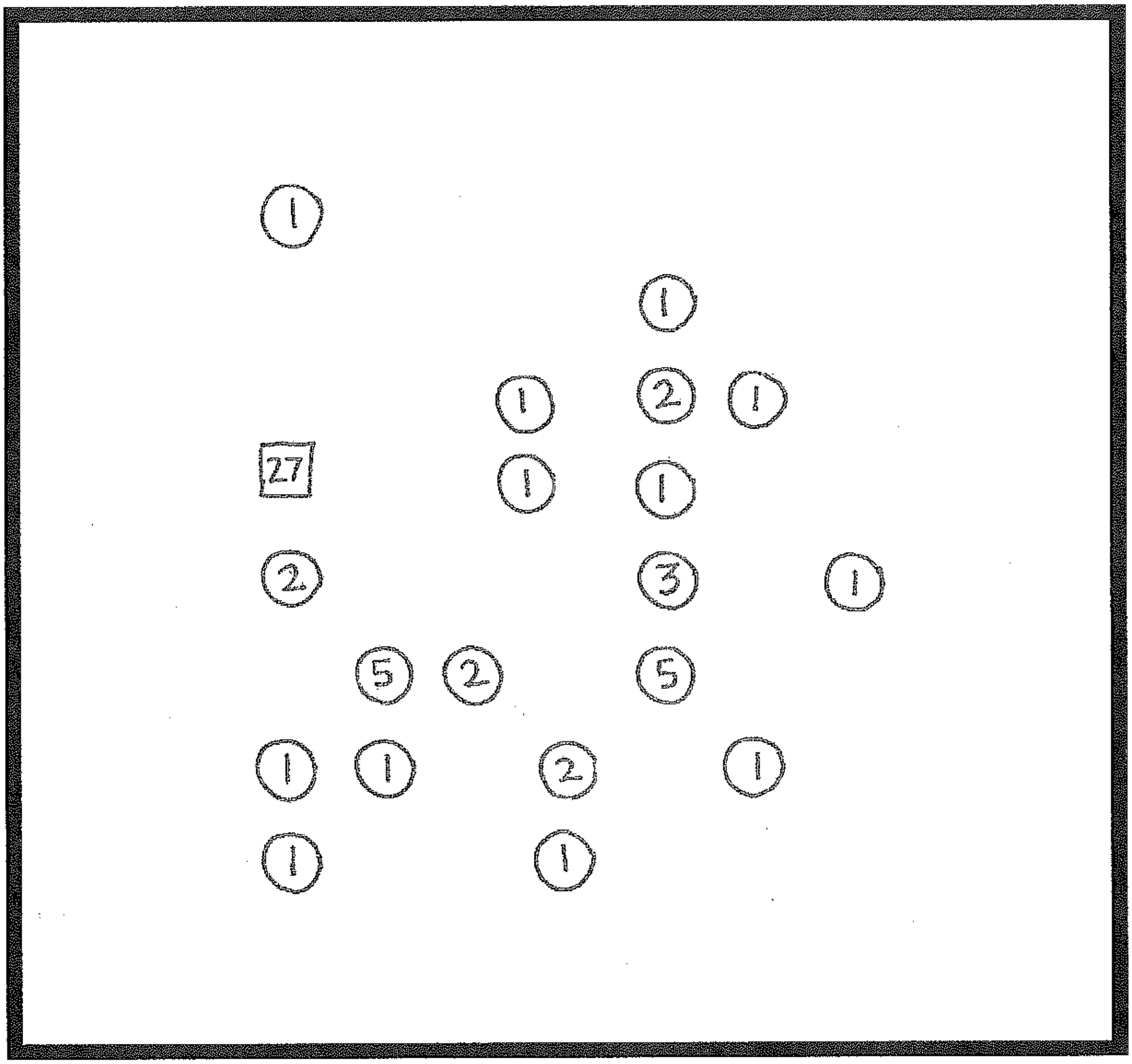


Figure 218. Rankin 17 (22-Ra-681) distribution map.

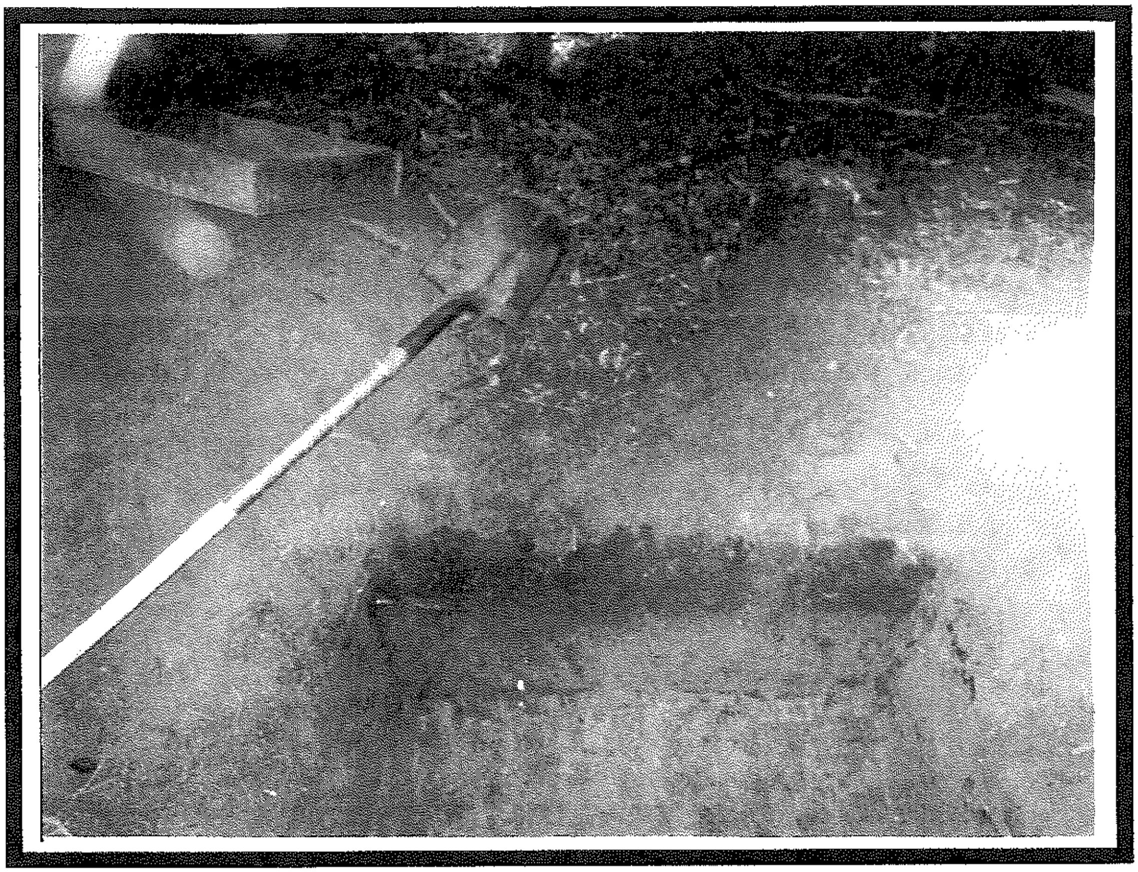


Figure 219. Rankin 17 (22-Ra-681), a. TU1 at 40 cmbs; b. [redacted]

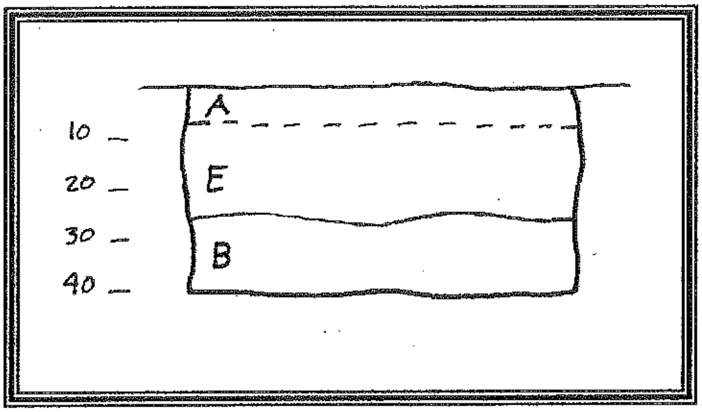


Figure 220. Rankin 17 (22-Ra-681) TU1 Soil Profile

Key to Figure 220. Rankin 17 (22-Ra-681) Soil Profile

Level	Color	Texture
A	10YR3/2	silt loam
E	10YR3/2	silt loam
B	10YR4/6	silty clay loam

Table 95. Rankin 17 (22-Ra-681) total artifact recovery from shovel tests (see appendix table.)

	Total
Lithics	
Debitage	
Primary decortication flake	5
Secondary decortication flake	8
Internal flake	6
Biface thinning flake	12
Flake fragment	19
Cores/bifaces	
Projectile point/knives	1
Other worked stone	
Unifacial tools	1
Burned earth	5
Ceramics	
untempered eroded	3
grog plain	1

Table 96. Rankin 17 (22-Ra-681) TU1 Artifact recovery.

	Bag 566 TU1 L1		Bag 567 TU1 L2		Bag 568 TU1 L3	
	#	g	#	g	#	g
Lithics						
Debitage						
Primary decortication flake	6	17.1	25	42	2	0.8
Secondary decortication flake	14	33.3	57	58.5	1	1.6
Internal flake	8	9.4	14	6.7	2	1.8
Biface thinning flake	17	17.4	96	49.3	6	2.6
Flake fragment	8	6.6	92	35.5	7	1.6
Shatter			10	24		
Cores/bifaces						
Amorphous core	1	2.1				
Projectile point/knives	1	4				
Biface fragments			1	5.6		
Unmodified stone						
Fire cracked rock			13	14.8	2	2.2
Chert pebble					1	4.6
Ferruginous sandstone			1	1		
Hematite/siltstone					1	3.2
Petrified wood			23	22.1		

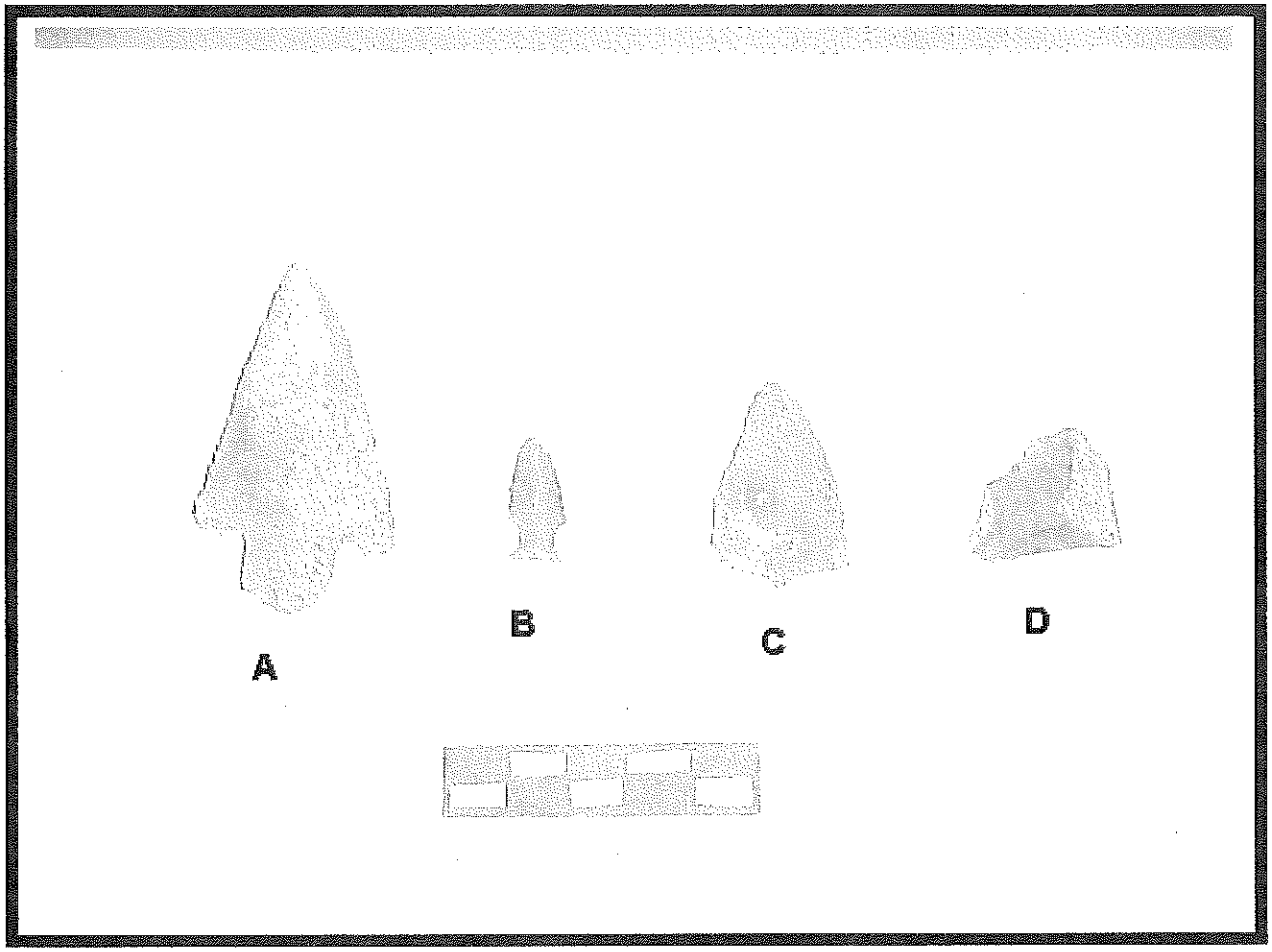


Figure 221. Rankin 17 (22-Ra-681) Artifacts. a. projectile point/knife; b. arrow point; c. biface fragment; d. utilized flake/unifacial tool.

Rankin 18 (22-Ra-682). This small scatter was recorded by Orsbun on 17 September 2004. The initial positive was M.Starnes 498. The site was delineated on 10 m intervals (Figure 222). Two additional positive shovel tests are reported: M. Starnes 501 (not tabulated) and 503. Tabulation however also includes Underwood 246 "E20MS498." [redacted]

The site lies on a natural levee on the edge of the first terrace overlooking Prairie Branch drainage canal. The site is in a mature pine plantation. A trail runs along the west boundary of the site. The surface was covered with duff so visibility was poor and no surface collection was made.

Prehistoric lithics (1 secondary decortication flake and 1 flake fragment) and historic artifacts (1 clear bottle glass and 1 fragment of stoneware, handmade buff-bodied Albany interior and exterior slipped) were recovered.

The site has been heavily disturbed by logging resulting in soil deflation. Due to heavy impact and highly limited deposits, the site is considered ineligible for the NRHP. No further work is recommended.

[redacted]

Rankin 19 (22-Ra-683). This small, low density site was found as a surface scatter of lithics on a dirt trail. [redacted] It was recorded by Orsbun, M. Starnes, J. Starnes, Underwood and Hawkins on 18 September 2004. Five man-hours was spent at this location. Visibility was poor, but a surface collection was made and the site was delineated on 10 m intervals (Figure 223). [redacted]

This location is a mature/senescent pine plantation. With red and white oaks and sweetgum. The site setting is a natural levee. A slough forms the north boundary of the site. 6 positive shovel tests are reported. The deposit is estimated to be around 10 cm thick. The soils are deflated. Materials collected are 2 biface thinning flakes, 1 tested pebble, 1 fire cracked rock, and 1 shell tempered plain (Mississippi Plain) sherd (Table 98). One of the biface thinning flakes is local quartzite.

Table 97. Rankin 19 Cores/bifaces

Provenience	Class	Comment	Dimensions	Weight
Underwood 268	Tested pebble			11.3 g

No interpretation of site function was offered, but the site seems best interpreted as a transitory hunting/gathering camp. Use in the Mississippi period is indicated by a single 2.2 g sherd. An historic agricultural component is also reported, but no historic materials are included in the tabulation.

Site preservation is very poor due to logging, skidding, push-piling and replanting. Due to this and the low density and diversity, along with the lack of diagnostics, Site 22-Ra-683 is considered ineligible for the National Register. No further work is recommended.

[redacted]

Table 98. Rankin 19 (22-Ra-683) artifact recovery from shovel tests.

	Bag 508 Underwood 268		Bag 509 Underwood 269		Bag 510 M Starnes 538		Total
	#	g	#	g	#	g	
Lithics							
Debitage							
Biface thinning flake	1	0.3	1	0.2			2
Cores/bifaces							
Tested pebble	1	11.3					1
Unmodified stone							
Fire cracked rock					1	1.2	1
Ceramics							
shell plain					1	2.2	1
TOTAL	2	11.6	1	0.2	2	3.4	5

<u>Rankin 20 (22-Ra-684)</u>. This minor manifestation [redacted] It was recorded by Orsbun, Underwood and M. Starnes on 22 September 2004. The site was discovered while conducting 30 m interval shovel test transects. The site was delineated on 10 m intervals. Only two positive shovel tests are reported (Orsbun T32 ST160 and M.Starnes T64 ST566). Nine additional negative shovel tests were excavated in this area (Figure 224). Three man-hours were spent on this site. [redacted]

[redacted] The west boundary is an electric power transmission line cut. Spoil banks from canal and power line construction have significantly impacted the site. The site is covered with a hardwood and pines thicket with maples, elms, oaks and sassafras. The surface is covered with vines, briars and duff so visibility was poor, but a pp/k was surface collected (Figure 225). Soils are deflated and the location is subject to erosion. Materials recovered were 1 flake fragment and 1 projectile point/knife (Table 99). This broad bladed, stemmed point is tentatively classified as Middle Archaic.

Table 99. Rankin 20 Cores/bifaces

Provenience	Class	Comment	Dimensions	Weight
Orsbun 160	PP/K	entire		21.9 g

A low density lithic scatter is indicated, but interpretation of the original site is not possible due to high degree of mechanized impact. Site 22-Ra-684 may have been a Middle Archaic period transitory hunting/gathering camp. The site has seen major disturbance from erosion, road construction, bulldozing, forestry, and drainage improvement. The site is considered to be essentially destroyed, so it is ineligible for the NRHP. No further work is recommended.

[redacted]

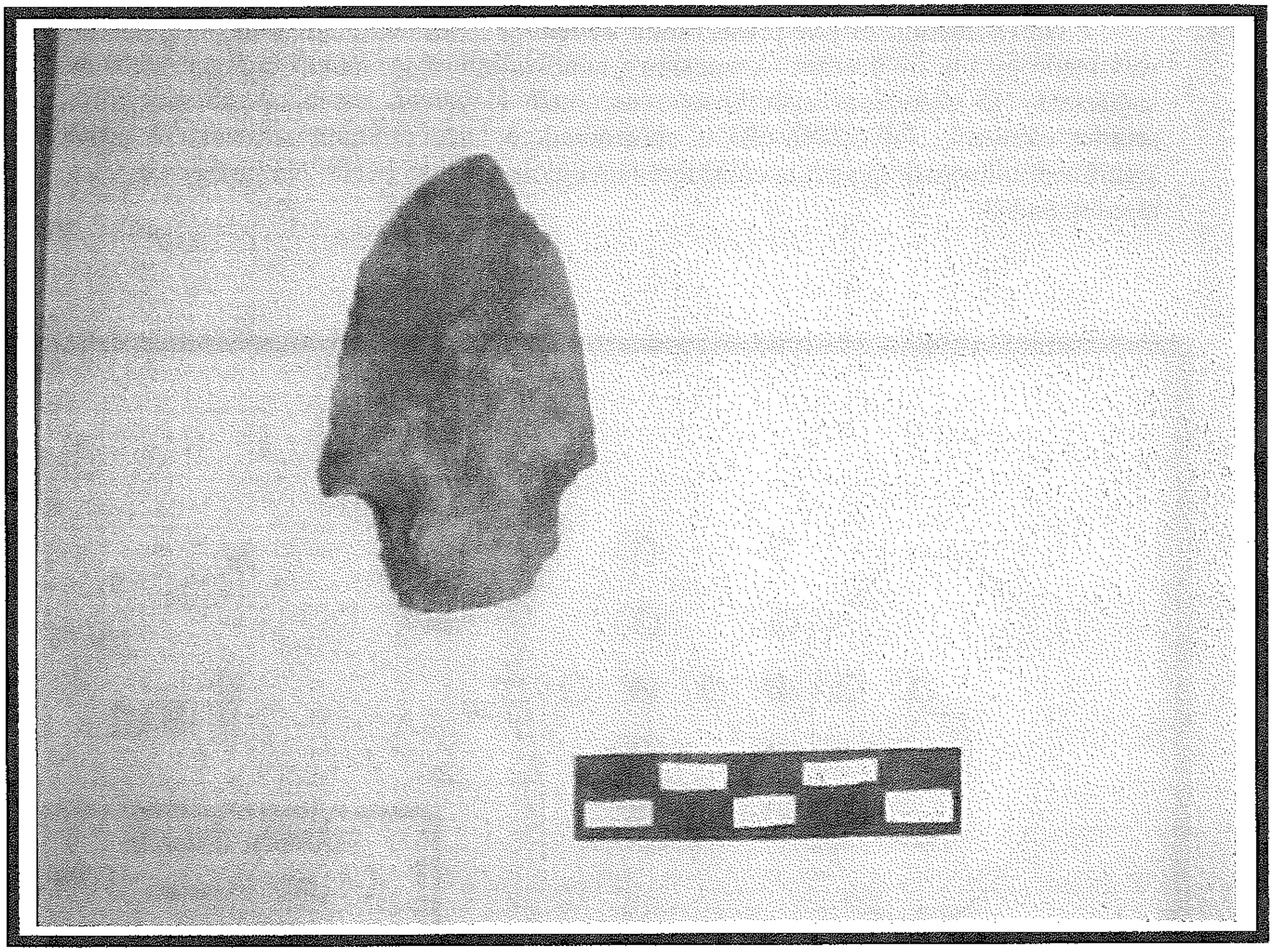


Figure 225. Rankin 20 (22-Ra-684) Artifacts; projectile point/knife.

Rankin 21 (22-Ra-685). This minor prehistoric site was recorded by Orsbun, M. Starnes and Underwood on 23 September 2004. It was located while conducting 30 m interval shovel test transects. The site was delineated on 10 m intervals. About 6 man-hours was spent on the site. Only two positive shovel tests are mapped (M. Starnes 586 and Underwood 292) (Figure 226). An additional 13 shovel tests were negative. [redacted] There is a swale along the east side of the site. The location is considered to be a point bar on a T1 surface. The area is old hardwood forest. The surface is covered with duff so surface visibility was poor. The geomorphic location and site soils are stable.

Only prehistoric lithics are reported (Table 101). These were 1 biface thinning flakes, 1 flake fragment, and 1 tested pebble.

Table 100. Rankin 21 Cores/bifaces

Provenience	Class	Comment	Dimensions	Weight
M.Starnes 586	Tested pebble			28.8 g

No evaluation of site preservation, temporal placement, function of significance was made by the field crew. A transitory hunting/gathering camp, perhaps Archaic, is suggested. No significant disturbance was noted. However, based on the very limited artifact recovery, Site 22-Ra-685 is considered to have minimal potential to provide significant information, so it is considered ineligible for the NRHP. No further work is recommended.

[redacted]

Table 101. Rankin 20 (22-Ra-684) and Rankin 21 (22-Ra-685) artifact recovery from shovel tests.

	Bag 718 Orsbun 160		Bag 719 M Starnes 566		Bag 766 Underwood 292		Bag 767 M Starnes 586		Total
	#	g	#	g	#	g	#	g	
Lithics									
Debitage									
Biface thinning flake			1	1.1			1	0.5	2
Flake fragment					1	0.2			1
Cores/bifaces									
Tested pebble							1	28.8	1
Projectile point/knives	1	21.9							1
TOTAL	1	21.9	1	1.1	1	0.2	2	29.3	5

Rankin 22 (22-Ra-686). This large site was recorded by Orsbun on 23 September 2004. It was discovered with conducting 30 m interval shovel test transects. The site was delineated on 10 m intervals. About 24 man-hours were spent in this endeavor.

[redacted] Shovel testing reveals a gap of 50-60 m across a swale between two clusters of 14 positive shovel tests each on two point bars (Figure 227). There were 25 negative shovel tests defining the boundaries of the western cluster and 28 defining the boundaries the eastern cluster. [redacted] This terrace surface stands at 175' amsl. The area has a mixed oak-hardwood thicket in a mature/senesent pine plantation. The site is covered with duff so surface visibility was poor and no surface collection was made.

The deposit depth is about 20 cmbs. Prehistoric ceramics and lithics were recovered (Table 103). Most of the material is debitage. Dense debitage was recovered from Underwood 305, where all 6 items may be from the same core. M. Starnes 573 also produced dense debitage (n=9). A minimal amount of grog tempered eroded pottery indicates Middle/Late Woodland period occupation. An historic agricultural component is also reported, but no historic materials were recovered; this may refer to an old field/pasture setting. Artifact density is low to moderate. No estimation was made by the field crew as to site function, chronological placement, or significance. Artifact class diversity is moderate, and there are some areas with increased density. The site is considered to represent occupations as low-intensity use hunting/gathering and base camps.

Table 102. Rankin 22 Cores/bifaces

Provenience	Class	Comment	Dimensions	Weight
Orsbun 177	Tested pebble			24.1 g
M. Starnes 611	Biface fragment	Burned distal		.3 g

There are extensive areas of deep disturbance on and around the site. Soils are deflated and subject to erosion. Impacts include cultivation, biological and other natural causes, bulldozering, tree planting rows and other logging disturbance from former clear cutting, borrow pits and push piles. Due to extensive disturbance Site 22-Ra-686 is considered ineligible for the NRHP. No further work is recommended.

[redacted]

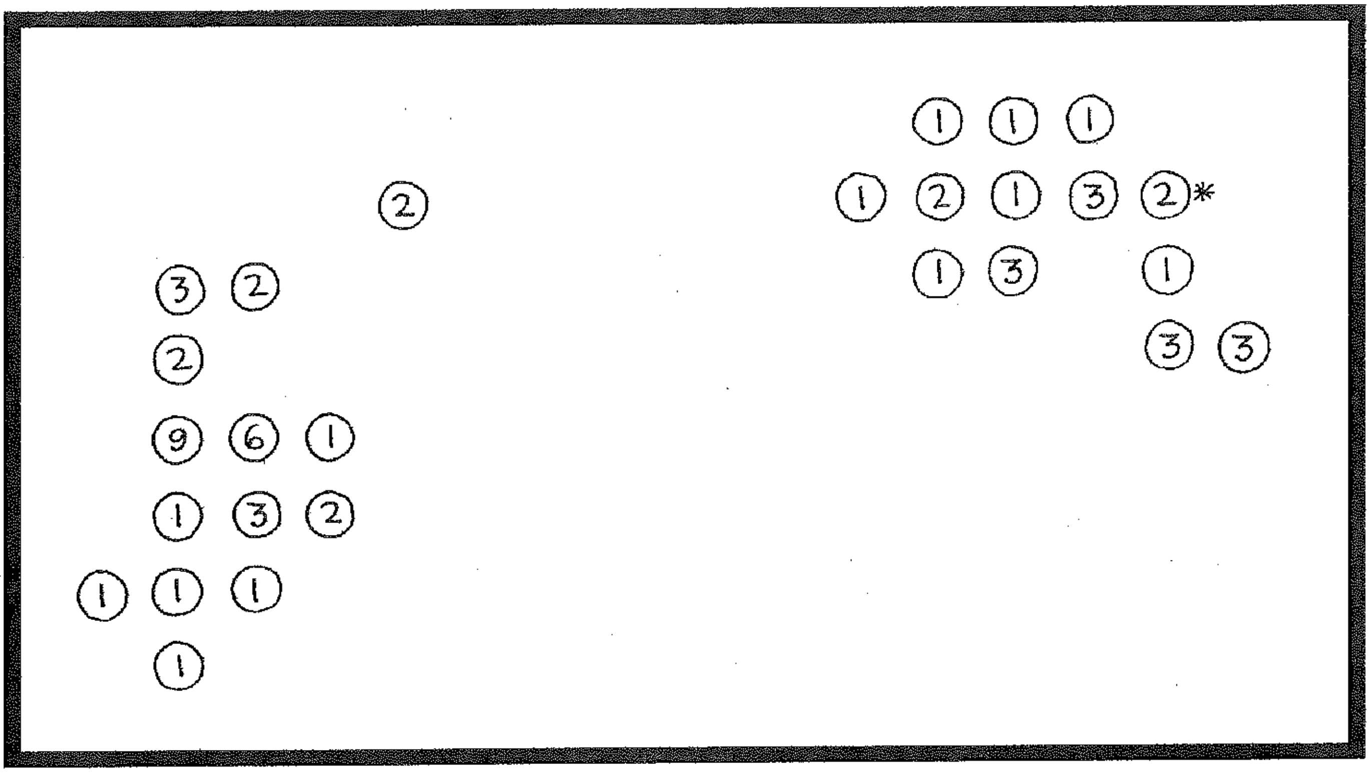


Figure 228. Rankin 22 (22-Ra-686) distribution map.

Table 103. Rankin 22 (22-Ra-686) total artifact recovery from shovel tests (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	6
Secondary decortication flake	11
Internal flake	9
Biface thinning flake	12
Flake fragment	14
Shatter	2
Cores/bifaces	
Tested pebble	1
Biface fragments	1
Ceramics	
grog eroded	2
Burned earth	1

Table 104. Rankin 22 (22-Ra-686) pH measurements

Bag #	Site #/provenience	Depth (cmbs)	pH
1252	Rankin 22	10-20	4.8
1253	Rankin 22	20-30	4.8

Rankin 23 (22-Ra-687). This small site was recorded on 28 September 2004. It was found on a 30 m interval shovel test transect and was delineated on 5 m intervals. About 4 man-hours was spent on the site. Five positive shovel tests were reported (Figure 229): Underwood 328-330, M. Starnes 639, and Orsbun 262. [redacted] The deposit depth is estimated at 20 cmbs.

The location is a degraded natural levee. The site lies in a patch of woods in an otherwise developed area. The area is a hardwood oak and tallow tree thicket under a mature pine plantation. The surface was covered with duff and vegetation, so visibility was poor. [redacted] There is no relief of this magnitude in the area.

The site produced only 7 pieces of debitage (1 primary decortication flake, 1 secondary decortication flake, 1 internal flake, and 4 biface thinning flakes). Site density is low. The location has been impacted by cultivation, biological and other natural causes, and forestry. Site preservation is fair.

No interpretation of site function, age or significance was made by the field crew. Archaic occupation is suggested by the exclusively lithic assemblage, but this is far from certain given how little material was found (Table 105). A single use as a transitory hunting/gathering camp is suggested. Based on low density and diversity and lack of diagnostics Site 22-Ra-687 is considered not eligible for the NRHP. No further work is recommended.

[redacted]

Figure 230. Rankin 23 (22-Ra-687) creek below site.

Table 105. Rankin 23 (22-Ra-687) artifact recovery from shovel tests.

	Bag 761 M Starnes 639		Bag 762 Orsbun 262		Bag 763 Underwood 328		Bag 764 Underwood 329		Bag 765 Underwood 330		Total
	#	g	#	g	#	g	#	g	#	g	
Lithics											
Debitage											
Primary decortication flake			1	2.1							1
Secondary decortication flake			1	2.6							1
Internal flake									1	0.3	1
Biface thinning flake	1	0.1			1	0.1	1	0.2	1	0.6	4
TOTAL	**1**	**0.1**	**2**	**4.7**	**1**	**0.1**	**1**	**0.2**	**2**	**0.9**	**7**

Rankin 24 (22-Ra-688). This small, low density lithic scatter [redacted] was recorded by Orsbun, Underwood and M. Starnes on 30 September 2004. The site was delineated on 10 m intervals. Six positive shovel tests are reported: Underwood 359, 361, 365 and M. Starnes 670, 671, 677, 678 (Figure 231). [redacted] The southern extent was not determined due to a briar patch. The area is a thicket of oak scrub, tallow trees, pines, greenbriar, blackberry and muscadine in a fallow field. Surface visibility was poor. [redacted]

The deposit is about 10 cm thick. Soils are eroding or deflated. Preservation is moderately good, with disturbance from cultivation, erosion, biological causes, and clearcutting. Material collected was 1 primary decortication flake, 4 secondary decortication flakes, 3 biface thinning flakes, 1 flake fragment, 1 bifacial tool, an adze weighing 29.8g (Figure 232), and 2 pieces of fire cracked rock (Table 106). Archaic period occupation is indicated, with perhaps two discrete occupations, one of enough intensity to require a hearth, based on a fragment of fire cracked rock.

No evaluation of site function, date or significance was made on the site form, but based on the sparse, low density material and relatively poor conditions of preservation, Site 22-Ra-688 is considered not eligible for the NRHP. No further work is recommended.

[redacted]

Table 106. Rankin 24 (22-Ra-688) Artifact recovery from shovel tests.

	Bag 768 Underwood 365		Bag 769 Underwood 362		Bag 770 Underwood 359		Bag 771 M Starnes 670		Bag 772 M Starnes 671		Bag 773 M Starnes 677		Bag 774 M Starnes 678		Total
	#	g	#	g	#	g	#	g	#	g	#	g	#	g	
Lithics															
Debitage															
Primary decortication flake							1	0.8							1
Secondary decortication flake			1	1.6	1	4.7					1	2.5	1	1.1	4
Internal flake									1	0.6					1
Biface thinning flake							2	0.3					1	2.9	3
Flake fragment	1	0.4													1
Cores/bifaces															
Other bifacial tools	1	29.8													1
Unmodified stone															
Fire cracked rock							1	0.7					1	2.7	2
TOTAL	**2**	**30.2**	**1**	**1.6**	**1**	**4.7**	**4**	**1.8**	**1**	**0.6**	**1**	**2.5**	**3**	**6.7**	**13**

Table 107. Rankin 24 (22-Ra-688) pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	pH
1258	Rankin 24	10-20	5.2

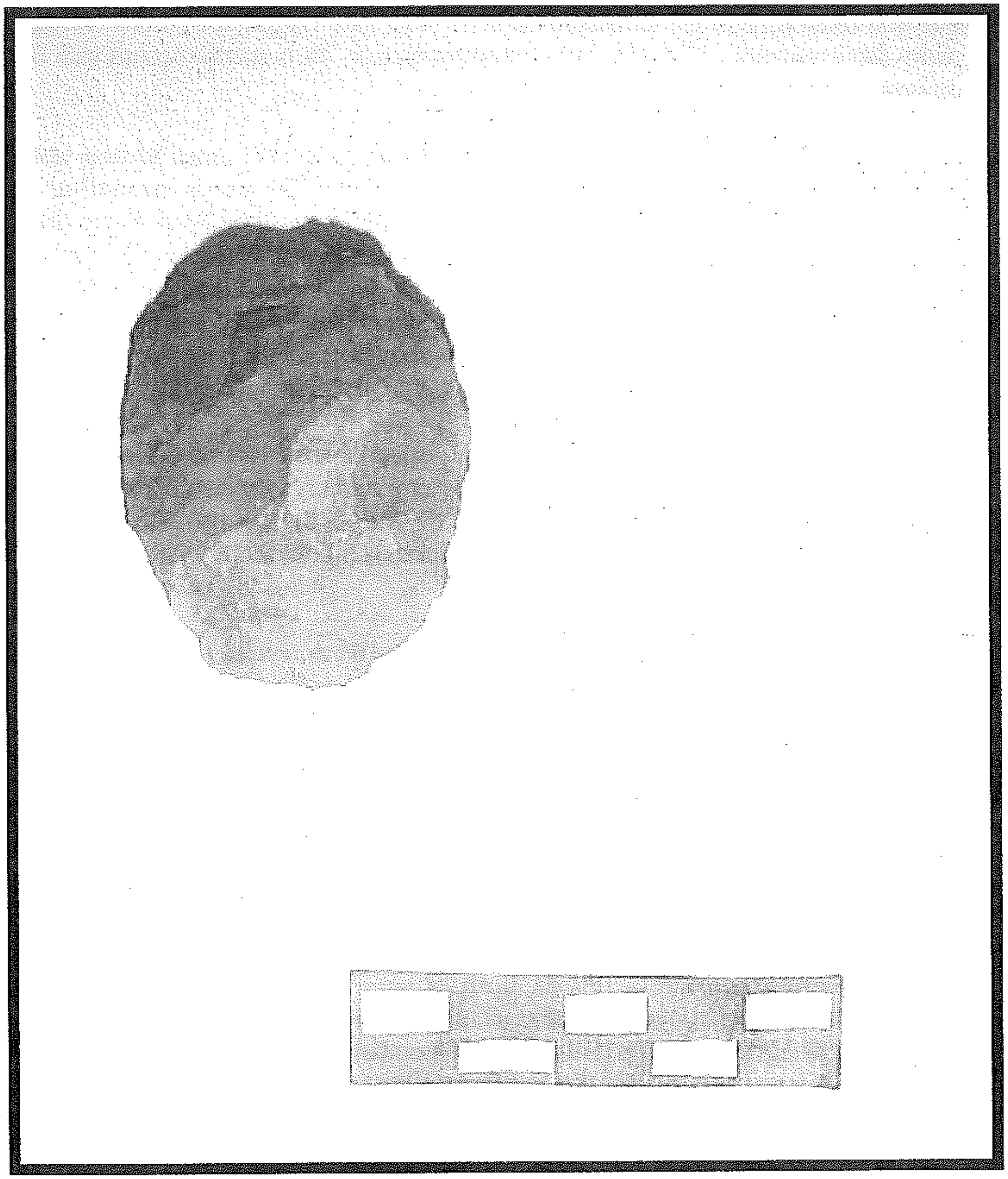


Figure 232. Rankin 24 (22-Ra-688) Artifacts. biface tool "adze".

Rankin 26 (22-Ra-689). This large, low density prehistoric site was recorded by Orsbun, Underwood and M. Starnes on 30 September 2004. The site was discovered on a 30 m interval transect and was delineated on 10 m intervals (Figure 233). Two 1x1 m test units were also excavated. [redacted] The location is a harvested field on the east part of the site and the west end of the ridge which is grown up in a mixed pine and hardwood thicket about 20 years old has been leveled and pushed so that "no soils are left". Vegetation consists of hickory, pine, sweetgum, privet, sumac, blackberry and greenbriar. The surface was covered with duff and vegetation, so surface visibility was poor.

Based on shovel testing, the archaeological deposit was described as about 25 cm deep, but the results of 2 test units showed artifacts as deep as 90 cmbs. Twenty-five positive shovel tests are reported: Orsbun 235, 243, 245, 246, and 247; Underwood 372, 374, 375, 377, 379, 380, 384, and 385; M. Starnes 684, 685, 687, 688, 690, 693, 694, and 712; Hawkins 61, 64, 65, and 67.

Test Unit 1 was excavated in 11 arbitrary 10 cm levels. The unit was recorded by Orsbun on 1 October 2004. Level 1 (to 10 cmbs) included the Ao horizon and was described as very homogeneous 10YR3/2 very fine sandy silt loam with a 5 cm thick root mat (Figure 236). Dense ceramics and lithics were recovered, along with bone (Table 113). Level 2 (10-20 cmbs) was a 7.5YR3/2 slightly sandy silt loam A1 horizon with Middle Woodland sherds and flakes. A darker stain was noted in the northeast corner of the unit. Level 3 (20-30 cmbs) was a 10YR4/4 silty fine sand E1 horizon with artifacts still abundant. The stain in the northeast corner was considered to be a potential feature and was pedastled and drawn in plan. It was later excavated as it appears in the unit profile. The dark soil appears to be a tree stain as it is organic silt loam originating at about 20 cmbs, the base of the A1 horizon and extends to about 70 cmbs in the E3 horizon. Level 4 (30-40 cmbs) continued through the 10YR4/4 silty fine sand E1 horizon, with artifact density still high. Level 3 (40-50 cmbs) included the base of the 10YR4/4 E1 horizon and part of the 10YR4/6 slightly silty fine sand E2 horizon. Level 6 (50-60 cmbs) is described as a 10YR4/6 E2 horizon with the quantity of artifacts thinning. Level 7 (60-70 cmbs) continued through the 10YR4/6 E2 horizon; few artifacts were recovered. These are described as Woodland period materials. Level 7 (60-70 cmbs) continued the 10YR4/6 E2 horizon with few artifacts. Levels 8 (70-80 cmbs) and 9 (80-90 cmbs) continued through the 10YR4/6 E2 horizon. In the similar Level 10 (90-100 cmbs) only one flake was noted. The closing Level 11 (100-110 cmbs) is described as consisting of the base of the E2 horizon and part of a 10YR6/8 slightly silty very fine sand E3 horizon. Particle size soil samples from TU1 confirm that site soils are very sandy (in all levels between 50 and 80%) (Figure 237). Clay reaches a maximum of about 20% in the 70 and 110 cmbs levels.

TU2 was recorded by Orsbun on 5 and 6 October 2004 (Figure 235). This unit was excavated in 10 arbitrary 10cm levels (Figure 238). Level 1, comprising the Ao and A1 horizons, had a high density of flakes and cordmarked and plain ceramics (Table 114). Level 2 (10-20 cmbs) likewise had a high artifact density. Level 3 (20-30) had similar material, including a piece of glass at 25 cmbs. At Level 4 (30-40 cmbs) it was noted that "E-1 starting to show up in small areas of unit". Dense ceramics and lithics as well as evidence of bioturbation were noted for this level. Level 5 (40-50 cmbs) had a moderate amount of flakes and ceramics and a small amount of burned bone and shell. Level 7 (60-70 cmbs) was harder to screen because soils were wet. A flake was recovered at 65-70 cmbs. Level 8 (70-80 cmbs) was archaeologically sterile. Another flake was recovered at about 85 cmbs in Level 9 (80-90 cmbs). Level 10 (90-100 cmbs) was sterile. A soil core from the base of the unit was used for particle size analysis. These show the sand unexpectedly declining from nearly 50% at 150 cmbs to around 15% at 230 cmbs, with a corresponding increase in silt. This is counter to the expected fineing upward sequence and may represent a natural levee superimposed on the more typically silty floodplain deposits.

Prehistoric ceramics and lithics were recovered (Figure 239). Most of the material is debitage, but fire-cracked rock and burned earth, indicative of more intensive occupation, was recovered in small amounts (Table 112). The ferruginous sandstone and hematite may also be from hearths. Chert, quartz, and petrified wood pebbles, which may be naturally-occurring, were also collected. The site has also produced a little burned bone and shell in a number of locations. Local quartzite debitage was recovered from Underwood 376 and M. Starnes 687. Two of the 4 items of debitage from the 70-100 cmbs level of Orsbun 246 appear to be from the same biface. Dense debitage is reported at M. Starnes 684.

Ceramics are primarily grog tempered (Baytown Plain, Mulberry Creek Cordmarked, eroded) indicative of Middle and/or Late Woodland occupation. One rounded lipped Baytown Plain rim indicates a cylindrical walled vessel. There are other thin plain rim fragments. There is also a simple rounded Mulberry Creek Cordmarked rim. Smaller amounts of untempered fragments (Tchula period?, TU2), mixed sand and grog tempered plain (Woodland period?, ST Orsbun 244), and shell tempered plain (Mississippi period; ST Orsbun 243, 246) were also recovered.

Table 108. Rankin 26 Cores/bifaces

Provenience	Class	Comment	Dimensions	Weight
TU1L5 (40-50)	Biface core	quartzite		6.4 g
TU2L1 (0-10)	Biface fragment	distal		.7 g
TU2L5 (40-50)	Biface fragment	distal		.6 g

Table 109. Rankin 26 Uniface tools

Provenience	Debitage class	Modification	Dimensions
Orsbun 235	Shatter	Steep margin "plane"	
TU1L1 (1-10)	Flake fragment	Lateral	

TU1L3 (20-30)	Shatter	Steep lateral/distal	

The site also has a limited historic component (Figure 240). Small amounts of historic debris were collected from Hawkins 64, Underwood 374, 385; M. Starnes 688; and Levels 1 and 2 of TU1 (Table 110). The architectural materials are typical of the very ephemeral 19th-early 20th century components noted in other project area sites.

Table 110. Historic Artifact Classes/Recovery

Architecture
- Cut spike 2
- Brick fragment, hand moulded? (soft orange) 1

Arms
- .22 short rimfire casing, "HP" headstamp 1

Automotive?
- Clear glass 2

Despite the cultivation and leveling/bulldozing, the site is described as relatively undisturbed, with logging and clearcutting comprising the main impacts, along with biological agents and erosion.

No interpretation of the site function was offered by the field crew, but the diversity and density of materials, along with significant amounts of pottery, indicates that this is a Woodland hamlet, with lesser use later in the Mississippi period and possibly in the Early Woodland period as well. National Register eligibility status was listed by the investigators as undetermined. The degree and type of impacts described could be taken to indicate that the site may not be eligible for the NRHP. Artifact density is, however, moderately high and these disturbances are largely surficial, and the depth of materials recovered in the test units indicates the potential for undisturbed materials at depth, so additional testing to determine the significance and eligibility status of Rankin 26 (22-Ra-689) is recommended if the site is to be impacted by this project.

[redacted]

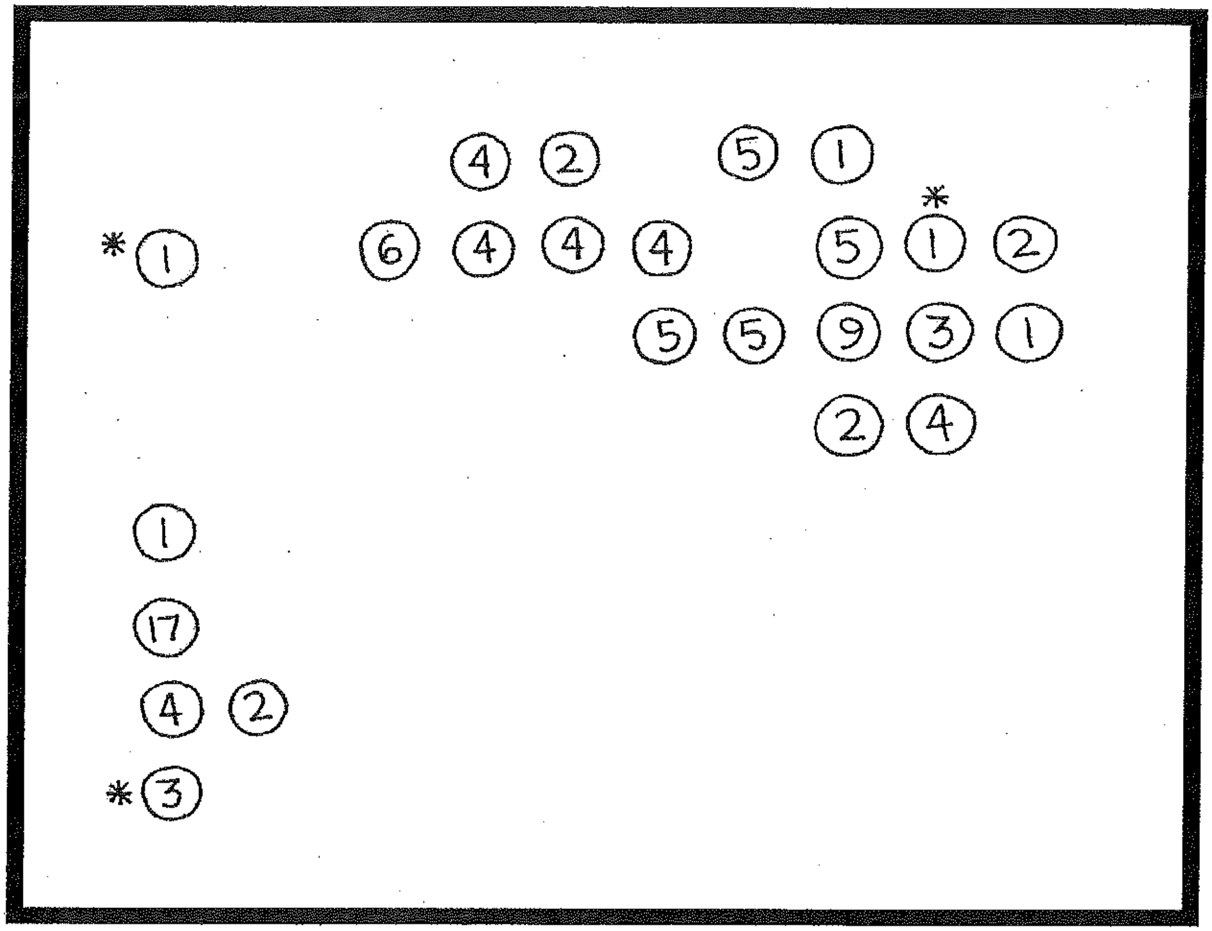


Figure 234. Rankin 26 (22-Ra-689) distribution map. *** cut nail, brick**

Figure 235. Rankin 26 (22-Ra-689); a. TU2 during excavation, Kris Underwood, Mark Orsbun at 90 cmbs. b. completed unit showing possible feature (or burned stump hole).

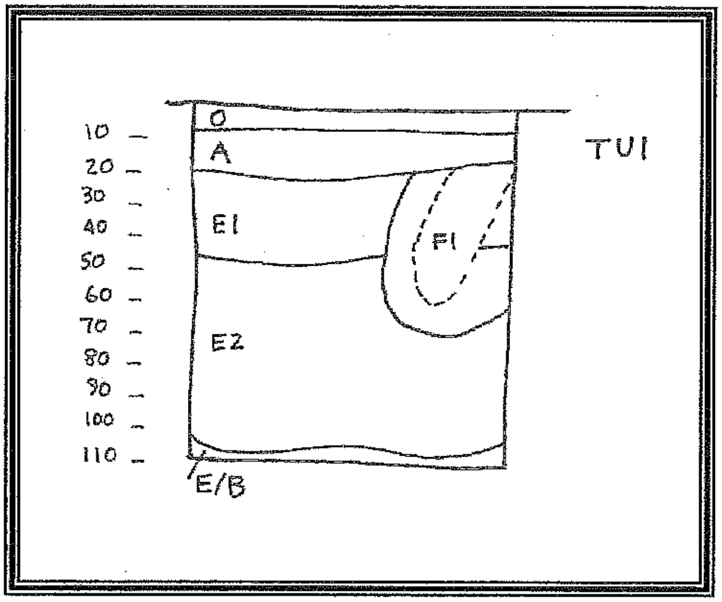


Figure 236. Rankin 26 (22-Ra-689) TU1 profile.

Key to Figure 236. Rankin 26 (22-Ra-689) TU1 Soil Profile

Level	Color	**Texture**
O	7.5YR3/1	organic sandy silt loam
A	7.5YR3/2	slightly sand silt loam
E1	10YR4/4	silty fine sand
E2	10YR4/6	slightly silty very fine sand
E/B	10YR6/8	slightly silty very fine sand
F1	10YR3/1	slightly sandy organic silt loam

Figure 237. Rankin 26 (22-Ra-689) TU1 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Rankin 26	TU #1	10	80.00	13.30	6.70
Rankin 26	TU #1	20	73.30	20.00	6.70
Rankin 26	TU #1	30	66.60	26.60	6.80
Rankin 26	TU #1	40	73.30	20.00	6.70
Rankin 26	TU #1	70	60.00	20.00	20.00
Rankin 26	TU #1	80	73.30	13.30	13.40
Rankin 26	TU #1	90	73.30	13.30	13.40
Rankin 26	TU #1	100	66.60	20.00	13.40
Rankin 26	TU #1	110	53.30	26.60	20.10

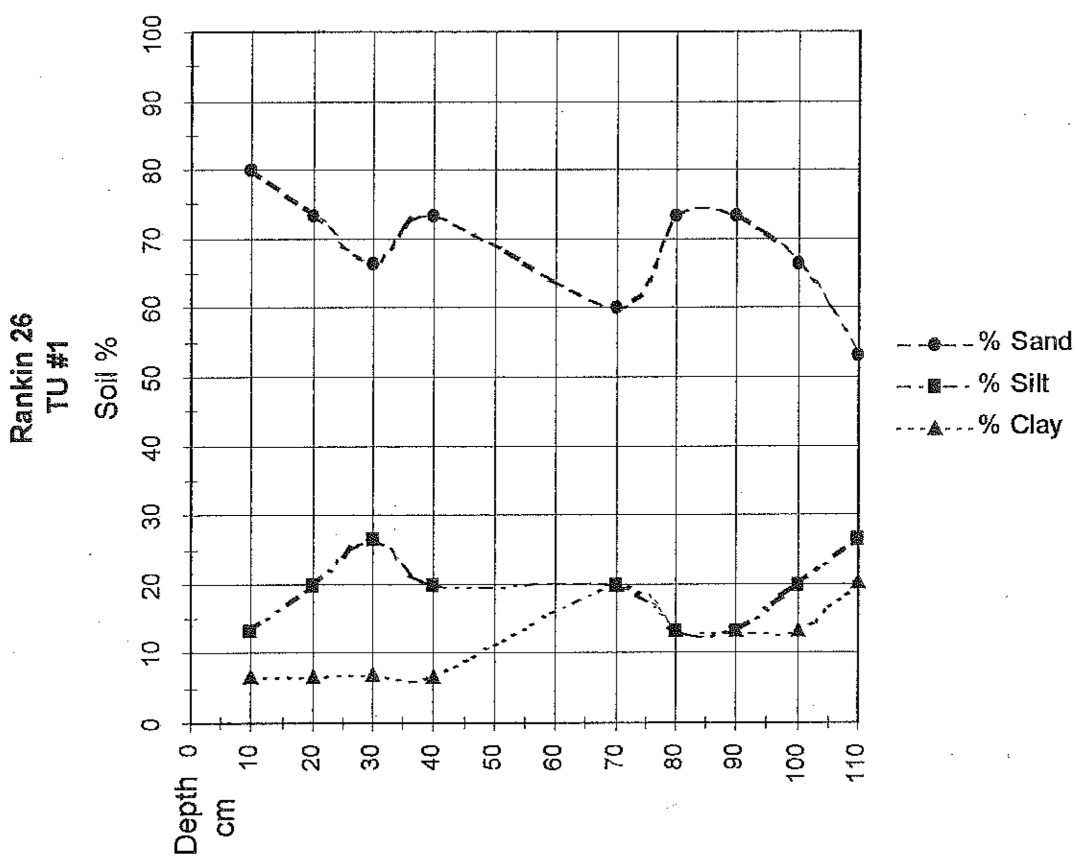


Figure 238. Rankin 26 (22-Ra-690) TU2 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Rankin 26	TU 2	150	46.60	33.30	20.10
Rankin 26	TU 2	180	33.30	53.30	13.40
Rankin 26	TU 2	200	20.00	60.00	20.00
Rankin 26	TU 2	230	13.30	80.00	6.70

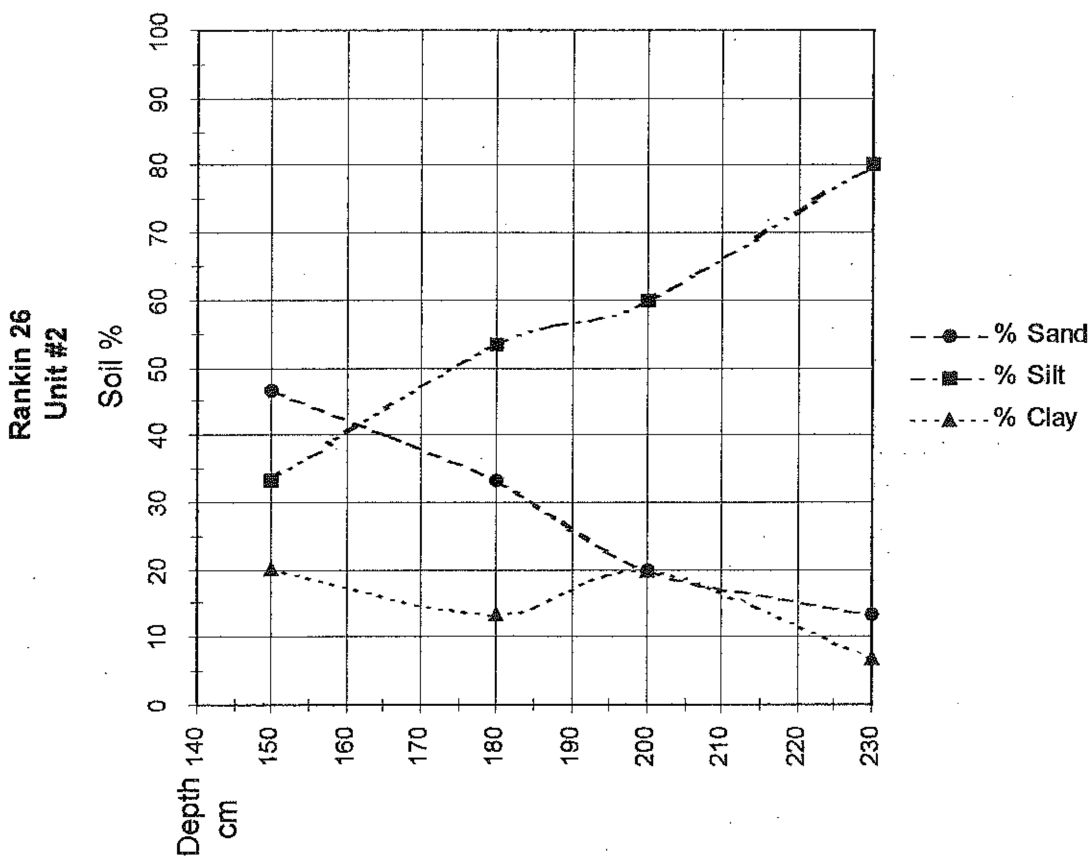


Table 111. Rankin Site 26 pH measurements.

Bag #	Site #/provenience	Depth (cmbs)	PH
1263	Rankin site 26	0-10	4.9
1267	Rankin site 26	10-20	5.5
1268	Rankin site 26	20-30	5.8
1269	Rankin site 26	30-32	6.0
1270	Rankin site 26	30-40	6.0
1271	Rankin site 26	40-50	6.2
1272	Rankin site 26	50-60	6.4
1273	Rankin stie 26	60-70	6.5
1274	Rankin site 26	70-80	6.6
1275	Rankin site 26	80-90	6.6
1287	Rankin site 26	90-100	6.5
1288	Rankin site 26	100-110	6.6
1265	Rankin site 26	20-30	5.3
1266	Rankin site 26	0-10	6.3

Table 112. Rankin 26 (22-Ra-689) total artifact recovery from shovel tests (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	**5**
Secondary decortication flake	**11**
Internal flake	**3**
Biface thinning flake	**21**
Flake fragment	**17**
Shatter	**3**
Other worked stone	
Unifacial tools	**1**
Unmodified stone	
Fire cracked rock	**6**
Chert pebble	**1**
Petrified wood	**4**
Ceramics	
grog eroded	**5**
grog plain	**13**
grog cord marked	**4**
heterogeneous cord marked	**1**
Shell plain	**2**
Burned bone	**1**

Table 113. Rankin 26 (22-Ra-689) TU1 total artifact recovery (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	1
Secondary decortication flake	6
Biface thinning flake	11
Flake fragment	11
Shatter	3
Cores/bifaces	
Bifacial core	1
Other worked stone	
Unifacial tools	2
Unmodified stone	
Fire cracked rock	2
Chert pebble	1
Petrified wood	2
Quartz	2
Burned bone	4
Burned earth	10
Ceramics	
grog eroded	3
grog plain	20
grog cord marked	18

Table 114. Rankin 26 (22-Ra-689) TU2 total artifact recovery (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	11
Secondary decortication flake	21
Internal flake	4
Biface thinning flake	65
Flake fragment	39
Shatter	1
Cores/bifaces	
Amorphous core	1
Biface fragments	2
Unmodified stone	
Fire cracked rock	11
Chert pebble	4
Ferruginous sandstone	2
Hematite/siltstone	1
Quartz pebble	1
Burned bone	11
Burned earth	4
Ceramics	
untempered eroded	1
grog eroded	27
grog plain	28
grog cord marked	20
shell eroded	1

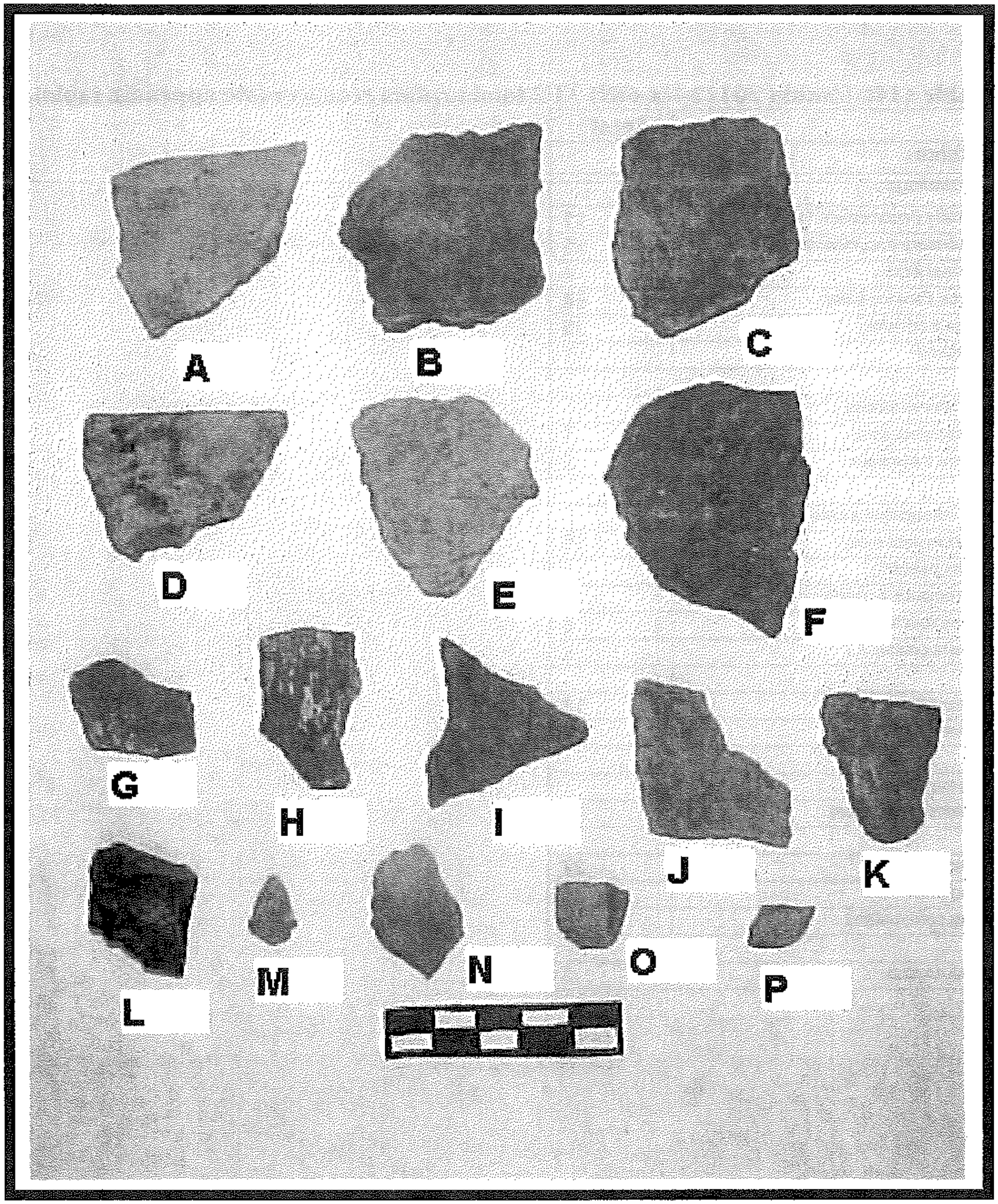


Figure 239. Rankin 26 (22-Ra-689) Artifacts. a-c. grog tempered plain, a is a rim; d-k. grog tempered cord marked; d. is a rim; l. amorphous core; m. biface fragment; n-p. utilized flake/unifaces.

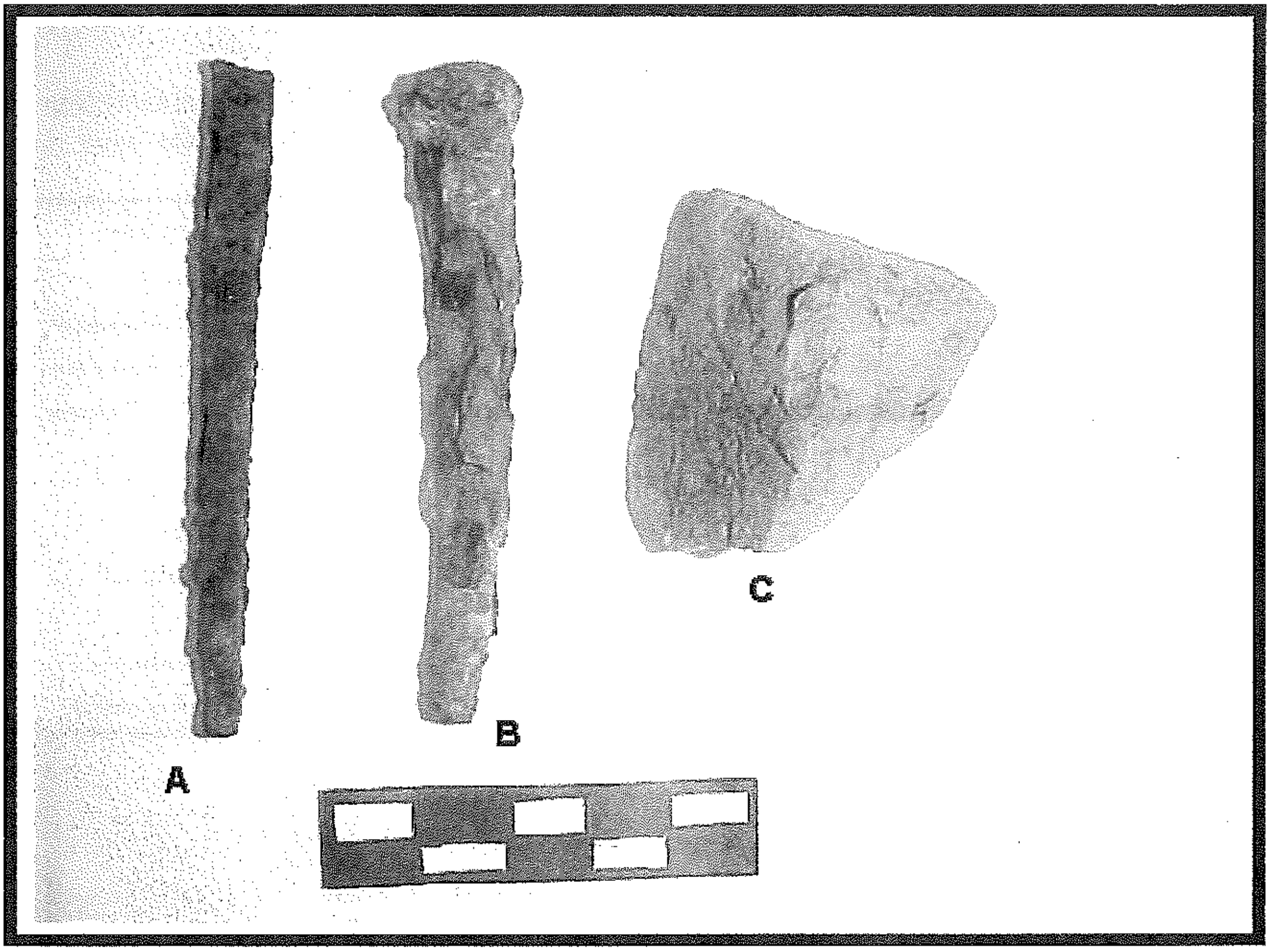


Figure 240. Rankin 26 (22-Ra-689) Historical Artifacts. a,b. cut spikes; a. ST Hawkins 64; b. ST Underwood 385; c. brick ST Underwood 374.

Rankin 27 (22-Ra-690). This site [redacted] The site was discovered on 14 September 2004 by Orsbun (T20 ST 85, 86) while walking transects on a 30 m interval but only digging intuitively placed shovel tests (Figure 241). The site was delineated on 10 m intervals by Orsbun, Underwood and M.Starnes who spent a total of 4.5 man-hours on the site. [redacted]

[redacted] The center of the site has a low intermittently wet area. The landform is a stable point bar or ridge and swale terrain with soils forming on a generally level area. The site has mixed hardwood and pine forest in a swampy area. Surface visibility was poor due to duff and low vegetation, so no surface collection was possible.

Prehistoric ceramics and lithics were found (Table 115). Most artifacts are debitage, along with a few chert, quartz and petrified wood pebbles. The pottery is Baytown Plain and grog tempered eroded. Middle/Late Woodland period occupation is indicated. The site appears to be a low-intensity use base camp or hunting/gathering camp. The area is relatively undisturbed, with cultivation and natural causes being the main agents of disturbance, but density and diversity are low. Deposits are shallow (20cm or less). Site 22-Ra-690 is considered not eligible for the NRHP. No further work is recommended.

[redacted]

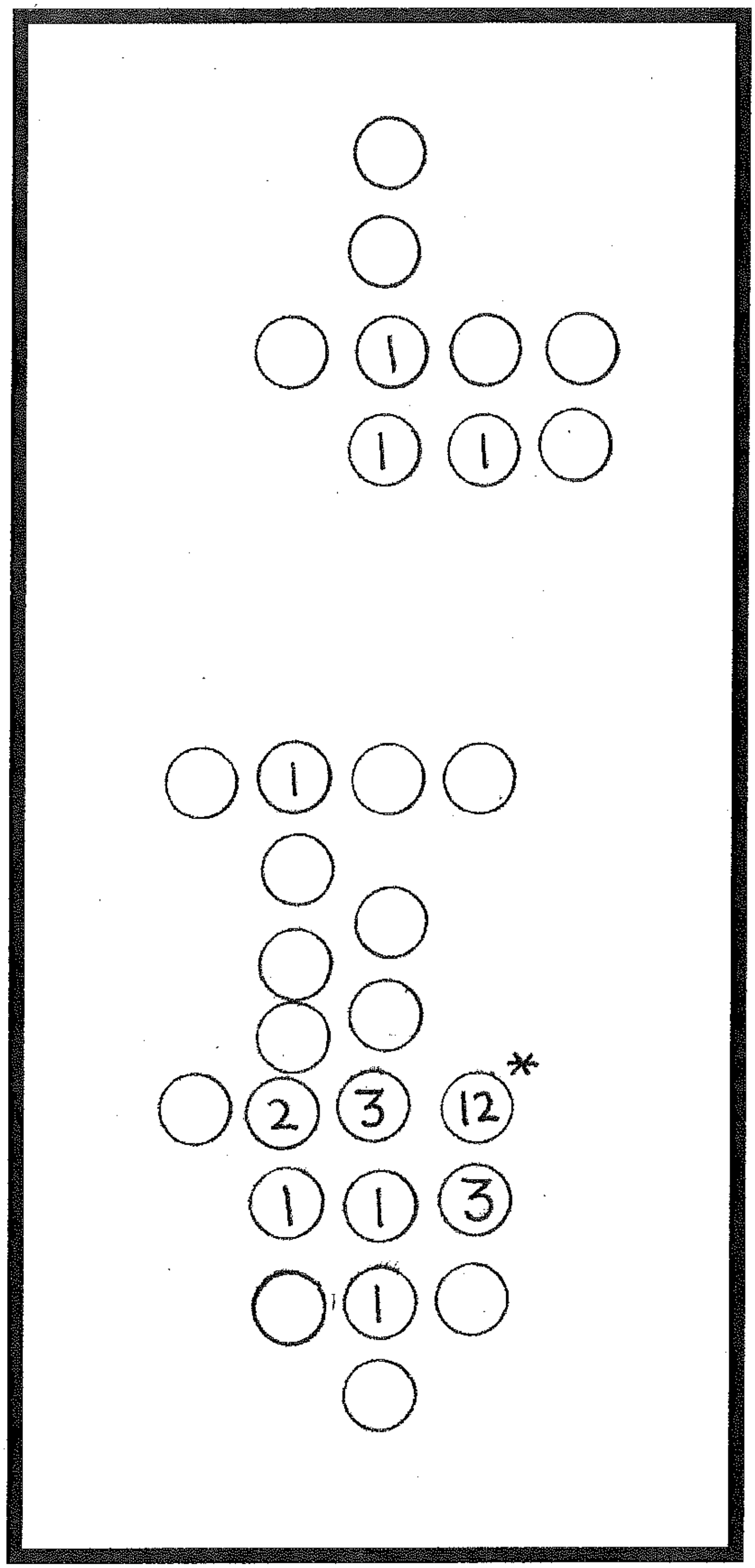


Figure 242. Rankin 27 (22-Ra-690) distribution map.
*** Underwood 226 has mostly pebbles, 4 flakes**

Table 115. Rankin 27 (22-Ra-690) total artifact recovery from shovel tests (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	1
Secondary decortication flake	1
Biface thinning flake	5
Flake fragment	4
Unmodified stone	
Chert pebble	5
Petrified wood	1
Quartz pebble	2
Ceramics	
grog eroded	5
grog plain	3

Rankin 28 (22-Ra-691). This site was discovered by Orsbun (T20 ST 87) while walking 30 m interval transects and digging shovel tests. The site was delineated on 14 September 2004 using a 10 m interval. Three technicians spent a total of 3 man-hours delineating the site.

The site [redacted] The site is on a stable point bar/ridge and swale surface with soil forming. The area is unimproved hardwood swamp forest. Vegetation includes red and white oaks about 50 years old, with an understory of hickory, sweet gum, greenbriar and muscadine vines. Surface visibility was poor due to duff and surface vegetation.

Artifact density is low. Prehistoric lithics and ceramics were recovered (Table). The only disturbances noted are natural. Although Site 22-Ra-691 has not been heavily disturbed, it is considered not eligible for the NRHP due to the highly limited nature of the deposit. No further work is recommended.

Rankin 30 (22-Ra-692). This site was discovered through 30 m interval shovel testing [redacted] The site was initially investigated by Orsbun, Underwood and M. Starnes, 14 October 2004. Starr and Underwood revisited the site with geologist James May on 17-18 May 2005 to conduct additional investigations. The site lies in a previously surveyed area, but was not reported by this survey. [redacted] 22-Ra-506 is a number assigned to Rk3 (Flowood #2), reported by Rands (1958) (See Figure 77). [redacted] As these numbers are for a different location, a new site card was submitted and a new number assigned. [redacted]

Site 22-Ra-692 [redacted] The site area itself is level to slightly (10%) sloping. The location is in mostly young woods with pines planted on rows with a sparse hardwood (hickory) canopy and understory of black cherry, privet, maple, and sassafras. The forest floor has dense cover of wild beans, greenbriar, poison ivy, and ferns. [redacted] The surface is covered with duff and pine straw, so visibility was poor. A few items comprising a grab surface collection were recovered from 4-wheeler trails (Table 116).

The site was delineated on 10m intervals (Figure 243). [redacted] The southern edge of the site has been destroyed by the railroad embankment borrow pit. Two 1x1 m test units were also excavated.

Test Unit 1 was excavated by Orsbun on 13 October 2004 in 8 arbitrary 10 cm levels (Figure 246). This TU does not give a full estimate of artifact density (Table 118), because it includes Underwood ST --- (Figure 245), the find site of the probable Dalton feature. Level 1 (to 10 cmbs) included the 5 cm-thick Ao horizon, which was organic loam and an A1 horizon of silt loam with "organic's leached in (sic)." Level 2 (10-20 cmbs) is not described. Neither is level 3 (20-30 cmbs). Level 4 (30-40 cmbs) is described only as "hard compact habitation surface @ 40 cmbs[;] Dalton drill/pitted stones were on this surface." Level 5 (40-50 cmbs), Level 6 (50-60 cmbs), Level 7 (60-70 cmbs), and Level 8 (70-80 cmbs) also were not described. On 17 May 2005 Starr re-opened a portion of this unit to expose the soil profile.

TU2 was excavated by Underwood on 17 May 2005. [redacted] The unit was excavated in four 10 cm levels (See Figure 246). Soil samples were collected from this unit. Particle size analysis of Underwood ST416 shows a pronounced increase in clay from 15-20% in the upper levels to over 60% at 40 cmbs, the level interpreted as the "habitation surface" (Figure 248). This supposed cultural surface might therefore by a naturally created Bt horizon. A deep (220 cmbs) series of soil samples obtained with a 4" auger in the base of TU1 show a less spectacular rise in clay content between 40 cmbs (around 15%) and 60 cmbs (20%), which seems more in line with a weathering-derived clay maximum, particularly because this peak co-occurs with a sand maximum. Clay is depleted from the upper levels. Otherwise, the deep profile shows loamy silt soils without much variation in relative proportions of sand, silt and clay.

Artifact density is high but variable. The northern side of the site appears to have a low density. Prehistoric ceramics and lithics were recovered, along with historic ceramics and glass (Tables 116). Shovel tests producing historic materials include M.Starnes 767, 768, 769, 772, 773, 776, and 778 and Underwood 417 and 420. The lithic material includes bifaces and tools (Tables 117,118,119).

Table 116. Rankin 30 Historic Artifact Recovery, Surface Collections and Shovel Tests.

Architecture/Furniture
13 brick
1 mortar
15 cut nails
1 wire nail
1 wire spike
6 unidentified nail fragments
1 solarized lamp reservoir
Kitchen
Ceramics
8 plain refined earthenware
1 blue rim decorated refined earthenware
1 blue decorated refined earthenware, burned
1 burned spall of refined earthenware
1 machine-banded refined earthenware
1 Albany slipped/Bristol glazed stoneware
Bottle Glass
5 amber
2 solarized
2 cobalt, includes 1 ointment pot
1 white, ointment/cosmetic pot
1 dark green
8 aqua
25 clear, includes 1 screw top sauce/condiment/pickle jar and 1 stopper top neck
5 light green tint
2 bright green
Other
1 clear glass canning jar seal, "ATLAS EDJ SEAL"
2 clear glass jelly jar tumbler rims
2 mammal bone
7 steel can scrap
2 steel crown tops
Personal/Toys/Clothing
1 4-hole porcelain button
1 slate fragment
1 toy/baby buggy steel wire 8-spoke wheel
Activities
2 Fe/steel wire
1 stove bolt and square nut, 1 x ¼"
2 skeet fragment

Impact to the site is limited to the railroad borrow pit along the south edge and a shallow silviculture plowzone that has disturbed the upper 15 cm of ceramic-bearing deposits. [redacted]

Given the diversity of lithic classes recovered, Rankin 30 (22-Ra-692) is interpreted as a base camp. While there are the moderate impacts to the site described above, including deflation and compaction of the later components, this site is considered potentially eligible for the NRHP based on the discovery of an apparent transitional Paleo-Archaic period, Dalton culture feature at 40 cmbs (cluster of pitted/anvil/abrader/hammerstones in apparent association with an expended lanceolate base pp/k). The site should be evaluated at the Phase II level of investigation if the site is to be impacted by this project.

[redacted]

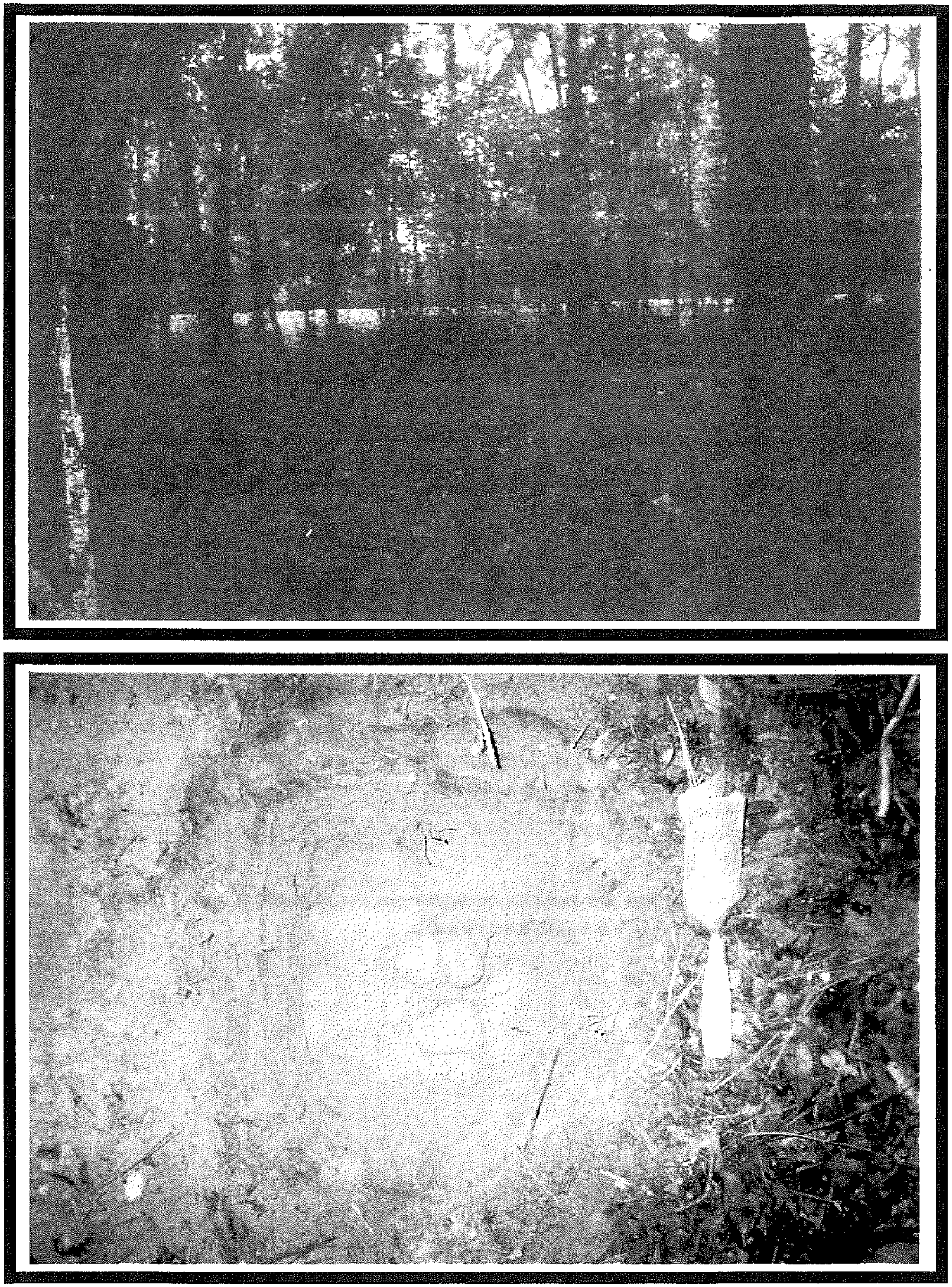


Figure 244. Rankin 30 (22-Ra-692); a. general site view south to railroad grade, b. ST Underwood 416 cobble tool feature.

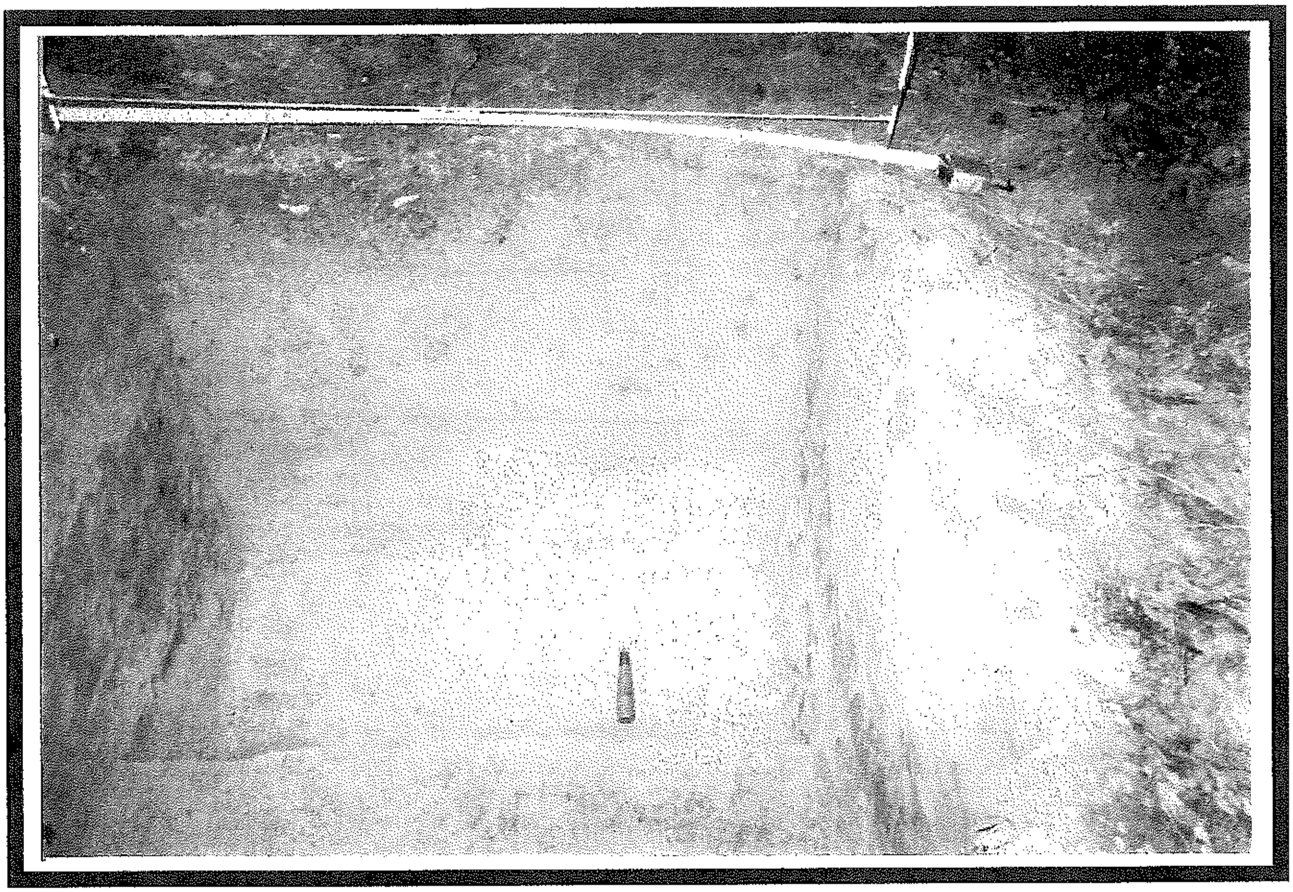


Figure 245. Rankin 30 (22-Ra-692) TU1 completed (expansion of ST Underwood 416).

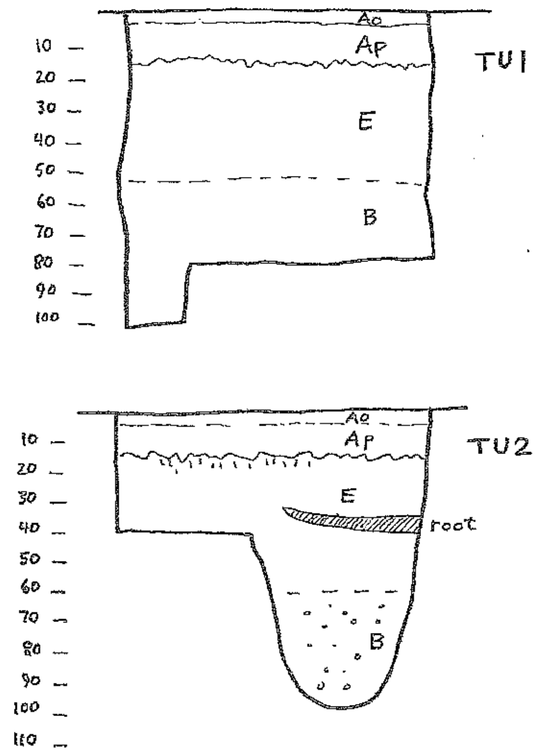


Figure 246. Rankin 30 (22-Ra-692) Soil Profiles.

Key to Figure 246. Rankin 30 (22-Ra-692) TU1 Soil Profile

Horizon	Color	Texture	Structure	Inclusion/Mottles	Boundary
Ap	10YR5/3 brown	loam	friable granular	weak incipient concretions	burrowed, leached
E	10YR5/6 yellowish brown	loamy silt	friable weak medium granular-subangular	homogeneous	gradual smooth
B	10YR5/4-10YR6/4 (light) yellowish brown	loamy silt	compact, subangular	heavily mottled with reduction-oxidation features and weak 3-4 mm concretions	matrix increasingly leached

Key to Figure 246. Rankin 30 (22-Ra-692) TU2 Soil Profile

Level	Color	Texture	Structure	Inclusion/Mottles	Boundary
Ap	10YR5/3 brown	loam	fine granular	common roots	leached with concentration weak 1mm concretions
E	10YR5/6 yellowish brown	loam	weak fine granular, friable, abundant large biopores	homogeneous, abundant debitage	gradual smooth
B	10YR6/6 brownish yellow	loam	moderate subangular, abundant large biopores with silt skins	below 70 cmbs increasingly pale with larger and stronger oxidized mottles and 3mm concretions	

Figure 247. Rankin 30 (22-Ra-692) TU1 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Rankin 30	TU 1	10	46.60	46.60	6.80
Rankin 30	TU 1	16	36.60	50.00	13.40
Rankin 30	TU 1	22	40.00	53.30	6.70
Rankin 30	TU 1	40	46.60	40.00	13.40
Rankin 30	TU 1	58	53.30	26.60	20.10
Rankin 30	TU 1	65	30.00	53.30	16.70
Rankin 30	TU 1	80	26.60	53.30	20.10
Rankin 30	TU 1	90	30.00	60.00	10.00
Rankin 30	TU 1	100	23.30	66.60	10.10
Rankin 30	TU 1	110	26.60	60.00	13.40
Rankin 30	TU 1	120	26.60	66.60	6.80
Rankin 30	TU 1	130	30.00	66.60	3.40
Rankin 30	TU 1	140	33.30	66.60	0.10
Rankin 30	TU 1	150	26.60	66.60	6.80
Rankin 30	TU 1	160	30.00	63.30	6.70
Rankin 30	TU 1	170	13.30	80.00	6.70
Rankin 30	TU 1	180	16.60	80.00	3.40
Rankin 30	TU 1	190	23.30	66.60	10.10
Rankin 30	TU 1	200	26.60	60.00	13.40
Rankin 30	TU 1	210	26.60	66.60	6.80
Rankin 30	TU 1	220	26.60	60.00	13.40

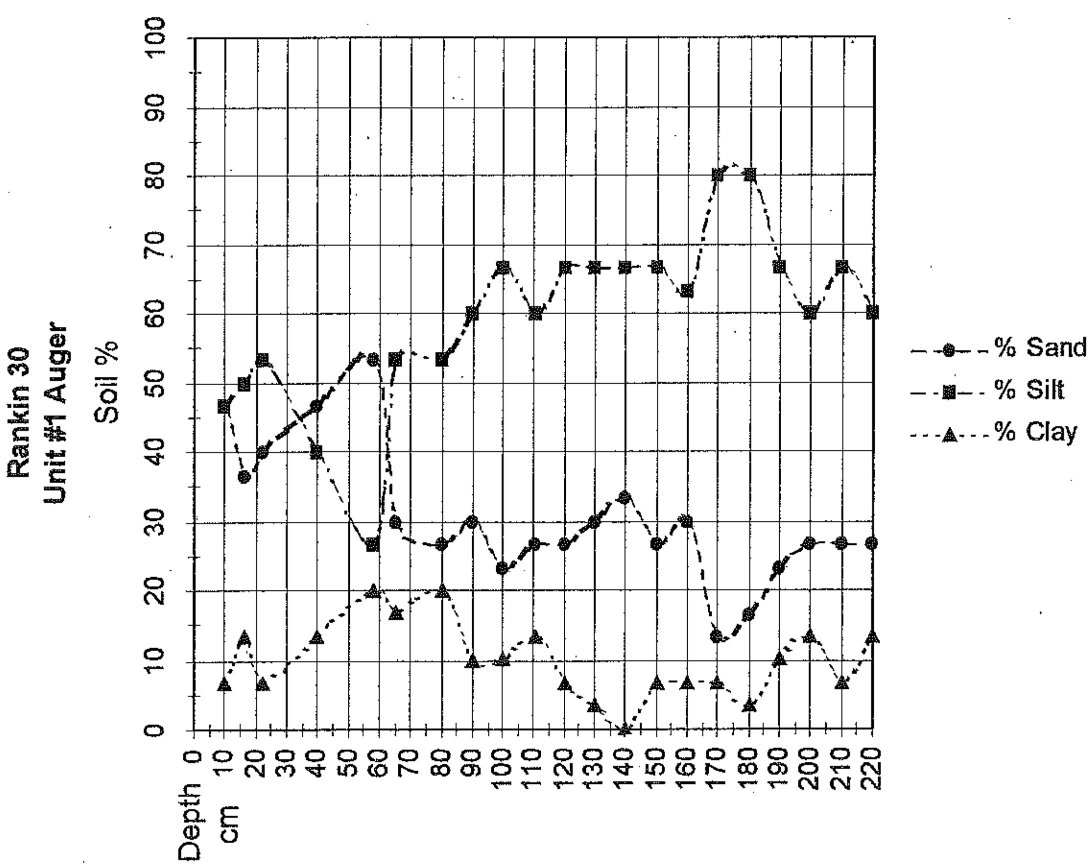


Figure 248. Rankin 30 (22-Ra-692) Underwood ST 416 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Rankin 30	Underwood ST 416	10	40.00	46.60	13.40
Rankin 30	Underwood ST 416	20	26.60	60.00	13.40
Rankin 30	Underwood ST 416	30	33.30	46.60	20.10
Rankin 30	Underwood ST 416	40	10.00	16.60	73.40

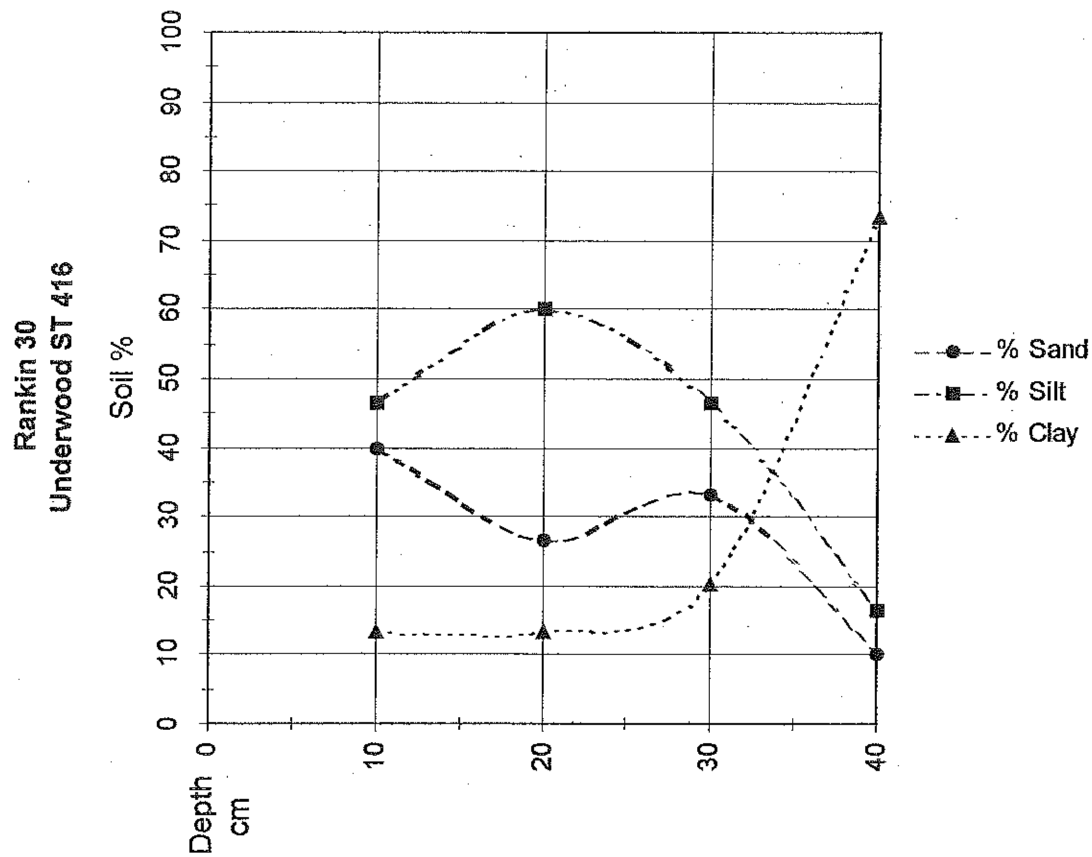


Figure 249. Rankin 30 (22-Ra-692) Underwood ST 433 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Rankin 30	Underwood ST 433	10	26.60	53.30	20.10
Rankin 30	Underwood ST 433	20	26.60	60.00	13.40
Rankin 30	Underwood ST 433	30	26.60	66.60	6.80

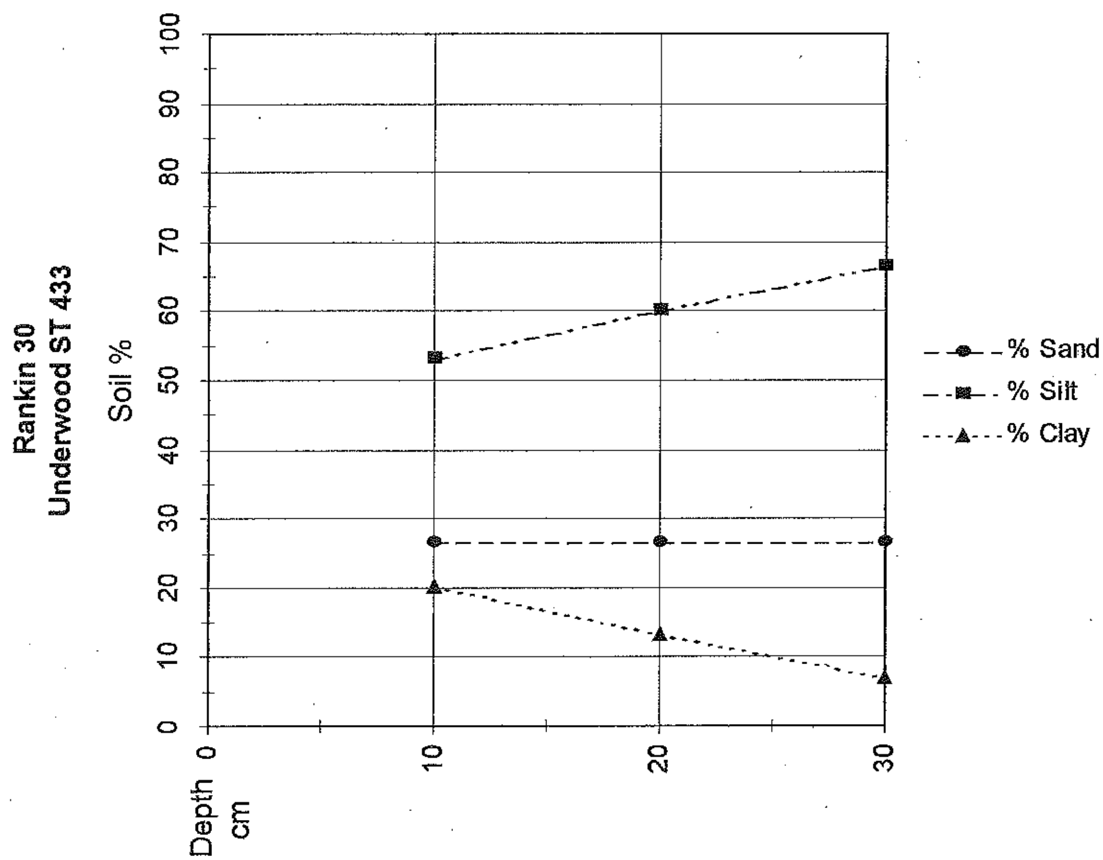


Table 117. Rankin 30 (22-Ra-692) total artifact recovery from shovel tests (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	8
Secondary decortication flake	43
Internal flake	7
Biface thinning flake	93
Flake fragment	67
Shatter	5
Cores/bifaces	
Pebble core	1
Biface preforms	1
Projectile point/knives	3
Biface fragments	4
Other worked stone	
Unifacial tools	2
Ground stone-qtz	2
Ground stone-fess	1
Unmodified stone	
Fire cracked rock	25
Chert pebble	13
Petrified wood	4
Quartz	7
Quartzite	1
Burned earth	2
Ceramics	
untempered plain	1
sand eroded	1
grog eroded	11
grog plain	2
shell plain	2

Table 118. Rankin 30 (22-Ra-692) TU1 Artifact recovery.

	Bag 1483		Bag 1482		Bag 1481		Bag 1480		Bag 1479		Bag 1478		Bag 1088		
	TU1 L1		TU1 L2		TU1 L3		TU 1 L4		TU1 L5		TU1 L6		TU1 L7		
	#	g	#	g	#	g	#	g	#	g	#	g	#	g	Total
Lithics															
Debitage															
Primary decortication flake	4	4.2					2	5							**6**
Secondary decortication flake	4	4.5	7	8.5	10		3	1.4			2	2.2			**26**
Internal flake	1	1.5			2		2	0.8							**5**
Biface thinning flake	5	4.8	9	6	17		21	9.3	1	0.2	2	2.3	1	0.4	**56**
Flake fragment	3	2.5	8	6.2	13		14	6.3	1	0.6	1	0.6	1	0.4	**41**
Shatter	1	0.8			2		1	3							**4**
Cores/bifaces															
Pebble core			1	36.2	1	57.2									**2**
Bifacial core					1	22.9									**1**
Biface preforms							1	14.4							**1**
Projectile point/knives							1	3.6							**1**
Biface fragments			1	1.3											**1**
Other worked stone															
Unifacial tools					1	0.3									**1**
Unmodified stone															
Fire cracked rock	7	27.3	19	32.8	4	4	2	9.1							**32**
Chert pebble	1	7.7	1	4.2											**2**
Ferruginous sandstone					2	1									**2**
Petrified wood			1	1.8	1	0.2									**2**
Quartz pebble	1	1.1													**1**
Burned earth	1	0.9													**1**
Ceramics															
grog eroded			2	1.8											**2**
heterogeneous plain	1	14.1													**1**
TOTAL	**29**	**69.4**	**49**	**98.8**	**54**	**85.6**	**47**	**52.9**	**2**	**0.8**	**5**	**5.1**	**2**	**0.8**	**188**

Table 119. Rankin 30 (22-Ra-692) TU2 Artifact recovery.

	Bag 1616 TU2 L1		Bag 1617 TU2 L2		Bag 1614 TU2 L3		Bag 1612 TU2 L4		Bag 1615 TU2 L5		Bag 1618 TU2 0-30 cleanup		
	#	g	#	g	#	g	#	g	#	g	#	g	Total
Lithics													
Debitage													
Primary decortication flake	7	8.4	3	4.4	3	1.5							**13**
Secondary decortication flake	20	28.8	6	9	4	20.5	3	4.1			1	1.7	**34**
Internal flake	9	5.5	8	5.5	5	2.1					1	0.1	**23**
Biface thinning flake	80	32.6	51	18.3	15	3	3	0.3			6	2	**155**
Flake fragment	56	21.2	38	11.2	13	4.5	5	0.7	1	0.1			**113**
Shatter	3	2.3	2	2.3	1	0.3							**6**
Cores/bifaces													
Other bifacial tools							1	0.6					**1**
Biface fragments	2	7.3	2	6.2									**4**
Other worked stone													
Ground stone	1	19.3											**1**
Unmodified stone													
Fire cracked rock	22	26.7	6	6.5							2	2	**30**
Chert pebble	3	37.3											**3**
Ferruginous sandstone	3	30.6	2	1.1									**5**
Hematite/siltstone	2	7.8	1	0.4									**3**
Petrified wood	1	1.3	1	9.2	1	2.5							**3**
Quartz	3	5											**3**
burned earth	2	1.8											**2**
Ceramics													
sand plain	1	2.9											**1**
grog plain	1	1.1											**1**
TOTAL	**216**	**239.9**	**120**	**74.1**	**42**	**34.4**	**12**	**5.7**	**1**	**0.1**	**10**	**5.8**	**401**

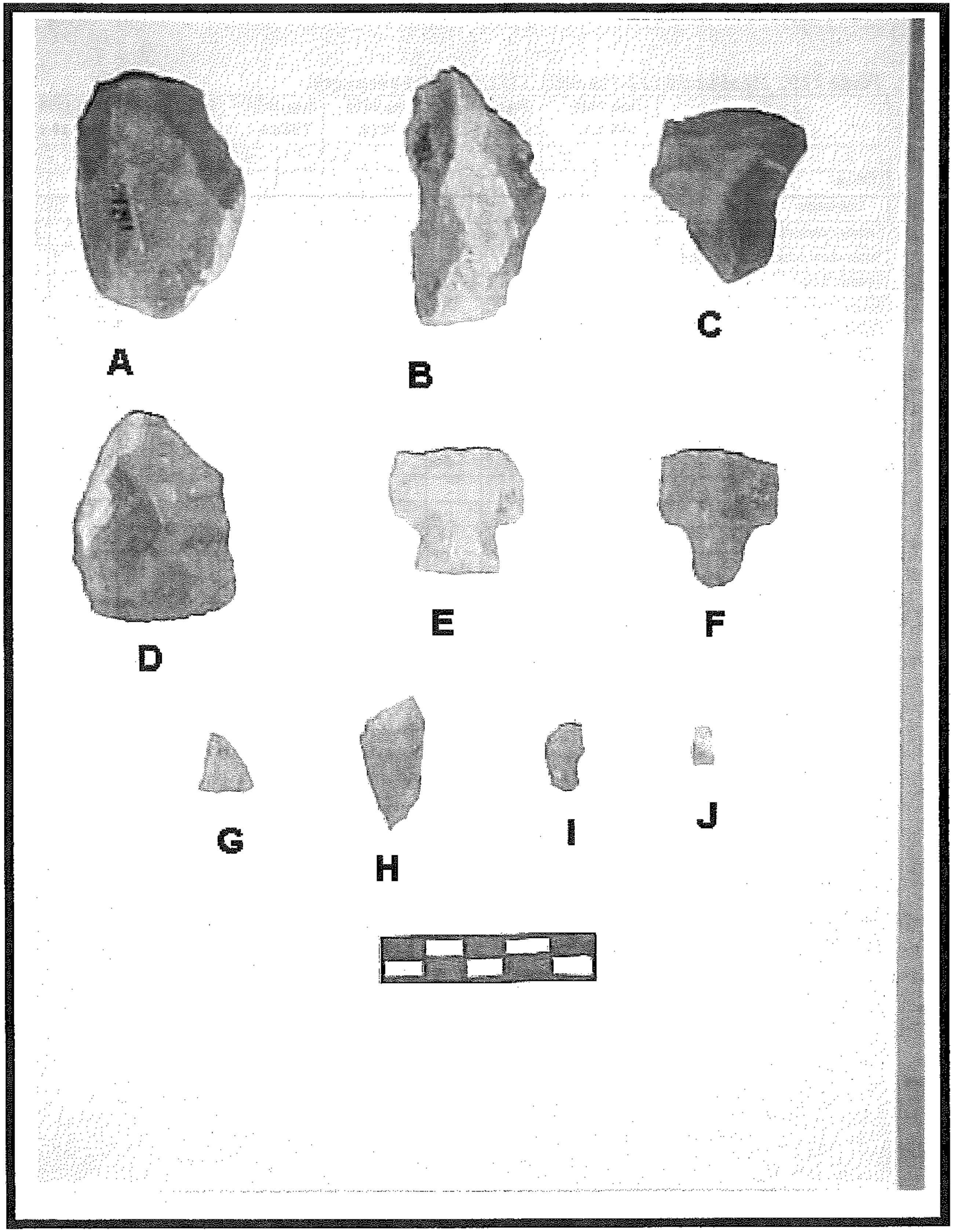


Figure 250. Rankin 30 (22-Ra-692) Artifacts. a,b. pebble cores; c,d. biface preforms; e,f. projectile point/knives; g-i. Biface fragments; j. uniface.

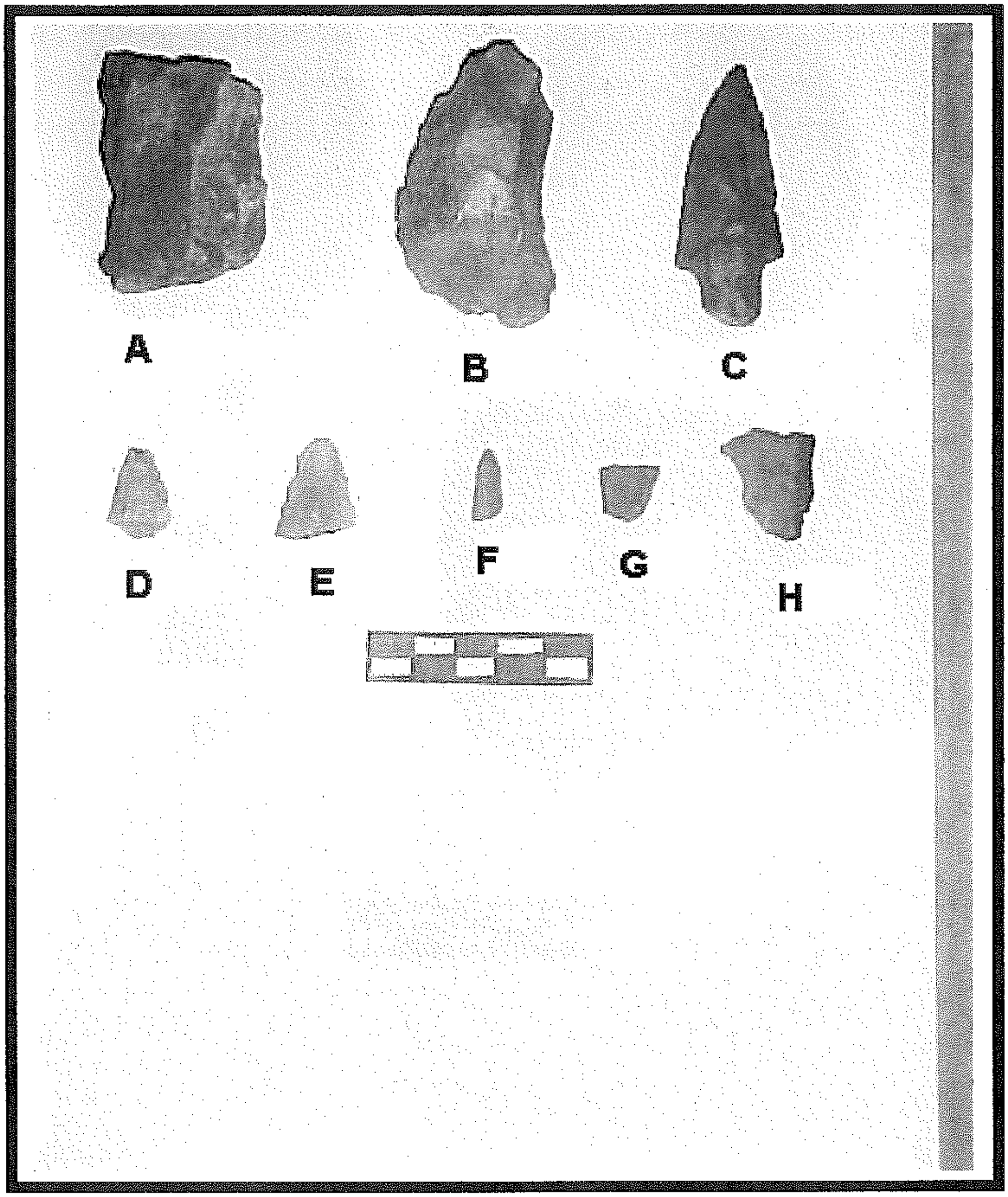


Figure 251. Rankin 30 (22-Ra-692) Artifacts. a,b. pebble cores; c. projectile point/knife; d-f. biface fragments; g,h. utilized flakes.

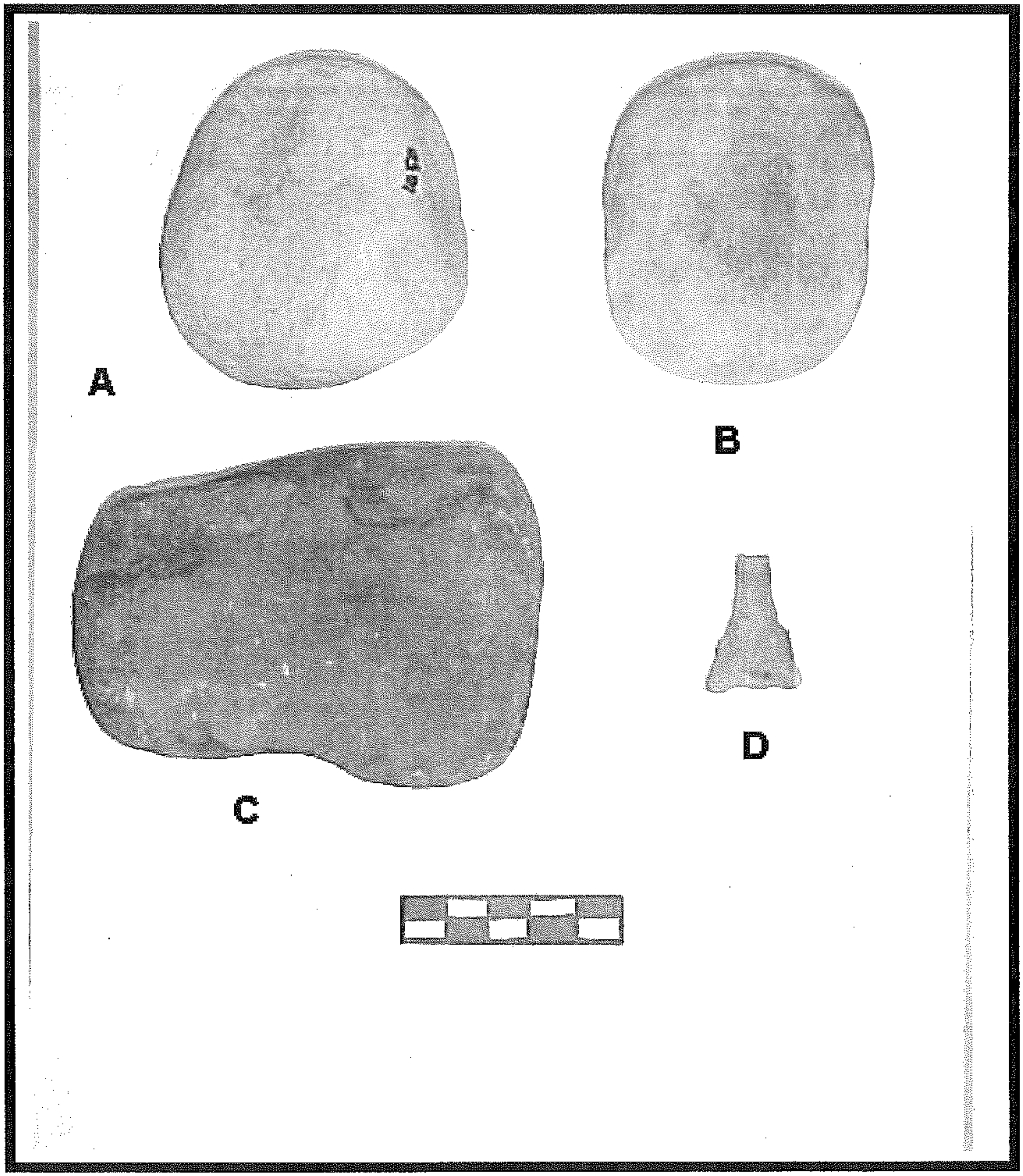


Figure 252. Rankin 30 (22-Ra-692) Artifacts. a-c pitted & abraded cobbles. Feature in Underwood ST416 (expanded).

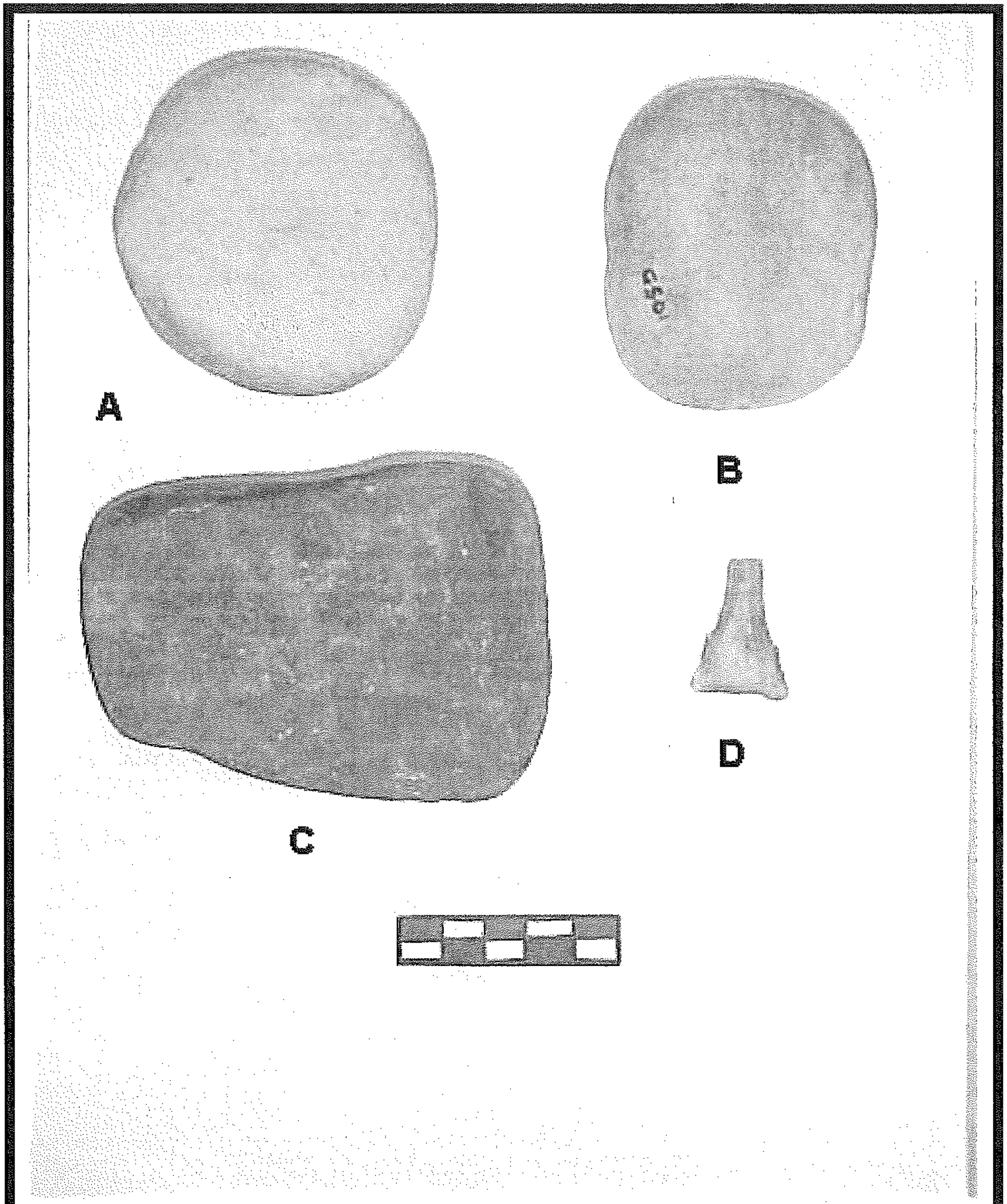
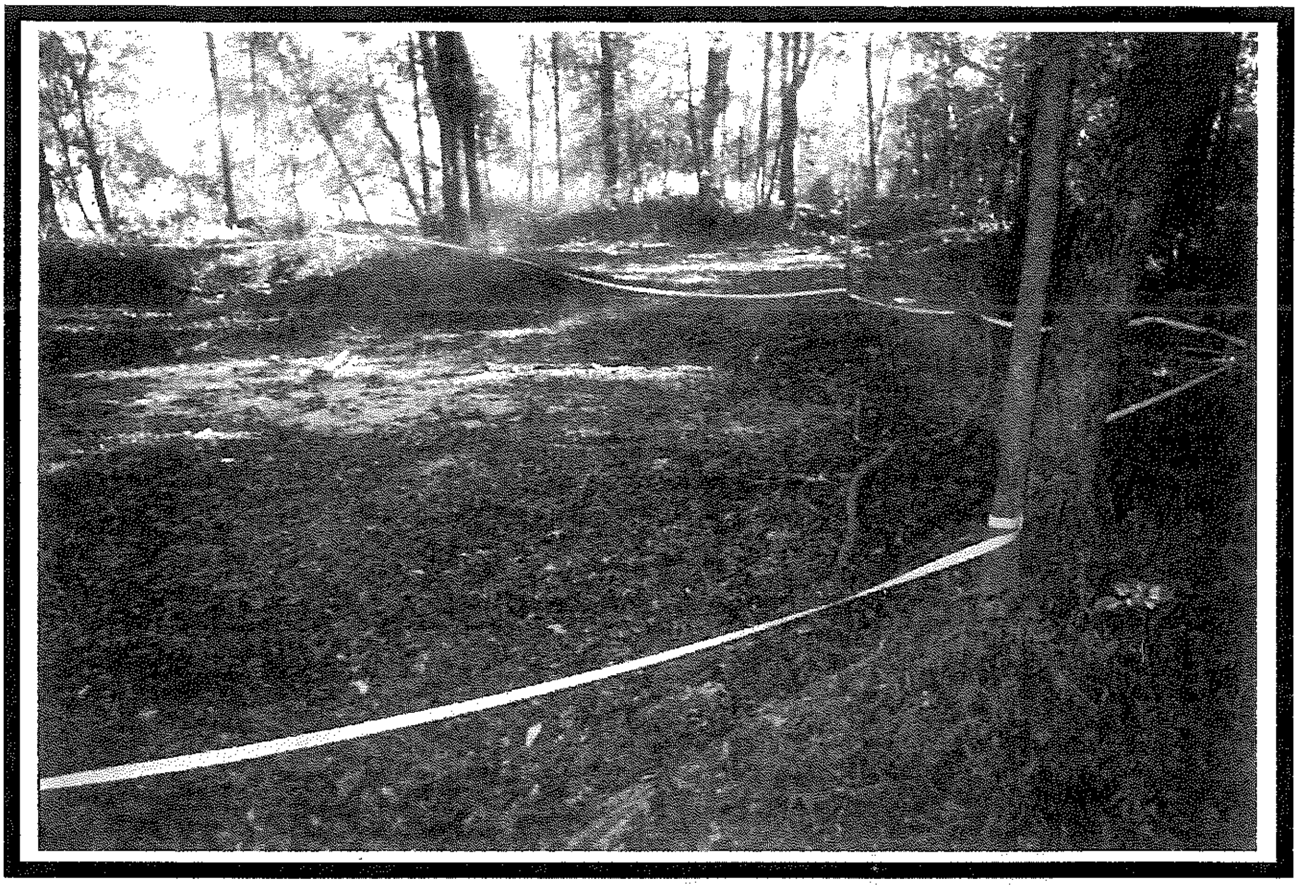


Figure 253. Rankin 30 (22-Ra-692) Artifacts (reverse of Figure 252.). a-c pitted & abraded cobbles. Feature in Underwood ST416 (expanded).



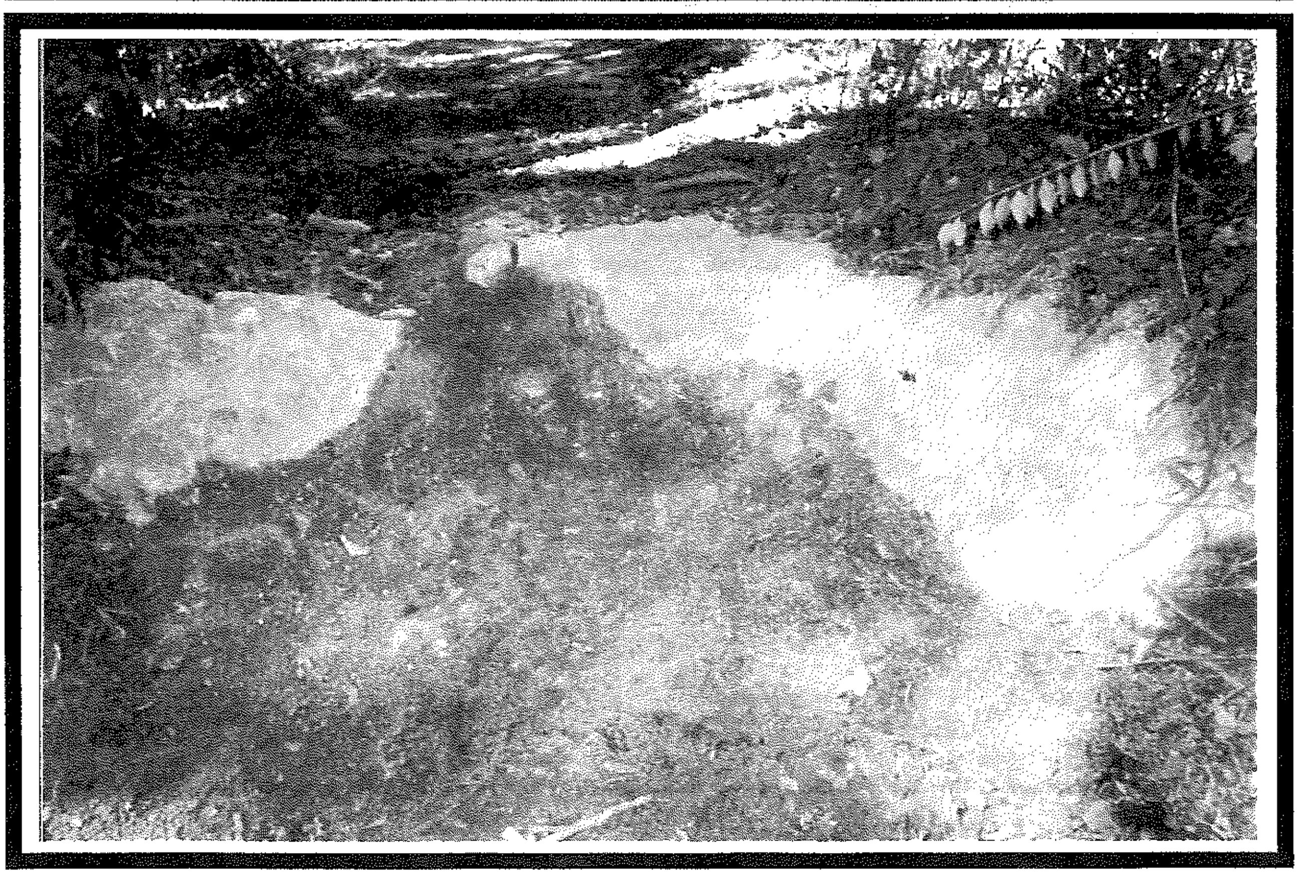


Figure 254. Rankin 30 (22-Ra-692) unidentified 20th century features (concrete basins on top of bank).

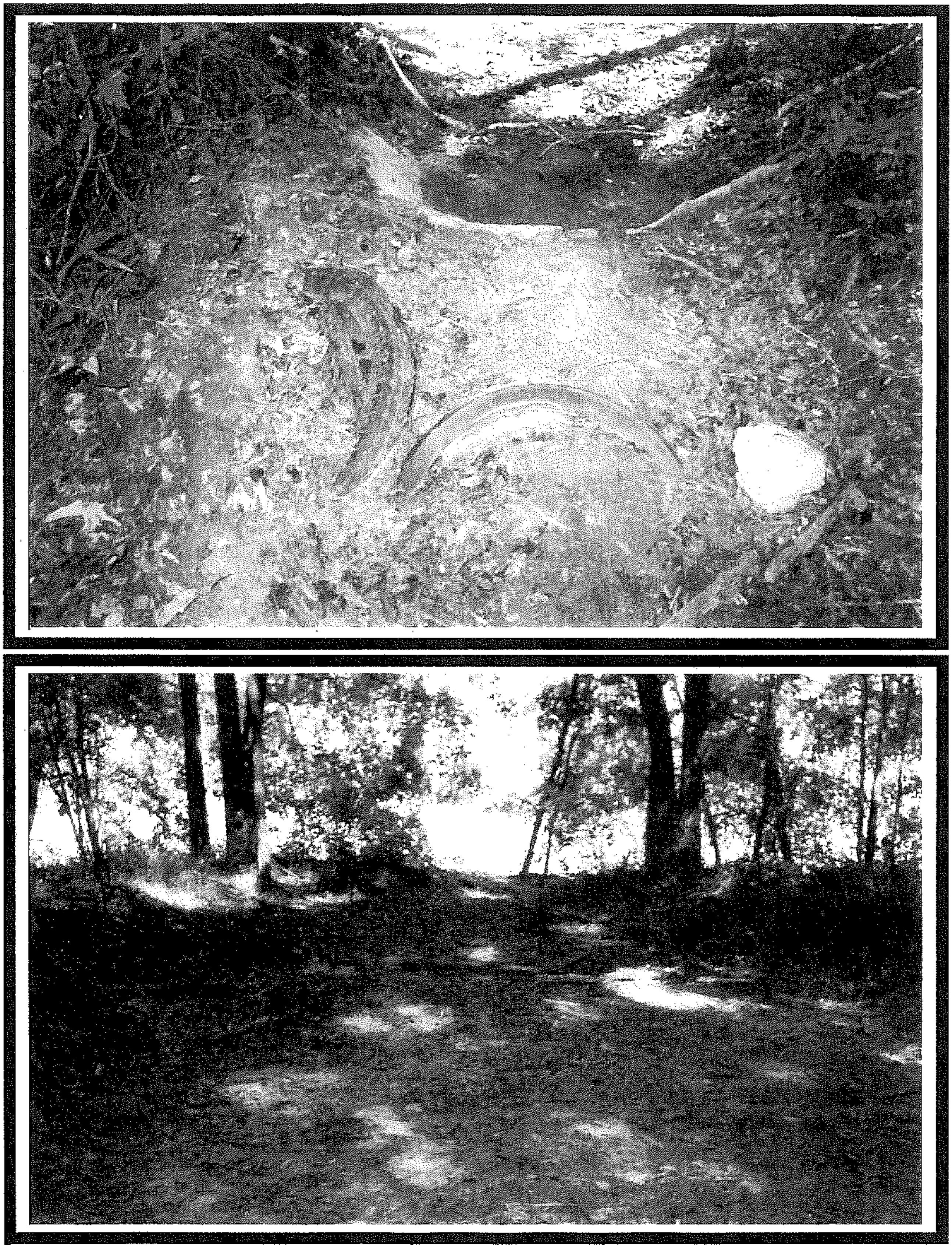


Figure 255. Rankin 30 (22-Ra-692) unidentified 20th century features.

Rankin 31 (22-Ra-693). This large prehistoric site [redacted] The site was discovered at Underwood ST 439 and recorded by Orsbun on 19 October 2004, when 36 man-hours was spent on the site. The site was discovered while conducting 30 m interval shovel test transects and was delineated on 10 m intervals (Figure 256). Sixty-five positive shovel tests are reported; their distribution is non-contiguous, which is interpreted as representing discrete occupation areas, possibly from different time periods. A 1x1 m test unit was excavated by Orsbun on 21 October 2004. The site was revisited by Starr, Underwood and May on 17-18 May 2005, at which time a 50x50 cm shovel test (Underwood 693) was excavated near the original 1x1 (Figure 257). [redacted]

Site 22-Ra-693 [redacted] The setting is geologically stable and soils are well-developed. The area is open woods with 50+ year old sensesent pines dominant and a hickory, sassafras, privet, sweetgum, and privet understory. The surface is covered with poison ivy and thick pine straw, so visibility was poor and no surface collection was made. The deposit is about 20 cm thick.

Test Unit 1 was excavated in 3 arbitrary 10 cm levels. Level 1 (to 10 cmbs) is described as comprising the Ao (0-4 cmbs) and A1 (4-9 cmbs) horizons. The upper zone was 10YR2/2-3/2 organic loam with abundant roots. The lower zone was 2.5YR5/3 friable silt loam. A high density of flakes is reported (Table 121). Level 2 (10-20 cmbs) was a dense, compact 10YR6/4 silty clay with abundant artifacts. Level 3 (20-30 cmbs) was dense compact 10YR6/4 silty clay with no artifacts. Particle size analysis shows the site soils to have only a trace of clay, but silt in the 30-50% range (Figure 258).

Artifact density overall is moderate, though variable, with prehistoric ceramics and lithics being recovered (Table 120). Most of the debitage from ST Orsbun 293 (0-25 cmbs) appears to come from one core. There is a fragmented quartz pebble from ST Underwood 461 (0-30 cmbs). The heterogeneous tempered sherd from ST Underwood 494 (0-30 cmbs) has sand and grog. Historic land use evidence is limited to a sling/belt-sliding buckle from ST M.Starnes 796, broken where riveted to leather/webbing. There is no evidence of cultivation and no tree planting rows. The south edge is truncated by a borrow pit associated with the railroad grade. Site preservation is overall good, with minor impacts from borrowing, biological, and other natural causes.

Site 22-Ra-693 is considered to be a base camp and/or repeatedly used hunting/gathering camp based on the moderate density of material and the large area covered. Archaic and Woodland period components are to be expected and may be horizontaly discrete. The site should be considered potentially eligible for the NRHP. The significance of the site is enhanced by its landscape association with the probably significant Rankin 30 (22-Ra-693). The site should be subjected to Phase II testing with contiguous 1x1 m test unit blocks in areas of high density or that are otherwise indicated to be of interest. It should also be considered in detailed geomorphic studies, including [redacted]

[redacted]

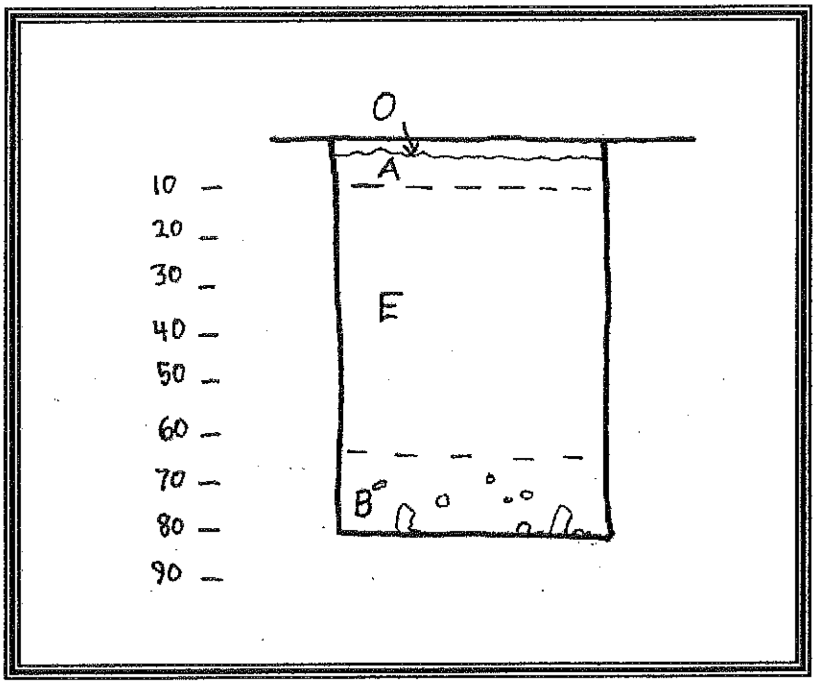


Figure 257. Rankin 31 (22-Ra-693) Soil Profile.

Key to Figure 257. Rankin 31 (22-Ra-693) (50 x 50 ST Underwood 693) Soil Profile

Horizon	Color	Texture	Structure	Inclusion/Mottles
O	10YR4/3 brown	loamy silt	weak fine granular, friable	common fine roots
A	10YR5/4 yellowish brown	fine sandy silt	medium granular, soft	weakly mottled
E	10YR5/6 yellowish brown	fine sandy silt	medium granular, moderate pore space with silt skins	Homogeneous, occasional large roots
B	10YR6/3 pale brown	silt loam	medium subangular moderate pore space with silt skins	strongly mottled, weak reduction with oxidation stains

Figure 258. Rankin 31 (22-Ra-693) TU1 graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Rankin 31	TU 1	10	30.00	66.60	3.40
Rankin 31	TU 1	20	46.60	53.30	0.10
Rankin 31	TU 1	30	50.00	46.60	3.40

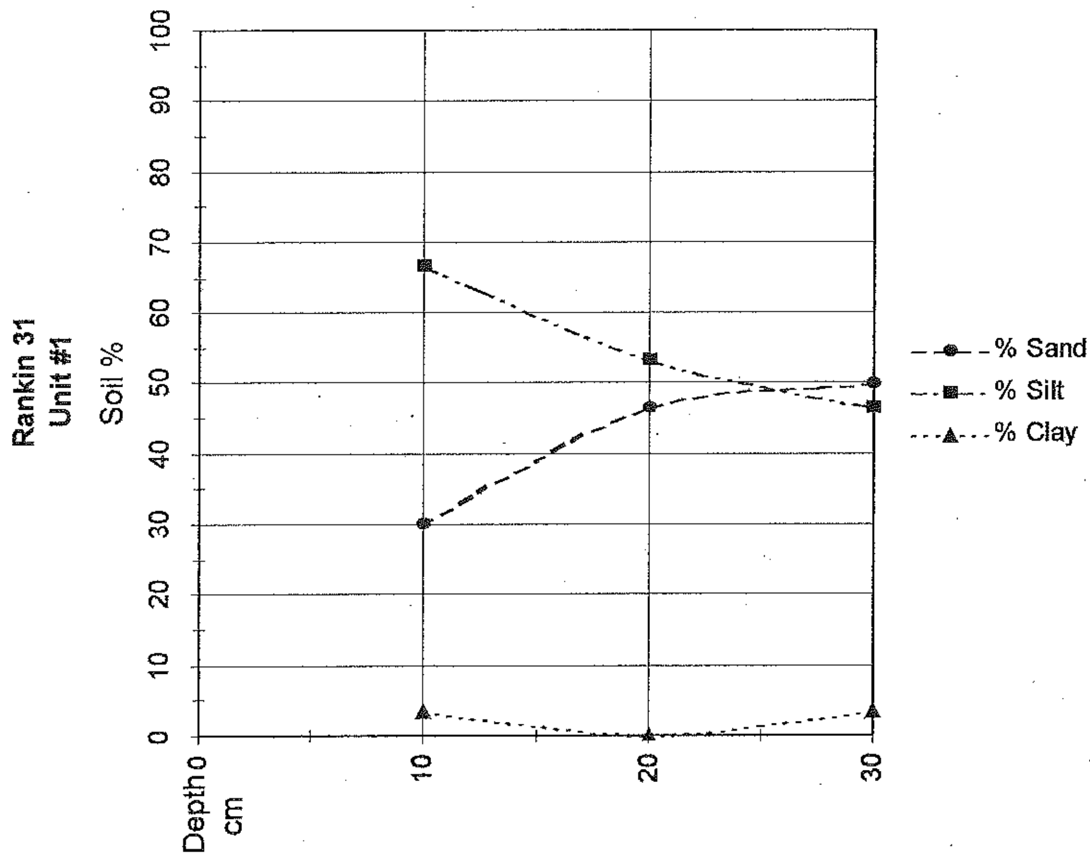


Table 120. Rankin 31 (22-Ra-693) Total Artifact recovery from shovel tests (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	11
Secondary decortication flake	39
Internal flake	7
Biface thinning flake	64
Flake fragment	53
Shatter	6
Cores/bifaces	
Biface preforms	2
Unmodified stone	
Fire cracked rock	9
Chert pebble	3
Arkosic sandstone	1
Hematite/siltstone	5
Petrified wood	5
Quartz	2
Quartzite	1
Ceramics	
sand plain	2
grog eroded	1
grog plain	1
heterogeneous plain	1

Table 121. Rankin 31 (22-Ra-693) TU1 Artifact recovery.

	Bag 1405 TU1		Bag 1406 TU1		Total
	#	g	#	g	
Lithics					
Debitage					
Primary decortication flake	5	7	2	0.7	7
Secondary decortication flake	9	11.2	5	12.4	14
Internal flake	4	2.4	5	5.2	9
Biface thinning flake	14	13.5	14	11	28
Flake fragment	11	4.1	10	8	21
Unmodified stone					
Fire cracked rock	3	0.8	3	1.8	6
Ferruginous sandstone	2	4.5			2
Petrified wood	3	0.8			3
Total	51	44.3	39	39.1	90

Rankin 32 (22-Ra-694). This small prehistoric site was recorded by Orsbun on 22 October 2004. It was discovered while conducting 30 m interval shovel test transects (Orsbun T30) at ST 268 and 269. The site was delineated on 10 m intervals. Seven positive and 24 negative shovel tests were excavated (Figure 259). Positive shovel tests were reported as Orsbun 268, 269, 309, 312, 314, Underwood 502 and M. Starnes 902. About 6 man-hours were spent on the site. It [redacted] The location was revisited by Starr, Underwood and May on 18-19 May 2005. At this time Underwood dug a 50x50 cm shovel test for soil samples and an increased artifact sample.

[redacted] The site is in large pines possibly from a mid-20th century plantation or, more likely, from natural regeneration in an old field with a few willow oaks and sweet gums about 30 years old, and a sparse understory of privet, prickley ash, beauty bush, arum and green briars. Any logging has probably been selective and conducted during the dry season, although some rutted areas were noted north of the site. The surface is covered with poison ivy and thick pine straw, so visibility was poor. [redacted]

The archaeological deposit is in the top 15 cm. Site soils are well developed. Artifact density and diversity are low to moderate. Prehistoric lithics are reported, with shovel tests reporting a few pieces of debitage (Table 122).

Site 22-Ra-694 is interpreted as a transitory hunting/gathering camp, probably from the Archaic period. Although site preservation is fairly good, with disturbance limited to the upper 15 cm or plowzone and to minor forestry activity, due to limited recovery the site is probably not eligible for the National Register. No further work is recommended.

[redacted]

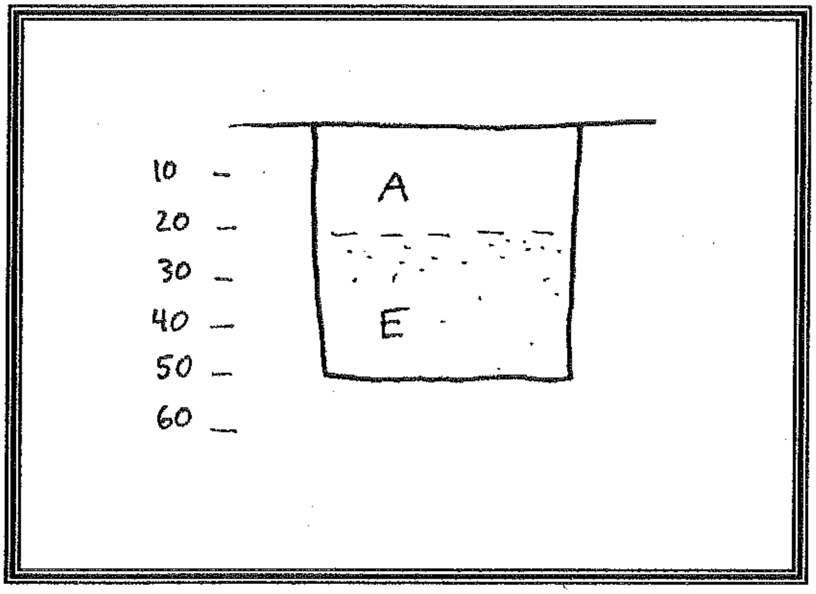


Figure 260. Rankin 32 (22-Ra-694) Soil Profile.

Key to Figure 260. Rankin 32 (22-Ra-694) (50 x 50 ST Underwood 692) Soil Profile

Horizon	Color	Texture	Structure	Inclusion/Mottles
A	10YR4/3 brown	Loam	fine weak granular	Homogeneous abundant fine roots
E	10YR5/6 yellowish brown	Loam	medium granular	Homogeneous moderate medium roots

Table 122. Rankin 32 (22-Ra-694) artifact recovery from shovel tests.

	Bag 1397		Bag 1398		Bag 1399		Bag 1400		Bag 1401		Bag 1607		
	Orsbun 309		Orsbun 314		M Starnes 903		Underwood 503		Underwood 506		Underwood 692		
	#	G	#	g	#	g	#	g	#	g	#	g	Total
Lithics													
Debitage													
Primary decortication flake			1	1.2									1
Secondary decortication flake			2	1.6	1	1	2	4.5					5
Internal flake									1	1.4	1	0.2	2
Biface thinning flake	1	11.8	2	1.5							2	0.6	5
Flake fragment											1	1.1	1
Unmodified stone													
Fire cracked rock									2	0.7	2	6.1	4
Ceramics													
TOTAL	1	11.8	5	4.3	1	1	2	4.5	3	2.1	6	8	18

Rankin 33(22-Ra-695) and 34/35/36 (22-Ra-696) site complex. This large site complex was reported by Orsbun on 4 November 2004 (Figure 261a). The site was discovered through the intuitive placement of a shovel test in a high probability area while walking 30 m interval transects. Most of the initial positive shovel tests (Rankin 33) lie along Underwood T71. Later, Underwood and M.Starnes began delineation of this large area on 10 m intervals, and Hardy, Barrett and Harris joined in the remainder of the delineation. The southern part of the site [redacted] It was found along several standard 30 m interval transects. Recording and delineation of the site began with Orsbun's visit to the site on 9 November 2004. [redacted]

The site data form provides information upon which to base an evaluation or description of the site, and work in this very large area has been limited. The artifact scatter appears to be fairly continuos over a quite large area. [redacted] The south side of the site is in 2-6" pines with privet understory. The north side is in mixed hardwoods, with red and white oaks, cypress, ironwood, hawthorn and poplar. Wildlife observed included deer, coons, red and grey squirrels, turtles, a copperhead and a black bear. Surface visibility was limited by duff and ground vegetation. Due to poor and limited visibility (trail and eroding areas), only limited surface collections were made. [redacted]

Prehistoric ceramics and lithics were recovered. Artifact density is moderate but variable across this very large site. Most of the material recovered is debitage. Ceramics include grog tempered eroded and plain, and a sherd with mixed sand and grog temper (Underwood 573). At M. Starnes 1040, 8 of the 9 pieces of debitage appear to be from a single biface. M.Starnes 1132 produced two small fragments of eroded Marksville Incised pottery. Other shovel tests produced eroded grog tempered pottery fragments. Limited historic use of the site is evidenced by 2 corroded nails of uncertain manufacturing style in ST Underwood 591.

A single test unit was excavated. TU 1 was excavated in 2 levels (Figure 262,263). Level 1 (to 10 cmbs) included two natural strata. The Ao horizon was 10YR4/4 organic loam. The E horizon was 10YR5/6 fine sandy silt loam. A very dense quantity of lithics with some ceramics was recovered. Level 2 (10-20 cmbs) likewise crosscut two natural strata. The E horizon was as in the above level while the B horizon was 10YR5/6 silty clay loam. Artifact recovery ceased by 20 cmbs. The test unit produced a large quantity of debitage, fire cracked rock, petrified wood, chert and quartz pebbles and a very small amount of grog-tempered eroded pottery (Table 123,124).

The site is subject to overbank aggradation in some areas as well as to erosion on some sloping surfaces. Preservation of deposits is variable, with greater impact in areas of pine plantations but better preservation in areas of selectively cut hardwood timber.

The NRHP eligibility status of the site complex 22-Ra-695 (terrace edge over floodplain)/22-Ra-696 (stream through backswamp) has not been determined. Only one test unit has been excavated so far on this very large site. The deposits are relatively intact, with forestry being the primary impact. The site can variously be considered a chipping station, a transitory or hunting/gathering camp, and/or a base camp based on fire cracked rock from hearths. This large area has evidently seen a number of used by various occupations, including during the Woodland period. This large site may be important to the overall interpretation of prehistory in the project area, and so is potentially eligible for the National Register. The site should be evaluated at the Phase II level of investigation if it is to be impacted by this project.

Figure 261. Rankin 35 (22-Ra-696); a. general view, view north; b. stream adjacent to site, view East.

Figure 262. Rankin 35 (22-Ra-696) TU1 at east end of site.

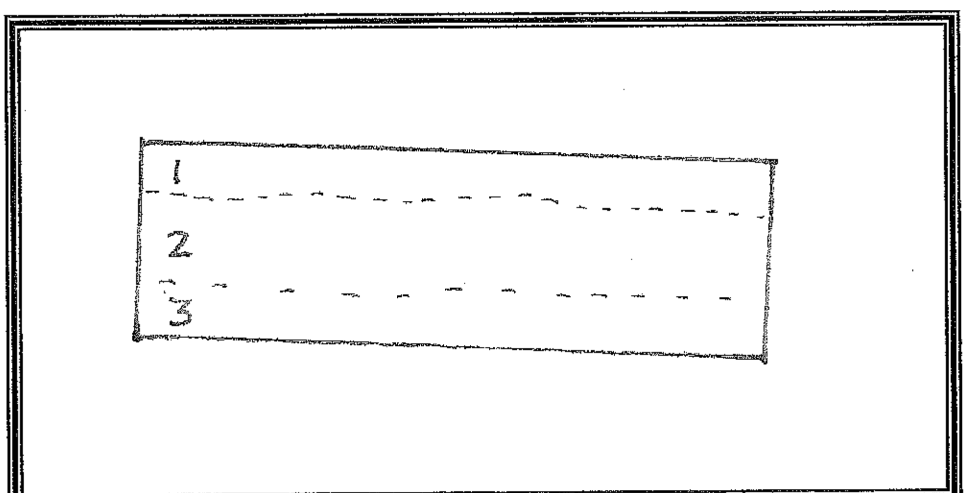


Figure 263. Rankin 34 (22-Ra-696) TU1 soil profile

1. **4/3 silt loam, moderately packed, with artifacts**
2. **5/4 silt loam, moderately packed, with artifacts**
3. **5/4 silt loam tending to silty clay loam, more densely packed, going sterile**

Figure 264. Rankin 34 (22-Ra-696) graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Rankin 34	Underwood ST 588	10	33.30	53.30	13.40
Rankin 34	Underwood ST 588	20	36.60	60.00	3.40
Rankin 34	Underwood ST 588	30	20.00	66.60	13.40

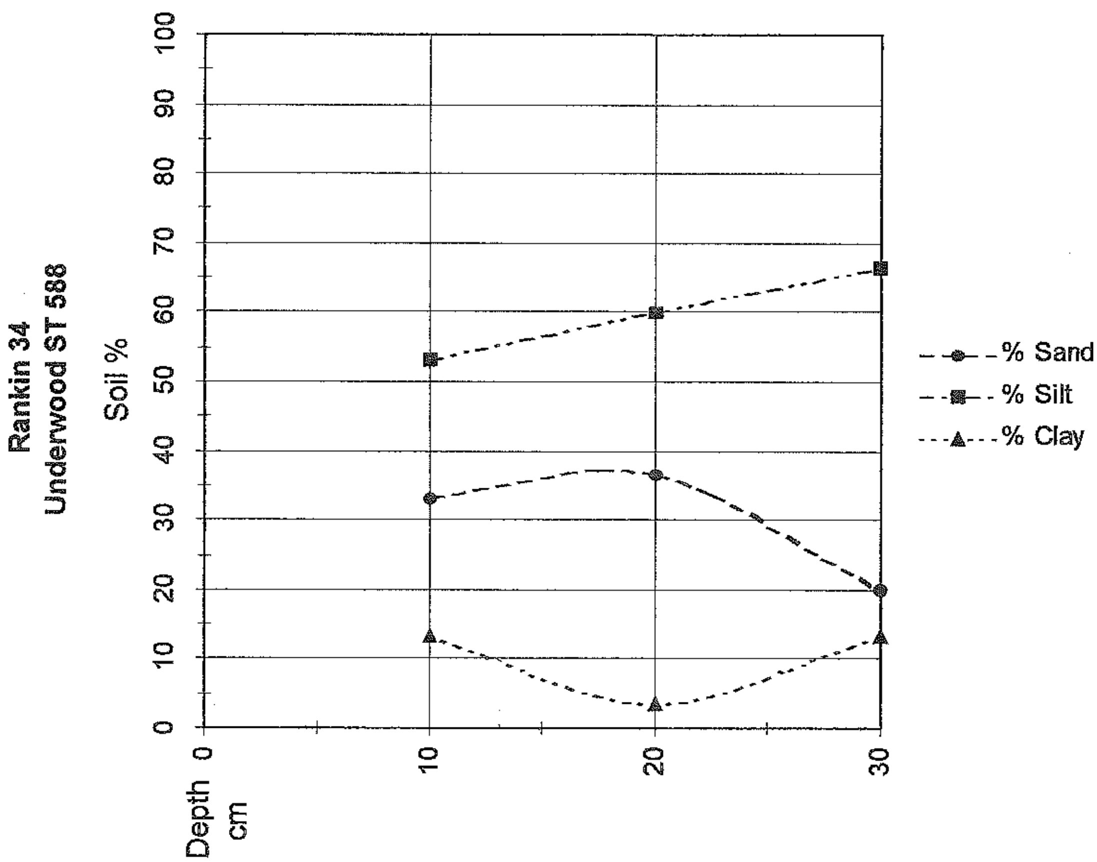


Figure 265. Rankin 36 (22-Ra-696) graph of soil particle size analysis.

Site	Unit	Depth cm	% Sand	% Silt	% Clay
Rankin 36	Underwood ST 609	10	40.00	53.30	6.70
Rankin 36	Underwood ST 609	20	46.60	53.30	0.10
Rankin 36	Underwood ST 609	30	40.00	53.30	6.70

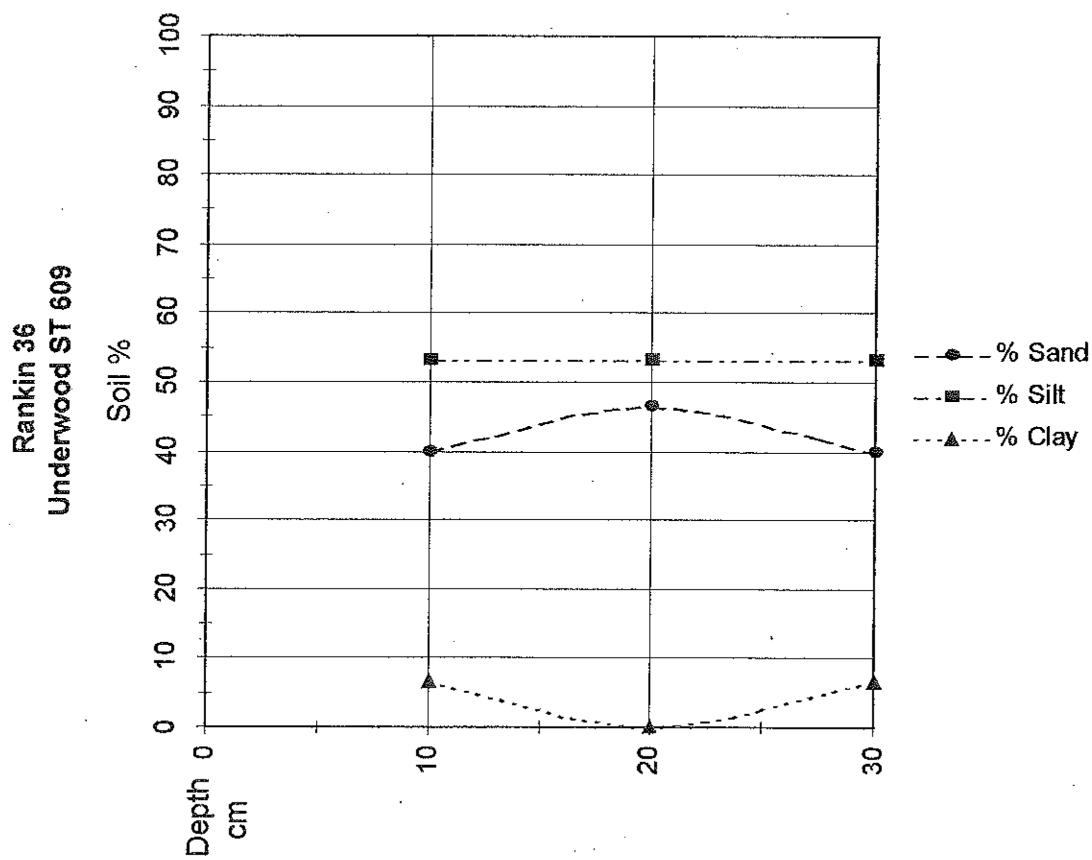


Table 123. Rankin 35 (22-Ra-696) TU1 Artifact recovery.

	Bag 1563 TU1 L1		Bag 1564 TU1 L2	
	#	g	#	g
Lithics				
Debitage				
Primary decortication flake	2	3.5	3	2.1
Secondary decortication flake	10	15.5	8	3.3
Internal flake	12	17.5	6	1.5
Biface thinning flake	42	18	20	6.4
Flake fragment	45	10	16	6.8
Shatter	2	1.8	1	0.3
Cores/bifaces				
Bifacial core	1	32.7		
Other worked stone				
Unifacial tools			1	1.5
Unmodified stone				
Fire cracked rock	4	1		
Ceramics				
grog eroded	6	5.4		
grog cord marked	1	5.9		

Table 124. Rankin 36 (22-Ra-696) TU1 Artifact recovery.

	Bag 1565 TU1 L1		Bag 1566 TU1 L2		Bag 1567 TU1 L3	
	#	g	#	g	#	g
Lithics						
Debitage						
Primary decortication flake	14	17	3	19.1	1	0.6
Secondary decortication flake	35	37.8	11	12.2		
Internal flake	10	5.4	5	2.6		
Biface thinning flake	65	33.5	31	15	2	0.4
Flake fragment	74	25.6	27	8.4	1	0.2
Shatter	6	7.5	4	3		
Cores/bifaces						
Pebble core	1	5				
Bifacial core	2	30.2				
Projectile point/knives	1	7.5				
Biface fragments	1	0.6			1	1.1
Other worked stone						
Unifacial tools			1	1.3		
Unmodified stone						
Fire cracked rock	2	2.2				
Chert pebble	1	46.3	2	23.8		
Petrified wood	1	5.8				
Quartz pebble	5	6.1	9	21	1	1.8
Ceramics						
grog eroded	5	3.9	2	1.9		

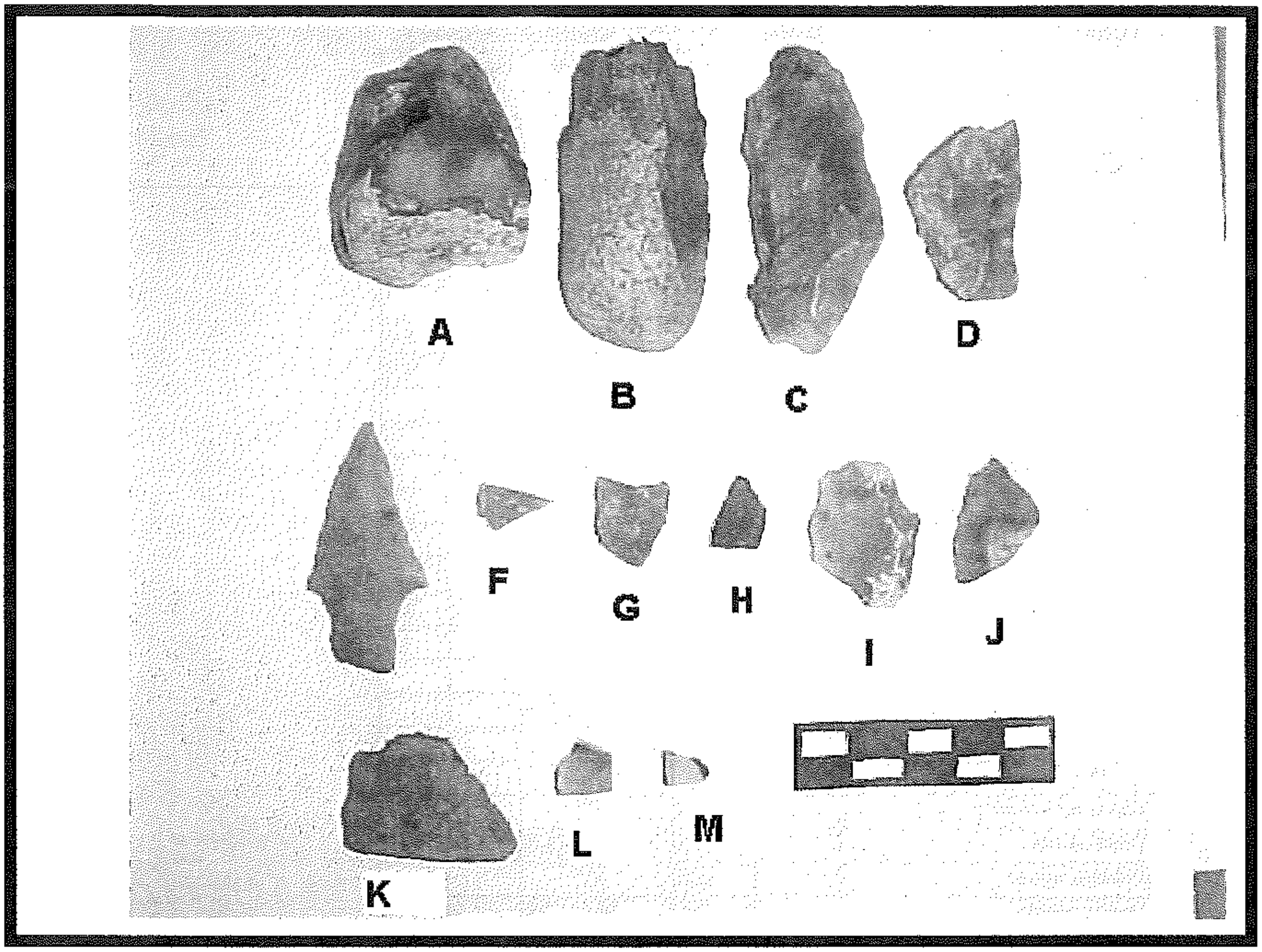


Figure 266. Rankin 35/36 (22-Ra-696) Artifacts. a,b. pebble core; c,d. non fitting sections of same pebble core; e. projectile point/knife; f-h. biface fragments; i-j. utilized flake uniface tools; k. grog tempered eroded sherd; l,m. cobalt hand-painted refined earthenware.

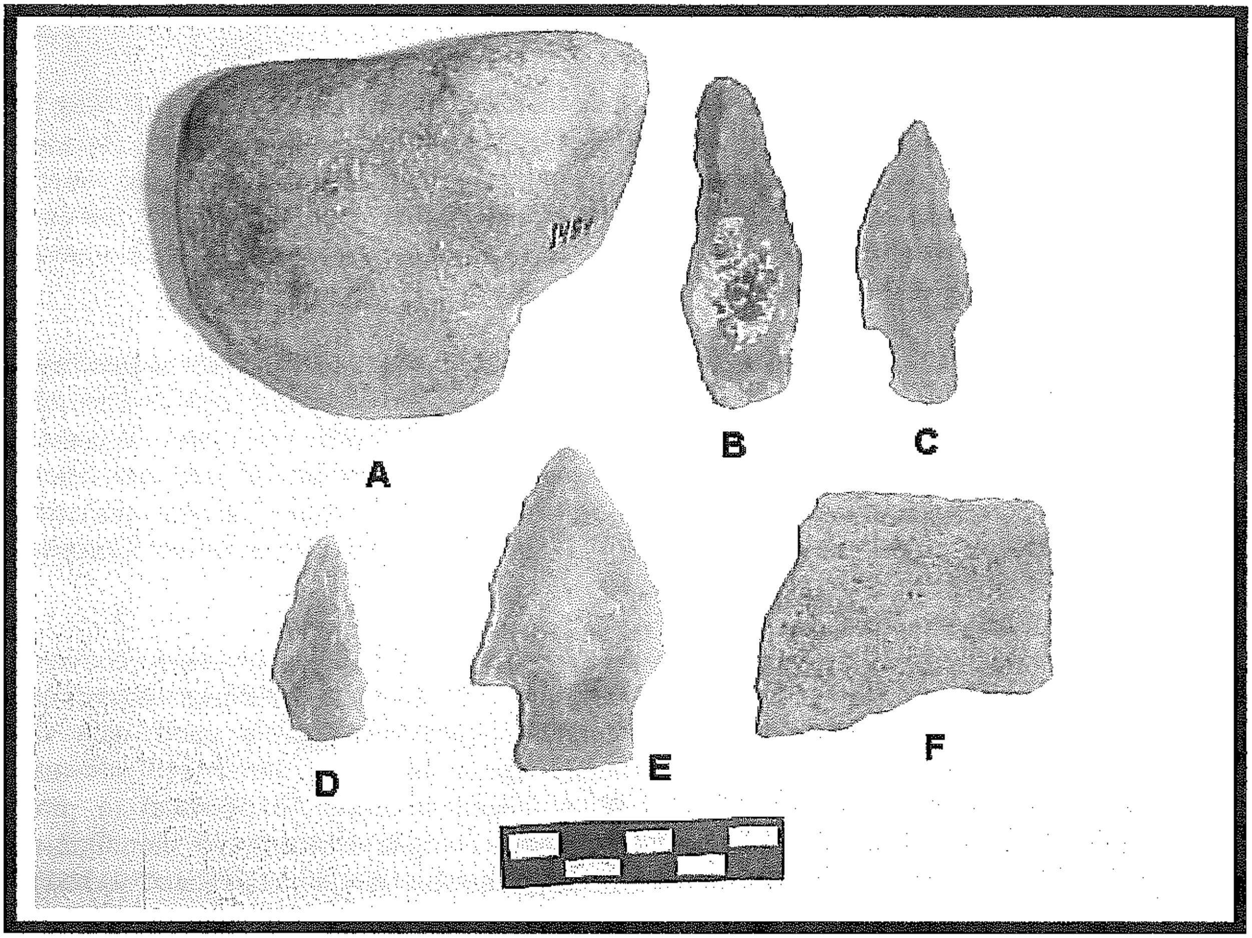


Figure 267. Rankin 35/36 (22-Ra-696) Artifacts. a. pitted stone; b. preform; c-e projectile point knives; f. shell tempered plain rim.

Rankin 37 (22-Ra-697). This is a highly limited lithic find, recorded by M. Starnes. It was found while conducting 30 m interval transects (Underwood T87). This initial shovel test indicated a moderate density, but six additional tests on 10 m intervals from the initial find were negative. About 2 man-hours were spent on this location. This site [redacted]

The find was on a slight knoll on a small ridge overlooking a small unnamed but perennial creek immediately north of the find. Soils in this flatwoods location are stable. The location is described variously as fallow land and pine woods. The site had young pines, "gum and papa's (*sic*)", briars, grass and fall leaf litter obscuring the surface.

The location has been slightly disturbed by natural causes, forestry and occasional flooding. No temporally or functionally diagnostic materials were recovered. The location is interpreted as a single-use hunting or other work station.

Given the number of flakes recovered in the positive shovel test, it is not considered an isolated find. However, due to the highly limited nature of the deposits, it is not eligible for the National Register. No further work is recommended.

Rankin 38 (22-Ra-698). This site was recorded by Underwood on 19 and 20 May 2005 while conducting survey of an area reported to have already been surveyed. He spent 5 hours in the site vicinity. A shovel test was placed in a high spot overlooking water and found to contain prehistoric materials. The location is between Highway 25, the electric transmission corridor and Prairie Branch. [redacted]

The site [redacted] The site has a cover of unimproved hardwoods about 30 years old, with a few larger oaks and hickories. The undergrown consists of cane and vines, so surface visibility was low and no surface collection could be made. The area was partially delineated on 10 m intervals (Figure 268). Six shovel tests were positive (Underwood 703, 704, 705, 712, 716, 718) (Figure 269a).

Prehistoric ceramics and lithics are reported (Table 125). All pottery recovered is grog tempered, indicating Woodland occupation. Otherwise only debitage was recovered. The density is apparently low to moderate. Preservation appears good, with minor disturbance by biological and other natural agents. Based on the limited information available at this point, Site 22-Ra-698 is judged to have the potential to provide significant information about regional prehistory, perhaps rendering the site eligible for the NRHP. If the site is to be impacted by this project, it should be evaluated at the Phase II level of investigation.

[redacted]

Figure 269. Rankin 38 (22-Ra-698); a. vicinity of ST Underwood 703; b. oxbow west of site.

Table 125. Rankin 38 (22-Ra-698) artifact recovery from shovel tests.

	Bag 1599 Underwood 703		Bag 1600 Underwood 712		Bag 1601 Underwood 705		Bag 1602 Underwood 704		Bag 1603 Underwood 718		Bag 1605 Underwood 716		Total
	#	g	#	g	#	g	#	g	#	g	#	g	
Lithics													
Debitage													
Secondary decortication flake			2	1.8									2
Internal flake					1	0.1							1
Biface thinning flake			1	0.9									1
Flake fragment			3	0.9	1	0.2			1	0.1			5
Shatter	1	0.5											1
Ceramics													
grog eroded							1	0.9			3	3	4
grog cord marked			1	3.7			1	0.6					2
TOTAL	**1**	**0.5**	**7**	**7.3**	**2**	**0.3**	**2**	**1.5**	**1**	**0.1**	**3**	**3**	**16**

Rankin 40 (22-Ra-699). This site was identified by Underwood on 16 June 2005 while searching for a reported mound in an area that had already been surveyed. One man-hour was spent on the site. The site [redacted] The site has a cover of large and small trees (mixed old growth hardwoods and pines), brush and vines. Impacts to the site include a logging road and push piles from previous cuttings of timber.

A single intuitively placed shovel test was excavated in an evident high probability area. The deposit appears to be 10 to 30 cm thick and may represent a low-to moderate density scatter. Prehistoric lithics and historic ceramics were recovered. Material was: 2 biface thinning flakes (.4 g), 6 fire cracked rock (7.3 g), and 1 plain refined earthenware.

Site 22-Ra-699 has not been completely delineated, so the site date and function can not yet be interpreted. However, the landscape position and the material recovered from the single shovel test indicates that this site may have significance for the interpretation of regional prehistory. If this site is to be impacted by this project, it should be evaluated at the Phase II level of investigation.

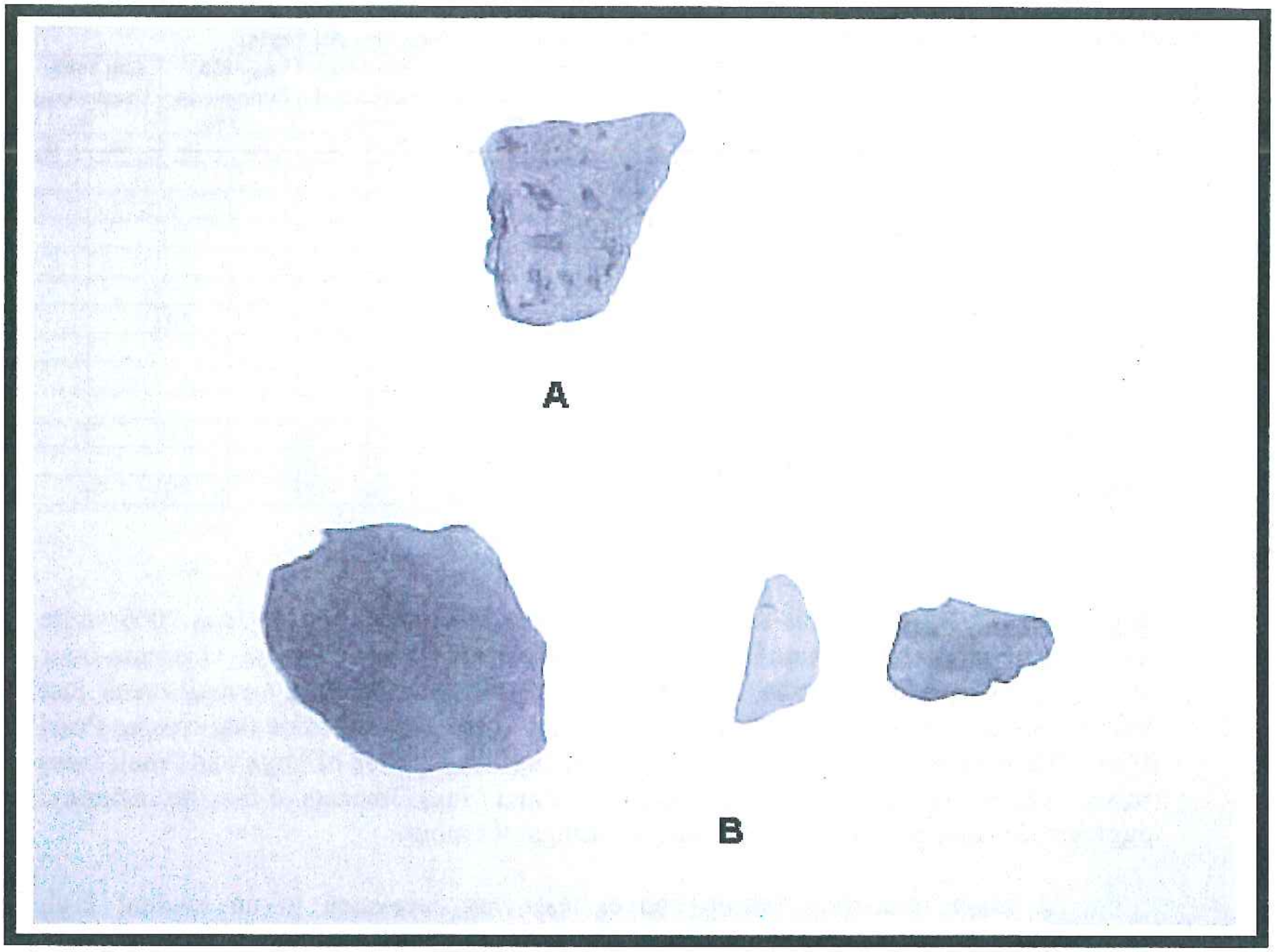


Figure 270. a. Rankin 40 (22-Ra-699), untempered punctate sherd; b. Rankin 41 (22-Ra-700), Mississippi Plain sherd, utilized flakes.

Rankin 41 (22-Ra-700). This apparent conical mound was found in an area that had reportedly been previously surveyed. The mound [redacted] It was found by Underwood on 16 June 2005. His visit to the site was merely to confirm the mound's existence and to give a location for planning further investigation (Figure 272). The mound was found to have a pothole in its summit. Otherwise the site appears to have suffered minimal impact, and this largely from forestry.

The site area is a high spot overlooking an old river channel forming a natural oxbow lake. [redacted] The site has a cover of small hardwoods and thick brush. Surface visibility was poor and no surface collection was made. The single shovel test (Underwood 723) indicates a high artifact density (Figure 273a). Prehistoric ceramics and lithics were recovered (Table 126). Fire cracked rock, burned earth and charcoal are all present. All of these materials are indicative of substantial or intensive use of a camp or hamlet. Redeposited occupation materials were recovered from other project area mounds. The two potsherds are not immediately useful for a more refined chronology than some time in the Woodland period. These are a untempered sherd with small rectangular tooled punctations (perhaps some form of dentate rocker stamping) and the heterogeneous tempered sherd which has sand, concretions and perhaps grog and burned bone. A fragment of quartz pebble shatter may also be indicative of middle Woodland occupation.

The site was revisited by Chris Underwood and Michael Starnes in March, 2006 for site delineation. They spent a total of about 40 hours on the site. The mound [redacted] The area is a dense stand of young pines and hardwoods. The site is estimated to measure 90 m in diameter, roughly centered on the mound (Figure 271). The mound itself is about 15 m in diameter. The deposit is about 30 cm deep on the non-mound portion of the site based on 94 shovel tests on 10 m intervals. Ceramics and lithics were recovered (Table 126). Density is moderate to high. Untempered, grog tempered and shell tempered as well as heterogeneous (grog/shell and grog/sand) tempers were identified, indicating multiple periods of occupation. A triangular arrow perform and a Collins arrow point were recovered. Fire cracked rock from multiple shovel tests indicates that hearths may be present. The possibility of features is real.

Site 22-Ra-700 is considered potentially eligible for the National Register of Historic Places. The site should be evaluated at the Phase II level if it will be impacted by this project.

[redacted]

Figure 272. Rankin 41 (22-Ra-700); a. general view of mound in thicket; b. shovel in old disturbance on mound.

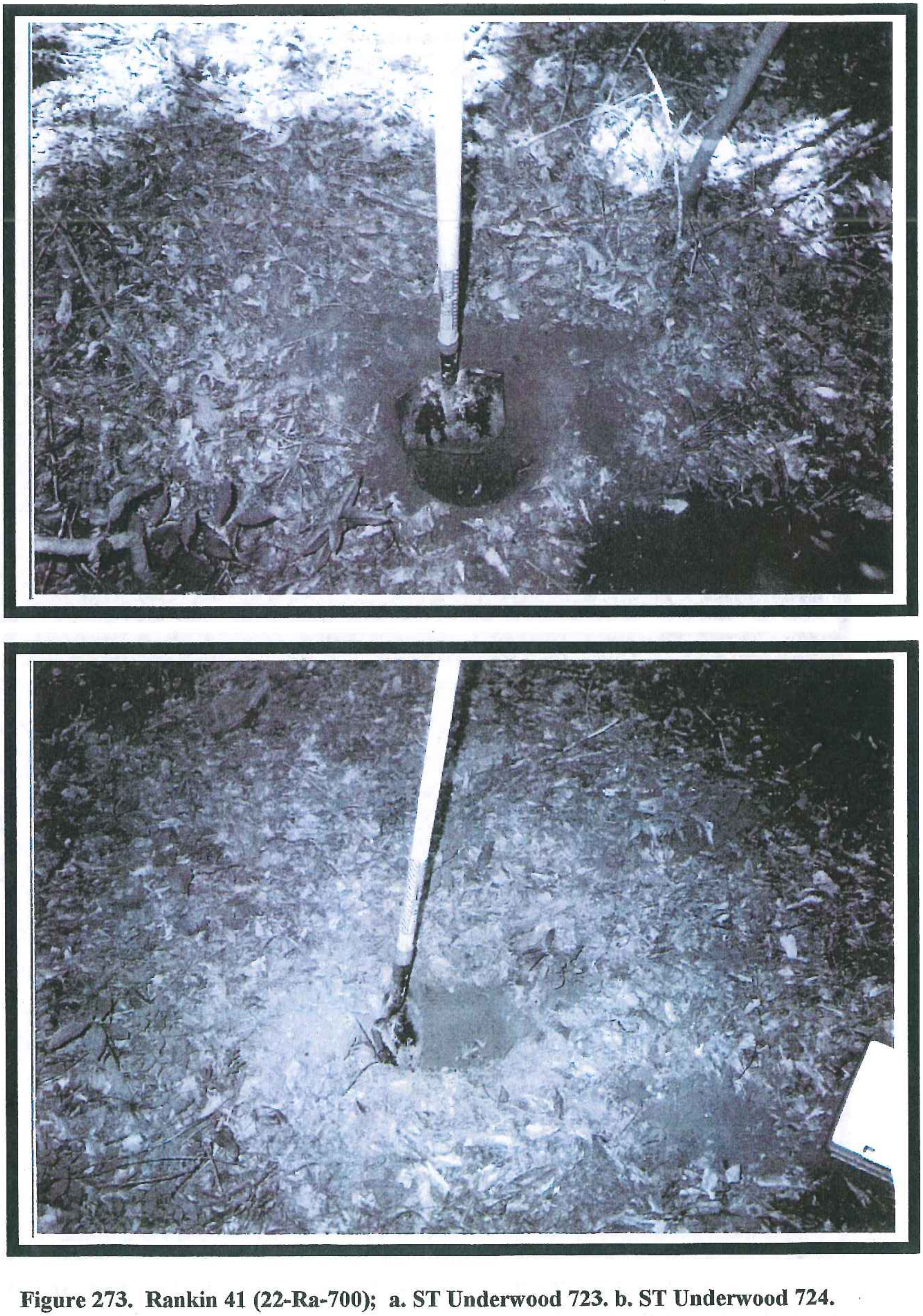


Figure 273. Rankin 41 (22-Ra-700); a. ST Underwood 723. b. ST Underwood 724.

Table 126. Site 41 (22-Ra-700) total artifact recovery from shovel tests (see appendix table).

	Total
Lithics	
Debitage	
Primary decortication flake	17
Secondary decortication flake	32
Internal flake	10
Biface thinning flake	129
Flake fragment	116
Utilized flake	2
Shatter	10
Cores/bifaces	
Amorphous core	3
Bifacial core	3
Biface preforms	2
Projectile point/knives	1
Biface fragments	2
Other worked stone	
Unifacial tools	2
Unmodified stone	
Fire cracked rock	38
Petrified wood	7
Burned earth	1
Charcoal-wood	1
Ceramics	
untempered eroded	3
untempered punctate	1
grog eroded	10
grog plain	6
heterogeneous eroded	1
shell plain	1
grog/shell eroded	1
grog/shell plain	4
Total	403

Isolated Finds

Madison 7. This very limited prehistoric site was found by Starr on 15 October 2004 in the course of a 30 m interval shovel test transect (T91, ST Starr 188). Crew members were instructed to delineate and test the site. M. Starnes S 70 and 72 are reported here. A .5 x.5 m unit was evidently excavated, but has been lost.

The low-density site lies on a small (15 m diameter) slight knoll in ridge and swale terrain. The area is unimproved hardwood forest. An intermittent stream or dry bayou lies to the northwest of the site and swales running north-south and east-west surrounding the small site empty into this bayou here. The site soils are being deflated by scour/overflow. Otherwise the site is undisturbed. There are several large rotten snags and stump holes on the site as well as a few young poles of red and white oaks, hickory, elm, and cane.

A large sherd that appears to be Early-Middle Woodland Bayou La Batre Incised was discovered (ST Starr 188). This sherd has abundant sand and coarse grog temper. The ware is oxidized throughout. The motif appears to be a running spiral made with medium width lines. Otherwise, only burned earth and charcoal were noted. This highly limited manifestation is considered to represent a transitory, low-intensity occupation, probably for resource extraction/gathering purposes. As an isolated find, no site card was submitted.

Table 127. Madison 7 Artifact recovery from shovel tests.

	Bag 253 Starnes 70		Bag 270 Starr 188	
	#	g	#	g
Ceramics				
untempered eroded	13	7.6		
untempered plain			1	2.5
heterogeneous broad incised	3	44		

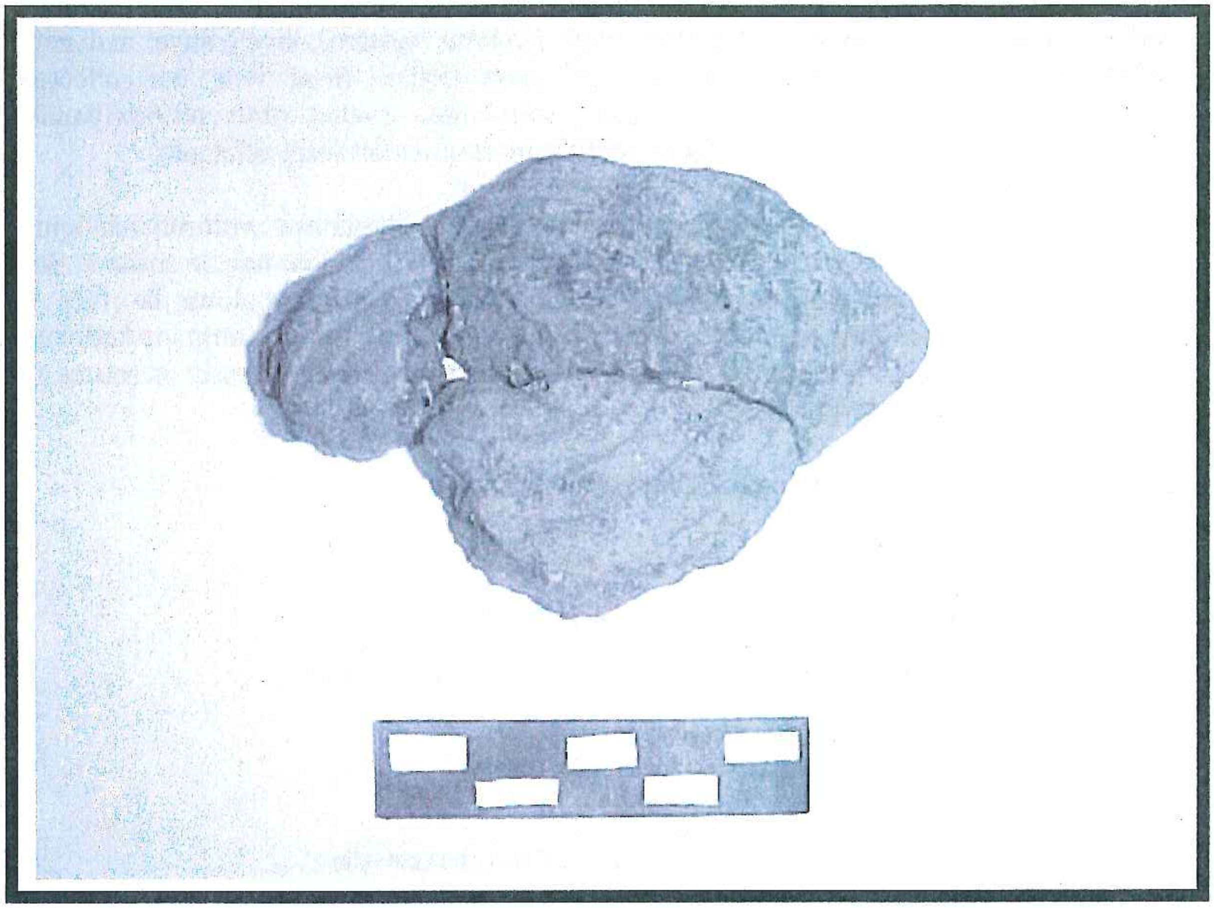


Figure 274. Madison 7 Ceramics. heterogeneous incised (Bayou La Batre series?).

Madison 8. This isolated find (ST Hardy 199) consists of two mending shell tempered sherds (Mississippi Plain, 6.8g). It has much coarse shell and is soft and highly leached. It comes from the rim and shoulder of a jar. It was recorded on 14 August 2004. As an isolated find, no site card was submitted. Like other Mississippi period occupations, epemeral use of the Pearl floodplain is indicated.

Hinds 5 (Camp/Hotel Dump). This dense surface scatter of glass bottles, hotel ware and other early to mid 20th century material [redacted] The site was recorded by Starr on 19 August 2004. About a half hour was spent selecting diagnostic artifacts. Surface visibility was fair, with hardwood leaf litter and some overbank silt/colluvium. This selection of diagnostic materials comprises the surface collection (Table 128). No subsurface investigations were conducted.

The dense scatter is about 10 m in diameter and is roughly circular. The deposit is around 20 cm thick and is relatively undisturbed although the area is subject to 4-wheel traffic and scouring by high water. [redacted]

[redacted] Materials include metal and building materials as well as kitchen debris. Clear, amber, cobalt, aqua, light green and white glass were noted. Bottle glass includes soda (Coca Cola), ketchup, mustard, olive, sauce, and milk bottles as well as small vials, ammonia and Clorox bottles. Metal items not collected include woven wire and barbed wire fencing, bedsprings, braided cable and box bands. Sanitary porcelain was also noted. Hotel wares with backmarks were collected.

The site is interpreted as a dump from a hotel/boarding house, with rubbish being tipped into the floodplain from the road. However, this interpretation may be suspect, due to the distance from the early to mid 20th century cities and location along the river. It may rather represent dumping from a tenant cabin or hunting/fishing camp stocked with durable semiporcelain "hotelware," but there is no known primary deposit or source to provide a context for interpretation.

Table 128. Material from Hinds 5, Camp/Hotel/ Dump.

Kitchen
- Ceramics
    - 2 black transfer decorated refined earthenware
    - 1 blue/brown transfer decorated (rim) refined earthenware
    - 2 buff-bodied, moulded, pink/brown glaze industrial stoneware
    - 1 plain white semiporcelain
    - 8 green transfer decorated semiporcelain
    - 2 maroon overall glaze, moulded semiporcelain
    - 1 brown exterior glaze semiporcelain
    - 4 buff paste, clear glaze semiporcelain
    - 3 buff paste, clear glaze, red transfer rim band semiporcelain
- Bottle Glass
    - 16 clear
    - 3 light green
    - 2 amber
    - 1 aqua
    - 1 cobalt
    - 2 white
- Canning Jar Lid Liner
    - 1 white glass

Activities
- 1 Fe chain

The black transfer decorated earthenware has a checkerboard rim pattern and comes from a saucer and plate/platter. It is marked "…bert M…aso…menacol…"The buff-bodied moulded, colored glaze stoneware comes from mixing bowl rims. The plain white semiporcelain is marked "McNichol China" in a bat cartouche, with "Clarksburg, W.Va. 122" below. The green 3-line rim band semiporcelain comes from two manufacturers. It includes a coffee cup, marked "B84" a plate marked "34", three saucer/dessert plated marked "A103" and a deep single serving marked "14". These were made by McNichol China, Clarksburg, West Virginia. Three other items have a somewhat bluer green and were made by Shenango China of New Castle, Pennsylvania. These have portions of this firm's seated Indian potter logo and include a deep serving dish. The maroon glazed semiporcelain is a deep serving/table dish with a fluted or lotus form. The brown glazed semiporcelain is from an oval server and is marked with "Hall" in an oval with "Made in USA" below. The buff paste semiporcelain comes from single serving vegetable dishes and is marked "Inca Ware, Shenango China, New Castle, Pa. USA." The buff semiporcelain with red rim bands comes from2 plates and a saucer, and is marked "...lbert....C...."

The clear bottle glass includes 4 sauce/ketchup bottles with screw tops, 5 tumblers, 3 milk/cream bottles, 3 other bottle necks, and a gallon jug with screw top. The light green glass comes from "Coca-Cola" bottles. The amber glass includes a gallon jug neck. The aqua glass is from a large (canning?) jar. The white glass is of ointment pot form and retains a steel screw top lid marked "Lustre-Crème a shampoo with lanolin Kay Dumit, Inc." The canning jar lid liner is marked "Crown.Mason."

No site number was assigned because of recent date and secondary context and the site is not eligible for the National Register. No further work is recommended.

Hinds 12. This site was recorded by Starr on 4 September 2004, based on shovel testing around M. Starnes ST 133, a test on a 30-m interval transect ending at the river, that reportedly produced a ceramic sherd (actually burned earth from timbering clean-up). Site delineation was on a 5-m interval. Starr and Mississippi State University anthropology student McIntyre spent several hours at this location, but results were largely negative. ST McIntyre 12 produced a fragment of a cut spike. ST McIntyre 13 produced four unidentifiable nail fragments. ST McIntyre 14 produced charcoal, burned earth and a further probable cut nail fragment. The moist soil screened easily through ¼" dry screen. [redacted] The area is a 15 to 20 year old pine plantation that has not been thinned. The sparse understory consisted of pokeweed and sweetgum. It is rather anonymous, although a slight rise in the Holocene floodplain can be detected here. The site area was cut up by trails and earlier logging. Surface visibility was poor due to a muddy four-wheel trail and thick pine straw. No surface collection was made possible. .

This is a low density scatter of ambiguous nature. Because of the recovery of a fragment of a large cut nail, testing was intensive, but no definite occupation component could be distinguished. This low-density scatter may represent an outbuilding such as a barn, or flood-rafted debris from a 19th century flood such as the 1874 flood described above in the Corps of Engineers report (See Chapter V). Alternatively, it may be the remnant of a 19th century site that has mostly been lost to river meandering. The site is moderately disturbed by erosion, trails, forestry and intermittent flooding. The site is considered to have minimal interpretive value.

Hinds 15. This find consists of a positive 30-m interval transect shovel test reported to contain a ceramic sherd. Documentation is poor and the location is uncertain, but lying in an area of ridge and swale terrain with pines and understory such as *arum*. This find was visited for recording through ¼" dry screened shovel tests on 9 September 2004. The crew of five directed by Orsbun spent about an hour and a half testing at a 5-m interval around the location of the initial positive find, with negative results. Surface visibility was poor due to vegetation. The location is not assigned a site number because it is apparently an isolated find. Because it has limited interpretive potential is not eligible for the NRHP.

Hinds 16. This location was tested by Starr, Hardy, Harris, Osburn and M. Starnes on 8 September 2004, around the initial find at Glasgow's T11 ST116 30-m interval shovel test. Additional tests were on a 5-m interval and all were negative. The area was mixed hardwood hickory and water oak and pine forest. The understory was briars and grapevines. The location lies in a level area along an unnamed stream or old channel in a ridge and swale terrain. The surface was covered with duff and there were no trails or other surface exposures, so no surface collection could be made. Disturbance was minimal and limited to forestry and intermittent flooding.

This location is interpreted as a transitory hunting/gathering station or camp. It is not possible to assign it to a temporal period. Hinds 16 is not eligible for the National Register because it is an isolated find with limited interpretive potential. No site card was submitted nor site number assigned to this isolated find as per MDAH guidelines.

Rankin 2. This ambiguous historic site lies along the south bank of a large borrow pit that had allegedly been previously surveyed. The site was found by Hawkins and J. Starnes on 13-14 July 2004, when a surface collection was made. The site immediately [redacted] The site was visited by Starr, Hardy and Millet for additional investigations (2 man-hours). Three positive shovel tests (Starr ST 132, Hardy ST 135 and Millet ST 5) were excavated at that time.

[redacted] Most of the debris recovered is bituminous coal and coal cinder and clinker from some steam engine (boat, rail engine or skidder). Burned earth and a large, cut nut and bolt from some piece of machinery were also recovered. A single flake is considered to be a prehistoric isolated find.

The initial predictions for the survey area included the likelihood of numerous late 19th-early 20th century logging sites. This did not prove to be the case in the field investigations. However, this site is interpreted as a probable timber extraction or related industrial site. Due to the high impact from the soil borrow pit as well as the limited interpretive potential, the site is considered to be ineligible for the National Register.

Rankin 3 (Claypit #3). This minor remnant of a destroyed site lies along the southwest bank of a large borrow pit that had been previously surveyed. The site was found by Hawkins and J. Starnes on 14-15 July 2004, when they excavated a single shovel test. The site was revisited by Starr, Hardy and Millet for additional investigations, when 6 additional 5-m interval shovel tests, all negative, were excavated (2 man-hours). The site [redacted] Swamp chestnut oak, hickory, beech, catalpa and switch cane were noted at the location.

Due to limited recovery (2 flakes in a shovel test), this site could be considered as an isolated find, but because of the obviously high probability location and the extent of disturbance, it is considered as a site remnant. Because the site has already been essentially destroyed, it is not eligible for the National Register.

Rankin 16. This isolated find of a prehistoric ceramic sherd was recorded by Orsbun on 10 September 2004. Eight additional shovel tests excavated in 10 m intervals on rays from the original find were negative. The find spot is on a small ridge or point bar running north-south on a T1 terrace surface. [redacted] The area is mixed hardwood forest with red and white oaks, pine, hackberry, sweetgum and greenbriar. The surface has been rowed up for pine planting and is covered with duff, so visibility was poor and no surface collection could be made. Site soils are deflated and disturbed due to logging. As this is an isolated find, it has minimal interpretive potential. It is not eligible for the NRHP.

Rankin 25. This isolated find of prehistoric pottery occurred at M. Starnes ST 681. The location was tested out by Orsbun, Underwood and M. Starnes on 30 September 2004. Three man-hours were spent on the location. Six additional shovel tests on 10 m intervals were negative. Surface visibility was poor. The location is a thickety fallow field with red and white oaks, tallow trees, briars, muscadine vines and blackberries. The location has been impacted by erosion, cultivation, pushpiles and clearcutting. The single positive shovel test also produced 4 fragments of white and speckle glaze tile and 3 pieces of clear and one piece of light green bottle glass, a further indication of the disturbance of the area. The isolated find [redacted] As this is an isolated find, it is not considered significant in terms of the NRHP. No site form will be filed.

Rankin 29 (Tile Waster Dump). This small, shallow site was recorded by Orsbun on 7 October 2004. The crew spent 3 man-hours on this location. The site was discovered during conducting 30 m interval shovel test transects (M. Starnes T29) and was delineated on 10 m intervals. The site is a dump for debris from the 20th century tile factory in Flowood. This debris was used as road fill, and some was scattered into the adjacent woods; it was observed but not collected in other locations. [redacted] Soils are eroding along this slope. The location has heavy duff covering the surface, so visibility was poor. The site is poorly preserved due to push piles, borrow pits, leveling/grading, and forestry. The material collected is summarized in Table 129.

Table 129. Material from Rankin 29, Tile Waster Dump.

Kitchen

Bottle Glass

4 clear

Activities

37 glazed tile fragments

63 unglazed (bisque) tile fragments

10 kiln shelf fragment

From this collection we can see that materials were fired twice, first to a bisque state and them second presumably in a muffle or glaze kiln. Some of the refactory clay shelves have glaze drips. The tiles are mostly flat 4" squares, with some curbs and corners. These are a common feature of mid 20th century kitchens and baths. Colors include, in order of prevalence, pink (10); light green and grey (5 each); light blue, light blue green, pink-tan and white with black speckle (2 each); and white, light yellow, and beige. There are various manufacturer's marks. These include a system of numbers and circled numbers in a grid, perhaps indicating date or style, "JACKSON" and "MOSAIC" in circle with circle R (registered trademark).

Because this is a modern, non-occupational scatter, it is ineligible for a site number, therefore no site form was filed. The site is not considered to have historical significance.

Results of Architectural Survey

Very little standing architecture will be impacted by the proposed construction. That will be affected [redacted] The Jackson City Engineer's Test Lab and the Kansas City Southern (formerly Gulf & Ship Island/Illinois Central) switch house [redacted] Three urban workers' shotgun houses and a fuel distribution center were documented on Farrish Street; all of these later four buildings were abandoned. This project also revisited two railroad bridges already documented by the MDAH Historic American Building/Historic American Engineering Record surveys (HABS/HAERS). A single structural ruin was documented in the course of the archaeological survey and will be described here.

None of the structures is considered eligible for the NRHP. There is currently debate in Jackson as to how many of the urban workers cottages (primarily single or double shotgun houses) should be preserved, how they can be renovated and retrofitted, and what their role in the modern city can be. Many are still occupied, and while picturesque and an undoubtedly important part of the historic urban landscape, many are in poor condition and many more are abandoned or ruined and unsuitable for rehabilitation. No standing structures outside the immediate urban context were encountered in the project area. The ruins of a frame house, probably brought to the location and fitted as a hunting/fishing camp, [redacted]

<u>City Engineer Test Lab.</u> This property is owned by the City of Jackson Engineering Department Testing Laboratory. It is located [redacted] It is estimated to have been constructed between 1920 and 1940. The main structure is of yellow brick with every sixth course bonded by alternating headers and stretchers. It is 3'6" from the slab to the water table. It is on a concrete slab and has corbelled nine-course cornices and a tile roof. This test lab has steel windows with 13.5x19.5" semi-opaque (ridged) wire glass panes. The steel windows are variously 3x5 panes and 3x4 panes, some with swinging ventilation sections. Most wood elements are painted barn red. There is a flat-roofed projecting front entryway and recessed rear porch/loading deck with horizontal planking and double doors.

This facility has been enlarged at various times in the past, and extensive changes have taken place in the mid 20th century, with frame/corrugated iron shed, concrete/asphalt roof, cinderblock, plywood and frame/asbestos tile additions. Some weathered wood sills have been capped with cement. Former front garage bays have been infilled with silty machine-made brick with white mortar. There is also a dog pound yard in the Pearl River bottom below (east) of the facility.

Due to the heavy 20th century modifications and the common, plain engineering style, this property is not eligible for the National Register of Historic Places, and no further documentation is recommended.

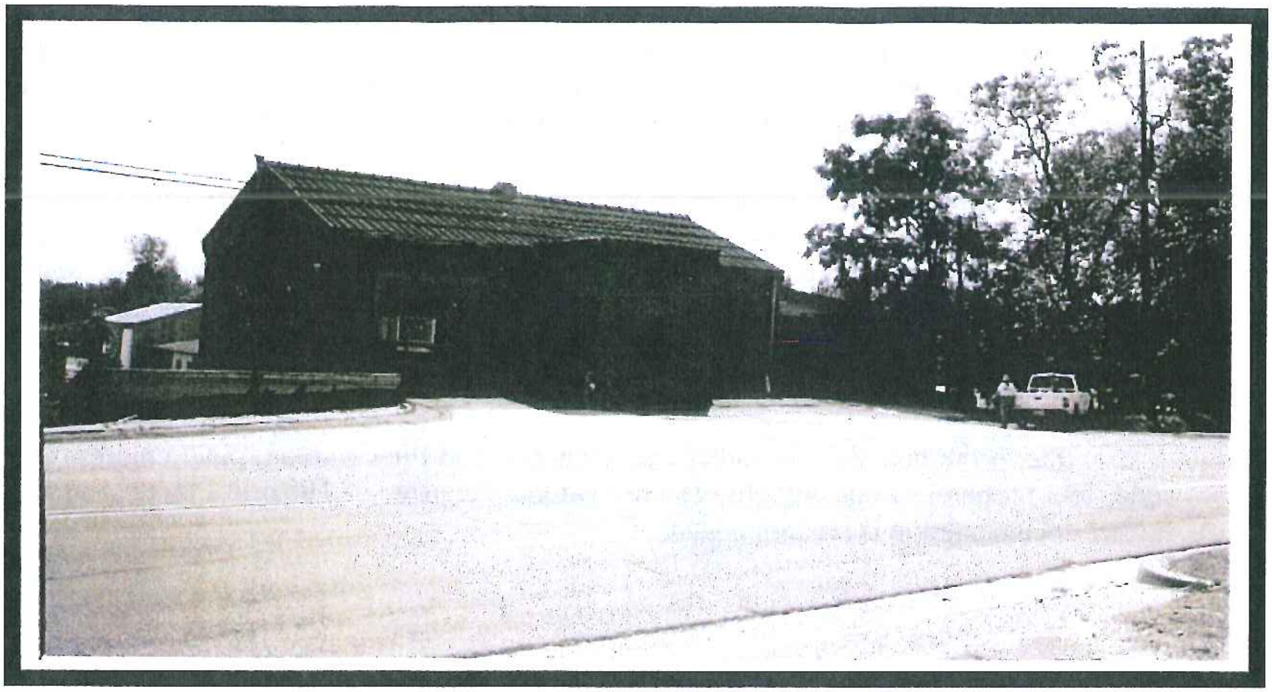


Figure 275. City Engineer Office; a. view southeast; b. [redacted]

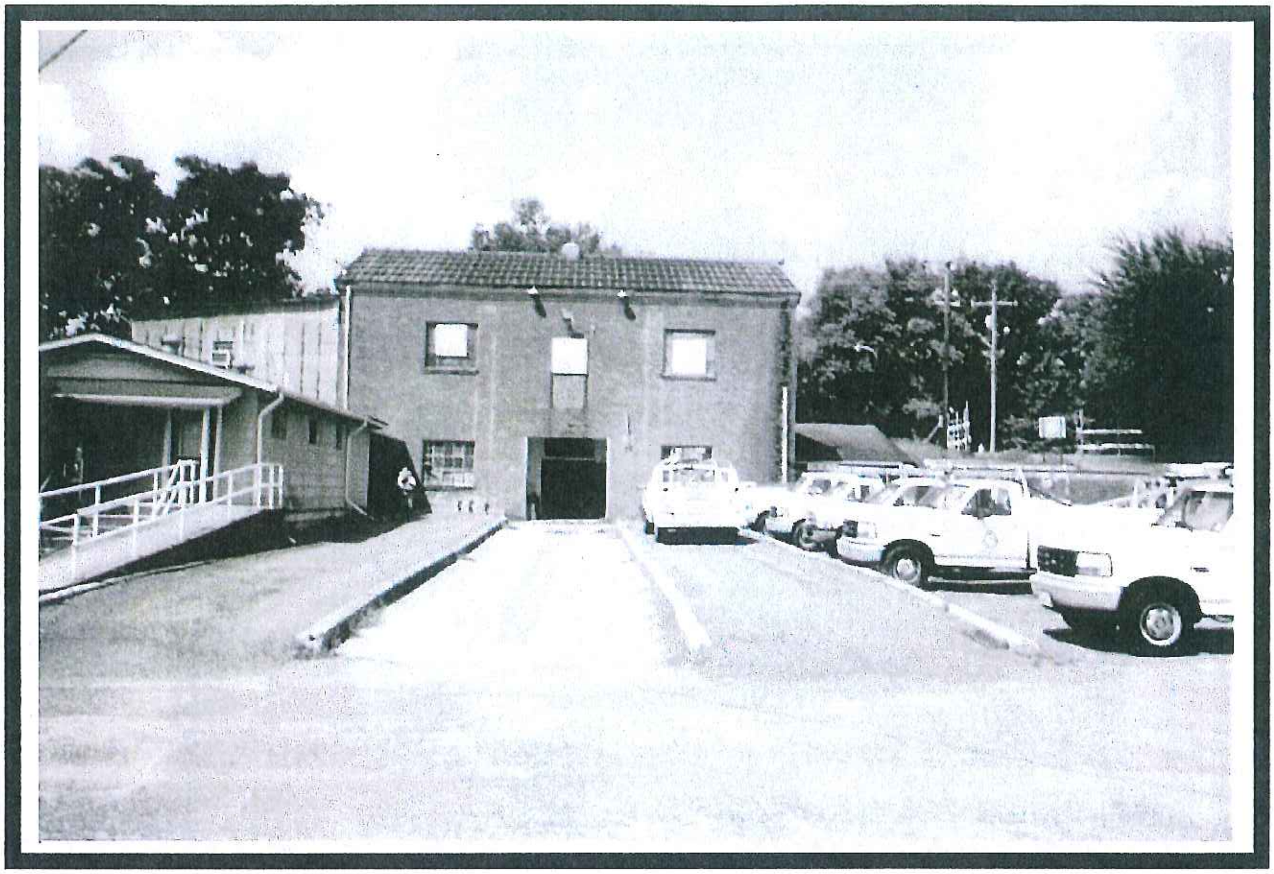


Figure 276. City Engineer Office; a. view west; b. cornice detail

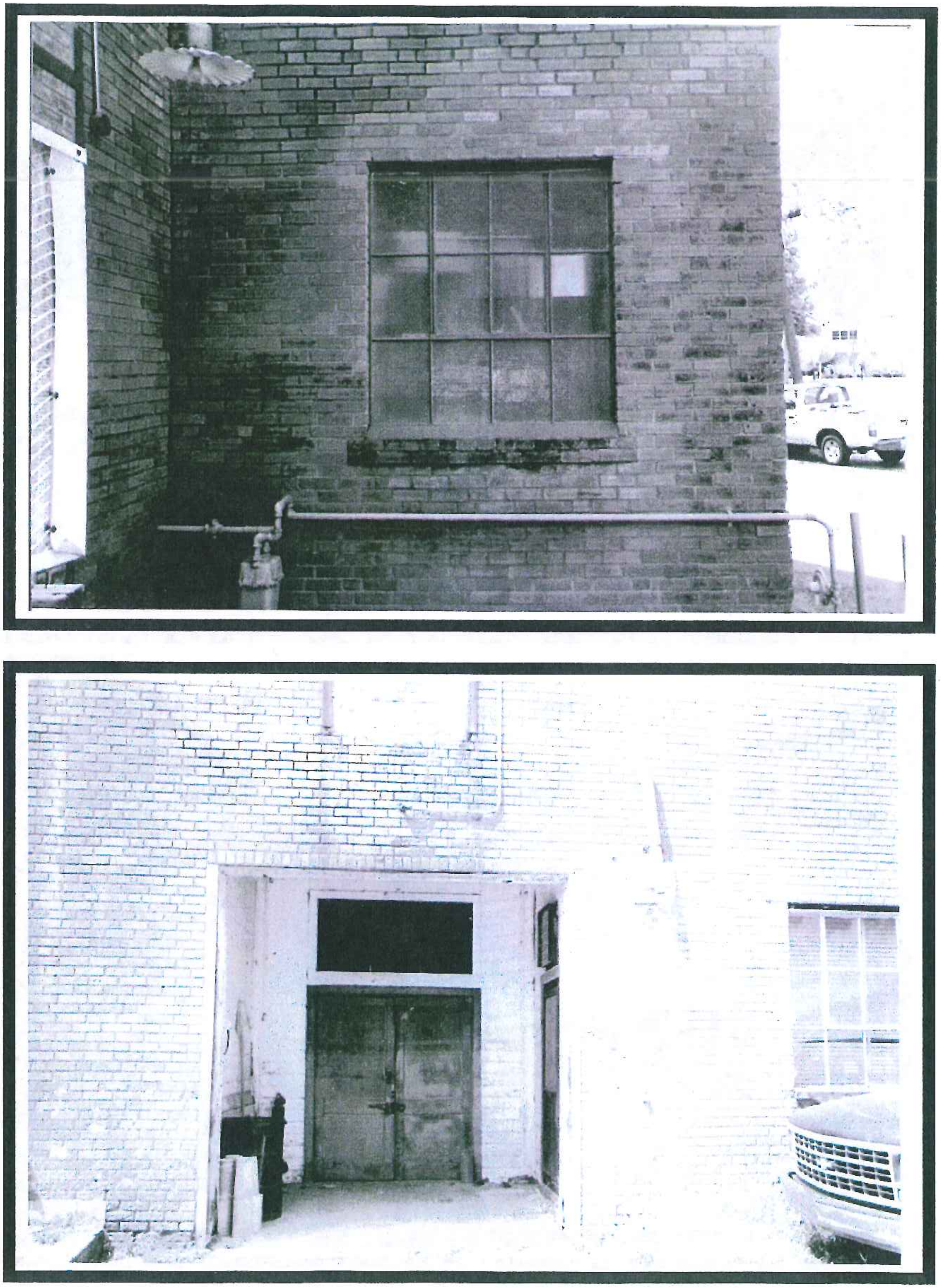


Figure 277. City Engineer Office; a. window detail; b. rear dock detail.

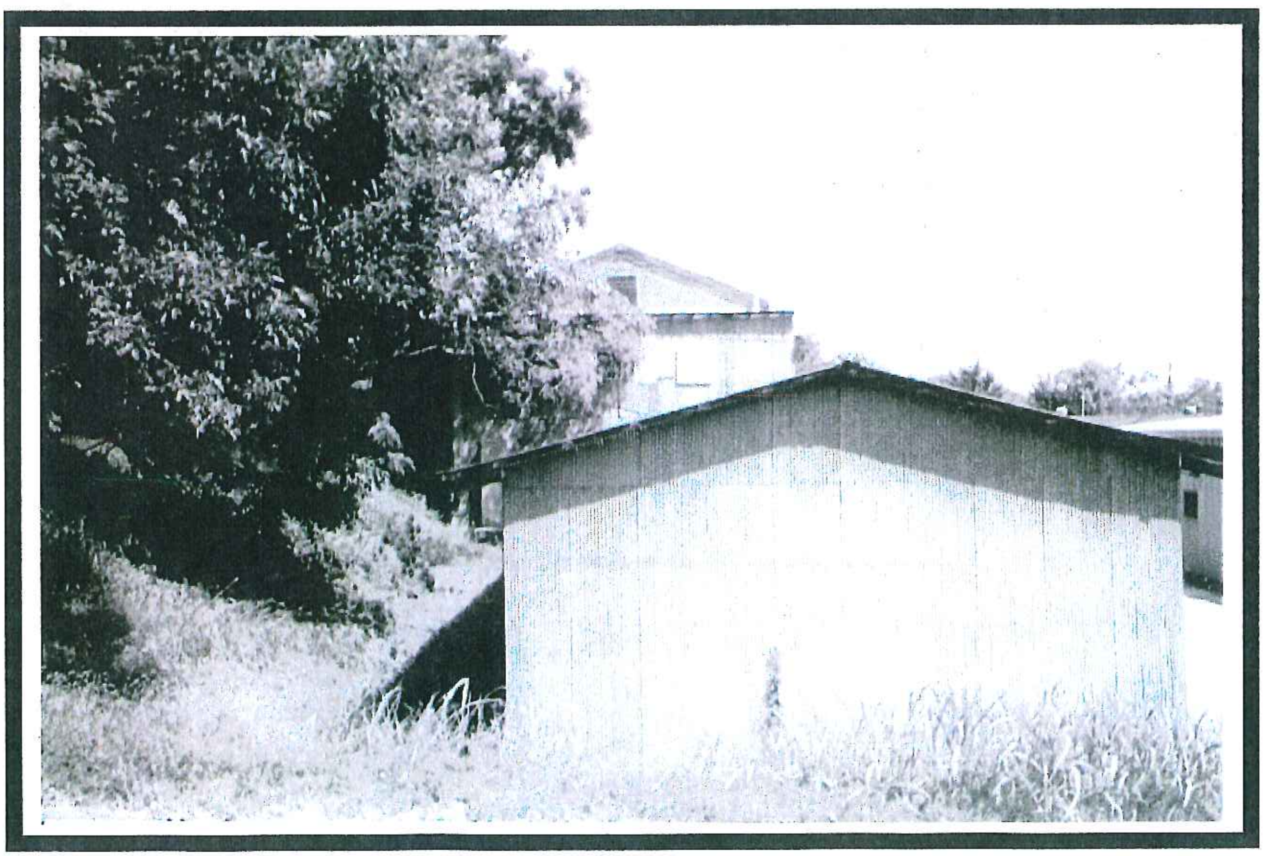


Figure 278. City Engineer Office; a. additions view north; b. additions view north.

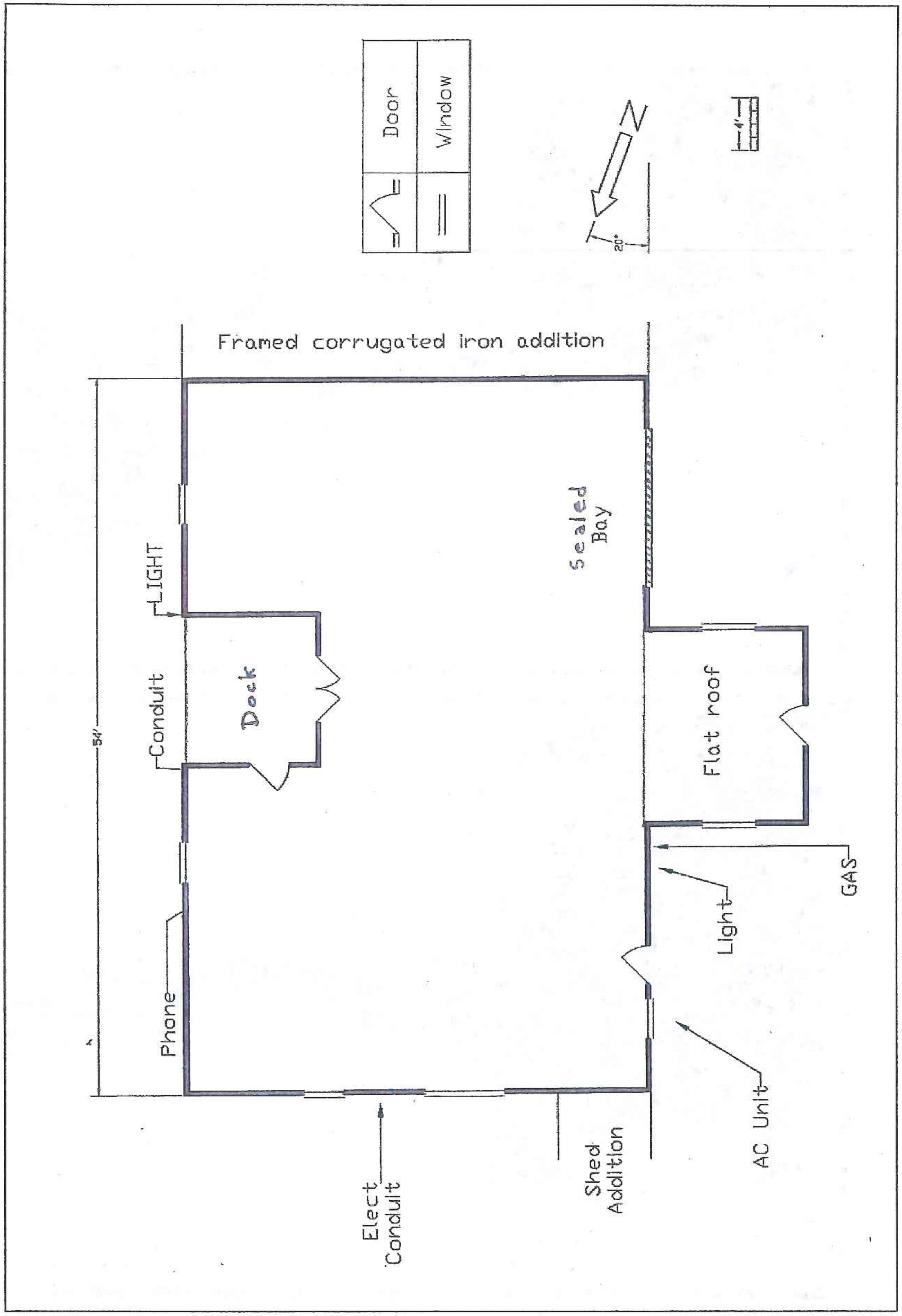


Figure 279. Plan of City Engineer Building.

Switch House of Kansas City Southern and Railroad Bridge. This property is an abandoned railroad control facility built sometime between 1900 and 1930 [redacted] It was probably built around the time the Illinois Central (as part of the IC's Yazoo & Mississippi Valley (YMV) branch) took over the Gulf & Ship Island (G&SI) railroad. This bridge is evidently on or very near the site of the antebellum Alabama & Vicksburg bridge. The structure is constructed primarily of brick with exposed rafter tails, eaves brackets, hipped roof and composition shingles. The brick is slick surfaced and is laid in Flemish bond (each course alternates headers and stretchers). There are ornamental panels of seven couses of Flemish bond seated on and capped with soldier courses, with stretchers on the sides, over the doors on all four walls. The concrete water table is 2'4" above the slab. Windows have 4'3" long, 5.5" tall concrete sills. The switch house is two-stories and the ceiling of the first floor is constructed of poured concrete beams and joists. There are abundant windows upstairs, generally 3 to a side. It is a typical depot of Mediterranean commercial style. Associated structures include a rail line with iron truss bridge.

It has been altered in the late 20th century. Some of the post-historic changes include the addition of aluminum and or steel for windows, doors, soffitts, and bracket covers. Holes have been knocked through the cast concrete interior for various utilities.

In January 1994, Todd Sanders of MDAH filed a Historic Resources Inventory form for this craftsman style railroad switching tower (049-JAC-0761). Its estimated construction date was 1925-1930. No evaluation of its eligibility was made. The construction of the switch house was probably contemporaneous with the Pratt type truss railroad bridge. MDAH files (049-JAC-0772), including Jack Elliot's 1986 Mississippi Bridge Survey and Inventory and Todd Sonders 1994 Historic Resources Inventory form indicate that the Illinois Central Gulf railroad bridge was built ca. 1920-1930. It apparently replaces the earlier Alabama & Vicksburg/Yazoo & Mississippi Valley trestles. While the switch house is abandoned, this steel bridge is still in good shape and sees heavy daily use. It is now operated by the Burlington Northern and Santa Fe railroad. The span bridge is 388' long (118 m) with concrete filled riveted boiler plate piers and abutments on the Hinds County (bluff) side and a creosote pole trestle on the Rankin County (floodplain) side. Trusses are 18.5' wide (5.6 m). This and other bridges at the location have been more fully described above in the archaeological results section.

The structure has been abandoned and is in somewhat deteriorated condition. Its primary significance derives from its role in Mississippi commerce and transportation. There are many depots in this style and this is somewhat unusual in being a switch house with similar style ornamentation. It is not eligible for the National Register of Historic Places due to 20th century modifications. No further documentation is recommended.

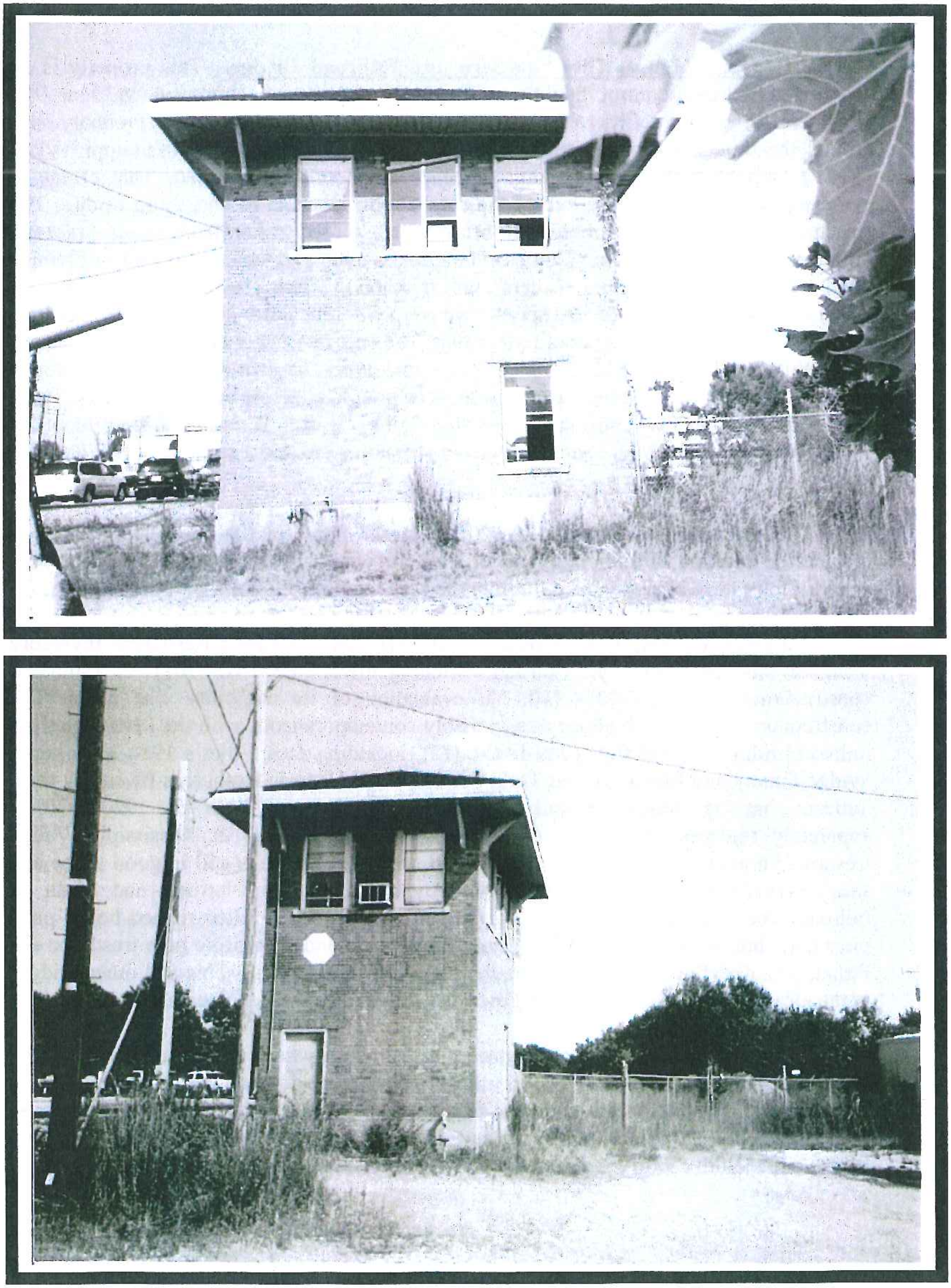


Figure 280. Kansas City Southern Switch House

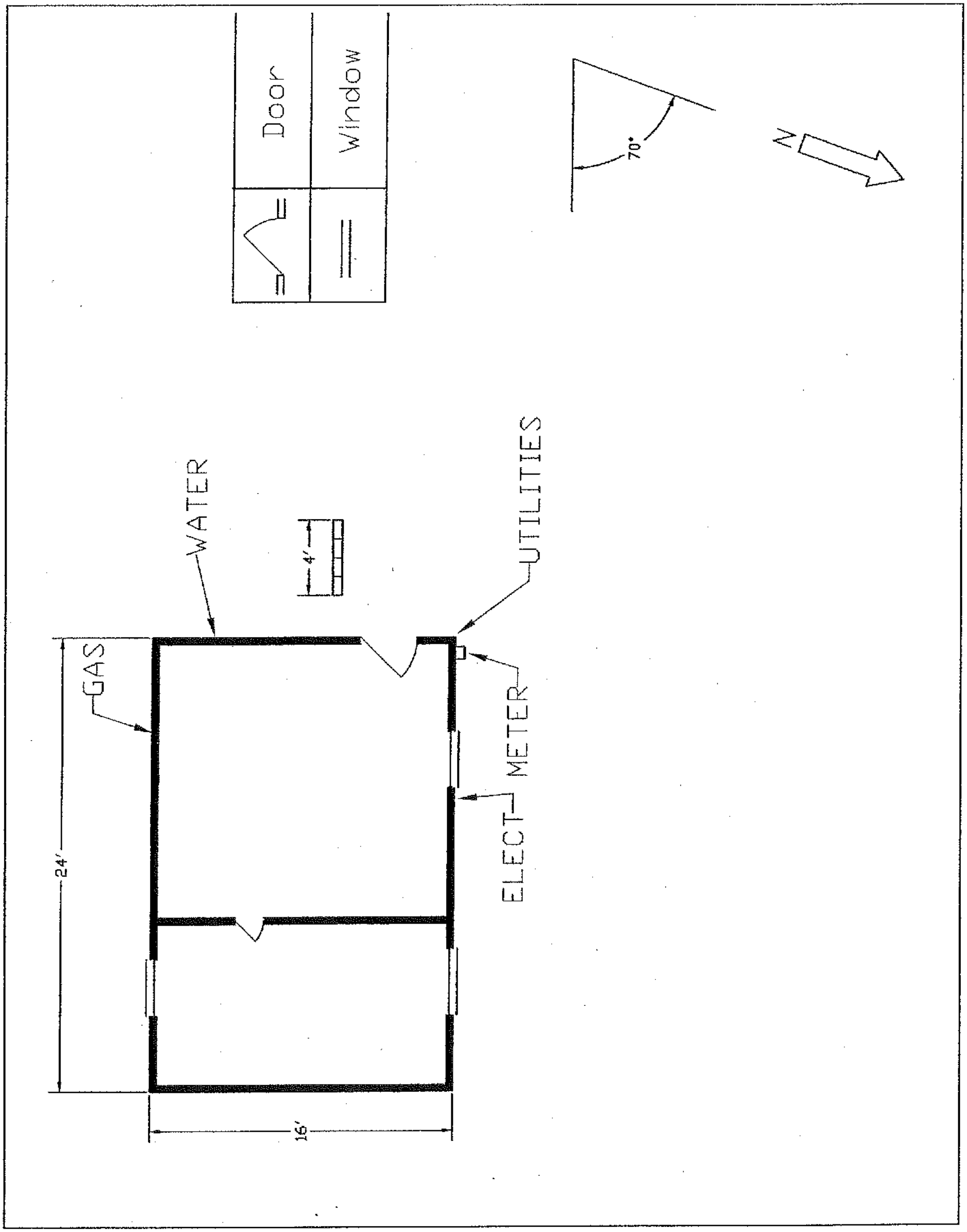


Figure 281. Plan of Kansas City Southern Switch House.

Farrish Street #636 and Hudson Alley, Fuel Distributorship. This property is located in the City of Jackson in Hinds County, Mississippi. At one time, this U-shaped building complex was used for a distribution center for petroleum product wholesaling. It is presently abandoned but possibly still used for some storage. The interior of the property was not surveyed. It is estimated to have been built ca. 1930 and altered in the mid 20th century. The building rests in part on concrete slabs and in part on 8' center brick piers. It has rafters with exposed ends on 2' centers and corrugated iron gabled or occasionally hipped grooves with various slopes indicating episodic construction. Some sliding doors are diagonal plank. The main warehouse deck is 2x8 plank with interior roof support posts with bases, caps and brackets. Other facilities include a garage with 2 parking bays, paved interior courtyard with porch/freight dock. Its architectural style is industrial, and outbuildings include possible inground fuel tanks. A hurricane fence surrounds the lot, preventing full documentation.

The structure has been abandoned and is in slightly deteriorated condition. It is likely that in-ground tanks and/or contaminated soils are present. The significance of this building complex lies in its role in wholesaling and distribution of petroleum production the Jackson area. It is not eligible for the National Register of Historic Places due to common vernacular industrial style and construction. No further documentation is recommended.

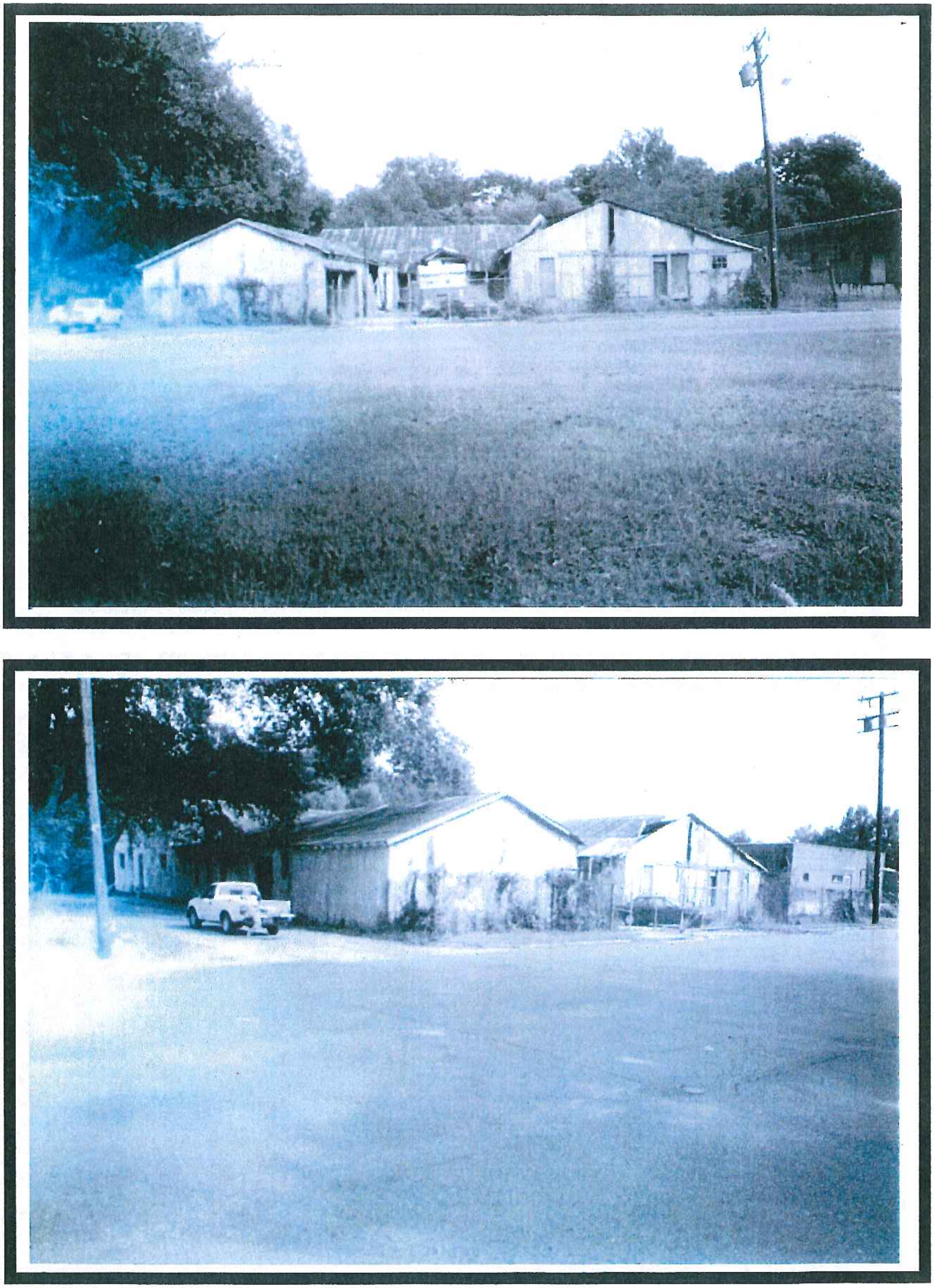


Figure 282. Fuel Distributorship; a. view east; b. view southeast.

Figure 283. Fuel Distributorship; a. view northeast; view west.

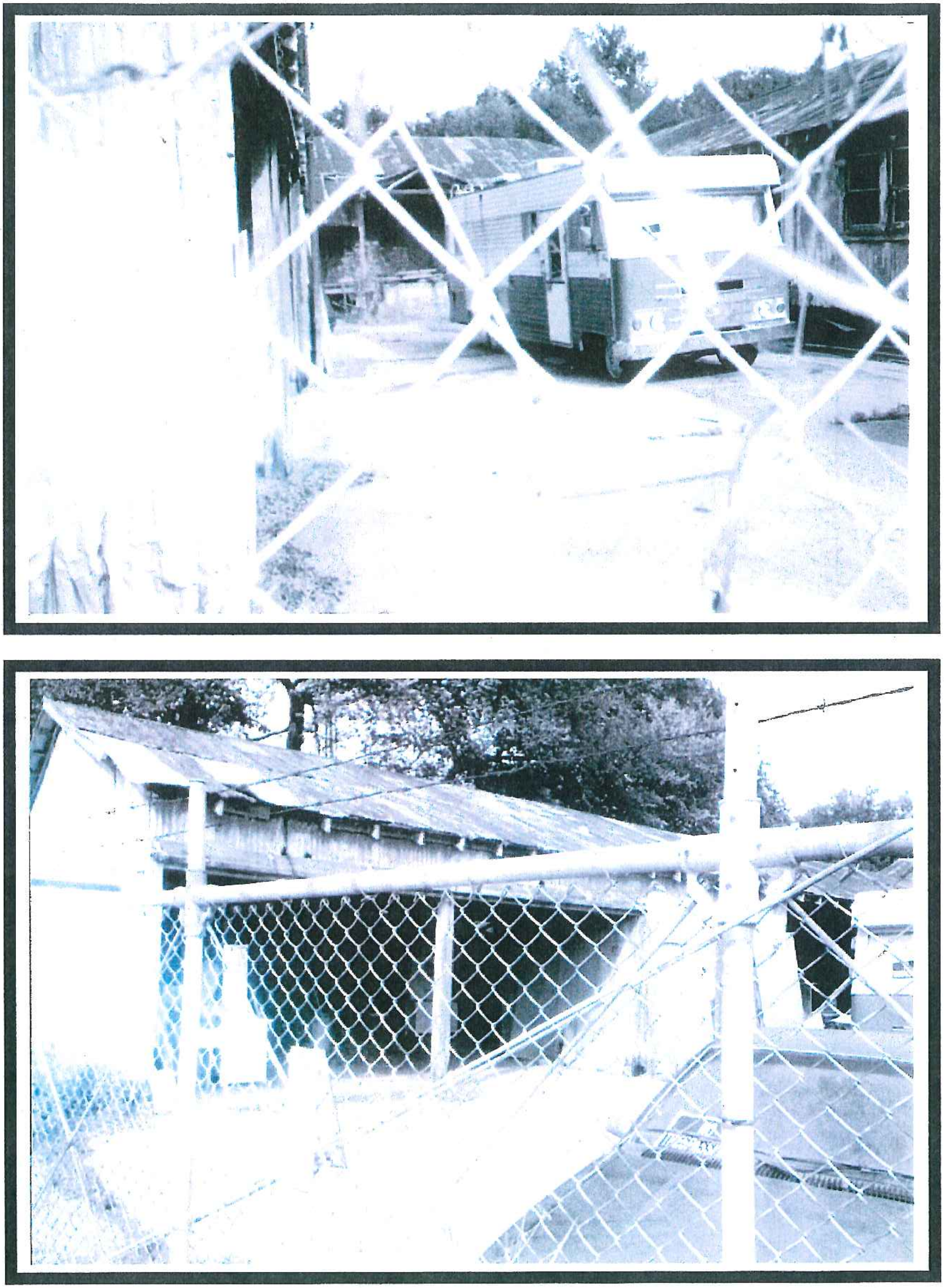


Figure 284. Fuel Distributorship; a. interior view courtyard; b. interior view garage.

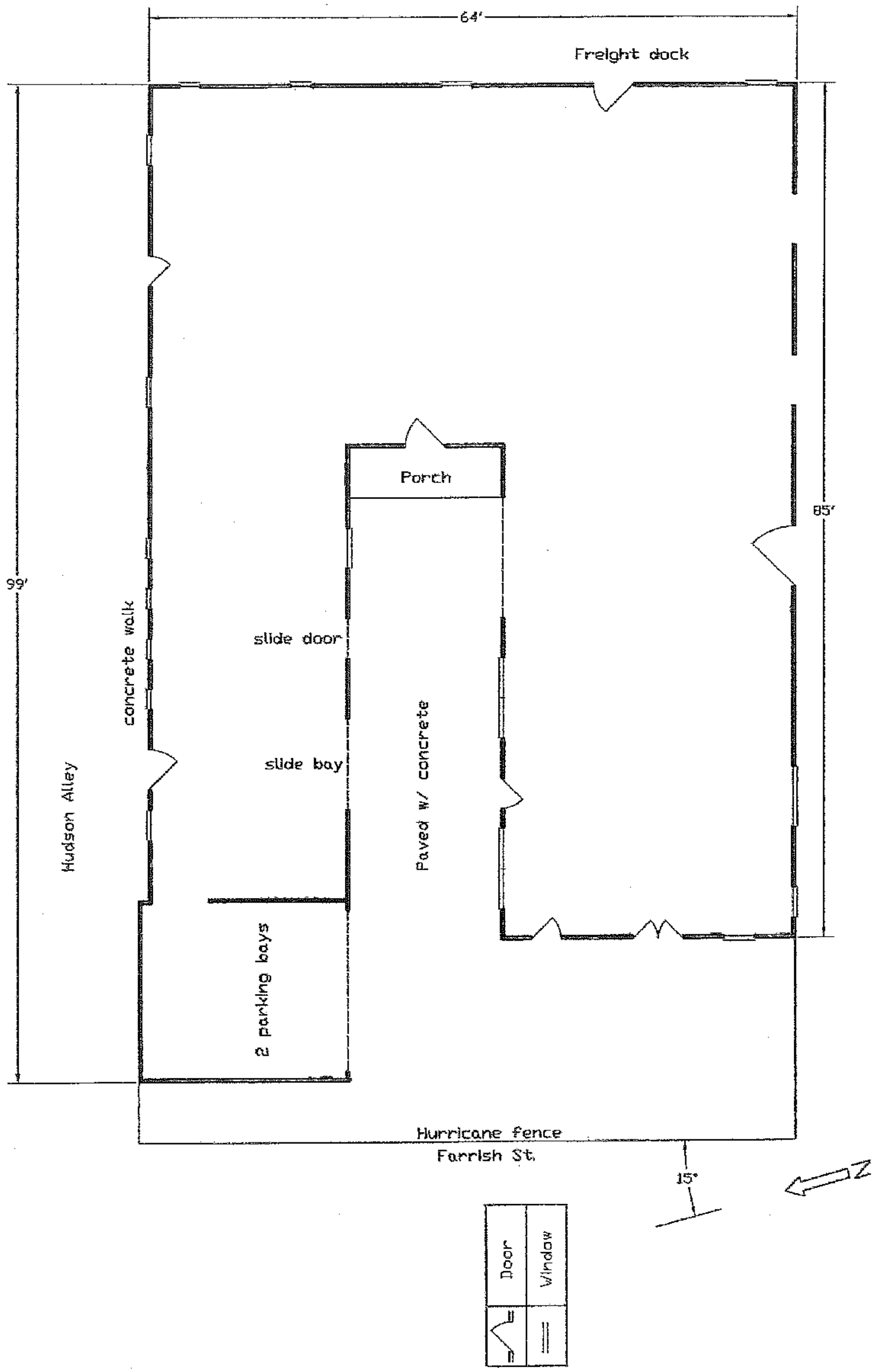


Figure 285. Plan of Fuel Distributorship.

Farrish Street #532. This abandoned vernacular residence by Town Creek is of double shotgun style. It is estimated to have been built ca. 1920 and altered in the late 20th century. It is a typical urban workers cottage with partly recessed porch, replaced with a concrete deck and steps (14" tread, 7" riser), but retaining beaded board porch ceiling. The iron replacement porch posts have probably been removed for scrap metal salvage. The porch has been painted various shades of green. The other woodwork appears to have always been white. The cottage has 4" shiplap clapboard siding. The gable ends have angled louver boards. Remaining original windows are rectangular 4/1 with top narrow vertical rectangular panes, including a smaller square 4/1 bathroom window. The brick support piers are of mixed hard red extruded brick. Rafter tails are exposed and on 2' centers. The rear room (kitchen) has metal replacement doors and windows and sink and hot water heater.

The interior appears to be beaded paneling with modern ply paneling over it; some rooms have beaded board ceilings. The two main, front rooms are partially separated by an opening with inset shelves. This shotgun house has porcelain door knobs. It was heated by a double-sided chimney with coal grates. Bath and hallway had linoleum floor covering. Other interior details include two small front and back bedroom closets. The narrow property is enclosed with a hurricane fence 4'3" from the north wall. The yard is grown up in "mimosa" or "silktree" (*Albizia*), bullvine and weeds.

The structure is in deteriorated condition and was inhabited by squatters in September, 2004. It is not eligible for the National Register of Historic Places due to dilapidated condition, heavy 20th century modifications, and redundancy of the form. No further documentation is recommended.

Figure 286. Farrish Street 532; a. façade; b. north side.

Figure 287. Farrish Street 532; a. porch detail windows; b. porch detail and eaves.

Figure 288. Farrish Street 532 interior.

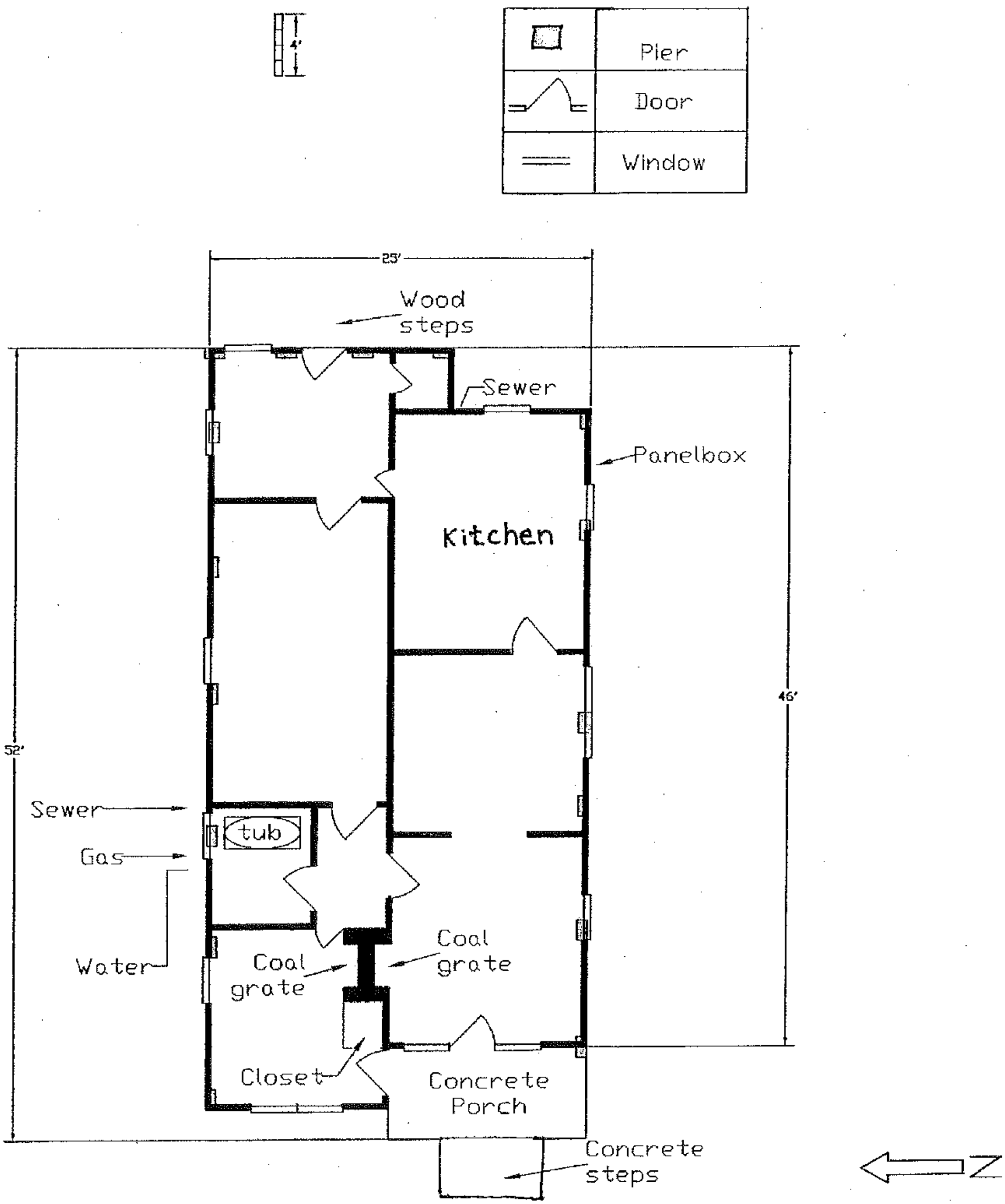


Figure 289. Plan of Farrish Street 532.

Farrish Street #534. This abandoned house is a double shotgun cottage located in the City of Jackson in Hinds County, Mississippi. The property is at the south end of Farrish Street by Town Creek. The interior was not surveyed. The cottage was probably built sometime in the 1920's, but has been enlarged and/or altered in the mid twentieth century. The piers and other brickwork is of hard red extruded machine-made brick. Windows are 4/4 with 9.5x14" panes. There is a rear shed that has been added with a tongue and groove porch. There are concrete steps with 12" tread and 8" rise and the screened porch was painted grey and has beaded board ceiling (painted aqua before white), tongue-and-groove deck and box piers with trim. The piers are of planed 2x6" lumber with base and shim and cap with moulding and shim. The center of three piers is missing. The front door has three inset rectangular chamfered panels and a small 4-pane light in the top. The front gable has hanging rafters notched into eaves boards and side inset brackets with some detail work such as pyramidal cut ends. The roof is composition shingle. The original planed 6" clapboard was painted yellow, but has white asbestos tile over it. The yard has mulberries, canna, bullvine, mimosa, and privet.

The structure has been abandoned and is in deteriorated condition. Like others in the sample, the residence was used by urban workers, probably in the industrial and service labor force. It is not eligible for the National Register of Historic Places due to poor condition, redundancy, and 20th century additions. No further documentation is recommended.

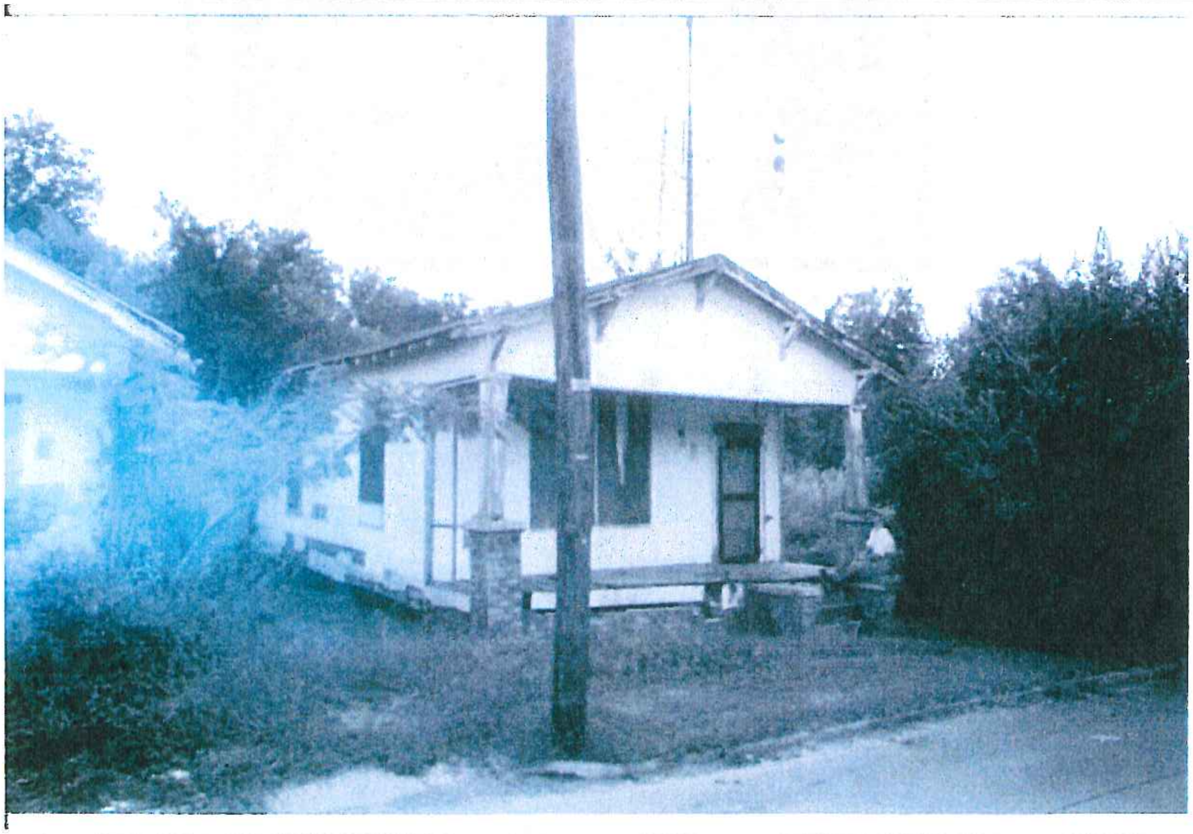


Figure 290. Farrish Street 534; a. façade; b. oblique view.

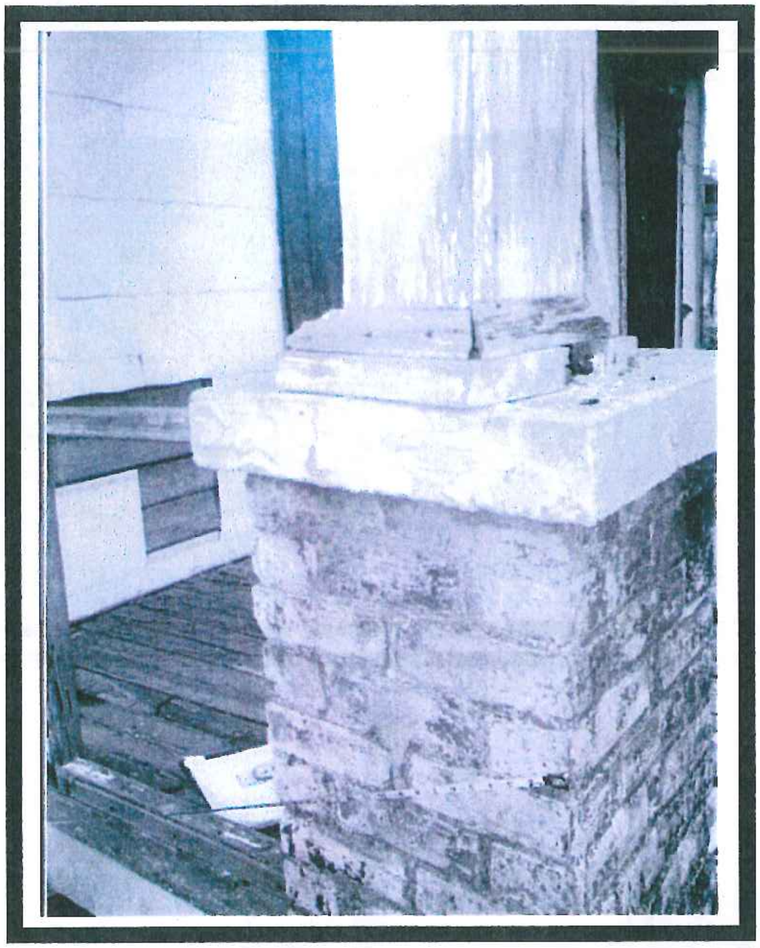


Figure 291. Farrish Street 534, pier detail.

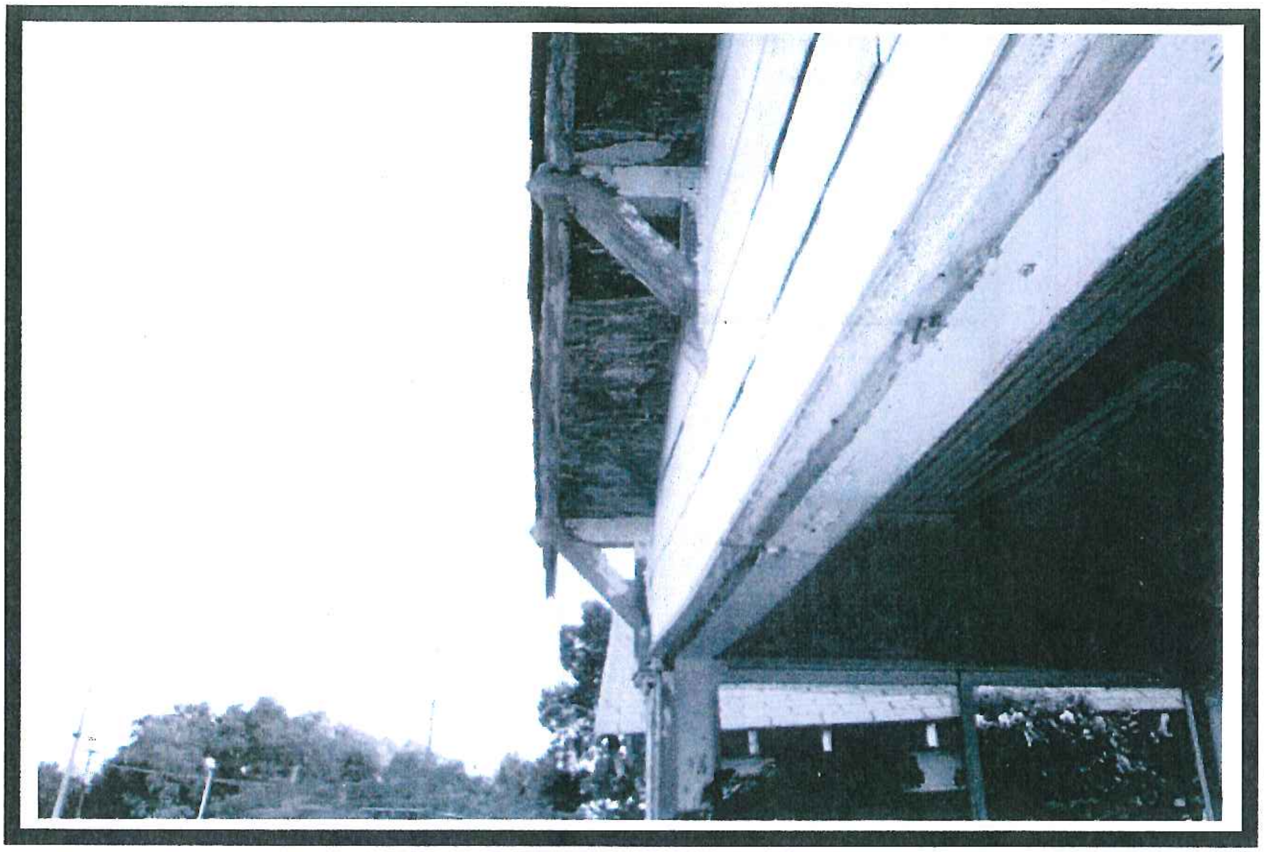


Figure 292. Farrish Street 534, eaves bracket detail.

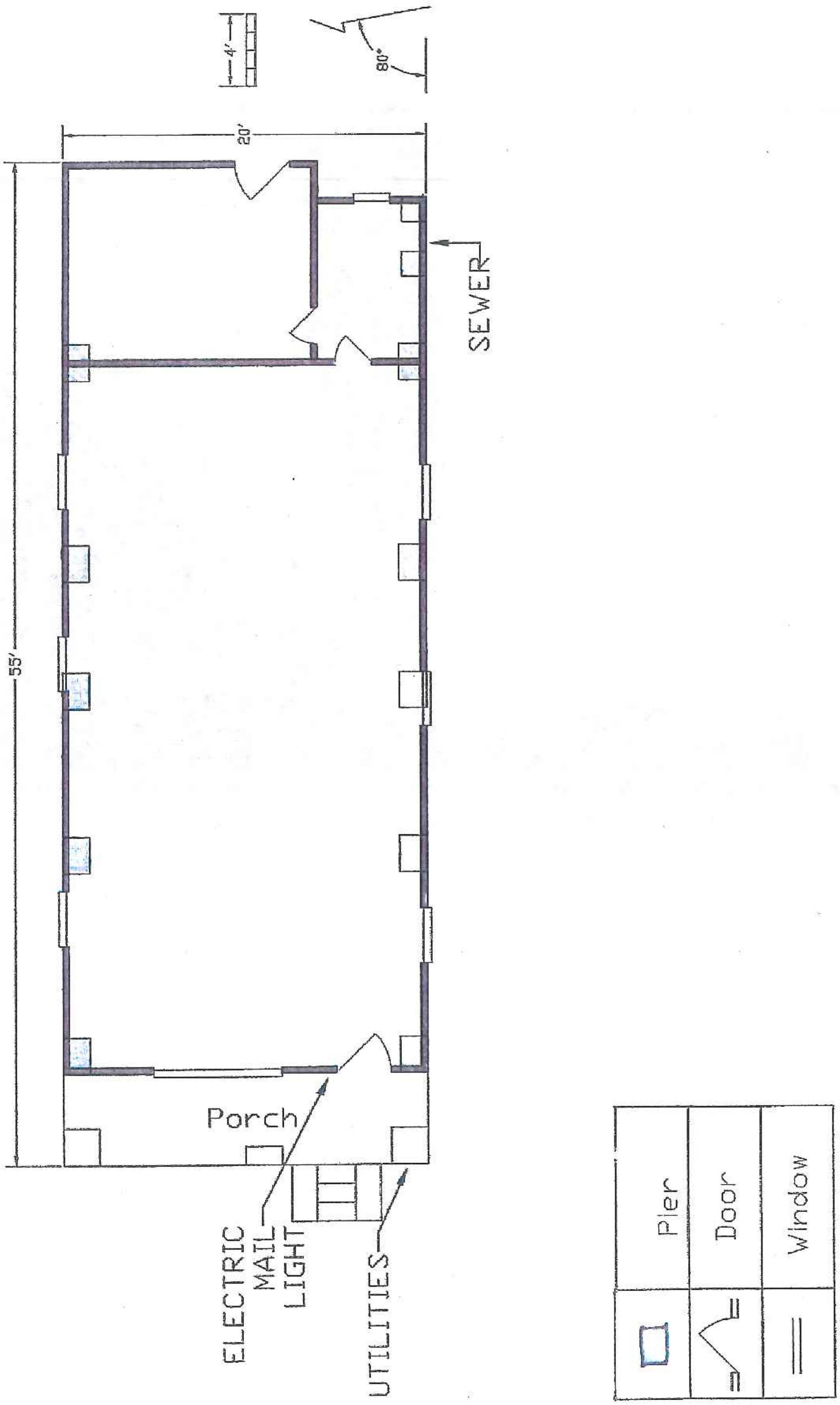


Figure 293. Plan of Farish Street 534.

Farrish House #3. Farrish House #3 is a typical urban workers single shotgun house located on the west side of the Hudson/Farrish Streets intersection in the City of Jackson in Hinds County, Mississippi. It was built ca. 1920. This residential property is burned and in ruins. The interior of the property was surveyed. The principal material is wood.

Floor joist were 2x8" on 2' centers with a center sill. The center sill is at 7' and rested on stumps or butts, but has been propped up on cinderblocks. Floors were 4" tongue-and-groove lumber. The corners of the frame are cross braced. The interior had beaded horizontal plank paneling and ceiling. Door and window casings are planed 1 x 4 ½ plain lumber. The ceiling joists are also on 2' centers. There is a loft that has never been decked, but with an attic partition at the joint between the second and third rooms, indicative of the enlargement of the original two-rooms with two additional rooms. This joint is also evident on the exterior. The rear two rooms are of similar construction and were probably added sometime after the initial construction. The property has a corrugated iron roof.

Post-historic changes to the property include the addition of a bath (plywood cubical with tub, toilet, wash basin and small window), front window iron bars, and felt and asbestos tile over the shiplap clapboard. There is a concrete porch with steel posts at two corners and some replacement cinderblock piers (most piers are brick). The front room was painted pink, then aqua; it has a bedspring in it. The second room was painted pink then aqua, then sheetrocked. The third room (kitchen) was aqua. It had a flue in one corner, shared with the second room, and a cabinet/counter along an exterior wall with double sink at window. The fourth, back, room which has the added bath cubical is aqua. There was a concrete rear stoop and five-panel door with hasp closure, screen door and light bulb fixture. The yard is grown up with spider lilies and day lilies. The lot was partly surrounded with a picket fence with cut-top planks.

This is a classic shotgun, with four sequential rooms with openings aligned with the off-center front and back doors, and a single gable roof. There are windows on either side of each room, also aligned for cross-ventilation. The structure has been abandoned and is in deteriorated condition. It is not eligible for the National Register of Historic Places due to its ruined condition and redundancy of this resource type in the city. No further documentation is recommended.

Figure 294. Farrish Street burned shotgun house; a. front; b. side.

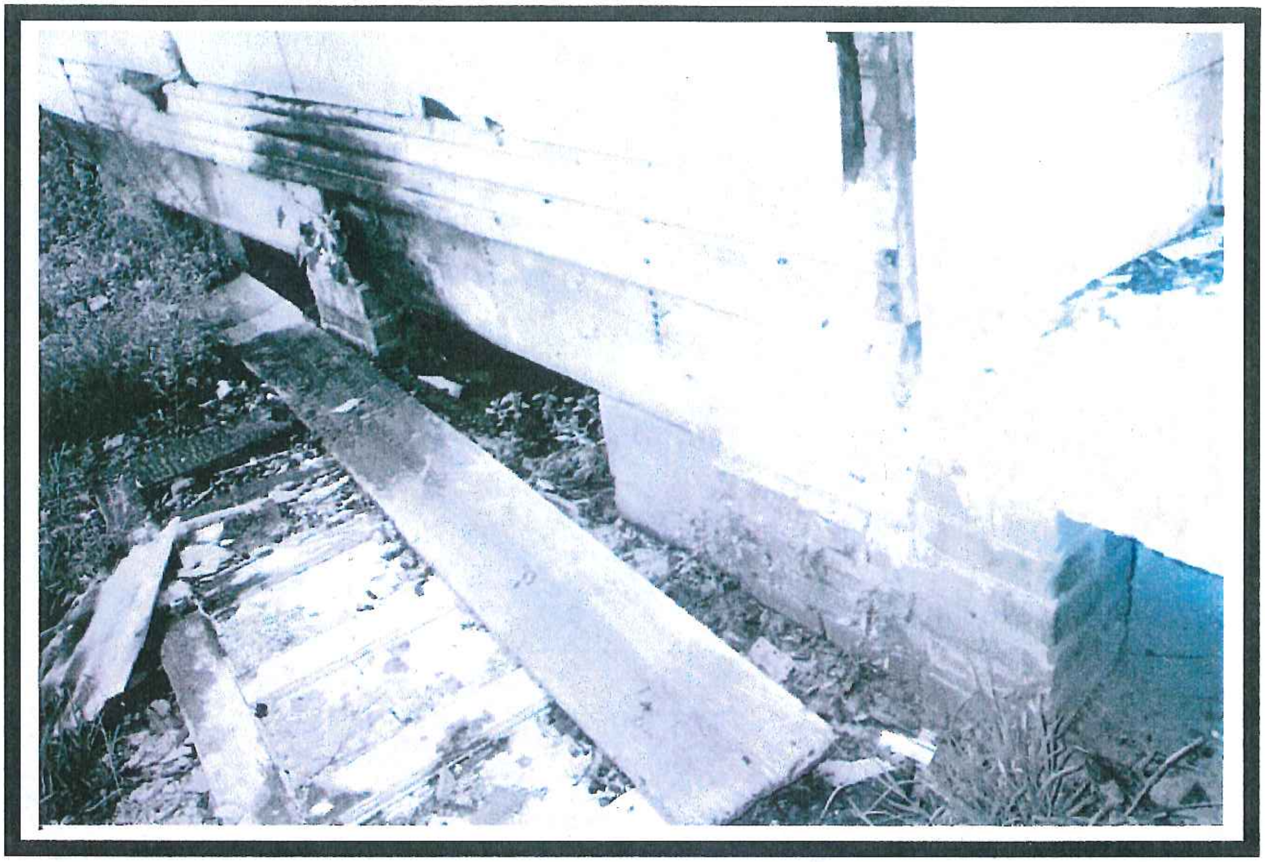


Figure 295. Farrish Street burned shotgun house; a. piers and door; b. picket fence.

Figure 296. Farrish Street burned shotgun house; a. interior view showing construction; b. flue.

Figure 297. Farrish Street burned shotgun house, rear stoop.

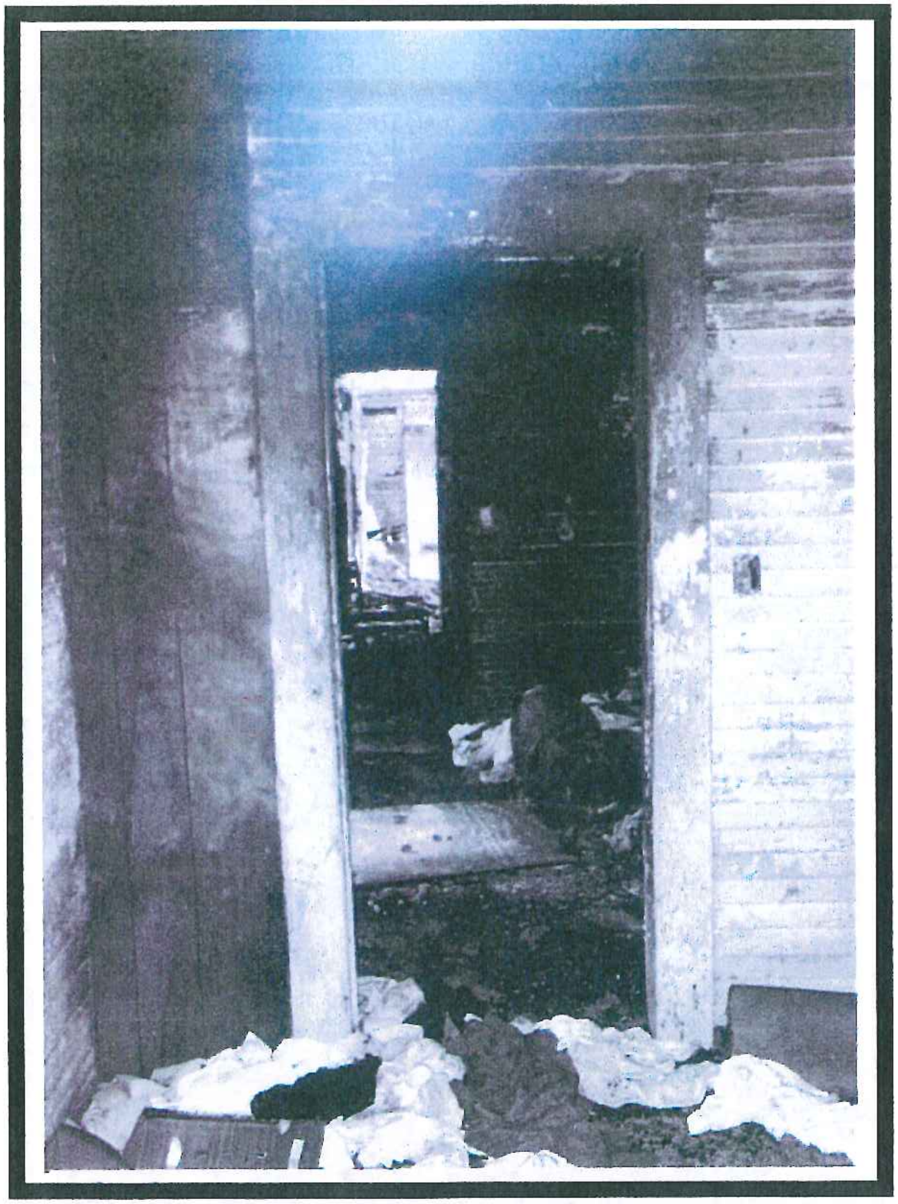


Figure 298. Farrish Street burned shotgun house, view through.

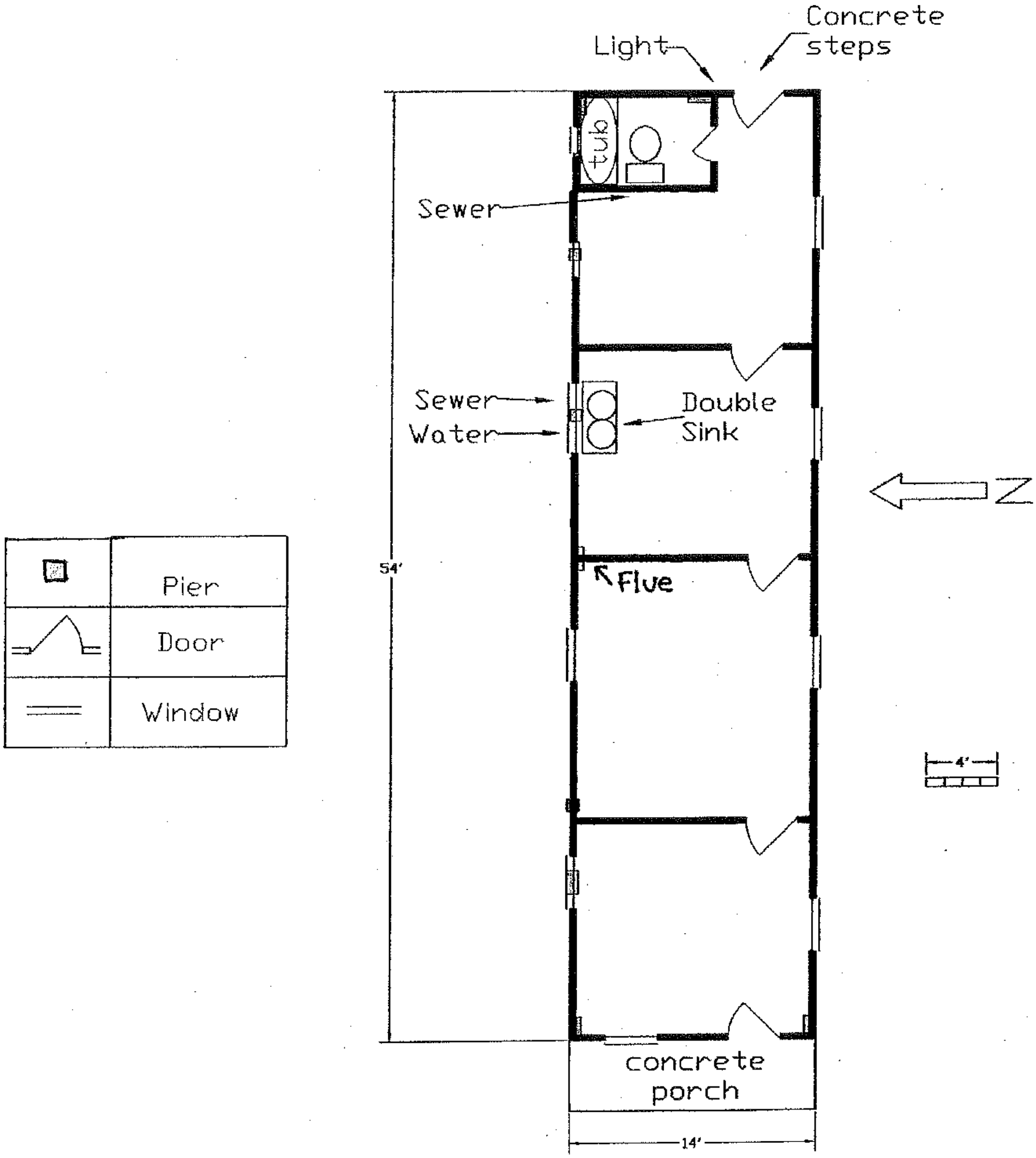


Figure 299. Plan for Farrish Street burned shotgun house.

Jackson City Water Intake and Treatment Plant. MDAH has already determined that early 20th century structures at the water treatment plant are eligible for the National Register as well as designation as a Mississippi Landmark due to the fact that the building embodies the distinctive characteristics of a type and a period (1999 summary, Architecture file 049-JAC-0999). Given this finding and the fact that access to the property is tightly controlled, no further documentation was conducted by the 2004 survey.

MDAH records state that the Pump House and Filtration Building #1 were built 1913-1914, and that the original diesel generators are still in place. The significance of the site derives from the fact that these buildings remain from the original plant and that they represent the height of achievement of Progressive politics in the capitol, by providing safe drinking water. The facility includes the lift pump station on the river bank; a chemical coagulation basin; four sand filters; 600,000 gallons of storage; and a steam-driven service pumping station. Chlorine treatment was added in 1921 and capacity has been repeatedly expanded since 1923 to keep up with population growth.

If the site is to be impacted by the proposed work, engineering/architectural documentation should be conducted of the relevant structures. This should include document checks as well as field recording of materials, dimensions, construction techniques and materials.

Gulf Mobile & Ohio Railroad Bridge. The GM&O bridge crosses the Pearl immediately below the City Water Intake and Treatment Plant. The bridge does not appear on the 1905 Jackson 15' quadrangle (see Figure 57), but it is shown on the 1926 soil survey (Wildemuth 1926, see Figure 22). The bridge has been recorded by Jack Elliott as part of the Mississippi Bridge inventory and survey. There has been past discussion of using this abandoned railroad bridge as part of a rails-to-trails crossing on the Pearl (MDAH architecture files), however, this may no longer be feasible. The bridge was long used as a hang-out spot, for fishing, and for shooting gar and turtles, but at some point around 2000, someone built a fire on the deck, and being of creosote timbers, it caught fire and burned a large section of ties out, so it is now dangerous to cross on the rails or girders.

Figure 300. Burned railroad bridge, views west.

Ruins of House on Riverbank. No road or structure is shown here on the 1905 quadrangle (see Figure 57) [redacted] The location is a high bank and there is no evident cut down to the river such as might be expected at a ferry.

The house had light 2x4 frame construction with exterior walls of horizontal beaded plank. The structure had an external chimney of brick; the mantle and firebox were ornamentally faced with thin irregular slab sandstone.

The construction by-and-large appears to be commensurate with the indicated early 20th century construction date. Perhaps this was a fishing camp or a predecessor of the elite/seasonal housing and recreation area immediately to the north. The find of a fencing trophy in a simple frame building of the type ordinarily to be called a tenant cabin indicates something more, as does the position right on the river bank.

Figure 301. Ruin east of Starr T24 on bank of Pearl at elite housing area; a. view south; b. view east.

Figure 302. Ruin east of Starr T24 on bank of Pearl at elite housing area (view north).

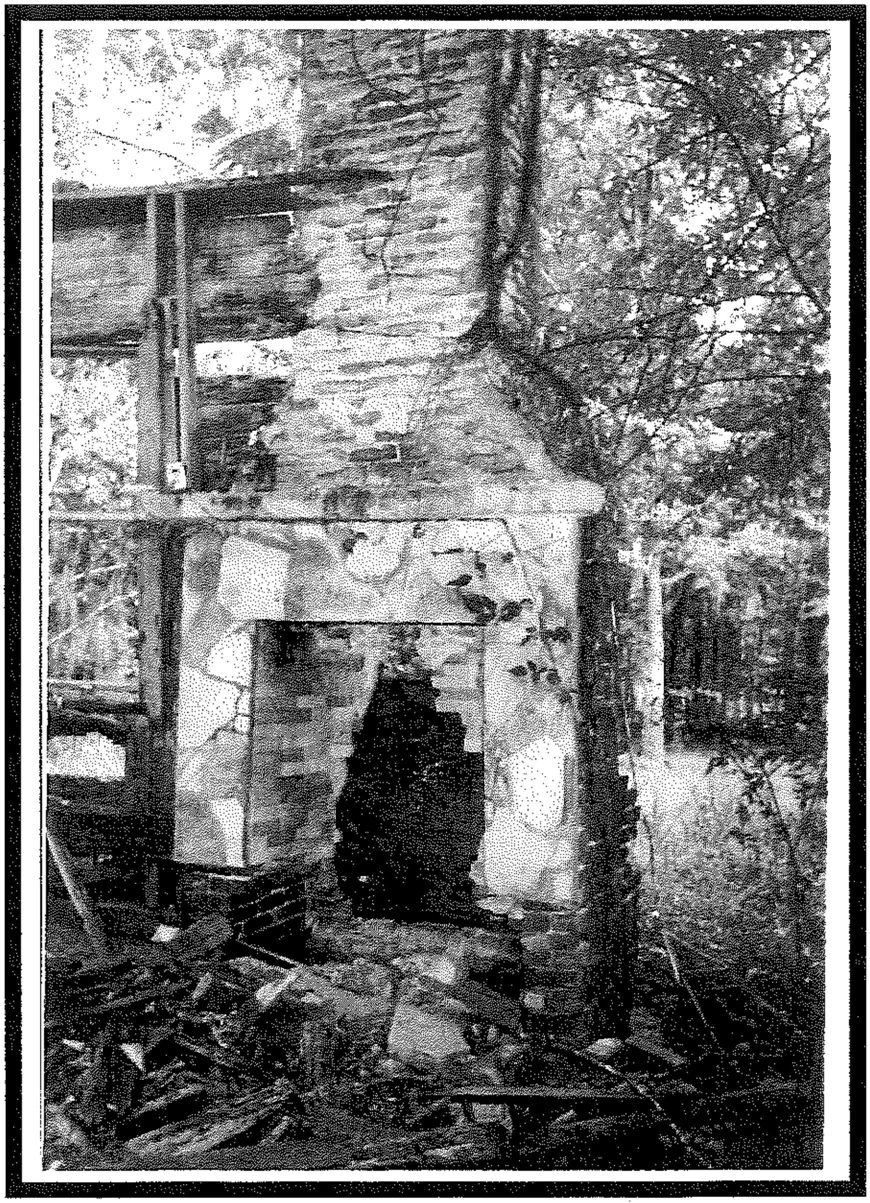


Figure 303. Chimney of ruin east of Starr T24 on bank of Pearl at elite housing area (view west).

Leggette House. This early 20th century raised cottage has been commented on by all previous surveys, with documentation recommended. At the initial report, much of the farm complex remained. Saddly, documentation was never completed and now apparently only the house remains. A brief visit to the location indicates that this may be a significant structure.

The house is approached by a long pecan-lined drive. The house retains many original details but the complex hipped and gabled roof has an asphalt/composition shingle roof and the wood siding has recently been covered with aluminum siding. It retains much of the original appearance, including turned porch posts, 2/2 rectangular pane windows and side and transom lights around the front door. There is extensive brickwork besides the 5-6' foundation/basement. Basement windows are 9 pane squares. The attic also has dormer windows. The front steps are also brick. The internal chimneys have decorative corbelled caps. There are large front-side-and-back wrap-around porches, with the back porch partly screened as a sleeping porch. The back porch doors also have transom lights. The gardens include magnolias, ferns nandinas, hydrangeas and laurel. There are concrete walks and patios.

This survey has also not documented the house because it lies outside the immediate area of impact as presently defined. It is one of very few surviving examples of a traditional farmstead in the project vicinity, and the 20th century history of the location appears to be well-documented. If project plans are modified to impact the location, additional research should include architectural, archaeological and document review.

Figure 304. Legette Farm; a. view west; b. view east.

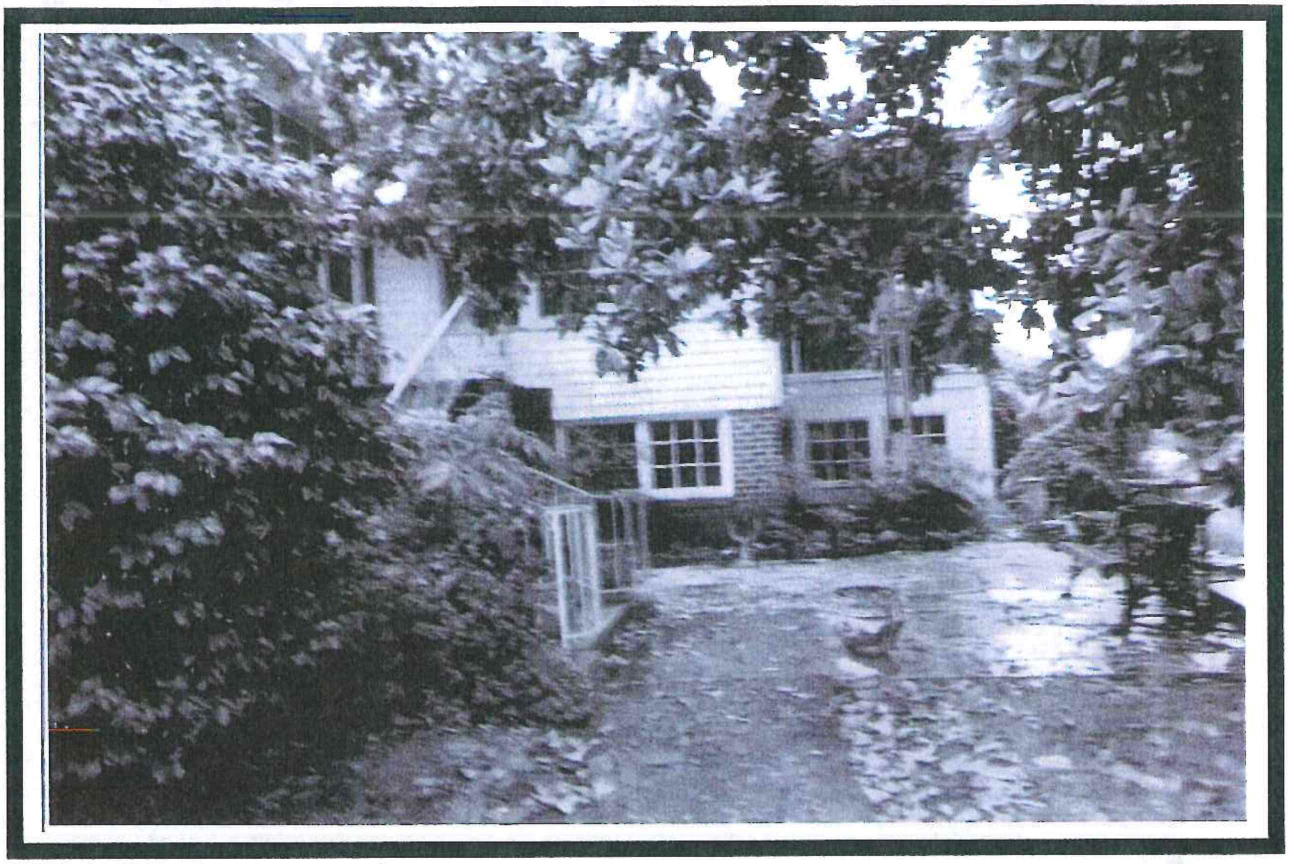


Figure 305. Legette Farm architectural details.

Figure 306. Legette Farm, facade.

[redacted]

Chapter IX. Summary and Interpretation

Here we summarize project results in terms of soils and landscape and cultural chronology, and provide a general assessment of the project area and results. The concluding chapter addresses additional research needed in the project area.

Nature of the Fieldwork

Work proceeded slowly. This can be attributed to a number of factors. First is the fact that soils are largely silts and sometimes slow to screen. Second is the fact that where sites are sandy, shovel tests have to be a meter or more deep, which sometimes takes an hour or more. A high site density has been encountered in most all undisturbed areas, and many sites are of fair size, requiring numerous shovel tests to delineate them. The daunting nature of the physical environment has been noted to impede work by all researchers since Rands (1958). This survey should be considered the first large-scale work in the Pearl Floodplain to use modern methods of 30 m transects and ¼" screened shovel tests.

Available maps, both 7.5' quadrangles and 1970s soil surveys, were found to be inadequate for our purposes. Quadrangles do not show sufficient contour detail. GPS reception was very poor due to heavy forest cover.

The work revealed a major difference in conditions between, roughly, the northern and southern halves of the project area. The northern half is well-preserved while most original land surfaces in the south have been destroyed. Future work should focus on the northern portion of the tract, where conditions for site preservation are overall extremely good.

Archaic Period

Three sites have produced Late Paleo/Early Archaic Dalton or San Patrice points (Figure 309). Site Madison 1 produced a San Patrice point at ca. 90 cmbs on a sandy knoll. Site Hinds 7 produced a fragmentary lanceolate point base, perhaps of Ft. Payne (Sam McGahey personal communication, February 2005) in what was otherwise a minor Woodland period ceramic scatter. This site lies on the same terrace surface as the City Mound, and if an in situ find, indicates the age of this surface. Soil particle size, acidity and pedogenesis supports this contention, and the same surface produced Hinds 2/3, where various fragments of novaculite debitage (probably indicative of Middle or Late Archic occupation) were recovered. Finally, an expended left beveled Late Paleo/Early Archiac biface was recovered from the cobble tool feature at Rankin 30.

"Formal" uniface endscrapers were recovered at Rankin 13 (isolated surface find in sewer spoil), Madison 2, and Hinds 13 (Figure 309). These are all interpreted as early

Figure 309. Late Paleo/Early Archaic Diagnostics; a. Madison 1 (22-Md-768), ST Starr 12 (San Patrice); b. Hinds 7 (22-Hi-822), ST Starr 262 (lanceolate base); c. Rankin 30 (22-Ra-692), TU1 (lanceolate base); d. Madison 2 (22-Md-769), ST Hardy 49 (uniface end scraper); e. Hinds 13 (22-Hi-826, surface (uniface end scraper); f. Madison 2 (22-Md-769), ST Hardy 48 (wedge); g. Rankin 7 (22-Ra-675), ST Hardy 179 (adze).

Archaic artifacts, with the caveat that it is recognized that Middle Woodland and Protohistoic cultures also made hafted hide scrapers of virtually identical form, indeed that the form is duplicated worldwide. Walthall and Holley (1997:157) believe that the hafted hide-working endscraper is expended when nearly square, and that earlier stages of scraper use-life are of more amorphous form. While utilized flakes were common, all appear to be expedient tools from later periods. Other early-appearing (steeply retouched) flake tools were not recovered. However, apparent Early Archaic tools were also recovered from Madison 1 (a crude, lumpy bifacial adze, perhaps later reused due to differential patination), Madison 2 (a unifacial wedge with heavy use on both ends, similar to the larger Clear Fork gouge of the South-Central Plains), and Rankin 7 (a poorly thinned adze with smoothed sides and distal polish). A bipolar flake and petrified wood adze from Madison 1 may also belong to the early component at this site.

Three sites have produced Middle Archaic period Denton points (Figure 310). One comes from the Rankin 36 locality of this large site complex. Others were found at Hinds 4 and Rankin 20. These crude, lumpy square-based points are some of the only diagnostics known for this period in the project vicinity.

Based on the numerous finds of Gary and Pontchartrain-Flint Creek cluster points (Figures 310,311), the Late Archaic-earlier Woodland interval can be considered a period of high occupancy in the Pearl Basin. The thick, formerly larger Gary from Madison 2 is probably from the Archaic period (Sam McGahey, personal communication February 2006) (See Figure 311). Pontchartrain-Flint Creek cluster points come from Rankin 7, Rankin 8/9, and Rankin 30. The smaller Pontchartrains from Hinds 8 and Rankin 36 are probably Woodland examples (SamMcGahey, personal communication February 2006).

Woodland Period

The Middle Woodland period, Marksville culture is well represented, but we also have abundant remains from the Late Archaic/Poverty Point through Baytown periods. Several earlier Archaic components and a few ephemeral Mississippi period components have also been found. This finding is in line with other modern surveys carried out by the USDA Forest Service in the 1990s, showing high occupation rates of the Mississippi uplands during Neoindian times. Examples are the Tchula concentration north of the Tallahatchie and the Marksville occupation along the Homo Chitto. The Pearl is no exception to the high density of Late Archaic-Woodland sites.

Most of the mound sites and mound groups visited by this survey appear to be of Woodland date.

Three Collins arrow points were recovered (Figure 313). Blitz (1988:131) has documented the rapid diffusion and "sudden dramatic appearance" of the bow and arrow in the lower, woodland part of North America east of the Plains. Arrows first appear in the Midwest and Southeast around AD 700, mostly as triangular points (Madison, Hamilton, Pinellas, Guntersville, Dallas, etc.), but with many stemmed and notched local variants as well. Dates appear to be AD 600-700 in Illinois, 700-800 in the Cumberland

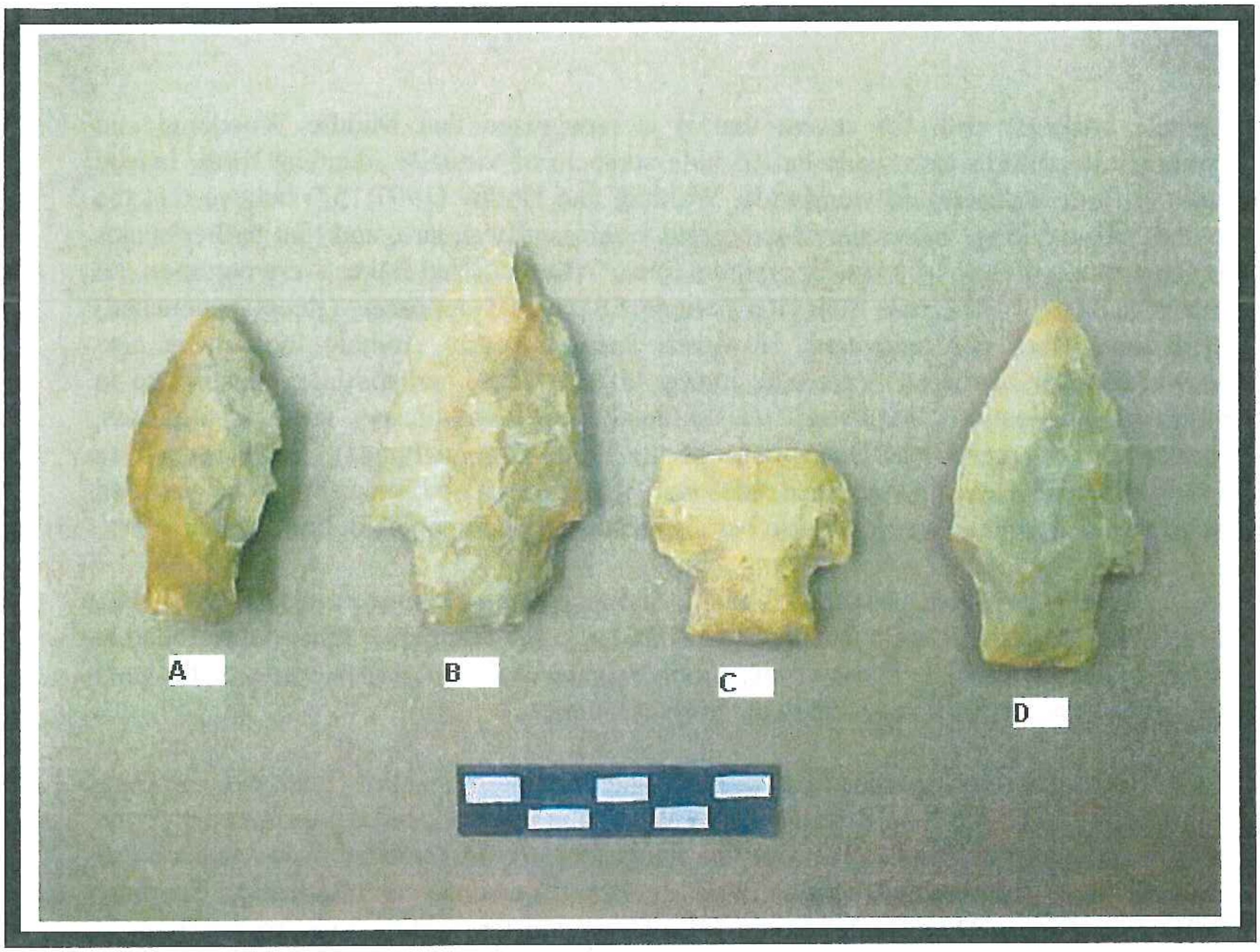


Figure 310. Middle Archaic Diagnostics (Denton points); A. Hinds 4 (22-Hi-820), ST Starr 272; b. Rankin 20 (22-Ra-684), ST Orsbun 160; c. Rankin 30 (22-Ra-692), ST Orsbun 281; d. Rankin 36 (22-Ra-696), surface.

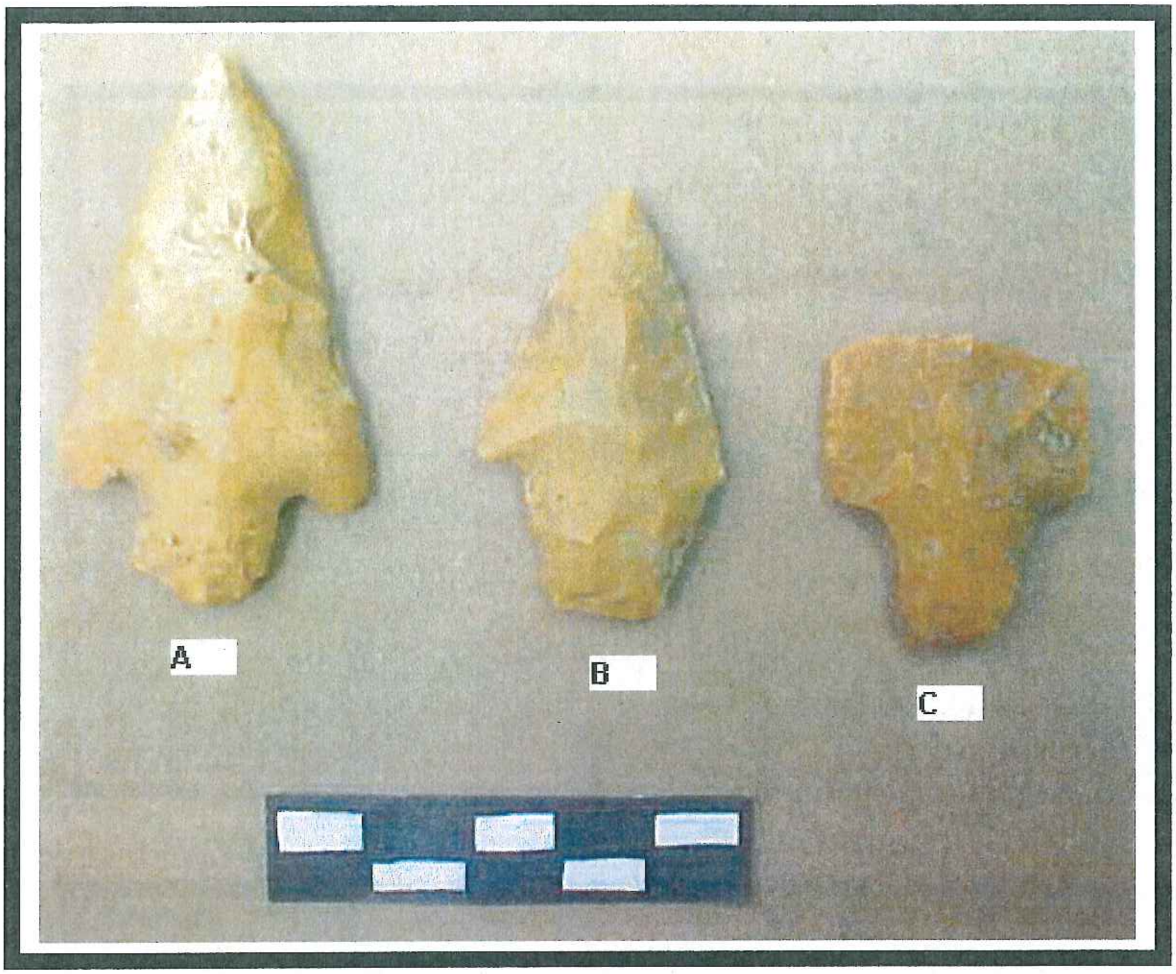


Figure 311. Late Archaic/Woodland stemmed points; a. Rankin 17 (22-Ra-681), TU1L1 (Shumla); b. Madison 2 (22-Md-769), ST Hardy 33 (Gary); c. Rankin 30 (22-Ra-692), ST M Starnes 762 (Gary).

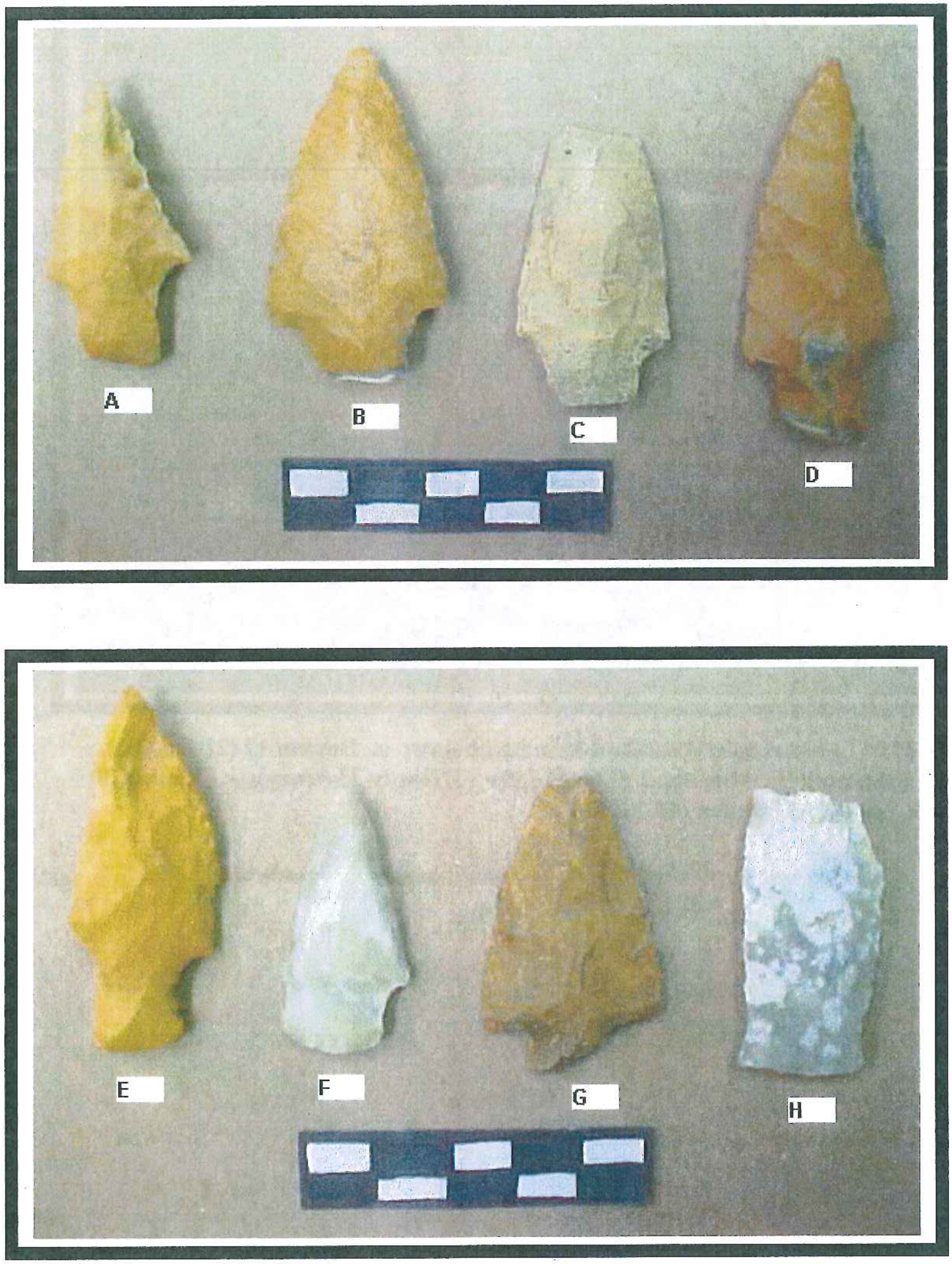


Figure 312. Late Archaic/Woodland stemmed points. a. Rankin 36 – 22Ra696 TU1L1 Pontchartrain); b. Rankin 7 – 22Ra675 ST Barrett 6 (Pontchartrain – Flint Creek); c. Rankin 8/9 – 22Ra676 TU2L2 (Ponchartrain – Flint Creek); d. Rankin 30 – 22Ra792 surface (Pontchartrain – Flint Creek); e. Rankin 36 – 22Ra696 surface (Late Archaic-Woodland stemmed); f. Hinds 8 – 22Hi823 (Late Archaic-Woodland stemmed); g. Rankin 10/11 – 22Ra677 TU3 (Tallahatta quartzite, Woodland?).

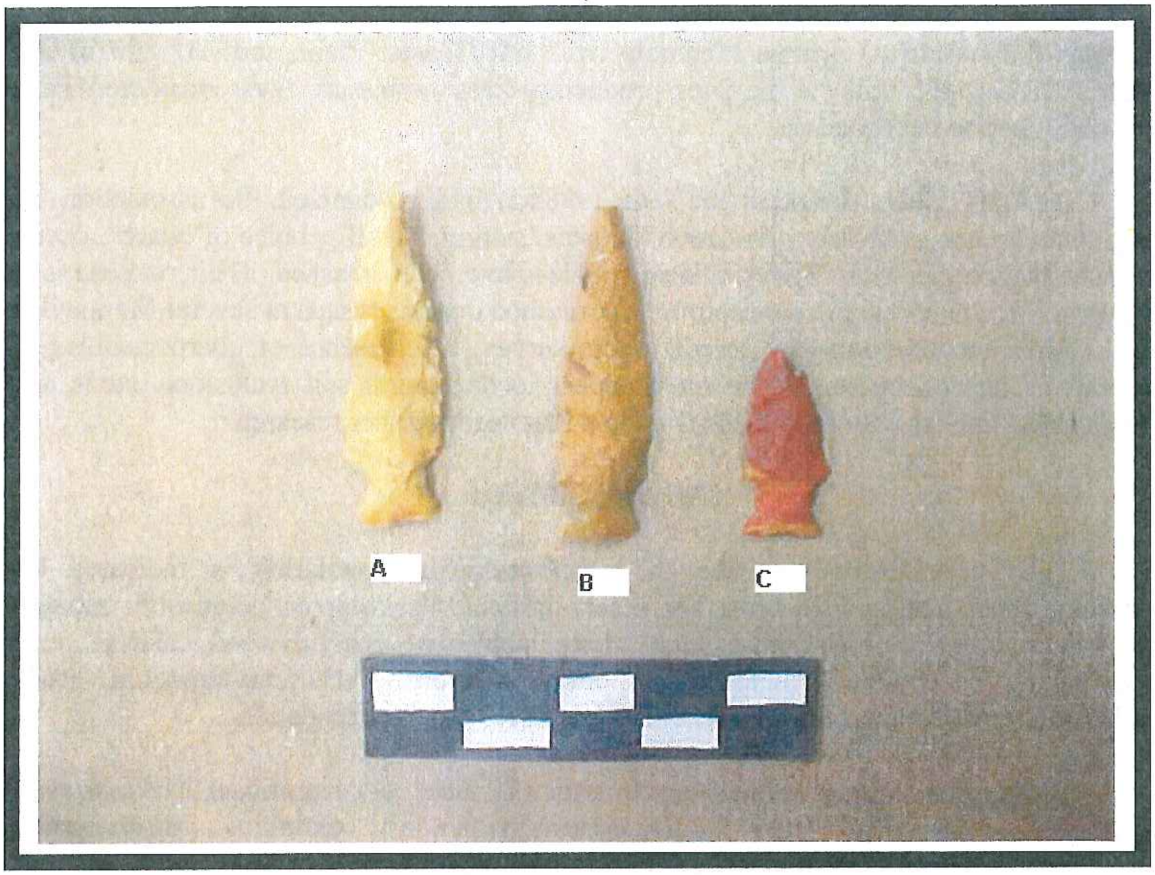


Figure 313. Late Woodland Collins arrow points; a. Madison 9/10 (22-Md-773), TU1 L1; b. Madison 11 (22-Md-774), ST Starr 387; c. Rankin 17 (22-Ra-681), ST M Starnes 514.

Plateau, Mid-Atlantic, Carolina Piedmont and Gulf Coastal Plain, and AD 800 in the Central Mississippi Valley. The sites producing these points are thus considered Late Woodland period occupations.

By the 1980s, Brookes (in Toth 1988:xi) had recognized the association of fragmented quartz pebbles with Marksville sites, stating "small pebbles of quartz...occur on most Marksville sites. Many of these pebbles have been smashed. Their purpose is a mystery..." but is probably connected to the smashed quartz crystals at several Marksville sites. While not thoroughly assessed by this survey, the presence of quartz pebbles is general in site collections. While most appear to be natural soil inclusions, some are fragmented, perhaps culturally. This is a topic that needs further research.

Mississippi Period

The very limited presence of a Mississippian population is indicated by occasional shell tempered sherds. No other definite Mississippian diagnostic artifacts (triangular arrows, burned house daub, chert pebble or petrified wood chisels) were recovered. No decorated shell tempered pottery was found. The shell-tempered sherds could in fact indicate protohistoric/18th-19th century Choctaw occupation.

Perhaps the easiest way to account for the lack of a significant Mississippian presence in the Pearl Basin is by appealing to soil conditions. Mississippian agriculturalist across the Southeast exhibit a marked preference for sand loam soils that can be cultivated with hoes and maintained in good tilth. These conditions are conspicuously lacking throughout much of the project area and the typically silty soils would have been poorly suited for hoe agriculture. However, it is this author's experience that seemingly ephemeral Mississippian occupation witnessed by occasional finds of shell tempered pottery is often found upon excavation to represent more substantial remains, including houses, hearths, granaries, and bell-shaped silos/trash-filled pits. At any rate, based on ceramics totals, the Woodland presence far outweighed any Mississippian presence in this part of the Pearl basin (Figure 314).

Historic Period

The 1821 GLO maps (see Figure 13,14) indicate Choctaw corn fields and old field clearings scattered around the Jackson prairie area; the size of the "prairies" recorded by the initial land surveys indicates that they may have been old fields or at least fire-maintained. No material firmly indicative of Choctaw components was recovered, unless two minor finds of early 19th century English ceramics are counted. Some of the sites producing shell-tempered pottery could be Choctaw rather than prehistoric.

Evidence of 19th century occupation was sparse and limited to very slight scatters of cut nails and/or ceramics and bottle glass. Very little evidence of historic Anglo/Afro American domestic or even temporary occupation has been found. Evidence of 19th century occupation is exceedingly sparse. Historic document review indicated that the initial occupation, prior to the late 1840s, was by graziers with few or no slaves and very

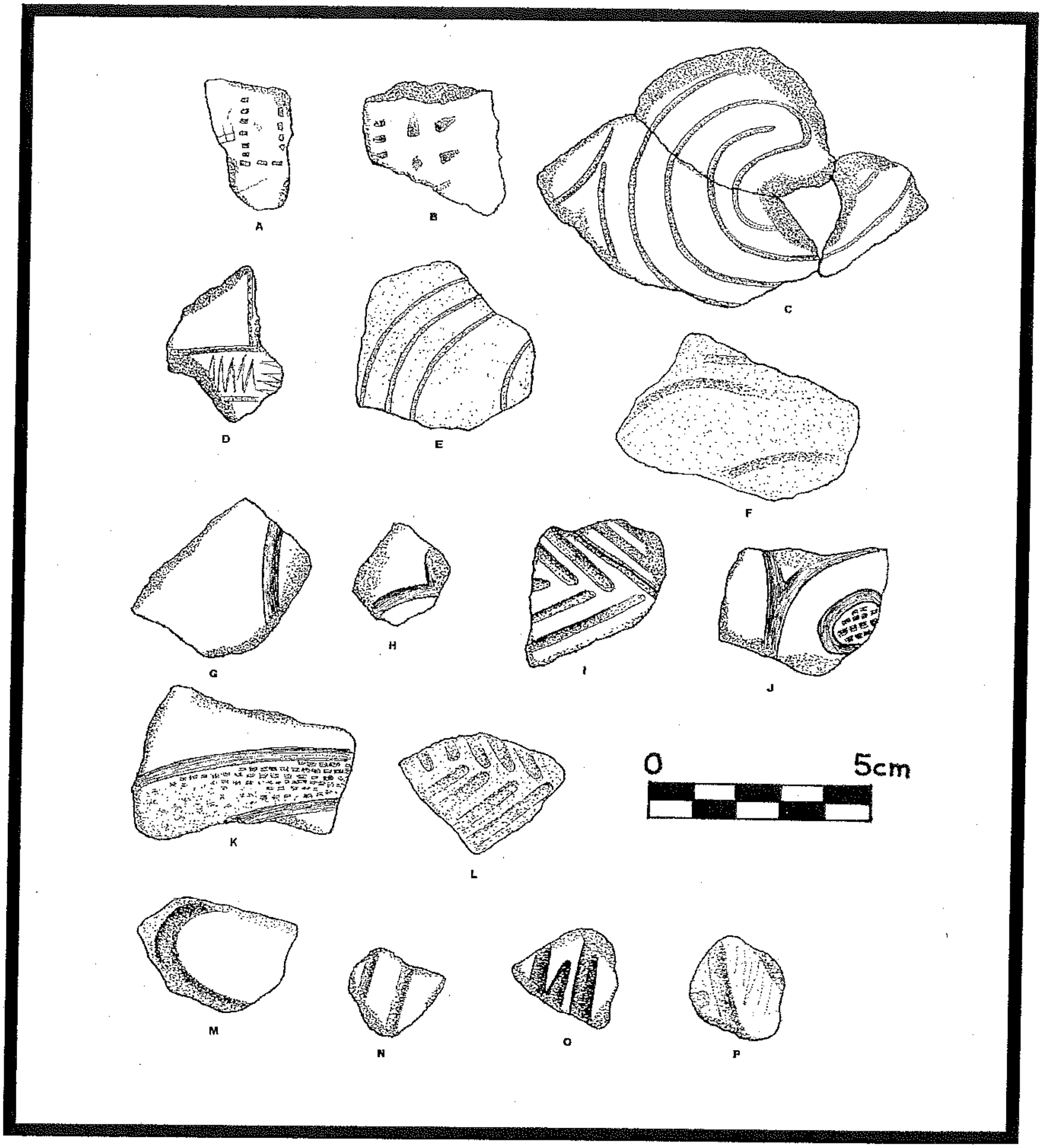


Figure 314. Gulf Formational and Woodland Period ceramics; a. Madison 1 (22-Md-768), ST Harris 13 Fiber incised/stamped; b. Rankin 41 (22-Ra-700), ST Underwood 723 untempered (fine sandy) punctate; c. Madison 7 sandy heterogeneous broad line incised; d. Madison 2 (22-Md-769), TU2L2 grog incised and stamped (Marksville stamped): d. Madison 3 (22-Md-770), ST Hardy 52 sandy grog incised; e. ST Harris 66 (both extremely eroded by violent washing); g-l. Hinds 8 (22-Hi-823), TU1 Marksville Incised and Stamped; m-p. Hinds 22 (22-Hi-672), Marksville incised, ST Harris 62, 67.

limited cultivation. Initial plantation agriculture was focused on the Big Black River, while Rankin County retained a more hunting and grazing oriented economy with low populations for longer than Madison and Hinds counties.

Hinds 12 produced a few cut nail fragments. The lack of 19th century sites may also be attributable to the terrible flooding of 1878, which the navigation engineering reports describe as removing all buildings and fences, killing much livestock, damaging soils and driving settlers upon to the uplands.

The initial predictions for the survey area included the likelihood of numerous late 19th-early 20th century logging sites. This did not prove to be the case in the field investigations. Rankin 2 is a scatter of coal and clinker. A large nut and bolt was also recovered. These are considered to be remains of steamboat or logging engine boiler cleaning. This small site remnant between a borrow pit and the Pelahatchie is interpreted as associated with the logging industry, although it is possible that a small steamboat could have been laid up here, perhaps during the Civil War when efforts were made to hide. However no evidence of tramlines that would carry a skidder or engine was noted. We had expected to find some sign of logging, in the form of temporary railroads or perhaps camps. However, Butchner found that dummy lines working bottomland hardwoods in the northeast Arkansas Delta were staked to the ground without raising beds. The location near several cities and towns indicates that woods workers commuted to work rather than living in camps. The impact of logging on the landscape appears to be minimal except in cases where modern equipment has been used in wet weather. The fact that primarily high-value hardwood timber is produced means that cuts have been selective and infrequent. The vast predominance of hickory in the forests is unusual. This is perhaps due to the fact that hickory is of less commercial value than oak, so that low-intensity management has allowed hickory to regenerate after oaks and other more valuable timber species have been removed.

Early-mid 20th century occupation is likewise very limited. Historic maps from 1905 and the 1920s indicate that there has been very little actual occupation of the project area in the 20th century. The early soil surveys (Kocher 1918, Wildemuth 1926) also indicate that there was little cultivation in the Pearl River bottom. A notable exception is the area of the Flowood Mounds (22-Ra-502), where houses were indicated and both late 19th/early 20th century debris and old plowzones were found. Hinds 13 (22-Hi-826) has a chimney base and extensive trash scatter of slightly later date. The ruins of a frame house and its chimney were found on the riverbank in a modern suburb.

The soil surveys (Kocher 1918, Wildemuth 1926) indicate that the wild cane of the bottoms mentioned in early 19th century accounts as the primary resource of economic value continued to be a valuable pasture into the 20th century. Finds of barbed wire and hog wire were made throughout the area, and in a few places remnant fences/fencelines were noted.

There is an overall difuse scatter of modern drink containers (glass, steel, aluminum and plastic) and ammunition. Pull-tabs (pre 1975-1980) are commonly found in shovel test. A few jeep trails and many deer stands (Figure 314) were found. There is little evidence of dumping. A dump of hotel ware, sauce bottles and other domestic debris was recorded near the modern channel at site Rankin 5. Tile from the mid-20th century plant in the Pearl/Flowood area was also widely scattered in the oil field area; apparently wasters were being used for road surfacing.

The very light historic land use is a primary cause of the overall good condition of the prehistoric components. It is very unusual to survey a location where prehistoric remains so overwhelmingly predominate over traces of 19th and 20th century occupation or use.

Lithic Raw Material Utilization

Citronelle gravel (including quartz pebbles) and petrified wood are considered local lithic sources and make up the overwhelming majority of the deposits. Tallahatta, Kosiusco and related local quartzites are the most common non-local material. A probable Kosiusco quartzite cobble/pebble decortication flake comes from 22-Hi-672. Kosiusko stream-worn materials may be local materials. Central Mississippi quartzite was recovered from Madison 1, Madison 2, Madison 4, Madison 11, Hinds 1, Hinds 2/3, Hinds 4, Hinds 10, 22-Ra-502 (Flowwwod Mounds), 22-Ra-565, Rankin 6, Rankin 8/9, Rankin 10/11, Rankin 17, Rankin 18, Rankin 19, Rankin 26, Rankin 30, Rankin 35/36.

Coastal Plain agate is also a local or near-local material. Nonlocal cherts are also recovered in very low frequencies. Novaculite from the Arkansas Oauchita Mountains was found at Hinds 2/3 (5 flakes in three contexts). Two shovel tests at 22Ra594 (M.Starnes 663, 664) produced novaculite biface thinning flakes. Rankin 2/3 also produced nonlocal mottled grey cherts in TU2. According to Trubitt et al. (2004) work in the Arkansas quarry sites as well as larger studies of complete pp/ks confirms that novaculite use was most intense during the Middle and Late Archaic periods. Brookes (in Toth 1988:xi) also notes the association of novaculite with grey-brown Cobden and white Burlington-Crecent chert with Marksville occupation in the upper Sunflower basin. While chert is difficult to source from small flakes, these appear to include Ft. Payne and Dover from the Tennessee Valley, Boone from the Arkansas/Missouri Ozarks, Harrison County, from the lower Ohio valley. Hinds 4 (ST Barrett 94) produced a possible Ft. Payne flake. Hinds 8 (ST Starr 320) produced a possible non-local chert flake. Rankin 3 produced possible Ft. Payne chert in a test unit. Rankin 11 produced a possible Dover chert flake. Rankin 30 produced a possible Ft. Payne biface thinning flake in TU1. Possible Burlington/Crescent chert from the St. Louis area is also probably represented in the collection. Use of non-local materials has general temporal significance. Most of these finds (primarily biface thinning flakes or flake fragments) are indicative of Late Archaic/Poverty Point and Middle Woodland occupation.

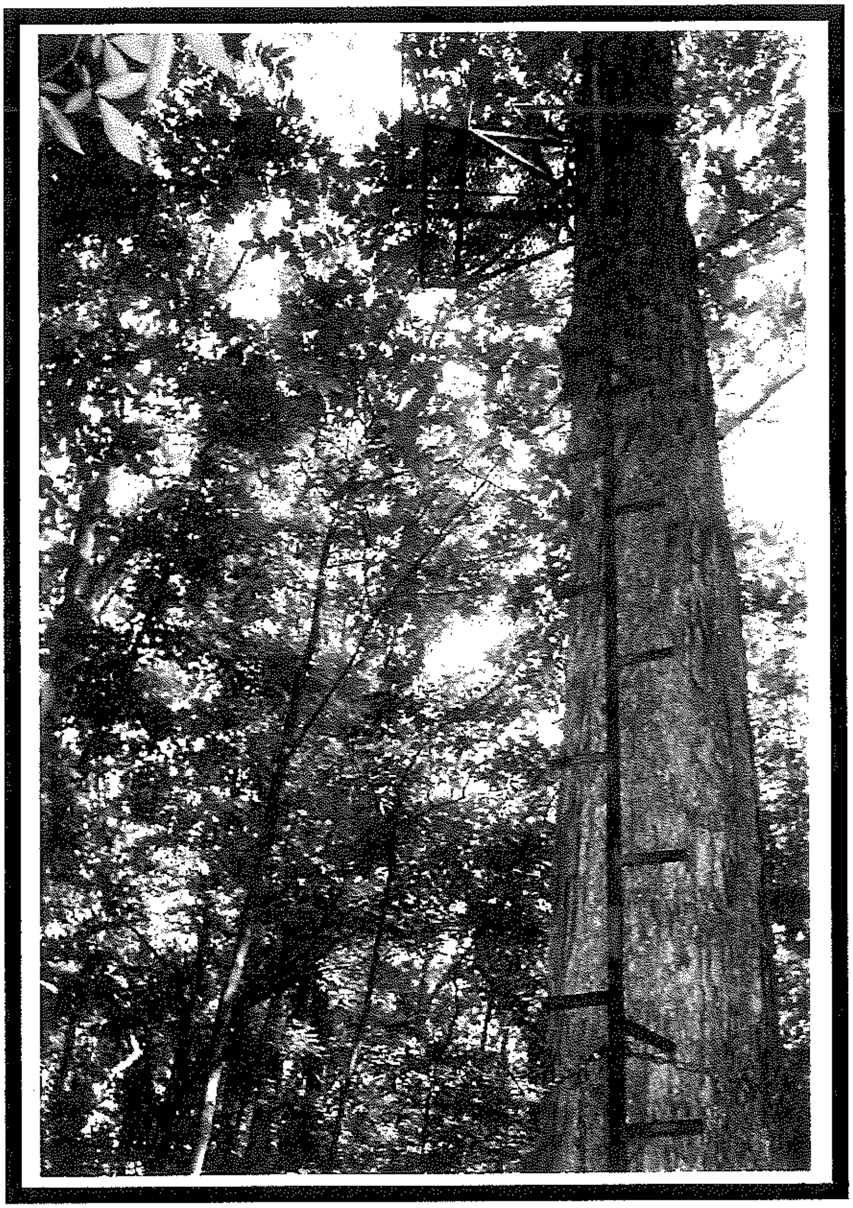


Figure 315. Portable tree stand.

[redacted]

The Natural Environment as Related to Site Location and Significance

The project area is largely limited to the immediate meander belt, but some areas of backswamp or slackwater clay flats are involved as spoil disposal areas. These are generally considered low probability areas where archaeological sites will not be found by standard methods. Given that the Pearl is confined to a distinct meander belt in an older, wider valley, the possibility exists that sites have been buried well below the present soil surface. Some areas of such deposits were assessed for the likelihood of buried sites through coring (1") and/or auguring (3"). These subsurface soundings were logged in the same way as shovel tests. May used the corer to examine stream channels and deep sand sites along the active channel.

The association between landscape form and forest type noted by Dunbar and Coulter (1988) appears to hold true for this section of the Pearl valley. Pines are strongly associated with shallow, more oxidized soils. White oaks, water oaks, and ironwood, as well as lesser numbers of laurel, holly, magnolia, bass, and beech are found on natural levees and lesser ridges, with more sweetgum, elm, and maple in the lower flats, channel scars and backswamps.

An apparently natural salt/mineral lick was reported along the unnamed creek north of the Rankin 33/34/35/36/37 site complex 60 m northeast of ST Orsbun 588. It lies on the slope into the creek in the Rankin 34 locus. Note that a "rock house" cattle lick in the Catahoula formation has been reported as 22-Ra-573, Section 25, Township 3 North, Range 2 East, slightly below the project area.

Landscape and Pegogenesis

It has long been recognized that oxbow or cut-off lakes were favored locations for aboriginal occupation, due to the presence of a large body of permanent water that is still somewhat protected from the fluctuations of the main channel. We also found that there are many sites on lower and smaller point bars in the extensive, poorly mapped ridge and swale terrain. These are the landscapes characterized as ridge and swale buried by backswamp by Dunbar and Coulter (1988). Previous very low intensity, unscreened shovel testing survey has failed to find these sites.

Only a few areas have thin Ao horizons and truncated E horizons typical of cultivated fields. No old field ridges have been noted, but occasionally the pines encountered were planted in raised ridge rows, which constitutes a major impact to site integrity. Around City Mound and Flowood Mounds, the ca. 1905-1960 clearing appears to have been individually planted or naturally seeded. Without major disturbance from plowing, horizontal stratigraphy appears to be very good. In many cases shovel tests encountered multiple flakes per test that appear to come from the same core. Likewise, concentrations of sherds from the same vessel have been found in numerous shovel tests.

The fact that the soils are silty seems to lessened the chance of downward migration of artifacts. The sites found on the terrace above the Pearl and the abandoned courses of the Pelahatchie have artifacts from 3-5 cmbs to around 20-25 cmbs. Sandier sites were found to be much deeper, evidence of biological and mechanical processes affecting the vertical stratigraphy of the sites. The find of the Dalton feature at Rankin 30, at 40 cmbs, raises an important question as to rates of overbank sedimentation in the Holocene. The climate modles discussed in Chapter 2 (Gunn 1997, Little 2002) as well as the results of limited pollen core analysis associated with the Shocco green tree or seasonal reservoir flood control option, indicate that rates of sedimentation have probably varied through time. The geologic modle from this upstream area (Dunbar and Coulter 1988), as well as our consultant May's interpretation of it for our project area indicated a high likelihood of sites in point bar terrains being buried by backswamp deposits. This burial appears to be shallow, so that site discovery through shovel testing alone is feasible. The potential for more deeply buried deposits has not been assessed.

Geomorphology

The geomorphic features mapped in the LeFleur Lake study area were similar to those mapped north of the Ross Barnett Reservoir in the Shoccoe Dam report. The surfaces mapped are the valley slopes, terraces, and flood plains. The environments of deposition in the flood plain are point bar and the point bar overlain by swamp. The flood plain contains numerous abandoned channels and courses of the Pearl River. Preliminary geomorphic mapping has identified segments of four abandoned Pearl River courses including the currently active meander belt. The most extensive geologic unit exposed in the study area is the Yazoo Formation. The Cockfield and Moody's Branch Formations are exposed in a limited area overlying the Jackson Dome.

Geomorphic Chronology. No radiocarbon or palynlogical dating was conducted during the current study, but numerous suitable sites for collecting material were noted in the numerous abandoned channels and courses. The chronology for the LeFleur Lake study was inferred from the Shoccoe Dam study north of the Ross Barnett Reservoir. The present drainage basin of the Pearl River began forming in the Early Pleistocene. Upland terrace deposits described by Moore (Moore, 1965) as Pre-loess Terraces and Citronelle Formation have been interpreted to be Early Pleistocene to Miocene by various authors.

The terraces along the Pearl in the study area were formed between 18,000 and 11,000 years before the present and are covered by a thin veneer of loess. The deposits forming the current Pearl River flood plain are less than 11,000 years old. Based on dates from the Shoccoe Dam study the present meander belt is less than 3,000 years old. Four abandoned courses were mapped from youngest to oldest as ACO, ACO1, ACO2, and ACO3 (Table 2). ACO1 is the youngest abandoned course and includes the abandoned courses created by channelization efforts in recent time. The relative ages of the abandoned courses were determined from geomorphic interpretations such as the degree of filling of the abandoned courses and channels. Radiocarbon and palynolgy dates are needed to confirm the exact dates of the abandoned courses in the LeFleur Lake study area.

Archaeological Site Distribution and Prediction. Some sites are spread over more than one geomorphic surface. In the study area where there was enough detailed information to determine statistics, it was determined that 10 percent of the sites are on the PB surfaces and 14 percent are on the PBS surfaces and 75 percent are on the Terraces. Data from the Shoccoe Dam study showed that about 80 percent of the sites there were located away from the present meander belt on the point bar overlain by swamp and terraces. Many of the smaller sites are associated with natural levee ridges.

THIS PAGE LEFT INTENTIONALLY BLANK

X. Recommendations

We make recommendations concerning additional work needed in the area in terms of archaeological survey, testing for significance on known and newly recorded sites, and paleogeomorphology/paleoclimatology.

Highly Disturbed Areas

There are many parts of the project area that have been heavily impacted in the recent decades (see Figures 316,317). Impacts have been in the form of highway and levee construction, the Jackson gas field and other utilities, urban development and, perhaps most importantly, stream chanelization after the 1973 flood. While the northern, wooded portion of the proposed lake is unusually well-preserved from an archaeological standpoint, the southern portion of the project area, from the abandoned MG&O railroad south, is highly disturbed. It is recommended that these areas be considered low probability areas for the discovery of significant sites, and that no additional survey coverage be focused on them. Examination of these areas on the 1963 map (see Figures 318,319) indicates the likely extent of destruction of archaeological sites since the 1976 chanelization work.

At least two prehistoric mounds have been destroyed in the area. These are the 22-Ra-527, Interstate Mound (which also had Civil War graves), and the ambiguous Mound Place Alley (mentioned in early directories) on the east bank of Town Creek.

Recommendations for Additional Survey

Permission to survey was denied in some cases. These are, in Hinds County, Mule Jail Club, and a nearby undeveloped tract. In Rankin County, land around the proposed dam site also belongs to a private club (See Figure 307). If the proposed project is to proceed, these areas should be surveyed after acquisition or under other agreement with landowners reluctant to cooperate. Mule Jail Club in particular is deemed an area of high probability for the discovery of additional prehistoric sites. The 20th century camp features should be documented archaeologically, architecturally and through document review and interviews. A folk history of the club has been prepared and this should be the basis for additional investigations. In particular, the affirmation that the cut-off was made to hide livestock during the American Civil war should be investigated. The cut-off is not shown on the 1905, 1918 or 1926 maps.

Large areas of the proposed lake have been surveyed in past studies (see Figures 75,76). However, these were almost all low intensity surveys limited shovel testing. Our survey overlapped these tracts in selected areas (See Figures 81,82). In these areas, site density comparable to the high densities our intensive shovel testing was found. This was done in conjunction with further geomorphological study

THIS PAGE LEFT INTENTIONALLY BLANK

[redacted]

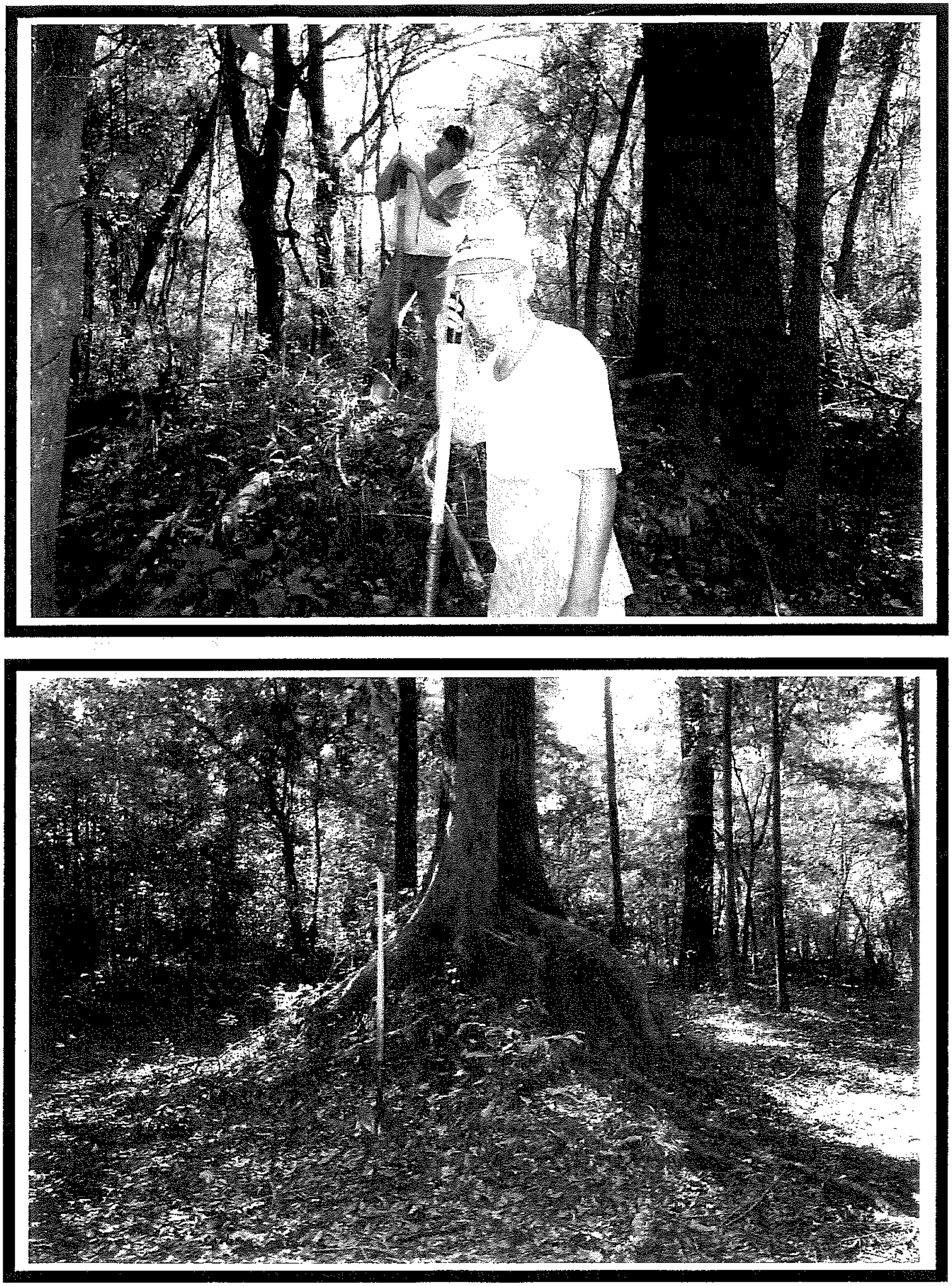


Figure 320. Scoured areas in Rankin County, Michael Starnes and Kris Underwood.

Figure 321. Channelized section of Pearl River.

recommended below, to allow for the assessment of the potential for deeply buried as well as near surface sites.

Any project modifications, including new or strengthened/heightened levees to be built below the proposed dam, should be surveyed when engineering plans are finalized.

Geomorphic Work

Effects of insolation, sea level change, and large-scale volcanism on any particular project area can only be addressed by programs of geomorphological, sedimentological and pollen core studies. As Gunn (1997:135) notes, "most if not all regional landscapes have a global-scale environmental context that must be understood before any meaningful analysis of culture change can be undertaken." In the Pearl basin, we should ask if the Middle to Late Archaic transition is actually a time of population explosion, or if this is only apparent because of shifts in settlement mobility and whether there was a shift in the fluvial regime in this small watershed. We should also consider the effects of later climate deterioration, which led to "unprecedented configurations" in the world-wide spread of "widespread interregional networks" after 2400 BC (Gunn 1997:146). This possibility, seen in the Old World in the shift from city states to empires that spread and reduced risks, can be seen regionally in the Poverty Point interaction sphere. The local impact of later events such as the Roman Optimun (300 BC-AD 200) climatic amelioration on Middle Woodland culture should also be explored. The pollen cores of the Shocco (Dundar and Coulter 1988) project have major gaps in coverage.

The project area contains locations that might be suitable for pollen cores, carbon samples, and dendrochronology. May has cored some dry channel sand found the upper 1-2 m is mottled and oxidized, indicating poor potential for pollen preservation. There are however other lakes that appear to be permanently wet that should provide suitable locations for cores for environmental history reconstruction. The Shocco cores cover the later Pliestocene and the later prehistoric and historic periods. There is a discontinuity of several thousand years between their two Adams Lake cores. Any additional work in the middle Pearl basin should attempt to fill the Archaic gap in particular. These areas are most likely to be found in the northern portion of the survey area, perhaps in Pelahatchie Creek and its meanders. Harris Lake and the associated oxbow in the oil/gas field south across the railroad grade/trestle also appear to be a likely location for such coring. This can only be determined by specialists.

While MDAH has not previously recommended deep (backhoe) testing of floodplains, this is standard procedure in states such as Arkansas, Tennessee and Kentucky, and it seems that this would be a valuable tool for discovering deeply buried or stratified deposits in the vicinity of Jackson, as well as for increasing our understanding of the geomorphic and hydrologic history of this portion of the Pearl River floodplain. Mechanized excavators are also invaluable on urban deposits. We recommend, based on May's results as well as our own limited deep testing methods (1m deep shovel tests and 2m deep cores/augering), additional mechanized testing of selected locations. Specifically, backhoe trenching is recommended on selected natural levee sections in conjunction with areas where permission for survey was denied by landowners. This should include a search for Rands' (1958) Mule Jail site Rk9 (22-Ra-508), which was not identified by this survey. It is possible, given locational problems found in other sites from the 1958 reservoir survey, that this location was mismapped as well.

Even though the area of floodplain and terrace of Pelahatchie Creek in Rankin County was not covered as intensively, a high site density is also indicated there. Three largely destroyed sites were found north of Pelahatchie Creek, along a borrow pit, and 5 sites were found along the south edge of the floodplain. Numerous large cypress stumps were noted in the oxbows of Pelahatchie Creek, and in the process of site testing in the area, soil/pollen cores as well as dendrochronology cores could be considered.

As noted, there is little evidence of charcoal in the archaeological sites found due to high soil acidity (with certain exceptions, such as the mounds, and small hickory nut fragments). However, a program of radiocarbon dating of preserved wood or peat would still be essential for a more thorough paleogeographical-paleoclimatological study of the Pearl River. A dozen or more C14 dates should be planned for this portion of mitigation excavations alone. Large, sawn cypress stumps were noted in Pelahachie Creek. These would perhaps be useful for environmental history as well. We need to inquire into how detailed the local cypress dendrochronology is, and if it seems that our specimens could help fill in the regional sample, appropriate consultants should be contacted. The Gulf South is largely lacking in late Pliestocene-Holocene geochronological data, and filling in this data in larger continental and world paleoclimate modles should be a major goal of any additional geoarchaeology on the proposed lake.

James May makes the following recommendations regarding the use of geomorphic interpretations to help define future cultural resource surveys in the LeFleur Lake study area:

(a) Cultural resource surveys should pay special attention to terraces and point bar overlain by swamp environments.
(b) Landforms of special interest include abandoned channels, abandoned courses, and streams that occur in combination with abandoned channels and courses.
(c) Searches for buried sites should concentrate on the point bar overlain by swamp environment where site burial should be less than 10 feet deep. Other locations where sites could be buried are along the boundaries of valley slopes and terraces where colluvium has accumulated and sites could be as deep as 15 feet.
(d) Radiocarbon dates should be obtained to more precisely date the abandoned channels and courses.

Recommendations for Site Preservation

MDAH asks that contractors evaluate the impact of the project on the identified resources. The impact of the proposed lake on any significant cultural resources would be extreme and probably destructive. The high damage to sites in other reservoirs indicates that inundation would not be permitted for significant sites, unless special coverings or stabilization measures were taken to mitigate the impact. The burial and inundation would probably also be considered an adverse impact to the eligible mound sites.

Large areas would also be destroyed by excavation and levee reinforcement, and some significant sites lie in the path of raised or widened levees. Preservation by burial may be explored in future planning processes.

In any case where design considerations permit, the final engineering plans should be drawn to exclude significant sites from the impact zone where excavation and/or inundation would occur.

General Recommendations for Phase II Testing

Based on Fields (2003) study at 22GN680, it is evident that large amounts of a site must be opened up to obtain the desired results in delineation of site function and internal structure. Site 22GN680 had 25% of the site excavated (130 square meters) to obtain the noteworthy results obtained. Likewise, Kimball (1993) used multivariate analysis of tool, debitage, charcoal and feature distribution to identify activity areas and probable structures at the Early Archaic Rose Island site, using counts from grid squares and ethnographic analogy. This approach seems fruitful, but it requires careful excavation of a large number of contiguous units and entry of the data from artifact analysis into mapping programs (Kimball's (1993) example used 57 square excavation units and 24 artifact classes). Such large-scale excavations would be needed to obtain similar results on the Pearl River sites. The results of delineation shovel testing indicate that these sites have a great potential to provide detailed internal patterning even on the shallow sites. As Fields (2003:154) notes, "sites of this type, although previously considered insignificant because of the lack or low density of artifacts can and do produce an overwhelming body of evidence for the reconstruction of prehistoric behavioral patterns." Here, I would emphasize the "overwhelming" nature of the data: at 22-Gn-680, 130 1x1m squares were excavated in 10 cm levels, and all lithic debris was sorted into 4 size grades to obtain these results. There is no substitute for large block excavation to obtain the results that allow the identification of structures and work areas. Even when there is limited vertical stratification, artifact density is low, organic preservation is poor and multiple occupations are present, a great deal can be learned about the social organization of the family-band level social unit once individual components can be segregated. Such investigations are labor intensive in the field and especially in terms of lab time to complete the analysis. The PBS&J study at 22-Gn-680 used the Surfer software to plot density; this takes a large front-end investment in data entry to produce artifact density maps formerly generated by hand-plotting distribution data.

Stratification and Artifact Percolation. When Southeastern archaeology was striving to create relative cultural chronologies, it was justified to focus on deeply stratified sites, but with the advent of absolute dating of even small organic particles and the development of detailed regional chronologies, our emphasis should have shifted to other research topics such as site function. Deeply stratified sites are not to be expected in most Mississippi environments, and even in places where they might be present, the standard shovel test is unreliable to discover them.

As early as 1992, Jackson and Scott discussed the possibility of downward migration being a not insurmountable factor in the interpretation of the G.W.O. (22-Js-587) site, located on a silty-sandy knoll in the Bouge Houma floodplain. Based on distribution by 10 cm level, they stated a belief that "the present evidence suggests a sealed archaeological deposit, despite the fact that no clear 'living floor' was isolated (Jackson and Scott 1992:71)." However, they admit in the same paragraph that "we cannot entirely discount the possibility that the apparent stratigraphic distribution is the function of some complex interplay of time and these disturbing factors" and they recommend geomorphological work to address the issue. While multidisciplinary studies are greatly needed throughout Mississippi, archaeologists cannot "pass the buck" on this major interpretive issue. Two decades after Jackson and Scott's study, in light of additional studies throughout the southeast, it seems likely that the 22-Js-587 artifact distribution was highly influenced by downward migration of artifacts through relatively loose soils, but that this natural disturbance did not erase the significant internal patterning of the site. However, as late as 2002, McGahey, using data compiled by a team of varied and qualified earth science professionals, concluded of the Short #3 (22-Pa-750) excavations that treefalls and other such disruptive events "have probably left very little of the Early Archaic-Paleoindian *occupational surface* (italics mine) intact." In the same paragraph, McGahey (2001:40) conversely acknowledges that the variation in fire cracked rock: debitage ratios through the levels "suggests that to a certain extent the deposit is not thoroughly mixed." This author strongly affirms that, until we find caves, deep alluvial sites such as Hester or mounds such as the destroyed Blaine (22-Hi-544) mound that seal the sub-mound surface, we will not find distinct "living floors" or "occupational surfaces" in many Mississippi sites dating before the Mississippi period, but this lack alone does not render a site uninformative.

The debate over whether slightly stratified sites are the result of continual soil deposition or are the result of continual downward migration of small artifacts through time is an important one to be addressed by future investigations. Vogel (2004) offers a strong argument that the downward displacement of artifacts through time is largely the result of the activity of earthworms, and that over the course of several thousand years, a "stone zone" forms as artifacts and natural stone are mechanically transported to the base of the zone of earthworm activity. This "sinking" is accomplished without significant lateral displacement. Any future studies should consider carefully the pedogenic processes taking place on each site. As has been pointed out, many sites have been dismissed as insignificant (not likely to yield significant new information) because they do not have strong evidence of (primarily fluvial) vertical segregation of components. Simple methods have been devised and found effective in controlling for the biological migration of artifacts, and it has been demonstrated that in cases where bioturbation is the main disturbance factor, sites still retain important information. In such sites, the primary information of interest is at any rate the horizontal patterning that allows for reconstruction of site area use.

Floral and Faunal Studies. Yarnell and Black (1985) in their review of 60 Southeastern Archaic and Woodland floral assemblages, which includes two Louisiana and three Mississippi sites, note the need for more data from a wider range of locales. Some project area sites have yielded burned hickory nuthull (recovered in ¼" dry screened shovel tests) as well as small amounts of bone and shell. The high soil acidity predicted in geologic models and USDA soil surveys is borne out in our soil chemistry analysis. However, the recovery of these materials in the field indicates that any future work should make all due effort, including fine water sieve and/or floatation, to recover floral samples, and that provisions in future budgeting should be made for specialist analysis of plant and animal remains.

Specific Site Recommendations

Virtually nothing is known about the prehistory of the capitol metropolitan area, and very few sites have ever been tested for significance. Many sites, including mounds, have been destroyed without evaluation or salvage during the development of the city. Sites found by the 2004 survey have a good potential to contribute significant new information about local, state and regional prehistory. Testing for significance in terms of National register eligibility is recommended at potentially significant sites. Specific recommendations for each of these sites follow.

Madison 1 (22-Md-768). This large sand knoll site should be avoided or subjected to extensive testing. Madison Site 1 produced a San Patrice point at about 80 cmbs, so deep excavation should be anticipated there. The sandy nature of the soils hampers pedogenic interpretation. The effects of bioturbation should be considered at this site, as the deposit is quite deep (up to 100-120 cmbs). Additional work should include deep (1 to 2 m) testing to evaluate the potential for early deposits. In tests extending below the 120 cm level safety precautions, including larger (2x2 m) and stepped units, should be taken. The Woodland presence at this site appears to be minimal, so work should focus on Archaic components.

Madison 2 (22-Md-769). (Probably previously recorded as 22-Md-517 and 22-Md-680) This site is considered eligible for the NRHP. This site consists of three conical mounds on a bayou bank. Previous visits have found the cultural nature of the mounds ambiguous. They do appear to be entirely cultural constructions. A Marksville Incised sherd was recovered from Madison Site 3 on the opposite bank. A large fragment a slightly restricted Baytown Plain jar was recovered from a shallow test unit on the northernmost mound. The site should be avoided or preserved, and if not avoided, extensive excavation should be considered. This should include excavation of the damaged mounds as well as off-mound testing in areas of high artifact density. Work should focus on dating the construction, recordation of mound features, and function of the associated occupation areas and whether they are contemporary with the mounds.

The significance of the site is increased by the fact that, while the Marksville and Plaquemines/Coles Creek culture has been investigated in the nearby Natchez Bluffs/Lower Mississippi Valley, Southern Pine Belt, North Central Hills/Tombigbee Valley and the Gulf Coast regions, we know very little about this period in the Jackson Prairie/Pearl Basin region. We do not know with any degree of accuracy when burial mound construction began (Early or Middle Woodland) nor when it ended (if burial mounds still being built in the Plaquemine/Mississippi period). The site is likely to contain human remains as well as associated grave goods, so any decisions concerning this and other mound sites should be made in consultation with the Native American Graves Protection and Repatriation Act (NAGPRA) representative of the Mississippi Band of Choctaw Indians (MBCI) and other relevant parties such as the Tunica tribe of Louisiana. The land is managed by the Madison County Water District. Work should focus on salvaging the mounds and also on determining the southern site boundary along the bayou bank, where the deepest deposits were found.

Madison 6 (22-Md-772). As a potential single-component site of limited size, with good soil preservation, an attempt should be made to determine chronological placement. Additional testing is recommended. This should take the form of a number of 1x1 test units. The site should be considered significant if additional diagnostics are found that confirm a single component. The site is shallow, so a number of units could be excavated rapidly. As a low-intensity use area, features may not be present. Focus should be on recovery of materials for reconstruction of internal patterning that would indicate site function(s) as well as date.

Madison 9/10 (22-Md-773). This Middle to Late Woodland site should be evaluated at the Phase II level. The site is considered potentially significant due to the presence of a feature (pottery concentration) and the relatively undisturbed condition. Mulberry Creek Cordmarked ceramics and a Collins arrow point indicate a single component Late Woodland period occupation. The debitage and ceramics are taken to indicate that this is a base camp or temporary hamlet. Additional work should include laboratory reconstruction of the ceramic sherds to attempt to determine vessel size and form as well as the excavation of additional test units. Recovery of features containing charcoal for radiocarbon dating and ethnobotanical analysis should be the major focus of work.

Madison 11 (22-Md-774).This Gulf Formational and Middle to Late Woodland site should be tested. The range of artifacts recovered, including utilized flakes and other debitage, petrified wood and fire cracked rock indicate that this is an intensively occupied site that functioned as a base camp or semi-permanent hamlet. Sherds were often large, also indicating low impact. The potential for horizontal artifact patterning should be assessed by further testing. This should include blocks of contiguous 1x1 m units at locations where shovel testing has revealed artifact concentrations. Recovery of features containing charcoal for radiocarbon dating and ethnobotanical analysis should be the major focus of work. The potential for the delineation of spatially discrete occupations