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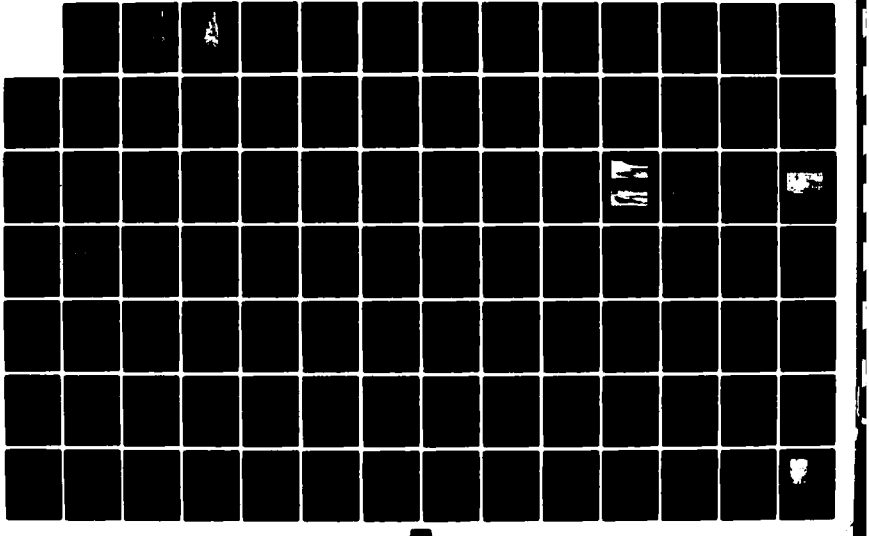

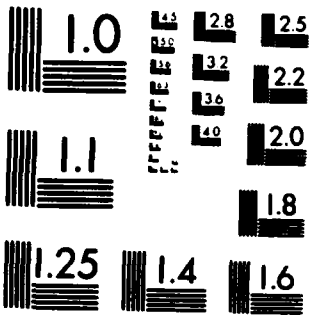

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Arkansas Archeological Survey Research Report No. 20

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A report on the intensive survey and testing of historic and prehistoric sites impacted by construction of a water supply reservoir in the central Arkansas River Valley. Historic portion of this report is unusually good.

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THE CONWAY WATER SUPPLY:
Results of Archeological Survey and Testing and a Historical Survey of a Proposed Reservoir Area in Conway County, Arkansas

by

Lawrence Gene Santeford

&

William A. Martin

with

Charles M. Hoffman
David C. Quin
Frank Rackerby
Beverly J. Watkins

ARKANSAS ARCHEOLOGICAL SURVEY
FAYETTEVILLE, ARKANSAS 72701
PROJECT NUMBER 340
1980

Report submitted to the Little Rock District
U.S. Army Corps of Engineers, Contract DACW 03-79-C-0056

Abstract

The Arkansas Archeological Survey conducted an archeological survey and testing program for the U.S. Corps of Engineers' proposed Conway Water Supply project in the Cypress Creek basin, Conway County, Arkansas. During a 1978 survey of the reservoir area, 26 archeological sites were recorded. Further surveying of the reservoir area, a spillway area, pipeline and road relocation corridors in the present program resulted in recording 53 additional sites within the direct impact of the project. Pedestrian survey and shovel test survey methods were used to discover sites and shovel tests and ~~1 m^2 or~~ 1 m by 2 m excavation units were used for testing sites.

Problem-oriented research revealed that the project area was occupied from the Dalton period through the Historic period, that at least one environmental variable--topography--was an important factor in the location of sites, that prehistoric sites were distributed differently from historic sites in regard to environmental features, that occupation may have been seasonally determined with a summer/fall versus winter/spring dichotomy between floodplain sites and terrace sites, and that stone tools found at these sites were primarily made of Boone and Pitkin cherts, sandstone, and novaculite. A study of selected historic log house sites resulted in the following conclusion: The combination of archeological data with oral and written sources made it possible to document and preserve much information on the past inhabitants of the area, their socioeconomic lifestyles, and their historical heritage.

Documentation supporting nomination of four sites (3CN57, 3CN64, 3CN117, and 3CN92) considered significant under criteria of the National Register of Historic Places was submitted in December 1979 and a determination of eligibility to the National Register was made in January 1980. Recommendations included a mitigation plan for data recovery at these sites. This plan has been approved by the President's Advisory Council on Historic Preservation.

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Management Summary

I. Legal Justification and Project Purpose

The Conway Water Supply project, sponsored by the Little Rock District of the U.S. Army Corps of Engineers, was authorized by Congress in the Water Resources Development Act of 1974 (PL93-251, Title 1, Sec. 10).

As a federal measure it is required that certain cultural resource management studies be undertaken under the authority of The National Environmental Policy Act of 1969, The National Historic Preservation Act of 1966, as amended, Executive Order 11593, and Corps of Engineers regulations for the Identification and Administration of Cultural Resources (33 CFR Part 305).

To comply with these various statutes and regulations it is necessary to (1) determine the cultural resource base of the project area; (2) assess the impact of the project on these resources; and (3) determine the significance of the identified cultural values. If prehistoric or historic sites are declared eligible for nomination to the National Register of Historic Places, an acceptable mitigation plan must be developed. Implementation of the mitigation plan would then be authorized under the authority of the Archeological and Historic Preservation Act of 1974.

The Arkansas Archeological Survey, under contract with the U.S. Army Corps of Engineers has assisted the Little Rock District in accomplishing above points (1) through (3). Operating under contract DACW 03-78-M-0427, an archeological survey was conducted in 1978 to begin the inventory of the cultural resources (Martin and Jones 1978). The 1979 investigations discussed in the present report were conducted under contract DACW 03-79-C-0056. This report completes the inventory and assessment phase of the project and presents a mitigation plan for future action.

II. Project Objectives

There were three primary objectives of the 1979 phase of the project as outlined in the Scope of Services:

1) The survey of legally accessible lands not investigated in 1978 which had environmental characteristics presenting a high probability for cultural resources (see Martin and Jones 1978 and Appendix A, this report); in addition a survey was required of the routes of the proposed water pipeline transmission corridor and the Highway 92 realignment.

2) The testing for significance and eligibility of 16 archeological sites, identified during the 1978 field season (see Martin and Jones 1978), as well as similar testing of sites recorded during the 1979 phase of work.

3) The development of a plan of mitigation for any cultural resources deemed eligible for nomination to the National Register of Historic Places.

III. Survey Areas and Constraints on Field Project

The major part of survey and testing carried out during this second season of fieldwork was conducted between June 15 and August 12, 1979, under the direction of Lawrence G. Santeford, assisted by William A. Martin.

Since access was denied temporarily to three agricultural areas in private ownership until after crops were harvested, fieldwork had to be suspended in August. Permission was granted in the fall for the testing of sites in these areas. The testing phase was completed during November, 1979.

In addition, during this November work, approximately 4 miles of realigned sections of the proposed water transmission pipeline corridor were examined at the request of the Corps of Engineers. These sections of the proposed pipeline corridor were relocated closer to the terrace west of Cypress Creek.

Pipeline survey. The proposed water pipeline transmission corridor will parallel the Cypress Creek and Cadron Creek channels.

Access permission was denied to Survey personnel by two property owners for survey of approximately 1.2 miles of the pipeline transmission corridor in the south part of Section 17 and in Section 20 (Menifee, Arkansas 7.5' USGS Quadrangle map). Most of the land in the area where survey permission was denied is approximately 285 feet above mean sea level. Due to the absence of sites at this elevation in other parts of the floodplain, it is probable that environmental conditions such as flooding were not conducive for prehistoric settlement; there is minimal likelihood that sites would be found in this area.

Highway relocation. State Highway 92 now passes through part of the project area and requires relocation east of the proposed reservoir boundaries. The new highway route would be approximately 4 miles long, with an approximate width of 100 feet. Property owners granted permission to examine the total length of the proposed highway route.

Reservoir and spillway survey. During the 1978 field season, an archeological survey was conducted within the proposed reservoir boundaries. Details of the extent of survey and the general conditions of the terrain are discussed in that report (Martin and Jones 1978). Additional survey plus subsurface testing were recommended and were carried out during the summer of 1979.

During the 1978 and 1979 field seasons, local residents informed the archeologists of the approximate locations of several historic Euro-American farm sites within the proposed reservoir boundaries. These locations were surveyed and when sites were observed they were recorded. Seven of the historic sites were test excavated during the 1979 field season.

A limited service spillway, approximately 235 feet long, will be constructed in the right abutment of the reservoir. A 350 acre fee acquisition area will contain the spillway and several access roads. This area was also surveyed.

IV. Methodology

The methods of survey and testing varied due to a number of factors, including (1) the condition of the land (i.e., ground cover; extent of artificial disturbance such as terracing, roadbuilding, etc., flood conditions of the area during the survey); (2) the specific instructions of the property owner concerning areas to be avoided until later dates, precautions to be followed to insure the safety of livestock, etc., and (3) the degree to which cultural resources, both prehistoric and historic, were preserved and which could have a high potential for the retrieval of significant information.

For the survey aspect of the project, two techniques were employed. Pedestrian survey was used in areas of good visibility, such as in cultivated fields. Pedestrian survey augmented by shovel testing was used in areas of obscured ground visibility, such as pasture land or woods. The more dense the ground cover, the more intense the interval of the shovel tests. Once a site was located it was surface collected and thoroughly documented.

Generally the preliminary subsurface investigation at a site involved shovel testing the entire site area unless the area was totally in cultivation. This was done to establish site boundaries. Such shovel testing was achieved by: (1) random testing; (2) transects across the site area with shovel tests dug at set intervals; or (3) the establishment of a grid with shovel tests dug at the intersections of grid lines. Generally

a depth of 12 inches was sufficient for shovel testing on most sites, since there was minimal development of any soil above the sterile clay levels. In those instances where deposition of alluvial materials created the potential of buried subsurface cultural material, deeper testing was conducted in order to assess the actual conditions.

Where test excavations were warranted, 1 m^2 test units or 1 m by 2 m test units were excavated at the site. These units were dug in areas where it appeared that maximum information on the subsurface nature of the site could be obtained. Factors controlling the placement of these units included: (1) areas with a higher potential of subsurface artifact density based on the results of shovel testing and/or surface survey; (2) physiographic features (i.e., slope, wet areas, rocks, etc.) that would have effectively controlled where occupation would have been most feasible; or (3) information provided by local informants, in the case of historic log houses, concerning where specific rooms or yard area were located. The ground surface was generally cleared by combined shovel scraping and troweling once the limits of the unit were defined by staking. Whenever possible, levels were excavated by observation of natural or cultural stratigraphy, although in most instances arbitrary 10 cm levels were necessarily employed. These levels were excavated by combined shovel scraping and troweling. Levels were carefully examined to determine if subsurface features (i.e. postmolds, hearths, foundation stones, pits, etc.) could be observed. The distributions of artifacts were also recorded. Artifacts and natural materials (i.e., nut shell, mollusk shel bone, wood fragments) were collected whenever these were observed during shovel scraping or troweling. All soil removed from the units was screened through 1/4 inch mesh in order to insure retrieval of smaller cultural and natural materials. Upon completion of a unit, wall profiles were drawn and the unit was photographed. Both black and white photographs and colored slides were taken. It was standard procedure to extend at least one test unit below an apparently sterile level to determine if there were any additional cultural deposits. Upon completion, all units were refilled with the soil removed during the excavation procedures.

V. Results and Potential Impact

A total of 82 recorded sites are discussed in this report, including three sites outside the actual project boundaries.

During the 1978 field season, a total of 26 project area sites were documented. Of these sites, 15 were wholly or primarily prehistoric and 11 sites were historic. During the 1979 field season, an additional 53 sites were located. Of this total, 35 sites were prehistoric and 18 were historic. Twenty-four sites which were located during both field surveys were tested in 1979. Seventeen of these sites were prehistoric and seven were historic.

VI. Recommendations

Four of the recorded sites were, in the opinion of the Arkansas Archeological Survey, eligible for nomination to the National Register of Historic Places. Documentation supporting this opinion was submitted to the U.S. Army Corps of Engineers, Little Rock District on December 20, 1979. The State Historic Preservation Office and Keeper of the National Register have concurred with this determination of eligibility. The sites are: (1) the Temper site (3CN57), a prehistoric site on the floodplain east of the Cypress Creek contains a deep midden (refuse deposits) pottery sherds, and lithic tools which suggest possible Archaic and Woodland period occupation; (2) the Don Scroggins site (3CN64), a site on the terrace west of Cypress Creek containing pottery sherds, lithics, and bone in a midden as well as possible remains of a prehistoric structure; (3) the Wilder Log House site (3CN92), a historic site first occupied in the 1850s by a Euro-American settler family and later by a Black-American sharecropper family until 1944; and (4) the W.S. Alexander site (3CN117), a Coles Creek or Fourche Maline-related (ca. 700-1000 A.D.) site on the floodplain west of Cypress Creek, containing lithics, animal bone, nut shell, mollusk shells, and decorated and undecorated pottery sherds in midden deposits.

A mitigation plan was prepared recommending extensive excavations at each of these sites, coordinated with a program of floral/faunal analysis, ceramic analysis, lithic analysis, and other analytic methods directed toward maximum retrieval of information which can be employed to gain significant insights into the cultural behavior of the early inhabitants of central Arkansas. Documentation including a plan for mitigation through data recovery was submitted to the U.S. Army Corps of Engineers, Little Rock District, on December 24, 1979. The Advisory Council on Historic Preservation has reviewed this document and concurred with the determination of no adverse affect (letter dated January 10, 1980).

VII. Repository Arrangements

Artifacts recovered from the sites and site records (e.g. field maps, level and profile forms, catalog records, etc.) will be curated by the Arkansas Archeological Survey. Permanent records are on file with the Survey Registrar at the University of Arkansas, Fayetteville. Copies are filed with the Station Archeologist at Arkansas Tech University (Russellville). The artifacts from the sites will be curated at Arkansas Tech (Russellville) by the Survey Station Archeologist upon completion of the project.

Acknowledgments

Upon the near completion of a project, it is impossible to assess the number of persons that should be recognized. While minor discussions in hallways or offices during the course of research would appear insignificant, these casual periods of interaction often trigger new directions for research and provide information on significant sources that would have been overlooked. There is no way to recognize all of the persons who have contributed to this report, and apologies are offered to those who have not been mentioned by name. The significance of their contributions is not diminished in any way. Likewise, the interpretations presented by the authors of the chapters included here are their own, and do not necessarily reflect those of the persons mentioned within the report.

The archeological survey and testing program conducted in the Conway Water Supply project area was carried out in accordance with a contract between the Arkansas Archeological Survey and the U.S. Army Corps of Engineers, Little Rock. A number of Corps of Engineers personnel provided additional time and assistance so that archeologists received maps and other information to insure that the retrieval of archeological information was successful. Mark Hubbert (Environmental Division) and Max Witkind (Archeologist, Environmental Division) were particularly attentive to the project and our needs. Other personnel of the Little Rock District willingly provided supplemental information and assessed their internal resources to provide archeologists with information that would be pertinent to research efforts.

Excavations and long days of survey could not have been accomplished without dedicated field personnel. Personnel for the June-August 1979 season included Paul Baumann, Edward Campbell, Diane Carpenter, Jerry Hilliard, Scott Jones and John White. In November 1979, Survey personnel had to complete testing of a number of sites. Personnel participating in the project during that period included Mark Hackbarth, Joseph Martin,

and David C. Quin. Volunteer assistance during the summer and fall work was offered by Lisa Hopkins (graduate student, University of Arkansas, Fayetteville) and Lewis Miller and Donald Scroggins (property owners in the project area).

Phyllis Clancy (ceramic analysis), Charles Hoffman (lithic analysis) Peter Mires, Anne-Marie Mires, Richard E. Berg, Richard P. Kandare, Edward Campbell and John White provided laboratory support under the direction of James Duncan. During research and write up, Dr. Michael P. Hoffman (Associate Professor of Anthropology, University of Arkansas), Dr. Christipher Carr (Assistant Professor of Anthropology, University of Arkansas), Dr. Fredrick Limp (Assistant Director, Arkansas Archeological Survey), and Dr. Gordon D. Morgan (Professor of Sociology, University of Arkansas) provided valuable contributions.

Personnel of the Arkansas Archeological Survey who provided assistance during the various stages of report preparation included Dr. Leslie Stewart-Abernathy (Station Archeologist, Pine Bluff), Roy Cochran (Research Assistant, Jonesboro), Beverly Watkins (Research Assistant, Camden), John House (Research Assistant, Pine Bluff), Dr. Martha Rolingson (Station Archeologist, Toltec), Dr. Daniel Wolfman (Station Archeologist, Russellville), Robert Ray (Research Assistant, Russellville), Pam Ashford (photographic processing), Jane Kellett (graphics), Mary Lynn Kennedy (production), Cathy Moore-Jansen and Carolyn Cox (Registrars), Peer Moore-Jansen and Ross Dinwiddie (Automated Management of Archeological Site Data in Arkansas), Susan Houston (computer input operator), Peggy Winkelman (key punching), Mary Printup (editing), and Frank Rackerby (contract administration and review. In addition, Dr. Leslie Stewart-Abernathy, Dr. Daniel Wolfman, Robert Ray and Norma Hoffrichter and Jerry Hilliard (Compliance office) reviewed the report during the period of preparation. David Quin and Alice Ashenden-Duncan devoted many extra hours when the site evaluations were being prepared. The manuscript was typed by Gwen Hamilton, Louise Mullins, and Jeannie Wyant.

Many persons living in the project area provided valuable services and information. In addition to telling Survey personnel where prehistoric and historic sites were located and providing access for testing, many of these persons provided information on historic sites which filled many gaps in the historical record. These persons include, in alphabetical order, Mr. and Mrs. W. S. Alexander, J. D. Flake, Mr. and Mrs. Wattie Griggs, Lizzie Griswell, Mr. and Mrs. Barry Henson, Donald Scroggins, and Mr. and Mrs. Virgil Scroggins. Col. Paul Harrison, Mrs. R. N. White, R. A. Wilder, and Freeman McKindra, descendants of early settlers in the project area, no longer reside there, but they willingly provided valuable information to Survey personnel. Assistance was also provided by the personnel of the Morrilton Public Library and the Conway County Soil Conservation Service office in Morrilton.

Chapter 1

Introduction to the Survey and Testing Phase of the Conway Water Supply Archeological Project

by

William A. Martin

and

Lawrence Gene Santeford

The Conway Water Supply project is sponsored by the U.S. Army Corps of Engineers, Little Rock District. It will involve the construction of a dam and spillway, a water transmission pipeline, and the relocation of a portion of State Highway 92. The dam and spillway will be constructed at mile 6.7 on Cypress Creek in Conway County, Arkansas, about 5 miles (8 km) north of Plumerville and 1 mile (1.6 km) southwest of Springfield. The resulting reservoir will serve the city of Conway 14 miles (22.5 km) to the southeast in Faulkner County, Arkansas (Figure 1).

The reservoir will have approximately 13 miles (20.8 km) of shoreline and an average depth of 20.2 feet (6.2 m). The reservoir and its surrounding buffer zone will cover an area of nearly 2,450 acres (991.5 ha). The spillway fee acquisition area will cover nearly 350 acres (141.7 ha) including the area of spillway construction and downstream floodplain areas that will be affected by spillway runoff during periods of heavy rainfall. A 36 inch ductile iron or reinforced concrete water transmission pipeline will be laid between the dam and the existing water treatment plant west of the city of Conway. The pipeline transmission corridor will be about 11.3 miles (18.2 km) long and have a right-of-way 50 feet (15.2 m) wide. State Highway 92, which currently passes through the center of the proposed reservoir area, will be relocated along the east side of the reservoir. The new route will be approximately 4.2 miles (6.7 km) long with a right-of-way 100 feet (31 m) wide.

In 1978, the Arkansas Archeological Survey contracted with the U.S. Army Corps of Engineers, Little Rock District, to conduct an intensive archeological and historical survey of the proposed reservoir and buffer zone areas. This work was conducted in the spring of 1978 and a draft report was submitted in August, 1978 (Martin and Jones 1978). Sixteen sites were recommended for additional investigation to determine their significance and eligibility for nomination to the National Register of Historic Places. In April 1979, another contract was signed that

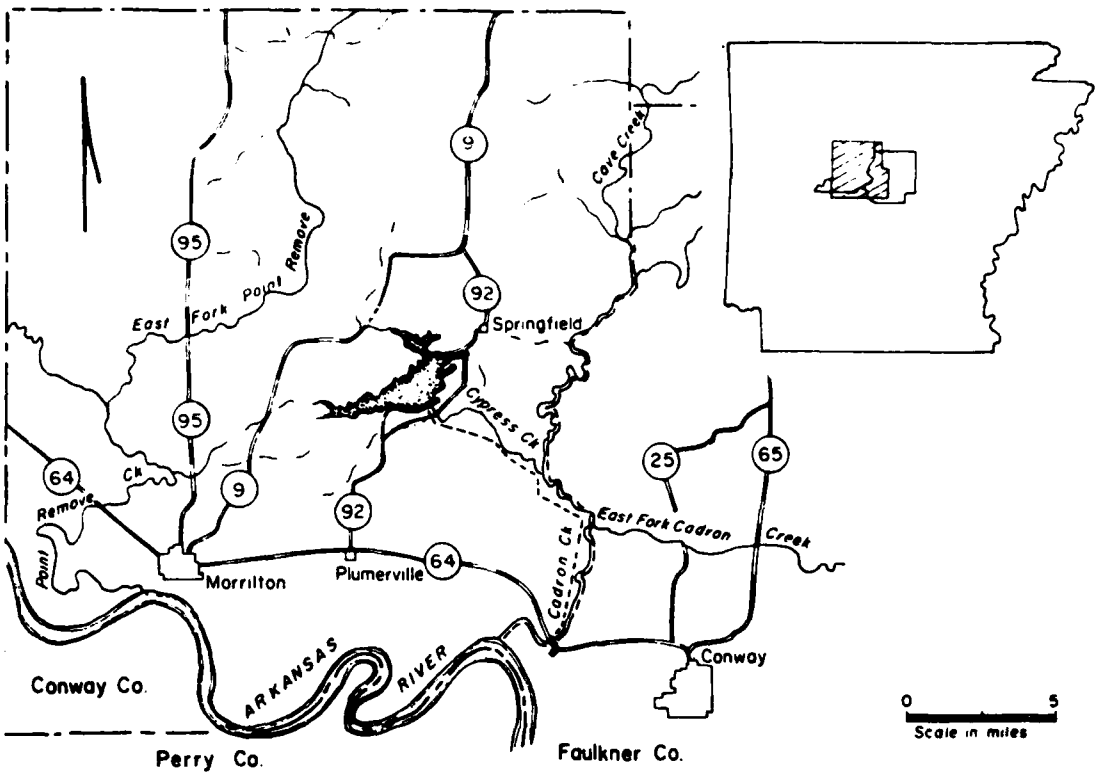

Figure 1. Location of the proposed Conway Water Supply project

required the Arkansas Archeological Survey to conduct additional work on the sites recommended for testing and also called for an intensive archeological and historical survey of the spillway fee acquisition area, the pipeline transmission corridor, and the State Highway 92 realignment. In addition, the contract stipulated that testing be conducted on any sites discovered within these impact zones which required additional work to determine their significance.

Most of the archeological survey and testing was conducted between June 15 and August 12, 1979. Three landowners requested that sites located on their properties be tested after the crops had been harvested in the fall. Personnel returned to the field to complete this work during a one week period in November 1979. At that time, two segments of pipeline trasmission corridor that had been realigned in the interim were surveyed. Laboratory analysis of the artifacts collected during the fieldwork was conducted between June and December 1979.

In December 1979, the Corps of Engineers requested a preliminary report on the evaluation of the sites recorded in the project area along

with completed forms for sites considered to be eligible for nomination to the National Register. A document entitled "A Summary of the Evaluations and Recommendations for Sites in the Conway Water Supply Project Area, Conway County, Arkansas" was submitted on December 15, 1979. Documentation supporting a request for eligiblity determination from the National Register for four sites was submitted to the Corps of Engineers at that time.

The draft of this report was begun in December 1979 and work continued through March 1980. The completed draft report was submitted to the Little Rock District of the U.S. Army Corps of Engineers on April 1, 1980. Site location maps were also submitted to the Corps of Engineers at that time.

All artifacts collected during the course of the Conway Water Supply archeological project will be curated by the Arkansas Archeological Survey Station at Arkansas Tech University in Russellville, Arkansas. All written records accumulated during the project will be on file at the Arkansas Archeological Survey Coordinating Office in Fayetteville, Arkansas. Duplicates of these records will be on file at the Russellville Station.

GOALS OF THE PROJECT

Cultural resources, which include prehistoric and historic archeological sites, artifacts, features, historical records, modern communities, and paleontological specimens, are nonrenewable resources worthy of conservation (Schiffer and Gumerman 1977). Federal legislation has been enacted in recent years to preserve and protect these irreplaceable resources for the benefit of present and future generations (Butler 1979: 27). The Conway Water Supply archeological project was conducted within this conservation ethic. The investigations were directed toward providing the U.S. Army Corps of Engineers with management information and recommendations for use in conserving the cultural resources in their area of planned construction.

The contractual obligations of the Arkansas Archeological Survey, as outlined in the Scope of Services (Appendix A), were

1. An intensive survey must be conducted on proposed road realignment, pipeline corridor, and previously unsurveyed portions of the proposed reservoir shown to have a high probability for the presence of sites.

2. Sixteen sites recorded during the 1978 survey and all sites recorded during the 1979 survey which require additional work to determine their significance and eligibility for nomination to the National Register must be tested.

3. An estimate of the kinds of cultural resources present and of regional distribution relationships must be made.

4. An estimate of the effects of loss of all or parts of the resource base upon future investigations must be presented.

5. A plan to mitigate adverse impacts upon significant cultural resources must be designed.

6. Previous investigations must be summarized in the report.

It was possible to fulfill these obligations in a manner consistent with the goals of cultural resource conservation by developing a research design.

RESEARCH DESIGN

Schiffer and Gumerman (1977) note that research oriented conservation archeology has been criticized by some as an unjustified expenditure of contract sponsors' funds because an archeologist under contract with a federal agency or private firm should only provide the sponsor with management information (purely descriptive information). This argument assumes that archeological research is somehow extraneous and unnecessary for management decisions concerning the future of the cultural resource base, overlooking the fact that sound management decisions can only be made on the basis of scientific criteria which result from planned research. According to Schiffer and Gumerman

> In short, the information that the sponsor must obtain in order to make management decisions depends on a very high level of archeological expertise applied to problem-oriented research. Unless the fulfillment of contract requirements is approached from a research perspective, one runs the serious risk of failing to meet the sponsor's needs. (1977:80)

The critical role played by the research design in archeological investigations has been well documented (cf. Binford 1964). The explicit formulation of a problem orientation and the organization of a structured plan of data recovery and analysis which characterize the research design take on, perhaps, an even greater meaning in cultural resource studies (cf. Goodyear, Raab and Klinger 1978). Research designs involve the recognition of scientific problems and the formulation and testing of specific hypotheses as possible solutions to these problems (Chenhall 1975). Planning serves to eliminate haphazard or inefficient field procedures, and establishes scientific criteria with which to assess the significance of archeological sites. In short, research designs provide a basis for efficient and responsible management of cultural resources.

Little problem-oriented research has been conducted within the Arkansas River Valley in central Arkansas. The research design for the original survey of the proposed Conway Water Supply reservoir (Martin and Jones 1978) addressed some archeological problems, but no firm conclusions were reached. The sketchy nature of archeological data retrieved during the surface survey allowed only limited suggestions to be made about the formation of the cultural resource base. These suggestions were intended to serve as a basis for further work and much of the 1979 research design is based on the results of the 1978 research.

Problem Orientation--Prehistoric Sites

Settlement patterns, cultural affiliation of sites, functional variability among sites, and lithic resource procurement were investigated to a limited degree during the 1978 survey (Martin and Jones 1978). All of these problems were investigated more fully using survey data from the 1979 research. In addition, excavated data from three sites provided information useful for the study of prehistoric subsistence strategies.

Problems investigated for prehistoric sites during the 1979 research included the following.

1. How were sites distributed across the landscape and what criteria appear to have influenced the selection of site locations?

The results of the 1978 research indicated that certain environmental parameters (e.g., topography, soils, distance to water, etc.) were considered by both prehistoric and historic populations during the process of selection of site locations. As expected, some environmental variables appeared to have been more important than others in influencing the decisionmaking process. During the 1979 research, it was hypothesized that sites were chosen on the basis of proximity to exploitable resources, that some habitation sites were situated along topographic features which were free from the danger of flooding, whereas others were situated on the floodplain and occupied during the dryer months, and that areas with gentle slopes and well drained soils were preferred areas for site location. In addition, the distribution of the historic sites was compared and contrasted with that of the prehistoric sites in order to address the hypothesis that different settlement strategies were used by prehistoric and historic populations in the Conway Water Supply area.

2. When was the project area first occupied? Was it occupied continuously up to the present, or was it abandoned during particular prehistoric cultural periods?

Information obtained from analysis of the artifacts collected during the 1978 survey suggested that sites were occupied primarily during the Archaic period. Some of these sites yielded projectile point styles which may have persisted from the Archaic period through the Woodland

period; thus, some sites may have been occupied during the latter period. However, no evidence of occupation during the earliest period, the Paleo-Indian period, was found. Only one site yielded projectile points manufactured during the late prehistoric Mississippian period (Martin and Jones 1978). During the 1979 research, it was hypothesized that the project area was occupied more or less continuously from the Paleo-Indian period through the Historic period. Survey data from the 1979 fieldwork provided additional information necessary for testing this hypothesis.

3. Were similar activities carried out at all prehistoric sites or were different specialized activities carried out at some sites, but not at others?

Differences in artifact assemblages, artifact densities, and site sizes observed during the 1978 survey suggested that functional variability existed among sites. Large sites which contained multiple tool kits used for a variety of domestic activities were classified as base camps. In contrast, smaller sites which contained tools used for one or more specialized procurement activities were designated as specialized activity sites. It was hypothesized for the 1979 research that these same differences and similarities with respect to site function would be observed among sites found along the pipeline corridor, road realignment, and spillway areas.

4. What kinds of stone were used as raw materials for tool manufacture and where were these raw materials obtained?

Data from the 1978 survey indicated that sandstone, chert, and novaculite were the three principal kinds of stone used to manufacture artifacts in the reservoir area. Nutting stones, manos, metates, and abraders were made from sandstone which occurs abundantly along hillslopes within the project area. Artifacts used for cutting or scraping, such as projectile points, knives, adzes, etc., were made from chert and novaculite, raw materials which occur naturally at considerable distances from the project area. It was hypothesized that approximately equal amounts of chert and novaculite should be present on most sites, since the project area is equidistant from sources of each material. It was also hypothesized that strategies for obtaining raw materials varied over time as indicated by fluctuation of amounts of each material on sites of different time periods.

5. What floral and faunal species were exploited by the prehistoric inhabitants of the project area for food and clothing?

No data was obtained during the 1978 survey which could address this problem because such data can only be retrieved by means of excavation. The 1979 excavations yielded middens with well preserved bones and charred floral remains suitable for addressing problems related to subsistence

strategies. However, only three sites yielded such data. Therefore it was impossible to make more than limited statements about subsistence patterns in the area.

Problem Orientation--Historic Sites

Martin and Jones (1978) provided a preliminary introduction to the history of the Cypress Creek basin which revealed that the people in the area had a rich heritage. Since many aspects of historic cultural relationships and development are not recorded in written sources, information from the archeological record (e.g., artifacts and features) can play an important role in understanding the historic occupation of an area. A second important unwritten resource is information from the descendants of some of the early settlers who still reside in the area. Use of this oral information not only enhances the archeological record, but it also involves the modern community in archeological work and preservation of historical information that would otherwise be lost. No single source can be accepted uncritically whether it is written, archeological, or oral recollection. Our understanding of the past is greatly enriched when all of these sources, each with its strengths and weaknesses, are considered.

The problems addressed with respect to historic sites in the Cypress Creek basin include the following.

1. Did log house construction techniques in the Cypress Creek basin conform to the patterns observed in other parts of eastern and southern United States?

Several techniques for the construction of log structures have been recognized throughout the eastern and southern United States. The selection of particular construction techniques appears to have been linked to several factors including the intended function of the structure, the geographic origin of the builder, and the technical and financial resources available to the builder. The 1979 investigations were designed to examine similarities and differences between the log architecture present in the vicinity of the project area and that found in other parts of the country. Structural evidence and informant descriptions provided the data base for the study of this problem.

2. Were structures oriented toward cultural features, such as roads, or toward natural features, such as rivers or the cardinal directions?

Hutslar (1977) and Jordan (1978) believe that the cardinal directions influenced the orientation of log houses more than any other single factor. Archeological evidence, supplemented by oral information, was used to study this problem within the Conway project area.

3. How accurately can periods of site occupation be determined on the basis of examination of artifacts recovered from historic sites?

Recent research conducted in the Ozarks of southern Missouri has shown that inventories of goods found within nineteenth century log houses often reveal a paucity of material (Price and Price 1978). The 1979 investigations examined the historic artifact assemblages in order to assess the kinds of materials present on sites to determine whether or not the pattern observed in Missouri also occurred in the Conway project area. The age of artifacts, as determined by laboratory analysis and identification by a historic archeologist, was compared to the age of the structures from which they were recovered to determine the reliability of historic artifacts as indicators of periods of site occupation. The actual age of historic sites was obtained from written records and from information obtained during the informant interviews.

4. What level of communication was maintained with outside communities by the settlers of the Cypress Creek basin? Were settlers restricted with respect to resource acquisition?

Zelinsky (1958) maintains that residency in log houses implied isolation from contact with outside sources. Analysis of the artifacts from log house sites in the project area, augmented by oral and written information, was used to assess changing patterns of cultural interrelationships and communication networks.

5. Does the distribution of artifacts in a historic site reflect any patterns regarding the size of artifacts, types of artifacts, or proposed function of areas within sites (e.g., under the house, in the yard)?

South (1979) has suggested that the size of artifacts will vary with the part of the site where they were deposited. Archeological work on historic sites in the Conway project area attempted to determine if this pattern was present in the project area. Information was obtained on the differential distribution patterns for different classes of artifacts.

6. Were all settlers in the project area dependent on subsistence farming or were there variations in socioeconomic patterns (e.g., single family farms, sharecropper units)?

In most instances, compilers of written information do not provide indications of the variations in rural traditional agrarian cultures. Oral information may be incomplete and only provide superficial data. Research was directed toward the study of subsistence, economic and other patterns of culture and environment by using the artifacts collected from the historic sites.

Survey Goals

Survey methodology was designed to minimize the chances of overlooking archeological sites in the project area. The survey methods employed were pedestrian survey and shovel test survey.

The four goals of the 1979 survey were the following.

1. Recording accurately and efficiently the locations of archeological sites

This was accomplished by inspecting the ground surface for the presence of artifacts (by means of shovel tests in heavily vegetated areas) and measuring the area extent of the artifact scatter. Sites were plotted on USGS 7.5' topographic maps and on larger scale (1:200) topographic maps supplied by the U.S. Army Corps of Engineers. Site forms were completed and are on file with the Arkansas Archeological Survey Registrar.

2. Assessment of project impacts to sites

This was accomplished by examining the location of each site with respect to the proposed location of construction and reservoir areas. Sites to be affected by construction activities or inundation were easily determined in this manner.

3. Assessment of cultural affiliation and time of site occupation

This was accomplished through analysis of stone projectile points, ceramics, and other artifact collected from the sites. In the case of historic sites, it was also possible to assess written and oral information in addition to identifying the artifacts.

4. Assessment of site distributions for settlement pattern analysis

Environmental data were collected for each site using eight variables. Site distributions were compared with a random distribution of points for which the same environmental data were recorded in order to measure clustering of sites with respect to environmental variables. Prehistoric and historic settlement patterns were also compared and contrasted. The importance of each variable to the decisionmaking processes involved in the choice of site location was considered.

Testing Goals

Nine prehistoric and seven historic sites located during the 1978 field season had been recommended for additional work (Martin and Jones 1978). These sites included

Prehistoric Sites	Historic Sites
Mazurek site, 3CN33	Bell-Norwood House site, 3CN44
Rotten Melon site, 3CN36	McKindra House site, 3CN47
Hensley site, 3CN38	Twentieth Century House site, 3CN51
Dam site, 3CN42	Springhouse site, 3CN55
Quartz site, 3CN43	Stell Lodging House site, 3CN58
Prickly site, 3CN45	Wilder Cemetery, 3CN59
Pear site, 3CN46	Stell House site, 3CN62 (mistakenly recorded as 3CN63, Martin and Jones 1978)
Temper site, 3CN57	
Don Scroggins site, 3CN64	

Sites discovered during the 1979 survey that appeared to warrant further investigation were also tested to obtain information necessary to evaluate their eligibility for nomination to the National Register of Historic Places. Eight prehistoric and four historic sites required testing.

Prehistoric Sites	Historic Sites
Terrace Edge site, 3CN79	Wilder Log House site, 3CN92
Brinkley site, 3CN80	Weatherly House site, 3CN105
Trafford site, 3CN82	Hammond House site, 3CN106
Plow Zone site, 3CN83	Ledbetter House site, 3CN108
Roadcut site, 3CN84	
Gregory Dam site, 3CN97	
Raspberry site, 3CN107	
W. S. Alexander site, 3CN117	

The four principal goals for the 1979 testing phase were the following.

1. Determination of the degree of subsurface disturbance to sites

This was accomplished through shovel testing and/or the excavation of 1 m^2 or 1 m x 2 m test units. The shovel tests were usually dug along transects across the site with the tests dug at regular intervals. The excavation of test units were excavated by shovel scraping and hand troweling.

2. Identification of the period or time of site occupation

This was accomplished through the analysis of stone projectile points, ceramics and other artifacts recovered from the sites. In the case of historic sites, it was also possible to use written or oral information.

3. Collection of data that could be used to address the research problems

Artifacts recovered from the tested sites were analyzed, written documentation was reviewed, and oral information was collected whenever

possible in order to provide a basis for research on the cultures that occupied the area.

4. Assessment of the sites to determine their eligibility for inclusion on the National Register of Historic Places

Three major criteria were used to determine if the sites tested might be eligible for nomination to the National Register. These criteria were the degree of disturbance to the site, preservation of features, and the site's potential to provide important information on prehistoric and historic cultures in the area.

ORGANIZATION OF THE REPORT

Chapters 2, 3, and 4 of this report contain background information for the Conway Water Supply archeological project. A discussion of the natural environment is presented in Chapter 2. This information was important for the development of the research design and for the interpretation of settlement and community patterns. A summary of previous archeological work conducted in the vicinity of the Conway project area is presented in Chapter 3. This information was necessary for planning the research design and survey strategy.

A summary of the regional culture history of the prehistoric periods for the Arkansas River Valley is also included in Chapter 3. This provided a basis for the comparison of archeological material recovered from the sites in the Conway project area with that recovered from other areas. Chapter 4, a detailed account of the history of the settlement in the area during 1800s, contributed to the formation of the problem orientation used for the study of historic sites and the interpretation of historic material recovered from these sites.

The methodological background and procedures used to conduct the 1979 survey and testing program are discussed in Chapter 5. The strengths and weaknesses of the approaches used and the general results of the survey and testing are presented. The specific methods, site descriptions, historic documentation, resident information, cultural affiliation and evaluation for each site are contained in Appendixes B, C, and D.

Chapter 6 includes a discussion of the research design and problem orientation used for the study of the prehistoric sites. Specific assumptions made by the authors are stated, hypotheses and test implications are proposed for each of the problems under study, and the results of the study are interpreted and hypotheses reexamined. In Chapter 7, data on historic sites are used to address problems of community patterns, the relationships in the architecture of the Conway area with other regions of the country, and other proposed hypotheses.

The conclusions of the investigations and recommendations for both prehistoric and historic sites are presented in Chapter 8. The mitigation plan for sites 3CN57, 3CN64, 3CN92, and 3CN117, which were recommended for nomination to the National Register, is outlined in Chapter 9.

Chapter 2

Environmental Perspectives of the Conway Water Supply Project Area

by

Lawrence Gene Santeford

INTRODUCTION

People function in relation to their environments. That is, the effects of climate and local habitat influence human activities. DeFleur, D'Antonio, and DeFleur (1971), for example, state that the physical environment cannot itself cause social or cultural change to occur but that it provides conditions conducive to change.

> History provides countless examples of how the physical environment can stimulate social and cultural change. Natural disasters such as floods, droughts, and earthquakes have periodically disrupted life for large numbers of people, forcing them to abandon not only their homes but their traditional patterns of life. Throughout history, geography has played a part in shaping boundary lines and political alliances. Climate has often turned the balance of war. And the distribution of natural resources has given direction to patterns of settlement and conquest. (DeFleur et al. 1971: 178)

Evans (1978:2) reports a set of fairly well-defined parameters into which the environment can be broken down. These include climate, geology, soil, vegetation, fauna, and diseases. While each of these factors can be discussed individually, they are all integrated and can be considered in terms of spatial and temporal variability. In addition, attention should be given to man's impact on the environment.

There are four major groups of interaction to bear in mind when considering relationships between man and environment.

1. parts of the environment exploited by man for food

2. parts of the environment exploited by man for other purposes, e.g., timber, hides, inorganic raw materials

3. parts of the environment not always directly exploited by man but affecting him, e.g., climate, vegetation, disease

4. parts of the environment not always exploited by or affecting man, but which are useful in working out the ancient environment, e.g., snails (Evans 1978:2-3)

In this chapter, attention is given to the current environmental conditions that prevail in the Conway project area. Some of these factors, such as raw materials like minerals and rocks, remain constant and provide insights into resources available to prehistoric communities. Other environmental factors are not as stable; assessment of current climate, hydrology, and vegetation may not be consistent with the environment influencing man in the region thousands of years ago. Subsequent work will be required for determination of changes in environmental factors through time.

CLIMATE

Climate affects man directly and indirectly through its influence on other factors such as fauna, vegetation, and soil (Evans 1978:3). It determines which areas of the earth's surface will be suitable for the cultivation of crops, and where specific types of vegetation that support mammalian and other fauna exploited by man for food, clothing, and housing can grow. By examining such factors as precipitation, temperature, seasonality, and length of the growing season, archeologists gain insights into some factors affecting settlement location, architecture, and tool manufacture.

The climate of the Cypress Creek area has not been uniformly like the present. Data suggest a climatic shift from warm-dry to warm-moist approximately 6000 years ago (Whiteford 1965:43). Current studies in the Missouri Ozarks are providing information on such shifts, but these studies cannot necessarily be applied to events within the Cypress Creek basin without more work in the area.

At the present time, rains in the area are usually of a frontal origin during the winter and early spring, resulting in rainfall for several days. Summer rains are short and are often marked by high intensity thunderstorms, which occasionally result in flooding in the area. During late spring and fall both types of rainfall are experienced. Rainfall annually averages 39 to 49 inches (100 to 125 cm) (Espenshade 1970:62).

Climate in the area ranges from humid to subhumid. The average annual temperature at present is 61-62 degrees F. (16 to 17 C.), although there is extreme daily and seasonal variation. During the long and warm summers, daily temperatures through July and August are normally 90 to 100 degrees F. (32 to 38 C.). The winters are normally mild and short, with temperatures in December and January normally in the 20 to 30 degrees F. (-7 to -1 C.) range. The average number of frost-free days in the area is 200 to 240 days per year (Espenshade 1970:63), so it is currently possible to grow maize, soybeans, hay, cotton, and sorghum.

GEOLOGY

On a local scale, topography is important. Evans (1978:6) stresses that mountain ranges, lakes, and river valleys provide variability in the environments and often determine the positioning of ecotones. In addition, the above factors are significant in the control of routes, the exploitation of resources, and communication.

The project area lies within the Arkansas River Valley subdivision of the Ouachita Mountains natural division of Arkansas (Figure 2). Foti (1978:18) observes that the Arkansas River Valley is not only a transitional subdivision between two mountain systems (the Ozarks and the Ouachitas), but is also a region in itself. The valley is comprised primarily of lowlands approximately 300 to 600 feet (91-183 m) above sea level but also has prominent ridges in excess of 2000 feet (610 m).

Eight major topographic features recognizable in the project area are defined in the report by Martin and Jones (1978:12) as primary alluvial flat (Figures 3 and 4), terrace edge, (Figure 4), point of terrace edge, terrace surface, hillslope-floodplain junction, (Figure 3), hillslope, ridgetop, and natural mounds. These areas are shown on the adjoining topographic maps in Figures 5a-b. Since these terms are employed in this report in a way consistent with the earlier report, the definitions are repeated here.

> The primary alluvial flat is the area of primary alluvial deposition between the normal stream edge and the first discernible terrace edge. A terrace edge is defined as an area in close proximity to the edge of an alluvial terrace. A point of terrace edge constitutes an area where the terrace edge juts out prominently onto the floodplain. Terrace surface includes all areas between recognized terrace edges or between a terrace edge and the hillslope-floodplain junction. An alluvial terrace is a stream terrace composed of unconsolidated alluvium produced by renewed downcutting of the floodplain by a rejuvenated stream or by the later covering of a terrace with alluvium. Hillslope indicates the sloping surface that forms a hillside, mountainside, or ridge side. Ridgetop is the uppermost surface atop a ridge, which in turn is defined as a

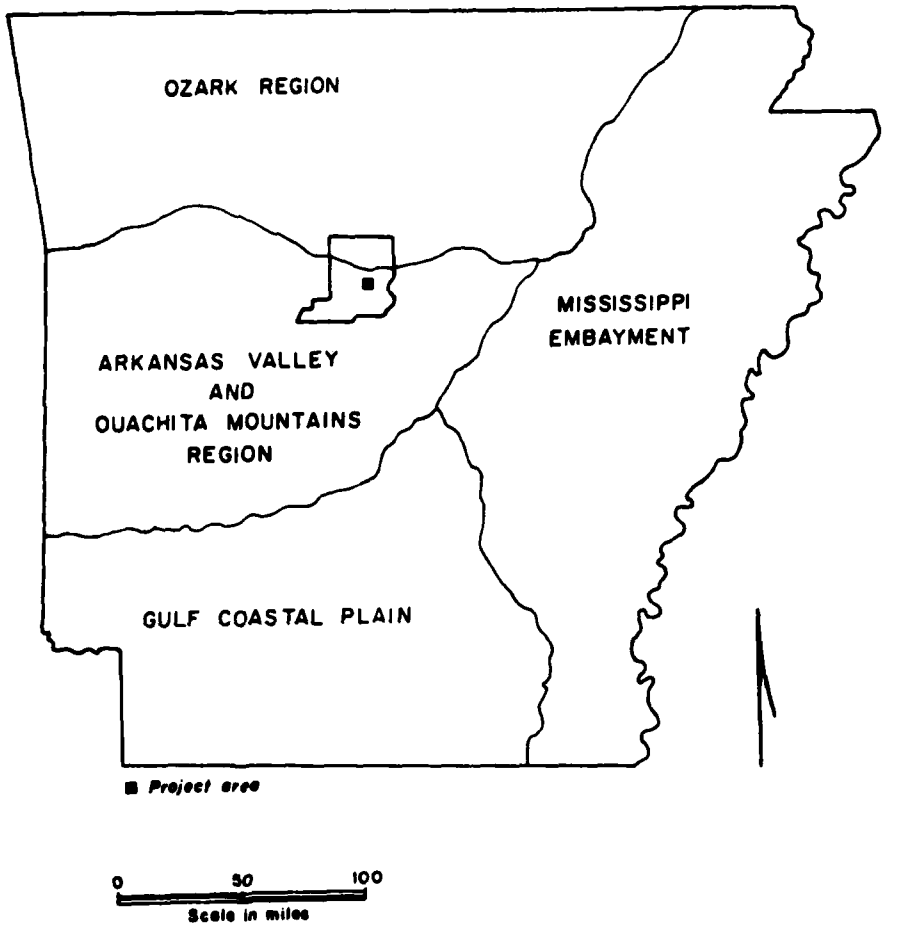

Figure 2. Location of the Conway Water Supply project in relation to the topographic regions of Arkansas

Figure 3. Primary alluvial flat in foreground and hillslope-floodplain junction in background, Ragsdale Mountain, Conway County, Arkansas (PR802425)

Figure 4. Primary alluvial flat in foreground with remnant erosional terrace in background, Conway County, Arkansas (PR802424)

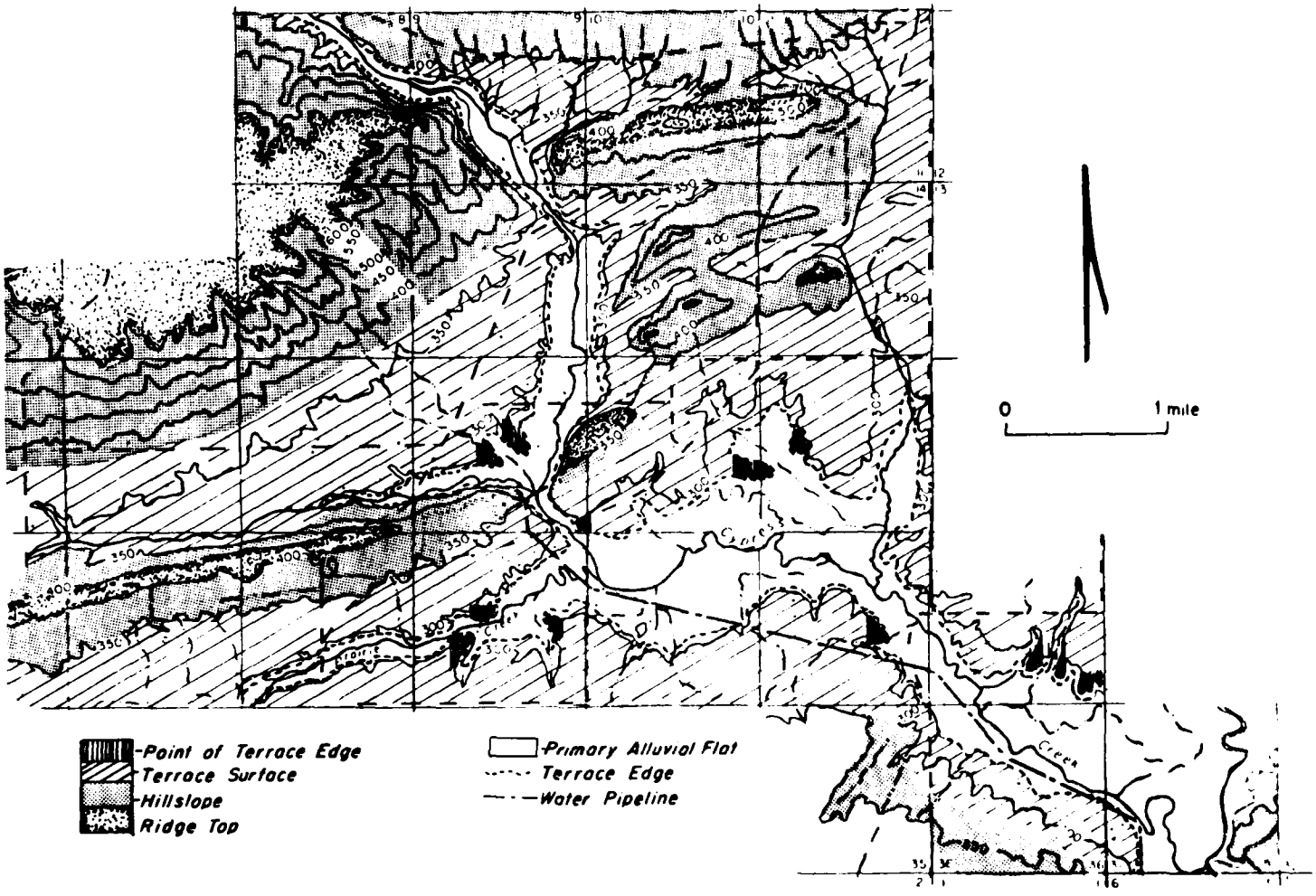

Figure 5a. Specific topographic features in the vicinity of the proposed Conway Water Supply project lake, spillway, highway relocation and upper part of the water pipeline transmission corridor

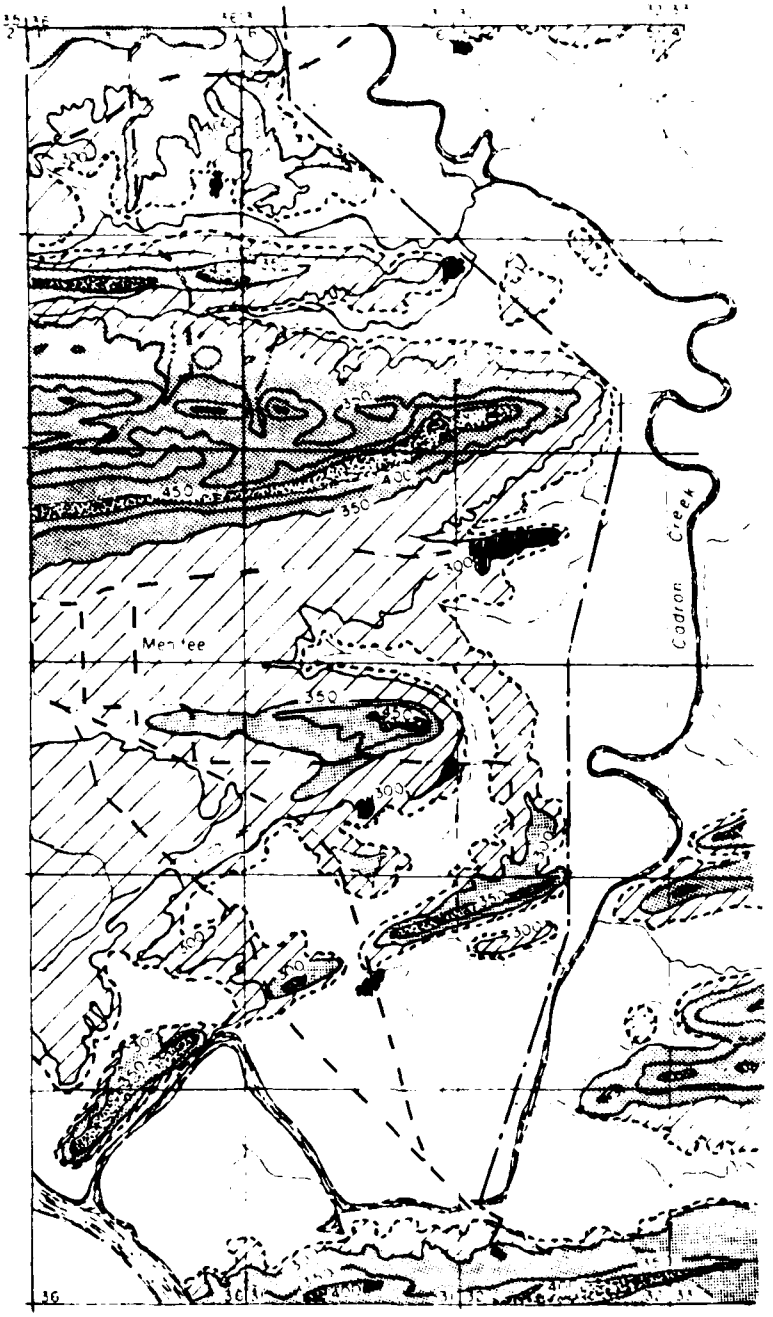

Figure 5b. Specific topographic features in the vicinity of the proposed Conway Water Supply project, lower part of the water pipeline transmission corridor

long narrow elevation, usually with steep sides, occurring either as an independent hill or as part of a larger mountain or hill. (Martin and Jones 1978:12)

Within the primary alluvial flat zone are found sloughs and other marshy areas (Figure 6). Marshy areas were found particularly along the pipeline corridor zone, since this parallels Cadron and Cypress creeks.

Figure 6. Slough on the primary alluvial flat in the Conway Water Supply project area

Natural mounds appear in various parts of Arkansas, including areas in Conway County. Fergusen (1920:118) observes that these low circular mounds are often 20 to 98 feet (6 to 30 m) in diameter and 1 to 4 feet (.3 to 1.2 m) high. These mounds appear on Quaternary deposits, especially on prairie terraces. They are also often called prairie mounds, pimple mounds, or mima mounds. Quinn (1961) suggests that the mounds are remains of a desert environment that existed in Arkansas as late as 3000 B.C. These mounds are natural, although artifacts have occasionally been found in the same area. As Quinn (1961:6) pointed out, "Artifacts have never been found in the prairie mounds, and the age of the mounds cannot be directly estimated by any present methods." A number of these mounds were

shovel tested during the June-August 1979 field season to insure that there were no buried cultural levels. There was no evidence of human activity on or around the mounds in the project area.

Rocks and minerals have been exploited by humans during prehistoric and historic periods for building materials, tools, and weapons. Generally, this is on a local basis, although it may be necessary to gather resources farther afield. In some instances the exploitation of resources may not be direct. With cultural contact resulting from the exchange of raw materials, possibilities exist for the movement of goods, exchange of ideas, and the exploitation of wide ranging environments (Evans 1978:6).

Within the Arkansas River Valley the main surface rocks are sandstone and shale (Figure 7). Alluvium is present along the river and larger tributaries (Foti 1978:18). The sandstone and shale are of the Atoka formation of Pennsylvania age (ca. 310 million years B.P.). Ferguson (1920:37) observes that the Atoka formation is estimated to be approximately 5000 to 7000 feet (1524 to 2134 m) thick, with the sandstone strata separated by thick beds of black clay shale. Shale also appears at the surface in the project area, appearing extremely weathered (U.S. Army Engineer District 1979:64). Thick shale levels appear on the bank and in the bottom of Hill Creek.

It does not appear that shale was used by either prehistoric or historic inhabitants of the area, but sandstone was used during both periods. Prehistoric groups employed the sandstone blocks for nutting and grinding stones. Euro- and Black-American groups used the blocks for log house foundations, steps, chimneys, and grave stones.

Many other lithic resources have been recovered from prehistoric sites in the project area, including chert, novaculite, quartz, and manganese. These materials are not of local origin and must have been introduced from other parts of Arkansas directly or by an indirect exchange system.

Much of the lithic debitage and many of the points, scrapers, and knives recovered from the prehistoric sites are made from chert and novaculite. The two primary cherts used are from the Pitkin and Boone formations; other lithic raw materials have been collected in minor quantities. Pitkin and Boone cherts are found within limestone strata formed during the Mississippian period of the Paleozoic era (ca. 340 million years B.P.) (Manger n.d.:212). Ferguson (1920:13) observes that Boone chert deposits begin in Independence County, just west of the Black River, and near Dota Post Office, about 5 miles (8 km) northeast of Sulphur Rock (Figure 7). A ragged band, varying from 5 to 15 miles (8 to 24 km) wide, crosses Arkansas past Cushman, Mountain View, Marshall, St. Joe, Harrison, and Eureka Springs and forms much of the surface of Benton County. Stream beds in this region are filled to a depth of 15 feet (4.6 m) with small fragments of chert (Ferguson 1920:130). Boone chert color and texture characteristics vary so widely that it is difficult to assign a specific description to it on the basis of these characteristics (Martin and Jones 1978:8). Most chert found in sites in the project area is off-white to dark gray with bands of darker colors present on some specimens.

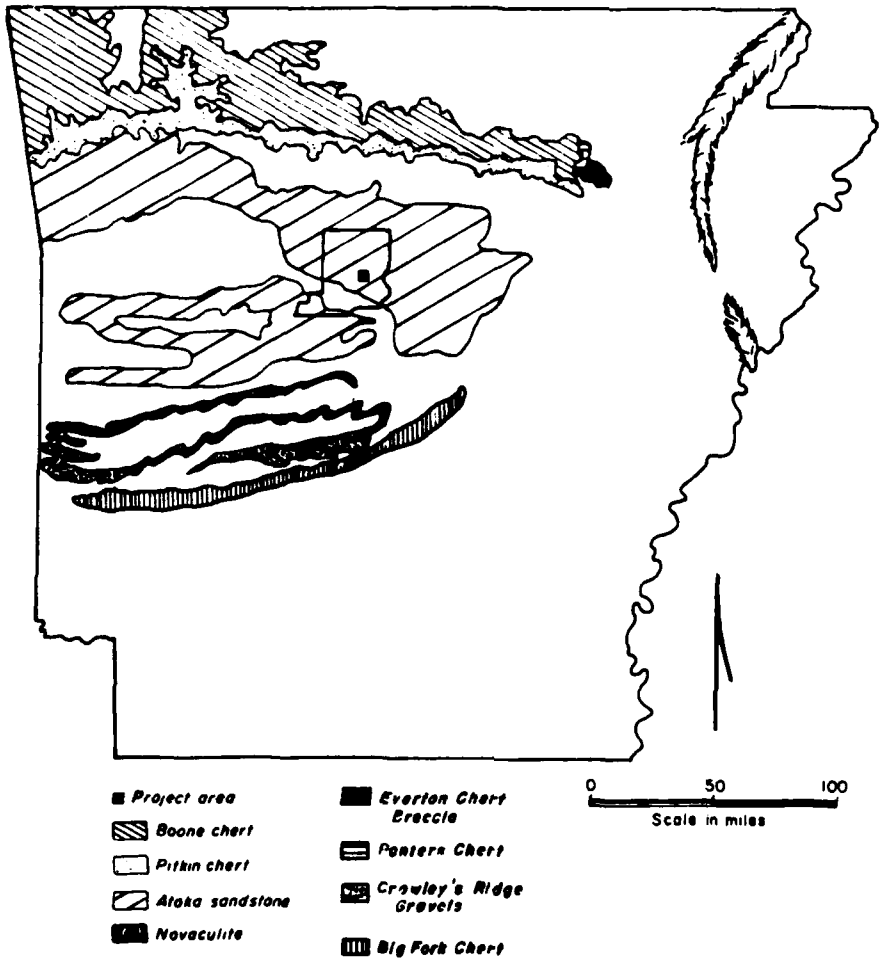

Figure 7. Location of the Conway Water Supply project in relation to the lithic resources in the region

Pitkin chert also occurs in the Ozarks in northern Arkansas (Figure 7) in deposits along the north side of the Boston Mountains from Independence County to the western boundary of Arkansas (Ferguson 1920:31). It is black with coarse silt to very fine grains of light colored anhedral dolomite distributed through it (Martin and Jones 1978:8).

The third major raw material used to make stone tools is novaculite brought into the area from the Ouachita Mountains (Figure 7). Novaculite is widely exposed in Polk, Montgomery, Garland, Saline, and Pulaski counties in more or less parallel and east-trending belts, whose narrowness is due to the steep dips of the beds (Ferguson 1920:34). Most novaculite represented in the sites in the project area is a white variety found in the lower division of the Devonian formation. This level usually occupies the crests of ridges in beds 2 to 10 feet (.6 to 3 m) thick.

Other lithic materials appear at sites in minor quantities. These include Everton chert breccia, Crowley's Ridge gravels, Penters chert, St. Joe chert, and Big Fork chert used to make arrow points and other tools and weapons. In addition, quartz crystals, manganese, and calcite have been found in some of the sites. Attention is given below to the proposed origins of these resources, although it is possible that some of them were locally derived. In some instances, source areas appear to be very broad.

Everton chert breccia is composed of "pebble to granule size, angular fragments of variable color, but uniform composition" (Manger n.d.: 209). The pebbles appear to have been cemented by quartz-bearing carbonate, and then the rock silicified. This chert breccia is assigned to the Everton formation of the Lower Ordovician geological horizon. It appears in gray and red, although the latter is probably a result of the weathering of the gray variety (Manger 1976:209). The bulk of this chert is found in the area immediately north of Batesville (Figure 7), but south of central Lawrence, Sharp, and Izard counties (Manger 1976:214).

Crowley's Ridge gravels reveal a broad distribution across northern Arkansas. The type area for these gravels is Crowley's Ridge, in northeastern Arkansas (Figure 7), but they may have been more locally derived. They do not appear to be found within the Cypress Creek basin. Stream beds contain chert cobbles eroded from Paleozoic strata of the Ozarks and occasional boulders (Manger 1976:207).

> Gravel deposits on Crowley's Ridge were...potential areas of lithic resources. It should be made clear that these materials were derived from the Ozark region and naturally transported to their site of deposition on Crowley's Ridge.

Penters variety is a white-tan mottled chert (Figure 7). Both Ferguson (1922:21) and Manger (1976:212) observe that it lacks fossils, and the latter also states that there are no other allochemical constituents present in the chert. Ferguson (1922:21) states that it is exposed within two small areas in Independence County, one near Pfeiffer and the

other near Penters Bluff station. Manger (1976:214) states that it is known only from exposures along the White River near the Independence-Izard counties line. The chert appears to belong to the middle Devonian geological horizon.

St. Joe chert is a distinct variety of Boone chert exhibiting a red/maroon coloring and small feldspar and fossil inclusions (James Duncan, personal communication). It is found in the Lower Mississippian geological horizon of the Ozark Escarpment (Manger 1976:210).

Big Fork chert is exposed "over large and small areas between Shady Post Office, Polk County, and Pulaski County" (Ferguson 1922:26). The thin-bedded chert appears from gray to black, containing mainly graptolite fossils (Figure 7). Ferguson (1922:26) also observes that it is a much shattered chert interbedded with thin layers of black shale. Big Fork chert is found in the Ordovician formation.

Another material brought into the project area by prehistoric groups is quartz. Quartz crystals have been found in many parts of Arkansas, but notably in a group of ridges south of Mount Ida known as the Crystal Mountains in the vicinity of Hot Springs (Ferguson 1920:124). At the base of the formation a conglomerate with limestone and chert pebbles exhibits fissures containing clusters of quartz crystals tentatively assigned to the Ordovician system. There has been much speculation concerning the use of these quartz crystals found in association with artifacts of the Archaic and Coles Creek cultures in the project area. Hudson (1976) describes the use of such crystals among historic groups, although we cannot infer that these crystals were used for the same purposes among all prehistoric groups.

> Quartz crystals have been found by archaeologists at Spiro and at many other Mississippian sites, though they are frequently not reported because they are unworked, and archaeologists perhaps have not fully appreciated their significance. The Creeks call them sapiya, and as we have already seen, the Creek hunter carried his crystal and some red ocher in a deerskin pouch....The Florida Seminoles once believed that such crystals could be used to ward off bullets, and earlier we are probably safe in concluding that they were believed to bring a man success in warfare as well as in rainmaking, hunting, and lovemaking (Hudson 1976:168-169).

Although recovered in minor quantities, manganese has been identified from one site in the project area. This material can be found immediately northwest of Batesville, in Independence County, Arkansas (Manger 1976:213). Ferguson (1922:66) states that, while the primary concentration of the mineral is in Independence County, it actually appears in a belt approximately 20 miles (32 km) long and 4 to 8 miles (6.4 to 12.9 km) wide. This belt extends westward through Independence, Sharp, and Izard counties. Manganese is not found in every part of this belt, but the deposits are extensive.

Calcite has been found at one site in the project area. According to Manger (1976:214), this mineral is common in the lead-zinc district located in north central Arkansas and also occurs in carbonate units along the Ozark Escarpment.

HYDROLOGY

Prehistoric groups were dependent on water sources for themselves and recognized that animals they hunted were also dependent upon water sources. Historic sites should normally reflect patterns dependent on availability of water, too, since settlers needed it for themselves, the crops they raised, and their livestock. Euro- and Black-American groups of the nineteenth century were able to solve some water supply problems by digging wells close to their houses. While the water supply in the well may have been no more reliable than the stream, at least it was convenient to the house.

The drainage system of the Cypress Creek basin is dendritic (U.S. Army Engineers District 1979:11). Water sources are plentiful. Two major sources, Hill and Cypress creeks, contain water throughout the year and there are also springs and artesian wells in the area. Cypress Creek rises from numerous tributaries in the Ragsdale Mountain. It flows over bedrock and then follows a meandering course between relatively narrow floodplains where it joins Cadron Creek, which flows into the Arkansas River. Zero flows sometime occur in the Cypress Creek for up to three consecutive months (U.S. Army Engineer District 1979:14). Flooding occurs in the Cypress Creek drainage basin three to five times each year (U.S. Army Engineer District 1979:21), and major floods historically have occurred in April-May 1927, May 1943, March-April 1945, and August 1957. A more recent flood, occurring in April, 1966, "inundated about 92% of the 100-year floodplain" (U.S. Army Engineer District 1979:22). The recurrence interval of this flood was about four years. Floodwaters tend to flow swiftly and to recede soon after the rainfall ceases. The area is typically flooded in the spring, although this does not occur every year.

There are two major results of the periodic flooding. First, due to the irregularity of the flooding, seasonal use of the floodplain cannot be anticipated. No permanent structures have been erected on the floodplain, and most farmers do not attempt to grow crops in the area. If conditions were constant, we could propose that prehistoric groups would not have established permanent villages on the floodplain. Seasonal use of the area would perhaps have been limited mostly to summer, fall, and early winter occupation. The only months that major floods have not occurred are June and July and September through February. As pointed out, however, major flooding does not occur every year, so the floodplain could have been occupied during the intervening months in many years. It can be anticipated that there has been major disturbance to most sites on the floodplain. Based on the known floods, there is a major flood on the average of every 7.8 years. If this pattern has been stable during the

last 6,000 years (the possible age of some of the Archaic period sites on the floodplain), it is possible that there have been as many as 769 floods of the Cypress Creek. Exposures located on the floodplain generally revealed deep sand deposits with no development of other soils.

Based on the information available on the Cypress Creek basin, it appears that the creek offered both benefits and perils for both prehistoric and historic groups that occupied the area. It was a permanent water source, which provided water for the people, attracted game, and was inhabited by various aquatic species used for food. At the same time, its history of flooding, both minor and major, suggests that use of the floodplain was necessarily seasonal and varied from year to year.

SOILS

Archeologists recognize that attention must be given to at least two major aspects of soil when dealing with sites. In addition, a third characteristic has been given increased attention by American archeologists following the development of phosphate testing in Europe. Each of these aspects will be considered since they directly influence where groups settle, what organic remains will be preserved, and what information can be secured from soil through chemical means of examination.

First, the types of soil have some effect on where groups, both prehistoric and historic, settle within an area. Evans (1978:7) stresses that this relationship is complex.

> It is bound up with all sorts of factors like drainage, fertility, texture, and the vegetation the soil supports as well as human land-use strategies -- which may be in part culturally determined anyway -- and with the level of man's technological development. (Evans 1978:7)

Muller (1978:297), for example, points out that approximately 80% of the Mississippian period sites in the Black Bottom of southern Illinois are located on Armiesburg silty clay loam. This soil is extremely fertile for maize agriculture, and it is far enough from the river to reduce the chance of flooding. This soil generally supports a ground cover of cane, which not only indicates the qualities of the soil, but is also easily cleared and was employed as a major construction material in Mississippian houses.

Attention has also been given to the relationships between soils and the locations of Mississippian period sites by Larson (1972) in his functional considerations of warfare and by Lewis (1974) in his discussion of the locations of sites in southeastern Missouri. While the latter devotes particular attention to biotic communities, these are directly related to soil types.

Most of the soils in the Cypress Creek basin area supported a native vegetation of mixed hardwoods. Two of the ten soil types on which sites were located had mixed hardwoods with shortleaf pine. Only one soil type had only pine. (See Appendix E for characteristics of these soils.) Examination of the qualities of the soils associated with sites in the project area reveals that these have only low to moderate fertility and low organic matter content. The best soils are Barling silt loam; Leadvale silt loam, 1-3% slope; Taft silt Loam; 0-2% slope; and Enders gravelly fine sandy loam, 1-3% slope. It appears that these soils will respond to fertilization, but it is only through such efforts that they are made suitable for cultivation. Even then, many areas are used primarily for pasture. Therefore, qualities of these soils suggest that they held minimal potential for prehistoric agriculture.

The second characteristic that archeologists have observed is the direct effect of soil on the preservation of organic remains. Generally soils and sediments range from pH 3.5 (very acid peats) to pH 8.5 (highly alkaline soils on chalk) (Evans 1978:67). Bone may not be preserved in soils whose acidity is too high (pH 6.3) (Heizer and Graham 1968:125-126).

Within the project area are ten types of soil in which archeological sites are located (Appendix E). Nine of these soils exhibit varying degrees of acidity. Only the McKamie series is alkaline (Appendix E). Weathering of sandstone and shale has resulted in the acid soils (U.S. Army Engineer District 1979:12). The McKamie series are underlaid by calcium carbonate resulting in an alkaline soil.

A third aspect of soils given relatively little attention by most archeologists is their phosphate content. Phosphate testing was not employed during the survey and testing phase of 1979, but its application should be considered in any subsequent work carried out on the sites in the area.

BIOTIC COMMUNITIES

In any discussion focusing on those aspects of the environment affecting man and the structuring of society, attention is necessarily given to plant and animal resources, since they were used for food, tools, clothing, and other purposes. The plant world impinges upon man in many ways as part of the environment, and, in turn, also affects the animal world.

> Vegetation structure...controls the structure and species composition of animal populations and this has considerable repercussions on man's hunting techniques, the range of species hunted, and his life-style....In a forested environment not only is part of the land surface taken up by the trunks of the trees themselves but most of the foliage is in the canopy, out of reach of grazing and browsing animals. Consequently there are fewer large herbivores, although a greater range of

species. They go around in smaller groups and they are often species that are shy and difficult to hunt (Evans 1978:7-8).

The project area falls within a transitional zone between the Carolinian and Austroriparian biotic provinces (Dice 1943). Vast forests, composed primarily of oak and hickory, once covered much of the lands within the project area. Currently many trees constitute second and third growth, having reoccupied the land following abandonment of many areas formerly in cotton production.

Three major tree communities can be identified in the project area. It should be observed at this point that aquatic vegetation is not abundant in Cypress Creek.

> In or right on the bank of Cypress Creek is a community dominated by bald cypress and water elm. Along the creek itself there is a community composed of water oak, willow, river birch, ash, and elm. The third community, found in better sites away from the creek, is dominated by red oak. (U.S. Army Engineer District 1979:24)

Animals present in the project area inhabit four major environs These are: (1) the creek or related aquatic sources, (2) the bank of the creek or related aquatic sources, (3) the ecotone between wooded and open areas of land, which generally marks the terrace-floodplain interface, and (4) the denser woods.

Over 70 species of fish inhabit the larger pools in the Cypress Creek basin. These include: spotted bass, largemouth bass, channel catfish, green sunfish, bluegill, and various minnows. In addition, carp, a modern introduced species, drum, and gar may be present. Clams, aquatic snails, and crayfish also inhabit the Cypress Creek and other aquatic areas in the project zone.

Animals spending part of their time in the water or preferring the streambank include: mink, muskrat, beaver, raccoon, bullfrog, cottonmouth, and snapping turtle. The Eastern box turtle is a species well adapted for life on land, although it occasionally is found in or near water. The environs most suited to the box turtle are moist open woods or swamps. Other animals found in the project area that prefer moist conditions are salamanders and skinks.

The cottontail rabbit is generally found in the ecotone between the woods and open lands. Hoffmeister and Mohr (1972:194) observe that it makes its home in brushy or weedy fields, thickets, forest edges, and in dry bottomlands. The fox squirrel also prefers woods with openings, but the primary source areas for food for both the fox and the gray squirrel are the denser oak-hickory forests. The bobwhite quail, a permanent resident in the Cypress Creek basin, nests on the ground in grass tangles, open fields, and hedgerows, although it also exploits acorns found in the oak-hickory forest. The striped skunk is at home

in a multitude of environments, the edge of woods, brushy country, or grassy meadows, but it usually remains close to a water source (Hoffmeister and Mohr 1972:107). The gray fox is likewise an animal of the forest, river bottoms, and bluffs, but it may also be found in semi-open brushland. The wild turkey lives in forested areas close to streams. Although most of the animals described to this point readily adapt to both the open areas and forested zones, the opossum is an inhabitant of the woodland (Hoffmeister and Mohr 1972:47).

The white-tailed deer moves extensively, exploiting various resource environs depending on the season. Smith (1975:20) succinctly describes the feeding movements of the deer.

> Knowing the location and seasonality of vegetation utilized by deer, we can describe their seasonal feeding movements with a good degree of accuracy. During the fall, when oak mast is abundant, deer eat little else, and concentrate their feeding in the heavily wooded areas, especially the upland hardwoods. The extent to which deer feed within this forest type during the winter months is a function of the continuing availability of acorns; when the oak mast yield is abundant enough, deer will feed in the upland hardwoods throughout the winter; when oak mast yields are low, deer are forced to shift to forage, and forest type preference changes, with deer browsing throughout the forest types. During the spring the deer concentrate their feeding in the stream-bottom hardwood areas, eating the early emerging grasses and sedges. As the growing season progresses, deer expand their range to include the cedar glades and lower slopes. They feed in these areas throughout the summer. It would seem evident, then, that deer definitely concentrate on a consistent basis during the period September-October-November in the upland hardwoods, and during March-April in the stream-bottom hardwoods, with the fall concentration being the more reliable of the two.

A number of faunal species that inhabited the area previous to Euro-American settlement are apparently no longer represented or are extremely limited in total population. These animals were dependent on the undisturbed oak-hickory forest conditions for survival. Thomas Nuttall (1821), a botanist, who traveled along the Arkansas River in 1819 and 1820, described the hills surrounding the settlement of Cadron (approximately 19.3 km south of the project area) and observed that wildcats, panthers, bears, and wolves were found in abundance. Bison ventured into the Ozark forests in search of isolated salt licks (Steyermark 1959:28-30). Evidence of these was observed in 1541 and 1542 by members of the DeSoto expedition as they traveled through the Arkansas region (Smith 1968: 127-128). Later journals indicate that buffalo were present on the prairies and in the cane brakes and forests along larger rivers through the 1700s (Sealander and Gibson 1974:125). By the early 1800s, buffalo were apparently restricted to the southern and eastern part of the state.

Chapter 3

The Arkansas River Valley Region: A Summary of Conway County Archeology

by

Lawrence Gene Santeford

A SUMMARY OF PREVIOUS INVESTIGATIONS

The earliest archeological work reported in the Arkansas River Valley was that done by Clarence B. Moore (1908), who pursued his early archeological efforts along the extensive floodplains of the Arkansas, White, Black, and St. Francis rivers (Figure 8). His primary labors were directed toward the excavation of Mississippian period mounds that yielded cultural materials (primarily ceramics) in association with burials, but the area proved relatively unproductive for Moore's objectives. He notes, "with the exception of the Menard Mound, and the so-called Toltec group below Little Rock, the mounds on the Arkansas River between its mouth and Natural Steps. . .are insignificant in number and size; while aboriginal cemeteries, as to the location of which a clue could be had, were far from numerous" (Moore 1908:481). The published work constitutes primarily a pictorial and descriptive account of the areas that he examined.

Moore's approach is generally consistent with that of other researchers of the period, focused principally on the description of archeological materials, "especially architecture and monuments, and rudimentary classification of these" (Willey and Sabloff 1974:42). Moore's survey extended up the Arkansas River only to the limits of the Mississippi Embayment, the lower Arkansas River (Hoffman 1971:194); therefore, the specific project area considered in the Conway Water Supply project was not examined.

Moorehead (1931) began work in 1915 in the central and upper Arkansas River Valley, particularly in the Fort Smith and Yell County areas. While Moore paid particular attention to ceramics in his work, Moorehead described certain lithic materials. Some of the lithics include what is now recognized as dating to the Archaic period (ca. 8000-500 B. C.).

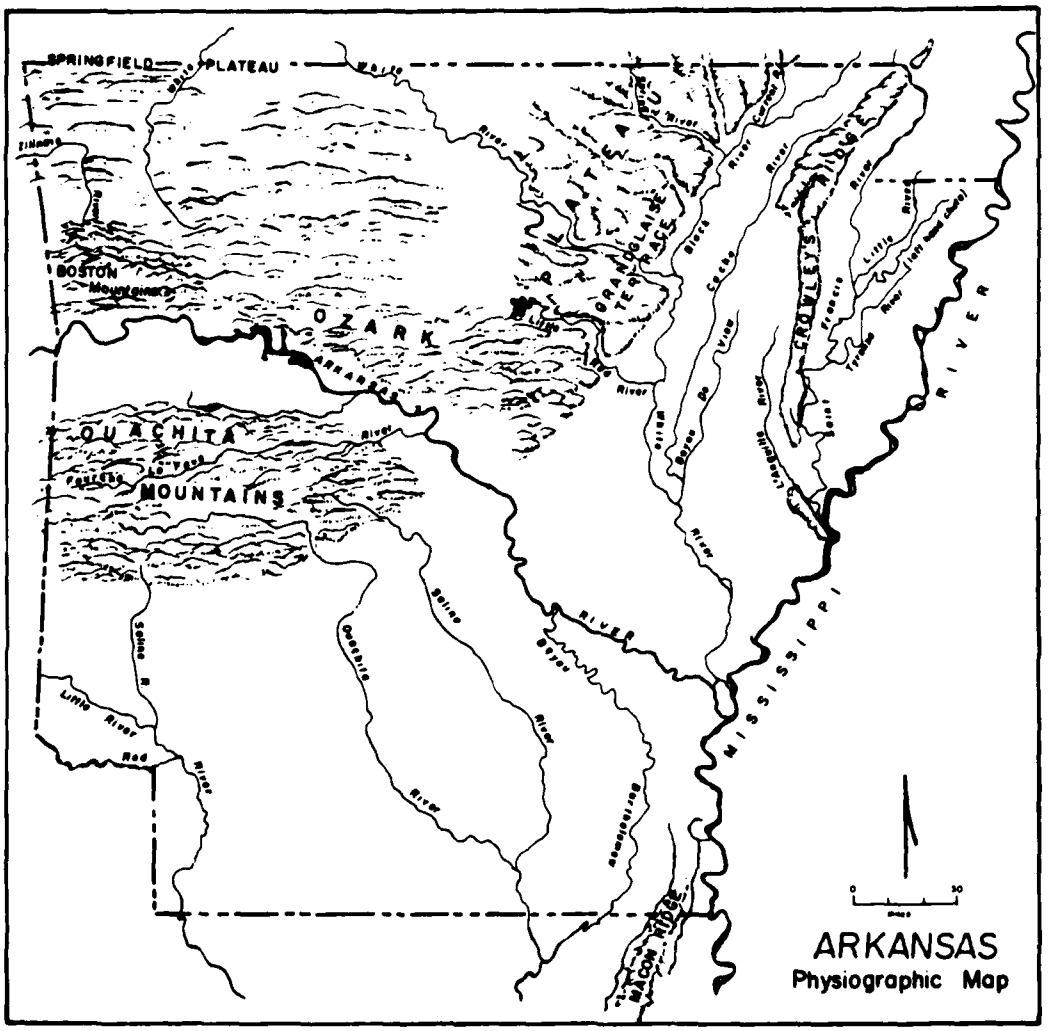

Figure 8. Physiographic features of Arkansas

Hoffman (1971:915) states that in the 1920s and 1930s there was a great deal of commercial pothunting of cemetery sites along the Arkansas (and Petit Jean) River in Yell County, Arkansas.

> None of this is recorded in print except for Harrington's appalled descriptions of the pothunting activities at Carden Bottoms near Dardanelle (Harrington 1924). Harrington made an attempt to list what was coming out of the ground in the excavations that he observed--and this is the only attempt to characterize those important ceramics. (1971:915)

Harrington (1924:3) observed that most of the Carden Bottoms graves showed no sign of trade or contact with whites, but a few graves contained glass beads and ornaments of copper wire. He also noted that one earring or nose ring turned out to be European brass when tested. As for pottery styles, Harrington (1924:3) maintained that many examples were Caddo and that some of it also resembled the typical pottery of eastern Arkansas, which may be Quapaw. It is now apparent that the site had a major Quapaw component. Carden Bottoms is approximately 26 miles (42 km) southwest of the project area.

The area to be flooded by the Dardanelle Reservoir was surveyed by Robert Greengo, of the Smithsonian Institution River Basin Survey, in 1957. Fifty-five sites were recorded, some of which relate to the Carden Bottoms material (Hoffman 1971:915). Caldwell (1958) also conducted some excavations in the reservoir, but the results have not been published.

In the late 1960s, Hoffman and Scholtz of the University of Arkansas Museum conducted surveys in connection with archeological salvage for the Arkansas River Navigation project. Results of this work are reported by Scholtz and Hoffman (1968) and Hoffman (1977). In addition, Myer (1969) described salvage excavations conducted at four sites in the Arkansas River Navigation project area.

Surveys within the Conway Water Supply project area are more limited in number, as well as more recent. A preliminary field study of eight floodwater retarding structures was carried out by Toney (1974) in the lower Cadron Creek and East Fork of Cadron Creek watersheds in Conway, Faulkner, and White counties for the Department of Agriculture, Soil Conservation Service. During the course of the survey, site 3CN33 (the Mazurek site) was found on the west bank of Cypress Creek in proposed Structure Number 1 in the lower Cadron Creek watershed (Toney 1974:15). Cultural materials included one novaculite scraper and 18 finishing flakes. The site was reexamined by Martin and Jones (1978). Another Soil Conservation Service survey was carried out in the northeastern part of Conway County by Hughes (1974) but is not directly applicable to the Conway project area.

Two additional surveys have been conducted in the proposed reservoir area within recent years by the Arkansas Archeological Survey for the

U.S. Army Corps of Engineers, Little Rock District. The first project, directed by Brooks and Brooks (1975), examined five alternate locations for the proposed Conway reservoir. Two sites located within the boundaries of the presently proposed reservoir area are 3CN36 (the Rotten Melon site) and 3CN37 (the Old Patch site). The former was identified as an Archaic period site, perhaps a seasonal camp. When Martin and Jones (1978) reexamined the site during their later survey in the project area, they determined the approximate site size and made a collection of surface materials. Site 3CN37 exhibited no diagnostic artifacts during the 1975 survey and upon reexamination by Martin and Jones (1978:62) only one chert flake was recovered.

An extensive archeological survey and review of historical documentation was carried out by Martin and Jones (1978). Their report includes an excellent summary of the natural communities of the area, the cultural history (both prehistoric and historic), and information relevant to an examination of the cultural resources, as well as the raw materials found and used in the area. Seven historic and nine prehistoric sites found during the 1978 field season were recommended for further study.

THE PREHISTORIC PERIODS OF THE REGION

The early cultures of Arkansas share many relationships with cultures throughout eastern North America, and the Southeast in particular. Griffin succinctly defined the area and status of relationships when he wrote

> In a very real sense of cultural connections, Eastern North America in prehistoric times is the area east of the Rocky Mountains and from north of the Gulf of Mexico to the boreal forest zone of Canada. Although there were great differences in the natural habitats within this area, with marked changes in climate and major vegetational changes during the long period of American prehistory, there were no major physiographic or climatic barriers preventing relatively rapid exchange of cultural innovations over most of the area. The most effective barriers, within the period of agricultural development, were the boreal forest zone on the north and the semi-arid plain on the west. (1967:175)

Although the culture history laid out by Griffin has remained much the same, there have been extensive changes in the definition of temporal and spatial distributions of various cultures as the result of additional archeological fieldwork and laboratory research. Despite extensive work, many problems still exist in studies of prehistoric eastern North American societies.

Syntheses are based on the review of a specific number of archeological reports that appear to represent development throughout the East, but definitions of development within specific areas remain vague and are filled with gaps. Only by filling these gaps will archeologists be able to clarify the effects of climate and environment on prehistoric populations, define the regions of technological innovations (e.g., invention of specific tools or skills), and suggest the ways by which artifacts were distributed throughout a region, deal with apparent prehistoric exploitation of various resources and the redistribution of these resources through exchange, and attempt to answer other problems relating to prehistoric culture and human relationships.

Major problems have been encountered when dealing with archeological sites in the East. Dragoo (1976:304) observes

> In recent years some archaeologists have turned their attention to theoretical studies of culture change and the development of what is often called problem-oriented archaeological research. Although these studies...have generated many hypotheses, we still lack adequate coverage for most areas of eastern North America to establish the statistically valid data necessary to thoroughly test these hypotheses. There are thousands of archaeological sites in eastern North America but only a small number of them have been investigated to the degree required to answer the problems. The archaeologist concerned with the East also faces the problem of poor faunal and floral preservation because of the region's excessively acid soils and high annual rainfall. At a time when so much stress is being placed upon man's adaptation to his environment as a prime factor in cultural change and development, the absence or paucity of food remains at many sites makes it hard to assess the degree of environmental adaptation and manipulation. Under such conditions the archaeologist may make incorrect inferences as to the economic base underlying societies.

The following is a summary of the generally accepted definitions of the four major periods of prehistoric development in the East. Presentation of this information serves two primary goals: (1) to define for the reader the characteristics employed for assigning temporal and functional labels to the sites located in the project area and (2) to develop a framework for comparing sites within the project to currently understood broad regional patterns. The latter ultimately is significant in order to assess regional variations resulting from different environmental factors as well as those deriving from cultural, social or individual behavior.

A few major summaries have been published detailing the prehistoric development in Arkansas. One of the earlier syntheses in which development throughout the state is summarized was written by McGimsey (1969). At that time, four papers also appeared in The Arkansas Archeologist in

which available information on prehistoric developments was summarized within a regional focus. Morse (1969) discussed the northeast; McClurkan (1969) devoted attention to the southeast; Hoffman (1969) summarized current knowledge of the southwest; and Scholtz (1969) discussed developments in the northwest. These papers constitute the best regional summaries available at that date on prehistoric cultures of Arkansas. Although each of the papers contains some references to prehistoric culture in the Arkansas River Valley, the treatment of the region proved rather superficial. In the same bulletin Davis (1969:2-4) summarized briefly the archeological history of Arkansas prior to the beginnings of the Arkansas Archeological Survey in 1967.

Since the papers were published 11 years ago, a significant amount of work conducted in the state has clarified certain problems. While the proposed project area lies primarily in the northwest region of the state as defined by Scholtz (1969), his discussion cannot be applied uncritically to sites within Conway County.

The Paleo-Indian Period (ca. pre-12,000-8000 B.C.)

This period is generally accepted as the earliest known period of occupation by aboriginal groups that entered North America. In Arkansas, fluted lanceolate points identified as Clovis have been found in Logan, Baxter, Newton, Carroll, Washington, Searcy, and Boone counties in the northern part of the state (Newton 1975-1977:85; Scholtz 1969:52-53). Most current knowledge about subsistence and settlement patterns is derived from Paleo-Indian sites in other parts of North America, and even that information is incomplete. It is also a major problem that most Paleo-Indian sites have been defined on the basis of the presence of a single artifact recovered from the ground surface or in levels of excavations where associated features are lacking.

The generally held view of Paleo-Indian suggests that small nomadic bands hunted mammoth, mastodon, giant sloth, and other megafauna during the period. No associations of artifacts with extinct megafauna have been recorded in Arkansas, although the remains of such animals have been found (Morse 1970b). While emphasis was perhaps placed on the hunting of such large animals, it is probably more accurate to identify these as foraging groups making use of edible plants and smaller animals in addition to the larger game (Wilmsen 1968a, 1968b, 1974). In fact, the locations of Paleo-Indian points in various areas suggest the exploitation of other animals and resources. Newton (1975-1977:90), for example, points out that the rugged, mountainous terrain of the Ozarks was not an ideal region for Pleistocene megafauna such as bison, mammoth and mastodon, although Paleo-Indian points are recovered from like regions.

Morse (1977) observes that the loci of fluted points in the northern Mississippi Alluvial Valley are on old surfaces in association with large riverine features. Of 13 sites with fluted points in the Ozarks, five were located on second terraces, one on a first terrace, one from an

undefined terrace, and the remaining six from upland environs (Newton 1975-1977:91). The question is periodically raised concerning the possibility that Paleo-Indian sites may also be located on the floodplain and are covered by deep alluvial deposits.

Despite the recovery of mastodon, beaver, tapir, and early horse remains in northeast Arkansas, relatively little is known about the early environments. Newton suggests

> If we can further hypothesize that extinct megafauna favored by Paleo-Indian did not migrate into the interior of the Arkansas Ozarks, in any large number, then what attracted Paleo-Indian to this region? Did he use the more easily traveled stream valleys as avenues of migration through the Ozarks mountainous terrain as suggested by a majority of the finds, or was he drawn to the region to exploit a bountiful population of white-tail deer and to harvest large varieties of nuts and berries not native to the grassland prairies? Possibly Paleo-Indian wintered in the Ozarks, utilizing the abundant caves and rockshelters during severe cold weather. (1975-1977:90)

In the latter part of the Paleo-Indian period climatic conditions appear to have moderated and megafauna densities decreased, but the cause is not known. White-tailed deer probably became the principle game animals hunted as the megafauna declined. Deer were probably supplemented with rabbit, raccoon, opossum, squirrel, beaver, muskrat, turkey, fish, shellfish, and various plant foods that became prevalent in the region. A number of points found in sites across eastern North America date to this period of time. Depending on the perspective of the archeologist, many of these artifacts are assigned to either a late Paleo-Indian or very early Archaic period in time. These points include Quad, Big Sandy I, Suwanee, Hardaway, Agate Basin, Scottsbluff, Hardin, Kirk, St. Albans, and Le Croy. All of these types exhibit an ancestry in the fluted-point tradition. In Arkansas the Dalton point is one type considered diagnostic of a late Paleo-Indian or early Archaic occupation.

> Another question is whether Dalton is "early Archaic" or "late Paleo-Indian". . . .The basic lithic assemblage is Paleo-Indian in nature and there are obvious correlations to Upper Paleolithic. The definite trend in the lower Mississippi Valley is to call Dalton (and a southern variant known as San Patrice) Paleo-Indian. However, in northeast Arkansas, we are dealing with two major patterns of distribution and probably exploitation. Fluted points are concentrated along two major rivers, indicating a tight riverine orientation during the terminal Pleistocene. Dalton points are found on all land surfaces known to be inhabitable before and at the end of the Pleistocene. In addition the transitional points such as Coldwater and Quad also occur on Dalton sites, indicating the shift in settlement

pattern occurred right at about the end of the Pleistocene. The pattern continues through a period of Hardin and Cache River points after the Dalton period. (Morse 1973:30)

Radiocarbon dates from Graham Cave in northeast Missouri indicate that the Dalton culture was present approximately 6800 ± 120 years B.P. (before present, ca. 1950) to 7630 ± 120 years B.P. (Klippel 1971:65). Arnold-Research Cave in Calloway County, Missouri, yielded dates of 7180 ± 300 B.C. (Goodyear 1974:2). Goodyear also observes that dates from the Rodgers Shelter in Missouri are among the earliest for the Dalton culture. These are 10,200 ± 330 B.P. and 10,530 ± 650 B.P.

Two Dalton sites in Arkansas reported in some detail are the Brand site (3P0139)(Goodyear 1974) and the Lace site (3P017)(Redfield and Moselage 1970). Both are in the L'Anguille River basin (Figure 8) in northeast Arkansas. By 1974 numerous Dalton sites had been recorded in northeast Arkansas (Goodyear 1974:4). During this period, northeastern Arkansas was marked by a deciduous forest of mixed oaks (King and Allen 1977:17) with numerous ponded relict channels. Morse (1973a:30) indicates that white-tailed deer would have been plentiful based on the reconstructed environment. He also notes that mastodon, tapir, ground sloth, and other open hardwood forest animals may have been present, but the pattern of exploitation best fits the hunting of deer (Morse 1973a:30).

According to Morse, sites of the Dalton culture in northeast Arkansas seem to be base settlements and butchering camps. Morse suggests that most Dalton groups were virtually sedentary bands occupying distinct drainages. Schiffer disagrees and proposes that Dalton bands occupied territories "which crosscut major physiographic and resource zones in the western lowlands of northeast Arkansas, regardless of drainage boundaries" (Schiffer 1975:111).

Morse reports indications of manufacture of Dalton points, scrapers suitable for hide preparation, and adzes indicating that considerable wood working was done at the Lace site (Morse 1973a:24). The Brand site, located about 9 km from the Lace site, has been called a butchering station, but Schiffer (1975:110) maintains that the site was probably a base camp at which a wide variety of maintenance activities were carried out. Morse (1973a:30) suggests that shelters (possibly lean-tos) may have been erected and that areas of artifact concentration suggest the activities there lasted only a few days and involved only a few males.

One site with Dalton material was found in the Conway project area. This site, the Travis site (3CN70), could perhaps be a butchering station. Examination was limited to a surface collection, and the site will not be affected by the proposed construction, so no further investigation is scheduled there.

The Archaic period (ca. 8000-1000 to 500 B.C.)

Between ca. 6300 and 3000 B.C., the climate of eastern North America became warmer and drier. This climatic change, the "altithermal", caused

a shrinking of the Ozark forest on the edge of the Great Plains. Vestiges of the Pleistocene environment retreated into northern Canada, and the sea level rose to cover the previously exposed Continental Shelf. New rivers were formed, and deciduous trees replaced spruce and pine forests (Dragoo 1976:11).

> By around 5000 B.C. modern distributions of plants and animals were established over much of eastern North America. These changes had far-reaching effects upon the food resources of Archaic man. Hickory nuts, walnuts, butternuts, chestnuts, acorns, and pecans became available and provided a new supply of protein over much of the East. Shellfish now flourished in streams whose rapid flow had been slowed by the rising sea level.(Dragoo 1976:11)

Collecting of wild plants and hunting of game appear to have been the primary base of Archaic subsistence patterns. Cleland (1976) considers such adaptation a diffuse one. The economy of the people is based on the careful scheduling of exploitation, so that the natural availability of resources is maximized and so that alternative resources are available. In order to accomplish this, there must be movement through time and space (1976:64). He also suggests that with the regularized exploitation of a variety of different resources there results a wide array of tool functions. When one compares the hammerstones, nutting stones, scrapers, and other tools recovered from Archaic period sites with those of the Paleo-Indian period, this change is visible. Points found in earlier Archaic sites are large and exhibit corner and basal notching and straight stems. These are replaced by points that were parallel-sided, expanded, or to a lesser degree exhibited contracted stems. Scholtz states

> The abundance of sites and projectile point forms in the Middle Archaic suggests an increase in population and more regional specialization of point types (and presumably other facets of culture) than was present in preceding stages. A more thorough exploitation of wild plant foods is seemingly indicated by the use of grinding stones in the substage.(1969:55)

The best evidence for the development of lithic tools during the Archaic period in central Arkansas has been derived from the Tom's Brook site (3J01), in the northwest part of the state (Bartlett 1963). The site is located in the thickly wooded and rugged topography of the south edge of the Boston Mountains. Tom's Brook shelter is on Tom's Brook close to where it joins Little Piney Creek. The shelter was occupied from the early Archaic through the late Mississippian period. Many of the lithic artifacts are similar to those found in the Table Rock Reservoir area in southwestern Missouri (Marshall 1958), as well as those found at sites in the project area. It would also appear that exploitation of lithic raw materials followed by groups in this area also follow patterns present in the project area. Bartlett (1963:20) observes that, while occasional chert nodules are found in the Atoka shales around the site, "nearly all

of the stone implements found were manufactured from flints brought in many miles from the Ozarks to the north or from novaculite quarries in the Ouachita Mountains, nearly 80 miles (128.7 km) to the south."

The presence of grinding stones and so-called nutting stones in Archaic sites in eastern North America suggests exploitation of the oak, hickory, and other nut-bearing trees in wooded environs and perhaps seeds. Other ground and polished stone tools also exhibit a marked increase during this period throughout the East.

> These ranged from grinding stones, grooved axes, and pendants to the early bannerstone forms which had a central hollow cylinder drilled by hand or with a bow drill, with a reed or hollow bone bit and with sand as an abrasive. The bannerstone was placed on the cylindrical shaft of an atlatl (or throwing stick), giving extra leverage in throwing spears at game, or at people. (Griffin 1967:178)

Throughout eastern North America, sites of the Archaic period have a greater variability than those of the Paleo-Indian period. Some of these were base camps, butchering stations, seasonal fishing camps, or quarry sites. Many of these Archaic sites were recorded in areas convenient to water, and those found in the Conway project area were located on the floodplain of Cypress Creek or on the terraces above the creek.

In the later Archaic period (ca. 3000-3500 B.C. to 500-1000 B.C.) there appear extensive regional variations throughout the East; points, grooved axes, atlatl weights, and some other stone tools show a wide range of spatial distribution (Griffin 1967:179). Environmental changes at this time may have again affected the settlement and subsistence patterns. Information on prehistoric vegetation and climate, however, is lacking. Morse, summarizing a generally accepted interpretation of climatic changes that occurred during the period, notes

> There is a suggestion that in central Arkansas just before and during the Late Archaic period under consideration climate shifted from warm-dry to warm-moist and that from an oak-hickory maximum there was a gradual increase of pine and gum. Oak-hickory climax vegetation today is of scattered distribution in this region along second bottoms. It is possible that the oak-hickory forest retreated up the Mississippi Valley to north of the Ozark highlands where it is now established at about this time. This shift would be associated with a breakup in a forest canopy, thereby increasing animal-carrying capacity. The increase of pine and gum is important. Today, black gum (Nyssa sylvaticia) and shortleaf pine (Pinus echinata) are two of the sixteen most abundant deer browse species in the Ozarks; in particular, the pine is a heavily browsed winter food for

> the upland pine-hardwood and cedar glade regions. Such a change probably also would allow an increase in oak varieties in subclimax forests, which in turn would provide more food for deer.(1969:19)

Evidence for local subsistence activities is found at the Tom's Brook shelter where deer, bear, turkey, rabbit, and other remains were found in association with late Archaic artifacts. Limited evidence indicates that the settlement and subsistence patterns were still based essentially on seasonal exploitation of resources by small transient bands.

The late Archaic pattern apparent in the Ozarks of Arkansas is in contrast to that observed at Poverty Point, a site in northern Louisiana. Radiocarbon dates suggest that the site was occupied by 1000 B.C. or slightly earlier. There are several large earthen mounds and a series of concentric man-made ridges at the main site. Overall settlement distribution appears to be scattered, with over 33 smaller sites located in riverine and upland zones, levee terraces, and lacustrine locales. Gibson (1974) analyzed the distribution of over 19,000 artifacts and reported

> The largest number of artifacts at the Poverty Point site seem to have functioned primarily as tools of daily use. Their distribution differs from those of the status-indicating artifacts and implies the existence of a broad stratum of commoners whose roles were not clearly distinguished by special insignia. Based on these findings, Poverty Point society appears to have been composed of at least three ranks of people, confirming the existence of the ranking principle, (1974:102)

McClurkan (1969:33) points out that clay artifacts diagnostic of the late Archaic occupation at Poverty Point have been found in the Arkansas River delta. They have also been recovered in the Arkansas Ozarks but the level of social complexity of the Poverty Point site is not manifested here (Hoffman, personal communication).

The Woodland Period (ca. 1000 B.C.-A.D. 900)

About 1000 B.C. there was another broad transition in the life pattern of many prehistoric societies in North America. Archeologically, the most significant changes in the East were the appearance of Woodland pottery and burial mounds and evidence of agriculture (Griffin 1967:180). In the northern part of Arkansas relatively little is known about this transition. Morse states

> Early to middle Woodland remains are so rare, especially in contrast to late Archaic, that an ecological and/or technological shift must be inferred. There is still a possibility we have

> not looked hard enough in the right places, but at least one fact has appeared-- as yet there is no evidence of cultural continuation from late Archaic into early Woodland in the Archaic habitation mounds thus far investigated. (1969:20)

Ceramics found in northeast Arkansas suggest the presence of early Woodland peoples. These include the pottery types Withers Fabric-impressed and Barnes Fabric-impressed. Based on point typologies, some of the sites within the Conway project area could have been occupied during early Woodland times, but, because of their long temporal span, some points cannot be used to identify cultural affiliation and temporal occupation of sites. No ceramics were recovered from any sites in the Conway project area that would definitely identify the presence of early Woodland peoples.

Numerous archeologists have stated that middle Woodland "refers to the period when most of eastern North America was dominated by the Hopewellian culture, between 200 B.C. and A.D. 400" (Griffin 1967:183). Large sites, such as Hopewell, a mortuary site located in Ross County, Ohio, and other impressive earthworks sites, have received primary focus, but small villages appear to have existed near some of them. The Hopewell culture apparently developed within zones characterized by broad alluvial valleys of rich soil with at least 120 frost-free days necessary for the maturing of corn. The culture spread primarily into surrounding areas where these conditions were present (Dragoo 1976:18). Most of the food was secured by hunting and gathering, but maize and squash were also cultivated in many areas.

In Arkansas there are two major middle Woodland manifestations, Marksville and Fourche Maline. Marksville and Marksville-related cultures are prominent in the southeastern (McClurkan 1969:30) and southwestern (Hoffman 1969:41) portions of the state, and Marksville pottery appears in the northeast (Morse 1969:20). Marksville is a variant of Hopewellian characterized primarily by burial mounds, ornate burial and plain utilitarian pottery, and the use of materials derived from as far as the Yellowstone area to the west and the Gulf to the south (Haag 1971:18-19). Marksville sites are more complex in Louisiana (e.g., the Crooks site in LaSalle Parish) and the sites in Arkansas that are nearest to those in Louisiana reveal this influence (Hoffman 1969:41). The apparent distribution of Marksville-related culture in Arkansas is defined by Hoffman (1969:41).

> Marksville-related sites are indicated up the Ouachita River in Arkansas to the vicinity of Arkadelphia, where the Kirkham and Means sites give evidence of this culture's presence. Thus far there is no evidence of a Marksville occupation of the central Arkansas River Valley.

Most of the Marksville sites in northeast Arkansas reflect a diffused settlement pattern characterized by small sites. The Helena Crossing site appears to be an exception; five conical mounds are present (Ford 1963:5). No villages have been located, although the Bowie site may be related (Phillips 1970). Pottery from Bowie has been found at Helena Crossing.

Typical Hopewellian traits include tombs covered by mounds, bi-cymbal copper earspools, sheet mica Hopewell blades, copper-jacketed panpipes, and Marksville Plain and Marksville Red Filmed pottery (Ford 1963).

In the remaining portions of the state Fourche Maline and Fourche Maline related materials are found (Hoffman 1969:41). These are similar but not identical to the Fourche Maline focus in Oklahoma (Bell and Baerreis 1951). Fourche Maline materials are distributed throughout the central and western parts of Arkansas, with the Gober complex as the variant observed in the central Arkansas River drainage. Characteristics of the Gober complex are Williams Plain pottery, pointed stem Gary dart points, extensive midden deposits, and large argillite tools (Hoffman 1969: 42; 1971:916). The pottery has clay, bone, and grit temper. Sites are located in bottomlands on natural terraces or on slight erosional terraces, sometimes surrounded by streams (Hoffman 1977:33). The Spinach Patch site (3FR1), in Franklin County, is a Fourche Maline site in western Arkansas. Bond (1977:120) states

> As Spinach Patch contained no shell-tempered pottery, it is postulated that the site was probably abandoned before this technological innovation that marks the Late Ceramic period was adopted. Although the presence of small arrow points suggests a relatively late clay-tempered habitation or that the inhabitants were so conservative as not to accept the use of shell tempering, the presence of implements believed to be associated with agriculture and the concentration and organization of the midden and intra-site areas indicate a relatively stable lifeway and intense habitation based on agriculture. The quantity of bone fragments, projectile points, and flake tools, however, indicates that hunting was an important economic function.
>
> The interpretations offered here suggest that the Spinach Patch site was occupied during an early Ceramic period, probably sometime after A.D. 300. The socio-cultural implications of the site suggest a well-organized village lifeway, including mound construction, supported largely by agriculture and subsidized by hunting.

The late Woodland period, between A.D. 400 and 900, is characterized by an environment which had stabilized, with conditions essentially like those of today. In eastern North America, "the subsistence base expanded to include more cultigens to supplement an efficient exploitation of all natural food resources" (Dragoo 1976:19-20).

During this period

> The ceremonial centers with large mounds and associated earthworks lost their importance and were gradually abandoned. The extensive trading network that had brought exotic raw materials and goods from distant sources diminished in importance. Burial practices became less complex, but burial

mounds of small size continued to be constructed for several hundred years.(Dragoo 1976:19)

Many groups throughout the East continued living the way they had previously, with little notice of the decline in the Hopewell culture (Dragoo 1976:19; Stoltman 1978:222).

In the general area of the Conway project, archeological excavations have been carried out at the Falling Water Falls site (3PP40), a bluff shelter in Pope County, which is immediately west of Conway County. Late Woodland occupation is apparent (Gregoire 1971). Faunal remains from the site include deer, turkey, common land turtle, frog, fish, and bear, among others. Floral remains include gourd seeds, corn cob, cane, various plant fibers, and wood. Of particular interest are woven fiber sandals, a split cane mat fragment, a coiled basket fragment, and a braided grass rope. Gregoire (1971:37) observes that artifacts at this site show Paleo-Indian, Archaic, late Woodland-marginal Mississippian, and possible Caddoan influence. Due to extensive disturbance, stratigraphic deposition of artifacts and organic remains could not be determined.

The cultural manifestation known as Coles Creek developed in the lower Mississippi Alluvial Valley around A.D. 600, was well developed by A.D. 700, and continued until about A.D. 1200 (Brain 1978; Belmont 1979). It was the first manifestation of ceremonial pyramidal mounds around a plaza, antedating the similar Mississippian pattern that later spread throughout the Mississippi and lower Ohio valleys. The Yazoo and Natchez basins were core areas (Brain 1978). Settlements were concentrated along the bluff and floodplain ecotone close to the main channel of the Mississippi River. In later times, Mississippian influence from Cahokia moved south into the area (Morse 1974; 1975:213).

The Crenshaw site (3MI6) is an important Coles Creek site that has been excavated in Arkansas. First discovered by C.B. Moore on his Red River expedition in 1913, it was later excavated by personnel of the University of Arkansas Museum in 1962 (Wood 1963) and of the Arkansas Archeological Survey in 1969 (Schambach 1971). Crenshaw was a ceremonial center that exhibited mounds, burials, and structures. In another ceremonial center at the Spiro site in Oklahoma near Fort Smith, Arkansas, the earliest ceramic level is identified as Coles Creek (Brown 1971). A mound at Point Remove, in Conway County, was also on a Coles Creek site but little detailed attention has been given to the material from the site (Davis 1967; Hoffman, personal communication).

The best known Coles Creek site in Arkansas is the Toltec site, another major center. This is the type site for the Toltec phase. Rolingson states:

> It is evident from preliminary studies of the site and its artifacts that the major occupation is characterized by Coles Creek ceramics and is related to the Coles Creek culture in the southern part of the Lower Mississippi Valley in the Yazoo, Red, and Ouachita River Valleys, dating about A.D. 700 to 1000. There are

> differences, however, in the artifacts and in the site organization. Many Coles Creek sites in the Lower Mississippi Valley have only three mounds grouped around a plaza area on the edge of a lake. The complex of 15 to 18 mounds at the Toltec site is much larger and more complex than most of the southern sites. It is certainly likely that the mounds were built over a long period of time, or were added to, and that the purposes for which they were used changed. . . .Apparently there was occupation at this location during the Marksville period, as a few Marksville sherds have been found. The embankments are known on at least three sites that date earlier, possibly constructed in the Marksville period. There is also pottery dating from a later, Mississippi period, occupation present, and perhaps even the protohistoric Quapaws used the site. (1978b:4)

Continued work at the Toltec site should provide significant information on the internal arrangement and social organization at a major Coles Creek site. Other Coles Creek sites in Arkansas that have been examined include Kirkham Place (Dickinson and Lemley 1967) in Clark County, McElroy site (McManus 1963) in Union County, 3WH11 (Figley 1964) in White County, the Soc site (Figley 1968) in White County, and the Old Martin site (Hoffman 1971) in Little River County.

In contrast to earlier cultures, Coles Creek components appear to reveal relatively permanent habitations supporting large populations and integrated at the local level by politico-religious centers. Teresa Hoffman (1979:5) observes

> Although it has been assumed that subsistence was primarily based on horticulture, there is no direct evidence of this in the Caddoan area, and milling basins are relatively sparse. Predominate food remains represented in middens are deer with some mussels and snails, suggesting a continued emphasis on hunting and gathering. It is not until the first Caddoan occupations are apparent that direct evidence for horticulture is identified.

The W.S. Alexander site (3CN117), located within the project area, exhibits a number of ceramic sherds with decorative modes typical of Coles Creek. In addition, small arrow points characteristic of Coles Creek have been recovered. At the same time, there is at least one sherd from the site with horizontal incising and tempering that appears similar to ceramics from the Spinach Patch site (Bond 1977, Figure 6.4; Hoffman 1977, Figure 1.16) as well as a Gary point which is a hallmark of the Gober complex Fourche Maline culture. Another site in the general area which reveals clay-tempered and shell-tempered artifacts and Fourche Maline-related artifacts is the Cadron Creek site (3CN13) reported by Myer (1969: 81). Both this site and the W. S. Alexander site lack argillite tools, considered important indicators for Fourche Maline sites.

The Mississippian Period (ca. A.D. 1000-1700)

The final period of prehistoric development merges into the contact period. It is known as the Mississippian and is represented in many areas by shell-tempered pottery and small arrow points, although some characteristics begin to emerge before the actual Mississippian period. In most areas, a major dependence on agriculture becomes the basis for insuring an adequate food supply. In terms of settlement pattern and other aspects of sociocultural organization Griffin (1967:189) states:

> These villages are primarily along the major streams with large alluvial floodplains which provided fertile and easily worked soils. It was the gradual shift to a substantial dependence on agriculture for food that tied the societies to specific localities, emphasized territorality and ownership of land, provided a supply of storable food that allowed marked increase in population, permitted specialization of labor, provided markets for the exchange of goods, and led to the development of elaborate religious ceremonies centered around crop production, in which whole tribal groups took part.

In Arkansas, the Arkansas River appears as a general boundary between two cultural traditions (McGimsey 1969:23). Areas south of the river reflect that Mississippian period peoples kept closer relationships with groups in Louisiana and southwestern Mississippi. North of the Arkansas River, Mississippian peoples were in more direct contact with groups to the north and east. Morse (1969:22-23), for example, describes a number of artifacts recovered in northeastern Arkansas that appear to have had their origin, either ideologically or physically, in other parts of eastern North America. One significant difference appears in the shell-tempered pottery that is found in sites north of the river in contrast to clay- or bone-tempered pottery recovered south of the river (McGimsey 1969:24).

Since the Conway project area is north of the Arkansas River, primary attention is given to Mississippian period sites north of this apparent environmental and cultural boundary. Numerous Mississippian period sites are located throughout northeastern Arkansas. These include the Parkin site (Davis 1966 and Klinger 1975-77) in Cross County. The Lawhorn site (Moselage 1962) in Craighead County, the Knappenberger site (Klinger 1974) and the Nodena site (Morse 1973c) in Mississippi County, 3P059 (Morse 1968) and the Hazel site (Davis 1973; Morse 1973b; Morse and Smith 1973; Zinke 1975) in Poinsett County, among numerous other sites.

Morse (1977) outlines three major periods of Mississippian development in northeastern Arkansas. The first of these, the initial or development period, is treated as a later Woodland or transitional stage in this report.

During the middle Mississippian (ca. A.D. 1000 or 1050 - 1400), farmsteads are present. Small village centers also appear, some of these palisaded

(Morse 1977:1-17). Morse (1977:1-17) points out that from the Powers phase data, there appears to have been strong central social and political control of society. The middle Mississippian merges into the late Mississippian period (ca. A.D. 1400-1700). In northeastern Arkansas there appears to be a sudden population increase.

> Two patterns seem apparent. First, considerable consolidation of sites and behavior took place, and, in fact, less land is being used to support more people. Second, there was a significant southward shift of population centers for all three phases at almost the same time. The Walls phase south of Memphis located on both sides of the Mississippi River may have fragmented from the Nodena phase or may be descendant from the Pemiscot Bayou phase, in turn descendant from the earlier Hayti phase. Nodena seems to be the paramount phase and exercised control of a portion of the Mississippi River.(Morse 1977:1-19)

Morse (1973c) defines the settlement pattern and other aspects of the Nodena Phase (ca. A.D.1400-1700). It would appear that this model can be employed to describe the known pattern observed of most Mississippian communities in eastern North America. There appear to be three basic kinds of habitation sites. These are: 1) major sites with at least one pyramidal mound and a large associated village, 2) small village sites lacking mounds, and 3) small single to multiple house sites (Morse 1973:74). The large flat-topped pyramidal mounds were employed primarily as locations for important buildings. These and surrounding houses were generally composed of a wood and cane frame covered with clay and topped with a thatched roof. In addition to the three types of sites recorded above, temporary camps for specialized exploitation of raw materials or resources (e.g. hunting, fishing, wood gathering, wild plant flood collecting, chert collecting) were certainly present. In fact, the shell-tempered pottery present at the W. S. Alexander site (3CN117), and the late date, suggests a probable Mississippian component at this site (Appendix C). The social units were probably interrelated to function as relatively autononomous subtribes that could interact as tribes in times of need, or as a hierarchically organized chiefdom.

The environmental setting was like that which exists in the region today. Mississippian period sites, generally located on or close to alluvial floodplains, were often close to the boundaries between distinct ecotones. In that way, the resources of both the floodplains and upland-forest environs could be exploited. White-tailed deer, raccoon, muskrat, squirrel, rabbit, and other animals were hunted for meat, bone and skins. Turkeys and other birds were hunted, while fish, turtles and other aquatic animals were caught. Numerous plants were used. Cane was employed for arrows and house construction materials. Wood was used for house construction, tools, and masks. Wild plants were probably collected and animals hunted to supplement a diet with primary emphasis on corn, beans, squash, sunflowers, and other plants.

A number of archeologists have discovered that there is a relationship between soil types and locations of Mississippian period habitation sites (Chapter 2). Morse (1973d:76-77) gives some attention to the importance of soil in understanding vegetation, wildlife, and the potential for agriculture. Very few sites in the Cypress Creek basin area were found to contain points chronologically assigned to the Mississippian period, and only one site exhibited shell-tempered pottery (W.S. Alexander site). The nature of these sites and the artifacts suggests that they were perhaps seasonal camps occupied by small groups exploiting local floral and/or faunal resources. The area historically yielded extensive oak-hickory forests, and soils were relatively poor for cultivation, previous to the use of modern fertilization. The apparent lack of larger Mississippian villages in this area has made it more difficult to define the actual nature of Mississippian period occupation and/or exploitation of the area.

No attention is given to the De Soto Entrada in eastern Arkansas in this report. This occurred in 1541. Descriptions of the groups that he encountered suggest these peoples shared in late Mississippian cultural patterns. Davis (1966) gives attention to the De Soto visit, as well as the possibility that the Parkin site may have been either the village of Casqui or Quiguate that he visited. It appears that De Soto may have followed the Arkansas River to Little Rock, then to the edge of the Ouachita Mountains, and finally down the Ouachita River (McGimsey 1969:31).

Unfortunately, neither archeologists nor historians have any idea of how many different historic groups passed through or briefly occupied the project area. We do know that the Cherokee were there from ca. 1812-1828, but this was a forced settlement on a reservation. The Quapaw probably used the area occasionally to hunt available fauna and collect floral resources. Hoffman (1975-1977) gives considerable attention to the presence of possible late prehistoric Quapaws at the Kinkead-Mainard site near Little Rock, in Pulaski County. He focuses on settlement patterns of the historic Quapaw in order to relate these to the prehistoric site.

> Quapaw sites are located on natural levees or other relatively high land in river bottomland, and are located in former river channels or bayous. The Kinkead-Mainard site certainly conforms to this kind of location. The major Quapaw sites appear to have been both ceremonial and habitation localities. Flat-top mounds were present at Avenue, Dupress, Menard, Old River Landing, Douglas, and Greer, although it is not certain in each case that they were constructed in Quapaw phase times. (Hoffman 1975-1977:33)

Ford (1961) gives attention to the Menard site, a Quapaw village site on the Arkansas River close to where it enters the Mississippi River. Hoffman (personal communication) also observes that there appears to be evidence of the presence of Quapaw at the Point Remove site, but the collections have not been analyzed. The absence of Quapaw materials in the Cypress Creek basin again suggests primary settlement along the major rivers and navigable streams.

Chapter 4

History of the Cypress Creek Basin Area Central Arkansas

by

Beverly J. Watkins

One of the dominant themes in American development before 1900 was the western movement; the opening of new areas to settlement; the challenge of the frontier. As early as 1763, the pressure for westward expansion caused the British government to forbid settlement beyond the Appalachian Mountains in an attempt to prevent conflicts between Whites and Indians. The Treaty of Paris of 1783, which put the western boundary of the new United States at the Mississippi River, was believed to provide growing room for hundreds of years, but by 1803 that region had been organized into seven new states and territories, and the American settlements were encroaching on French and Spanish lands to the west and south. The purchase of Louisiana in that year doubled the size of the United States, and the westward march continued (Smelser 1968:83-137).

Settlement of this new territory proceeded more slowly than that of Tennessee and Kentucky. Transportation difficulties tended to limit settlements to the river banks, there were Indians to be dealt with, and it was still easy to get land in the newly admitted and much more "civilized" states. Even so, Louisiana became a state in 1812; Missouri was headed for statehood in 1820; and the wild, largely unsettled area between them was organized as the Arkansas Territory in 1819. In the same year an agreement was signed with Spain defining the western boundary of the Louisiana purchase, and certain lands in the northwest part of the territory had been set aside for the Indians. All helped make Arkansas attractive for settlers.

In central Arkansas the line of settlement progressed up the Arkansas River from Arkansas Post. Cadron was established on the river just south of the project area in 1814 and became a center of trade and local government (Smith 1974). Treaties restricting the Quapaw Indians to reservations, first near Pine Bluff and then on the Red River, and removing the Osage Indians to northwest Arkansas opened most of the area to white settlers (Hempstead 1890:139-140).

Until 1828, the Cypress Creek basin was split so that lands in the western half were included in the Cherokee Reservation, and those in the eastern half were primarily U.S. Government lands (Figure 9). The Cherokee Reservation, formally established in 1817, assured lands for members of that tribe removing to Arkansas from the eastern states. The eastern boundary of this reservation crossed the project area, leaving roughly half of the land available only to Indians and making the other half undesirable because of the proximity of the Indians' lands. Many Cherokees moved to this reservation, and a mission and school were established, but, following the pattern of all frontier settlements, most of the homesteads were close to the river. By 1828 the pressures of white settlers wanting land and conflicts with the Osage tribes to the northwest led to a new treaty, and the Cherokees moved to Oklahoma (Hempstead 1890:140-146).

The growing settlements along the river led to the formation of Conway County from western Pulaski County in 1825. Continued growth brought about the formation of Pope County from northwest Conway County in 1829. A special sheriff's census taken in that year showed that Conway County had 794 free residents (793 white and 1 black) and 1025 slaves. In Cadron Township, which probably included the project area, there were 133 white men, 123 white women, and 320 slaves; but most of these would have been living along the river (Sheriff's Census 1829).

The key to the American ability to exploit new territory was mobility. In addition to European immigrants there were always established farmers or their sons who were willing to uproot their families and seek their fortunes in the west (Rossiter 1971:111, 170, 270). In the states along the south Atlantic coast, changes in the cotton economy provided further incentives to the westward movement.

Until the early 1800s cotton had been only a minor crop grown for local use. It required a long growing season and was difficult to pick and clean to get it ready for spinning. But, with the invention of the cotton gin in 1783, with the development of machines that could spin, weave, and sew, and with the tremendous growth of population in both the United States and Europe, cotton became a prime commercial crop. Planters quickly discovered that the rich lands of the Gulf Coast states were much more productive than the depleted soils of the older states and moved west. By 1835 Alabama and Mississippi were the center of cotton production, and by the time of the Civil War the Gulf states plus Arkansas produced three-fourths of the cotton grown in the United States (Eaton 1966:209-212).

As the soil in the seaboard states became less and less productive, small farmers joined the move west looking for better land. Unable to compete with the slave-based plantations in the deltas, these men sought the rich lands along smaller streams and in upland valleys. By the mid-1830s the best of these areas in the Gulf coast states had been claimed, but the new state of Arkansas offered many opportunities. Those families who settled in the project area were a part of this movement.

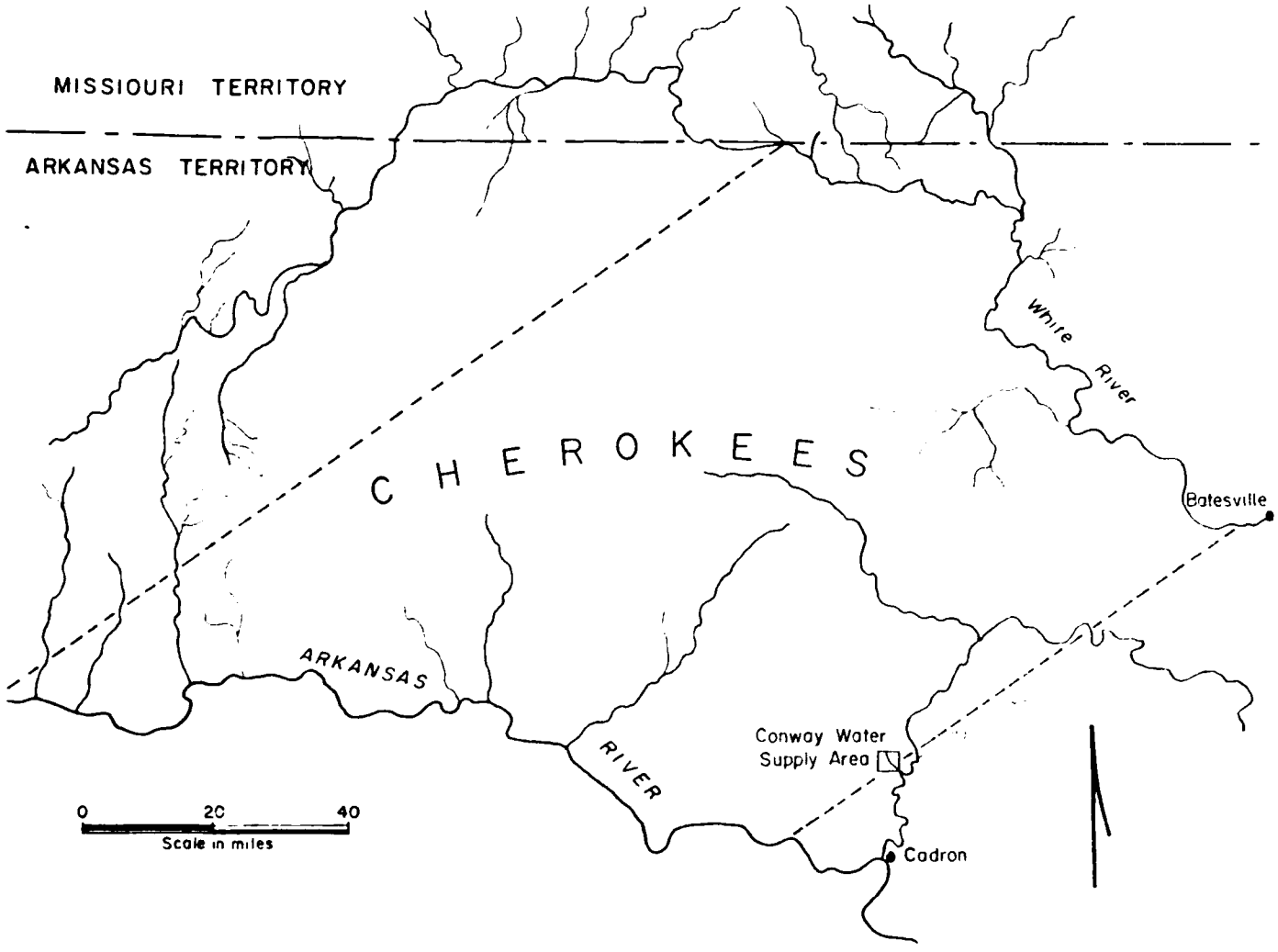

Figure 9. The Cherokee Indian boundary line, 1817-1828

In the late 1830s, early settlers including Robert Stell and his brother, Dennis Q., the Willbanks family, and the Venable and Harrison families (U.S. Census 1850:Benton and Union Townships) moved into the Cypress Creek basin and formed a neighborhood called the Georgia Settlement. The limits of this settlement are roughly defined by the limits of the proposed Conway reservoir.

Why they chose this particular section of Conway County for their new homes must remain conjectural, but some reasonable guesses can be made. They probably came up the Arkansas River, landing at Lewisburg. Learning that there was unsettled land to the north they started up the military road towards Batesville until they found a valley they liked. That they found land within a few miles of Lewisburg indicates how little settlement there was away from the river. Their failure to get land titles until almost twenty years later is more likely a reflection of the problems with the early surveys rather than a sign of poverty or evading the law.

The Stells and their neighbors tried to make their new Georgia Settlement as much like their old home as possible. Dennis Stell built a mill, and a post office known as Stell's Mill was established in December 1840, with Dennis serving as postmaster until the office was discontinued in 1843 (U.S. Post Office Records).

New farmsteads were similar to their old Georgia homes. In 1840 Dennis Stell owned one horse and five cattle, while Robert owned three horses and nine cattle, probably animals they brought with them (Conway County Tax Records 1840). No specific details of farms in the project area were found, but several homesteads from nearby Pope County provide typical details. At the time the descriptions were written (1842), the farms had been settled for two to ten years. They ranged in size from 15 to 50 acres, with the majority between 30 and 35 acres. All had orchards; the largest had 300 peach trees and 60 apple trees. The houses were built of hewed logs with a stone chimney. Only two descriptions gave dimensions: 18 x 24 feet and 20 x 26 feet. One apparently prosperous family had a double house with two chimneys. Other buildings included kitchens, barns, and outbuildings. Two of these farms had mills, one of which was described as a double geared grist mill worth $500 to $600 (Salt Springs Papers, items 11, 18-22).

The success of the Georgia Settlement and others like it is reflected in the growth of the area. By 1850 Conway County had 3,339 white residents, 4 free black residents, and 240 slaves (DeBow 1854:194). Union Township, including the project area, had 319 white residents, with no free blacks or slaves (U.S. Census 1850: Union Township). A post office was opened by Fitz Henry in 1851, and this became the town of Springfield in 1853 (U.S. Post Office Records). The new survey done in 1855 made proper land titles possible. This encouraged new settlers, so that by 1860 Union Township had 987 white residents and 39 slaves, 17 men and 22 women (U.S. Census 1860a and b: Union Township). George C. Witt was the only slave owner in the project area (Conway County Tax Records, 1858).

Roughly 20% of the land in Conway County had been improved by 1860. Agricultural production was widely diversified. Swine greatly outnumbered all other livestock, and the value of animals slaughtered that year was set at $68,644. The main crops were wheat, corn, oats, tobacco, and sweet potatoes; only 3,181 bales of cotton were produced. Significant quantities of butter, cheese, molasses, honey, and beeswax were also produced (U.S. Department of Interior 1864).

The coming of the Civil War ended this period of growth. No battles were fought in the project area, but patrols and foraging parties from both armies disrupted the quiet life. The real effect of the war was at the family level. Three examples from the Stell family suffice. James T. Stell, Dennis's son, was still a bachelor when he joined Company I, 3rd Arkansas Cavalry, at Portland on March 1, 1862 (Compiled Service Records, roll 25). His death at Saltville, Mississippi, on May 25, 1862, caused complications in the titles to his land. Balus B. Stell, Robert's son, had been married only a short while when he enlisted in Company B, Gordon's Regiment, Arkansas Cavalry, at Roseville on March 11, 1863 (Compiled Service Records, roll 34). Asbury Baxter Stell, also Robert's son, left five children at home when he joined Company F, 36th Arkansas Infantry, on April 7, 1863 (Compiled Service Records, roll 229).

Reconstruction brought hard times throughout the south, as cotton prices fell and plantation owners had to make arrangements for labor to replace the slaves. In the project area, however, the effects were minimal. There the farms were family owned and operated, and, while they had grown some cotton, their main crops were wheat and corn. The major change during this time was the coming of the railroad.

Residents of Arkansas had long recognized the need for a transportation system inland from the rivers. Efforts were made at the county level to build and maintain roads, but these were seldom more than wagon tracks that were impassable in wet weather. The only principal road in the Cypress Creek basin in 1836 was one from Batesville southwest by way of Clinton to Lewisburg on the Arkansas River (Figure 10). At that point the road connected with the military road between Fort Smith and Little Rock, where a stage line was operated from the 1830s to the 1860s (Figure 11).

In the 1850s there was great interest in building railroads across the state, both for internal transportation and as a link in proposed transcontinental routes. The railroads were to be financed through land grants and the sale of bonds. One of these railroads was planned north of the Arkansas River from Little Rock to Fort Smith.

Unable to start construction before the Civil War, the Little Rock and Fort Smith Railroad was plagued with financial difficulties after the war, but construction began late in 1869. The track reached Cadron in September 1870. Regular passenger and freight service began on November 21, 1870, on the 50 miles of track from Huntersville (North Little Rock) to Lewisburg, a three and a half hour trip (Thompson 1976:207-208).

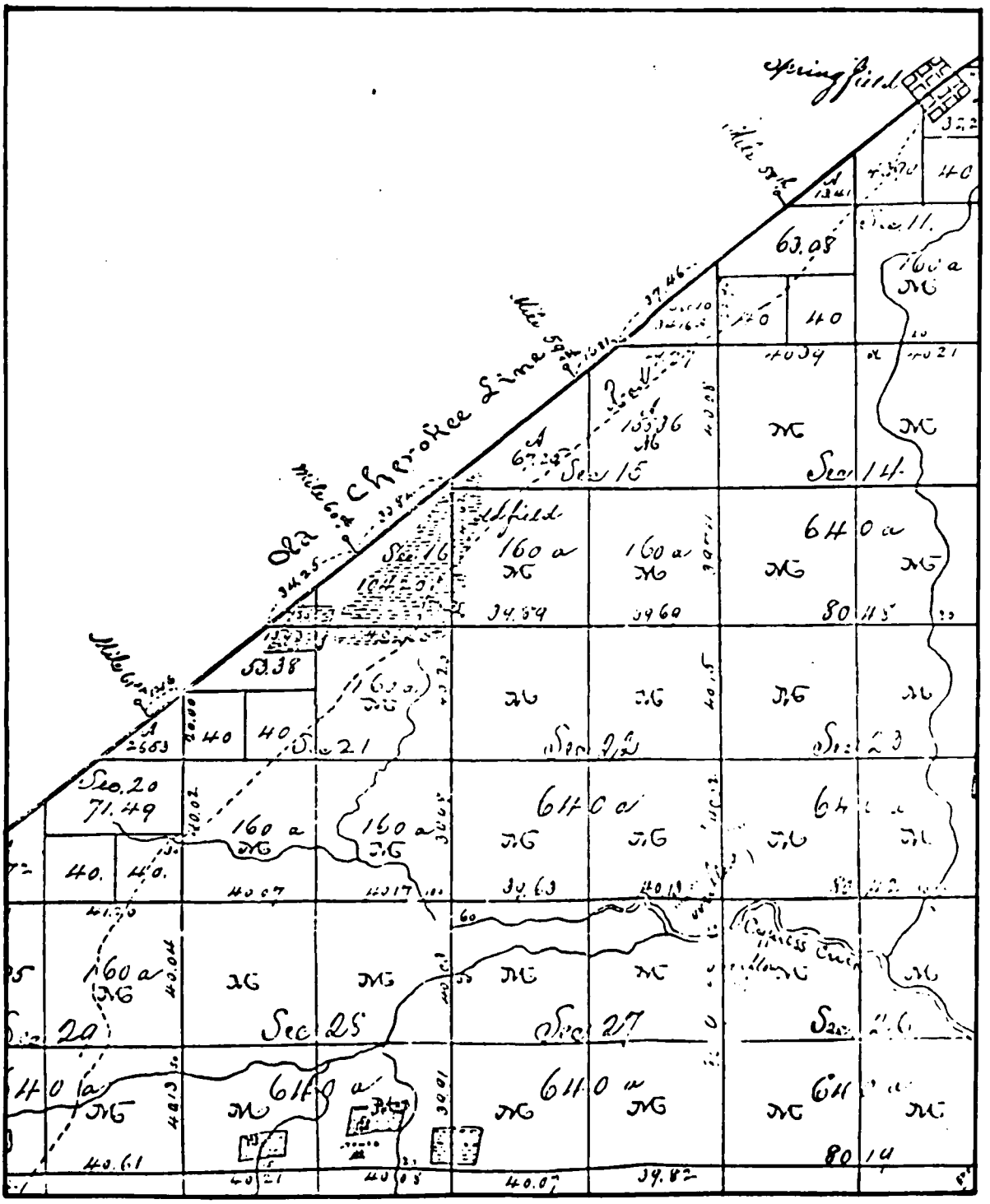

Figure 10. General Land Office survey map of 1855 with roadway between Springfield, Arkansas and Lewisburg (General Land Office 1855)

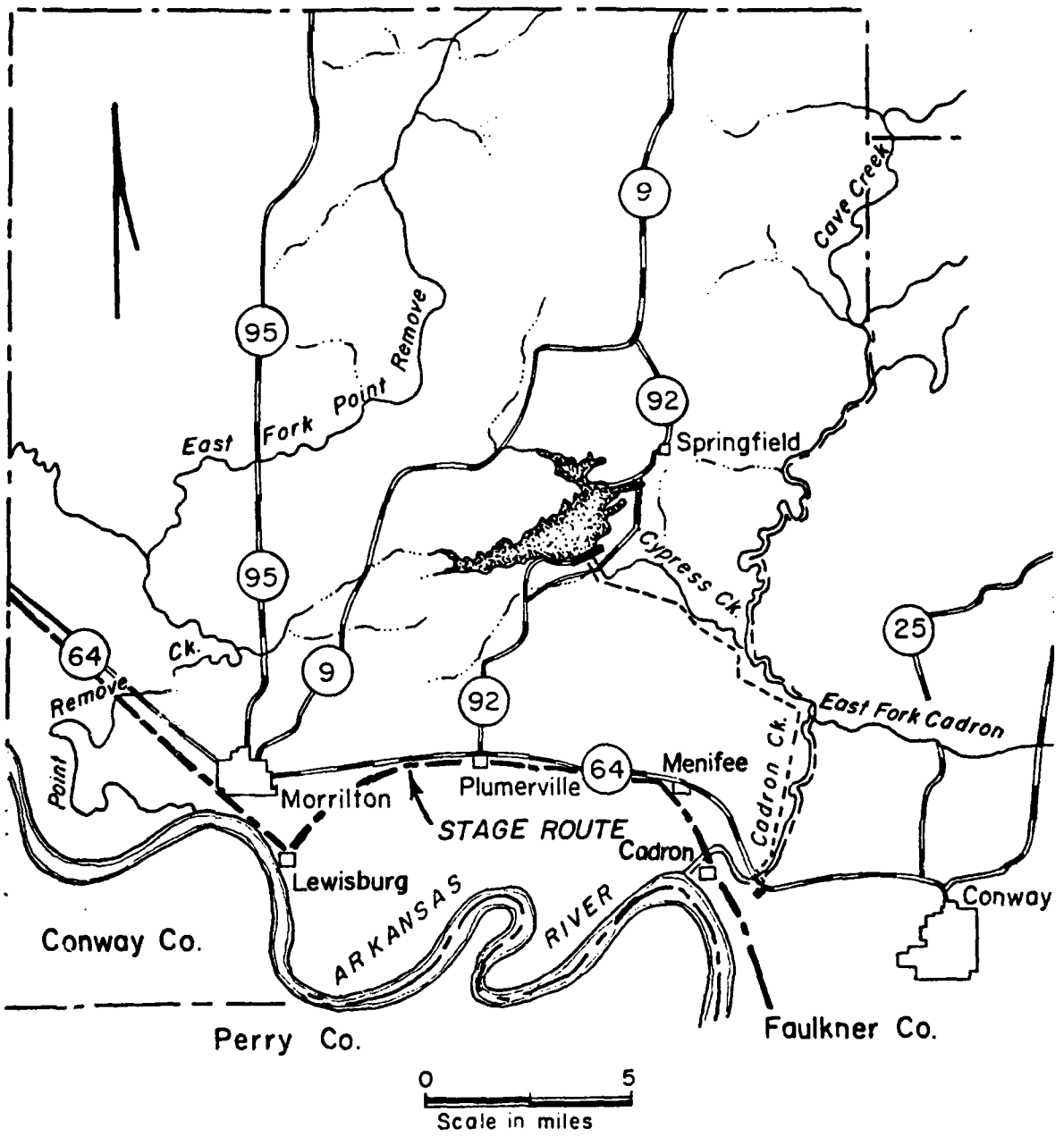

Figure 11. Approximate route of the Butterfield Overland Stage in the nineteenth century, Conway County, Arkansas

The arrival of the railroad marked the beginning of changing times in Conway County. Trade and commercial activity became concentrated along the railroad. Population increased as the railroad began selling its land and thereby making the remaining public land more desirable. By 1873 the population had grown enough for Faulkner County to be created from the eastern portion of Conway County. In the same year the county seat was moved from Springfield to Lewisburg to be closer to the center of commerce, but Lewisburg itself was doomed, for the railroad was actually several miles from the town. The new city of Morrillton, which grew up around the railroad station, soon overshadowed the older town and became the county seat in 1883 (Hempstead 1890:918,1153). Union Township, which gained only 60 people from 1860 to 1870, grew from 1,085 residents in 1870, to 1,738 in 1880, and to 2,004 in 1890. (U.S. Census 1860-1890).

There were three types of new residents, all attracted to the area by the extensive publicity campaign conducted by the railroad (Woodward 1971:298). The stream of new settlers from the older states of the southeast, which was interrupted by the Civil War, resumed in the late 1860s. Many of these people had been ruined by the war and were seeking a new life in the west. The second type of settlers was the foreign immigrants. These were frequently recruited in Europe by the railroads to form new towns along the line. The Little Rock and Fort Smith Railroad attracted a large number of German immigrants to the Arkansas River Valley.

Of special interest to the project area is the third type of new residents--the freedmen and other blacks. One of the immediate reactions of the slaves to emancipation was migration from the plantations. This took three forms: from country to towns, from poor lands to rich lands, and from one part of the South to another (Woodward 1971:207-208).

The westward movement was slow because the freedmen had no money to buy land or supplies. It was not unusual for a family to farm as tenants for a year or two and then move on. In this way it could take eight or ten years to move from Alabama to Arkansas. In 1866, in an effort to help the freedmen, Congress brought all of the government land in Arkansas and the other southern states under the provisions of the Homestead Act of 1862 (Woodward 1971:115-116). Although this allowed a person to gain title to a parcel of land by living on it, blacks, needing money for transportation and provisions until a crop was grown, still had difficulty taking advantage of the offer.

The main influx of blacks into the project area occurred between 1880 and 1900 and coincided with a change in the economy of the area that made it easy to buy land. Farmers all across the country suffered from hard times in most of the thirty years following the Civil War. In addition to the tenant farming system that eased the labor problems in the South (Edwards 1973), the crop lien system was developed to help farmers finance their crops. A merchant would advance goods and money to a farmer to be repaid from the first harvest of his crop; the farmer's land was collateral for this crop mortgage. If the farmer could not repay

the debt, the merchant got the land, which he then sold cheaply to recover his loss (since he also had debts to pay). This system forced the farmers to concentrate on cash crops and made them even more dependent on the merchants for supplies.

In the project area Miles L. Stell, as one of the partners of Stell and Bolton, was taking crop liens as early as the late 1870s (Conway County Deed Record Q:421). In 1884 over 1,000 crop mortages were recorded for Conway County (Elkins 1976:46). There were so many of these liens that the county clerk started a separate series of books to record them. The danger of the system was that, if the farmers could not pay, the merchants would have to mortage their own property to pay their suppliers. This was exactly what happened to Miles L. Stell in 1890, when he was forced to mortage his land to cover the debts of Stell, Willbanks and Company (Conway County Mortage Record B:236-238). A merchant foreclosing on a piece of property could, of course, keep the land and put tenants on it, as A. D. Malone did with the Wilder place (3CN92).

Agricultural production in Conway County reached its peak in 1890. In that year there were 92,417 improved acres, which produced 12,060 bales of cotton; 496,401 bushels of corn, 45,893 bushels of oats, and 5,443 bushels of wheat. The average farm had 88 acres, with 61% of the land cultivated by the owners, 23% rented for money, and 16% farmed on shares (U.S. Department of Interior 1895). Although there were tenant farmers in the project area, sharecropping was not as important in this county as in the eastern part of the state.

Farm product figures for 1930 show that agricultural products had drastically declined in those 40 years. In 1930 cotton acreage had almost doubled, but only 18,612 bales were produced, land in corn increased, but only 293,650 bushels were grown; and only 82 bushels of oats and 46 bushels of wheat were grown (U.S. Department of Commerce 1931:2(2):1169).

Notes on Land Titles in Arkansas and Their Interpretations

Buying a piece of land has always been an important event in a person's life. Owning property symbolizes stability, prosperity, and respectability. Having a clear title to your farm assured your family a place to live even in a poor crop year. As a result, records relating to land titles have been carefully kept at the county, state, and national levels. These records can provide a wealth of information for historical research if they are used cautiously and with an understanding of the types of titles and transfers involved.

When the Arkansas Territory was organized in 1819, teams were sent across the countryside to survey the land using the township and range system developed in the Northwest Territory. This system made it possible to describe parcels of land more accurately than the metes and bounds system used by the early French and Spanish settlers. Starting from a point on the Fifth Principal Meridian, the surveyors divided the territory

into a grid system with each unit of the grid divided into 36 sections, each one mile square and containing 640 acres. Parcels of land could then be described in terms of a fraction of a section and in relation to the starting point of the survey. For example, a typical description for a piece of property in Conway County could be the north half of section 27, 7 townships north of the baseline, and 15 ranges west of the Fifth Principal Meridian. The surveyors worked for the United States General Land Office, so the maps that they drew are frequently called GLO plat maps.

The project area was first surveyed in 1819, but there are several problems with the maps. The surveyors were instructed to record only streams and roads where they happened upon them in surveying section lines, so that a surveyor might or might not record a house or field that he could see but that was not in his path. Also, the portion of the project area west of the Cherokee boundary was not surveyed at all. These and other problems so affected the reliability of the 1819 GLOs that the entire area was resurveyed in 1855. Those surveyors were still not required to record everything they saw, so that these maps must be used carefully in trying to date historic sites.

Once an area had been surveyed, land titles could be established. In theory unsurveyed land still belonged to the United States, through the General Land Office, and there were many ways a person could gain title to some of this land. A person who lived on a piece of land before it was surveyed had pre-emption rights to that property. He could enter a claim on the land (so that no one else could buy it), then, when he proved he was living there and had made improvements on the property before the survey, a title patent would be issued and any other claims on the land would be voided.

In the early 1800s the federal government did not have enough money to pay soldiers, so following each war the men were given land warrants instead of money when they were mustered out. These military bounty warrants could be used to claim a specified number of acres of land in certain states, the amount determined by type and length of service. The soldier then had two choices: claim the land himself and move his family to his new property, or sell his warrant to a land agent. This led to speculation in both land and military warrants. Several pieces of property in the project area were claimed using military bounty warrants.

People who wanted to settle in a section 16 had special problems. By law, section 16 in each township and range was to be set aside for the support of schools. It was up to the state to decide how these sections were to be used or sold. In 1857 the Arkansas School Commissioners decided that 16th section land was to be sold for $1.25 per acre in lots no smaller than 160 acres, beginning in January 1858. Pre-emption rights still had precedence over other claims, but even these settlers had to pay for the land.

Acquiring title to government-owned land became more complicated in the 1840s and 1850s, as the land was classified for certain uses. Some land was to be sold to pay for internal improvements; some was to be used

as incentives for building levees and draining swamps. The project area was affected by a grant of land intended to encourage railroad construction. In 1853 a grant was given to the Cairo and Fulton Railroad Company for a road from the Mississippi River opposite Cairo, Illinois, to Fulton, Arkansas, on the Red River, with branches from Little Rock to Fort Smith and Memphis. This grant gave the railroad alternate sections of land three sections wide on each side of its right-of-way, with provisions for designating substitute land to replace any property already owned. The company would get title to the land as the railroad was built, but land within the grant could be "reserved"--that is, removed from public sale. Anyone settling on this land would risk losing it when the railroad was built. In November 1857, the Little Rock and Fort Smith Railroad reserved at least one section in the project, and a note was made on the records of the State Land Office that several other sections were within the limits of the grant.

Once a piece of land had become the property of an individual, there were still several ways the title could change hands other than through a direct sale. The most common of these was through a sheriff's sale for non-payment of taxes. In Arkansas property taxes were the main source of revenue for a county. If a landowner failed to pay his taxes two consetive years, the county sheriff would offer the property for sale for the amount of tax owed. This amount, of course, was much lower than what it would have cost to buy the land from its owner, making these sales very popular. The new owner paid the past-due taxes and the current taxes but did not immediately get title to the property, because the original owner had two years to redeem his title by paying all the taxes plus a penalty. In this two-year period, the new owner seldom made improvements on the land, because he would lose them if the property was redeemed. If the land was not redeemed, a Sheriff's Deed would be issued to the new owner.

Land offered at a sheriff's sale for delinquent taxes and neither sold nor redeemed was forfeited to the state, which would offer it for sale at auctions held several times a year. If land was offered at auction and not sold, or if the taxes had been delinquent for seven years (some sheriffs were a little slow turning in lists of forfeited land), the property became donation land. The state would give a quarter section (160 acres) to an individual who would pay the current taxes and live on the property, bringing three acres into cultivation within a year, or would clear, fence, and improve five acres, making them ready for cultivation within 18 months. If these conditions were met, the owner received an Auditor's Deed for the property; if the conditions were not met, the land reverted to the state. In 1850 the law was changed, so that the head of the family could get a quarter section for himself, plus a quarter section for his wife, plus a quarter section for each minor child. Improvements to qualify for the title had to be made only on the land entered by the head of the family, but land entered in the name of a child could not be sold until the child reached his majority.

After 1866 certain lands in Arkansas that still belonged to the federal government could be acquired under the provisions of the Homestead

Act of 1862. Similar to the state donation lands, the specific details of the Act were changed from time to time, but allowed settlers to gain title to land through a combination of residence, improvements, and low cost per acre.

County property tax records can also be used to establish landowners, but they must be used with special care because they are not legal proof of ownership. This is only a minor problem, however, because few people pay taxes on land they do not own, or at least occupy. Tax records from before the Civil War are particularly helpful. These were kept on an annual basis, and record all taxable property, not just real estate. Consequently they can be used in some circumstances to show when a new resident arrived in an area. After the Civil War, real estate tax records were organized by legal description, and can provide a quick check on when a piece of property changed hands. This can be very useful, since deeds do not have to be recorded to be valid.

The increase of sharecropping and tenant farming in the late 1800s is also reflected in the land records. In particular, mortgages against land or crops were recorded at the courthouse, as was the subsequent settlement. Again these records may be used cautiously to determine landowners. A person had to own the land to mortgage it; but a tenant could mortgage only his crop. The records must be carefully read to avoid confusion between tenants and owners.

Finally, it must be noted that while the broad outline of this land title system is applicable to much of the United States, the details listed here apply only to Arkansas. Each state developed its own procedures for handling titles to state-owned land, and for recording deeds and assessing taxes.

Chapter 5

Methodology and Results of the 1979 Conway Survey and Testing Program

by

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and

Lawrence Gene Santeford

The goals, methods, and results of both the archeological survey and the archeological testing program of the Conway Water Supply project are discussed in this chapter. General information on the sites recorded and tested is summarized. Extensive site specific information including detailed descriptions, methods of investigation, inventories of material recovered, and evaluation of each site is contained in Appendixes B, C, and D of this report.

GOALS OF ARCHEOLOGICAL SURVEY

In the late nineteenth and early twentieth century, archeological survey was used as a means of finding large, deeply stratified sites to dig. The archeologists working during this period were concerned with the study of change in artifacts and other site attributes over time. The principal problem orientation was the reconstruction of culture histories for particular sites and small areas. Large, stratified sites were the only sites that could provide the data necessary for this research orientation; therefore, small shallow sites often went unrecorded because there was no need to dig them (King 1978:5).

As anthropological theory began to change during the midtwentieth century, archeologists were forced to reconsider their goals and methodologies. Environmental anthropology (Steward 1955, White 1959) examined cultural change in light of man's adaptation to specific ecological niches. Cultural materialism (Harris 1968, 1978) studied human behavior as a response to a material resource base. Both of these approaches are well suited to archeological studies which, by their nature, use material remains to make inferences about past human behavior.

As archeologists adopted these approaches, archeological surveys changed. Culture was viewed as a system whose parts were in mutual

interaction, and archeology's new goals were directed toward discerning the patterns of interaction among the components of the system (Hole and Heizer 1973:315). Archeologists realized that it was impossible to study the total system by looking exclusively at large stratified sites. Equally important in studies of settlement/subsistence patterns, lithic procurement patterns, and other ecological and economic problems was the information that could be supplied only by small specialized sites. As a result, survey strategies were developed which attempted to locate all sites present within areas under study (King 1978:8).

The environmental legislation enacted during the 1960s and 1970s also influenced the development of modern survey strategies (Schiffer and Gumerman 1977). The laws required federal agencies or private firms engaged in federally funded or licensed land-altering projects to consider impacts on the cultural environment and to nominate eligible sites within their project areas to the National Register of Historic Places. Archeologists had to devise survey strategies and research designs that allowed them to find as many of the sites present within impact areas as possible and assess their eligibility for inclusion in the National Register (Schiffer and Gumerman 1977, King 1978).

The goals of the 1979 Conway Water Supply survey and testing program were to attempt to find all sites located within impact areas and to assess their potential to yield additional data important to the study of prehistory or history. The scientific criteria used to assess the significance of sites were derived from the research design presented in Chapter 6.

SURVEY METHODOLOGY

Constraints on the Research

Lack of ground visibility, caused by the presence of dense vegetation, was the principal factor responsible for hindering attempts to locate sites and collect samples of cultural materials. Visibility ranged from good in plowed areas to bad in pastures to worse in forests. Table 1 presents a breakdown of the proportions of ground cover present in each of the proposed impact areas surveyed during the 1979 field season. Figure 12a-b shows the location of these proposed impact areas.

Denial of access by landowners prevented personnel from surveying approximately 1.25 miles (2 km) of pipeline transmission corridor and roughly 50 acres (20.2 ha) of the portions of the proposed reservoir that were to be investigated under terms of the Scope of Services. The dispersed nature of the small unsurveyed parcels and the fact that immediately contiguous areas were surveyed suggests that there would be a low probability of any sites of importance being missed in these areas.

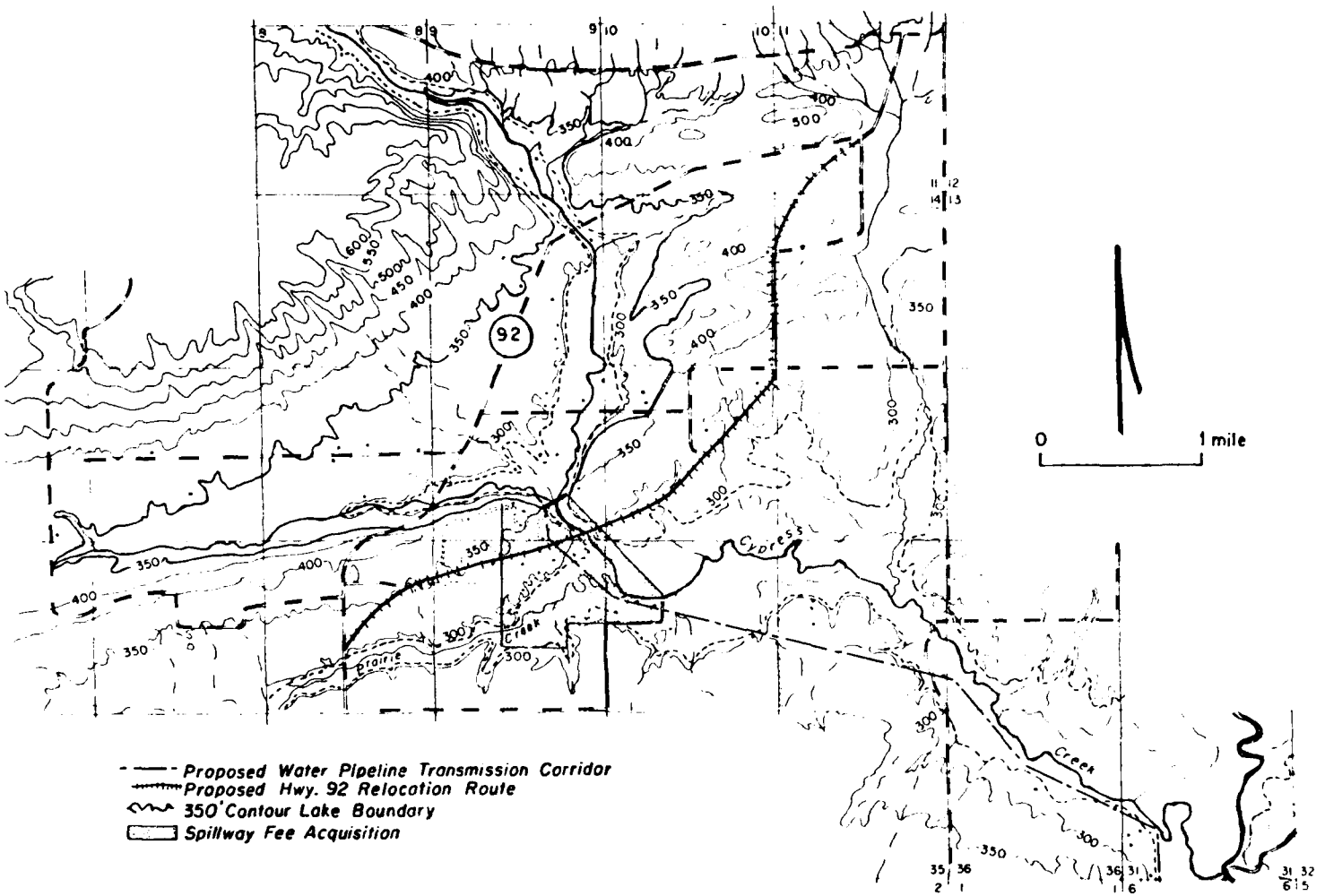

Figure 12a. Proposed impact areas for the Conway Water Supply project

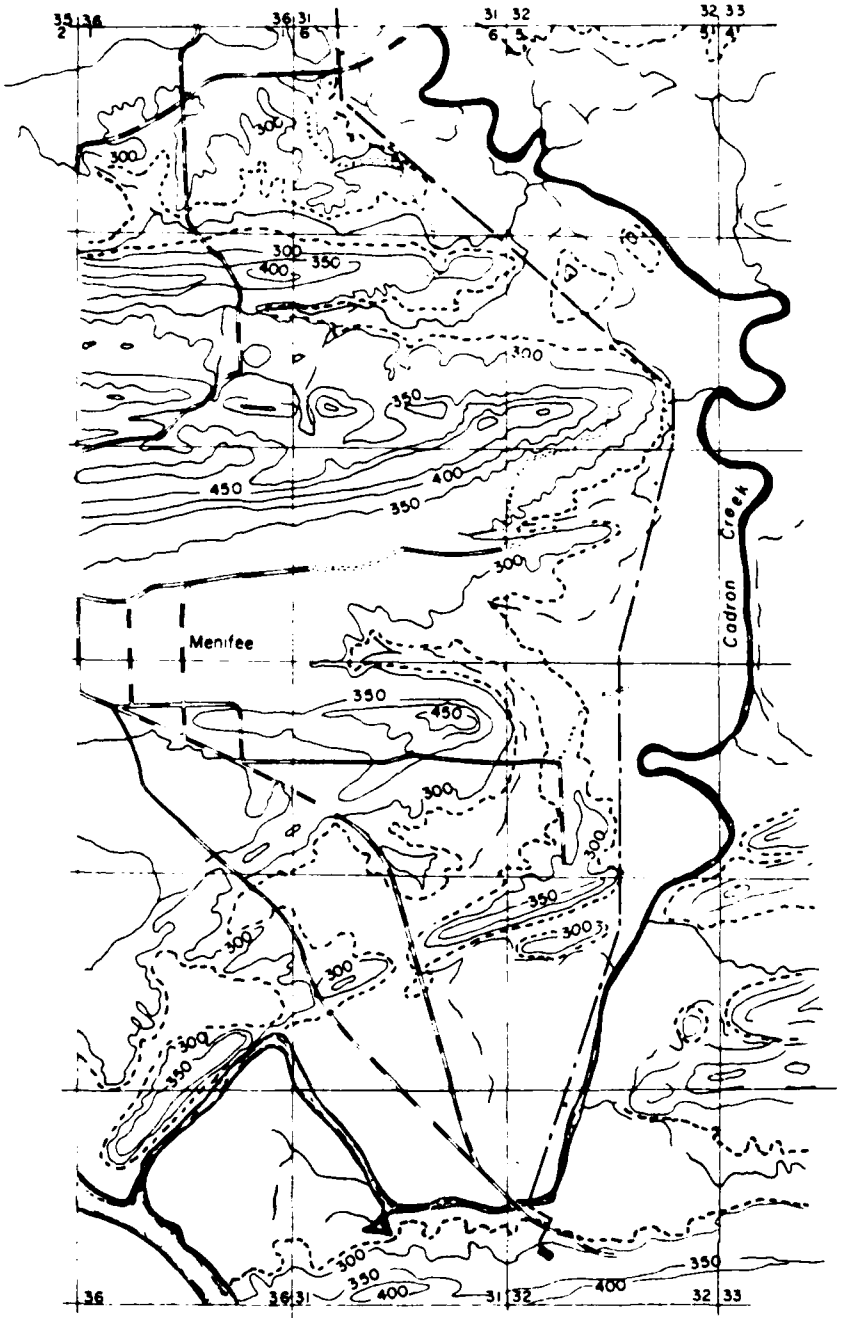

Figure 12b. Proposed impact areas for the Conway Water Supply project

Table 1. Ground cover present in proposed impact areas surveyed in 1979

Ground Cover	Impact Areas		
	Pipeline Corridor	Road Relocation	Spillway Acquisition
Plowed	38% 4.2 miles (6.8 km)	0%	43% 150 acres (60.7 ha)
Pasture	32% 3.6 miles (5.8 km)	89% 3.7 miles (5.9 km)	43% 150 acres (60.7 ha)
Forest	30% 3.3 miles (5.3 km)	11% 0.5 miles (.8 km)	15% 50 acres (20.2 ha)

Survey Techniques

Two techniques were employed to locate sites: pedestrian survey and shovel test survey. Pedestrian survey was used in plowed areas, whereas shovel test survey was used in forested areas and pastures.

Pedestrian survey is the most common technique employed by archeologists to locate sites. It involves walking across an area to be examined while looking for artifacts eroding out of the ground surface. Thus, this technique is appropriate only for the examination of areas with good ground visibility, such as plowed fields, erosional gulleys, stream banks, and road cuts. Pedestrian survey is a quicker survey technique than shovel test survey because more ground surface can be examined per unit time walking along disturbed areas than can be examined by digging in vegetated areas. Site dimensions can be accurately determined and artifact collections made in a relatively short period of time by means of pedestrian survey.

Shovel test survey is an accepted technique for use in heavily vegetated areas where little or no ground surface is exposed (cf. Lovis 1976, Klinger 1977, McManomon 1977). Personnel employing this technique position themselves across the area to be examined at relatively regular intervals. They walk in the same direction, maintaining the interval between them, and dig shovel tests along the way, also at regular intervals. Shovel tests are excavated by first scraping back the surface foliage over an area 30 to 60 cm wide to examine the upper most layer of soil, and then turning the soil over to depths usually ranging from 20 to 60 cm.

Survey Intensity

Survey intensity varied according to ground cover and terrain. In addition, the size of the survey crew changed during the course of the field season. A single large crew comprised of seven people surveyed the southern 6.6 miles (10.6 km) of the pipeline transmission corridor, whereas the northern 4.4 miles (7.1 km), the spillway fee acquisition (350 acres, 141.6 ha), and the road realignment (4.2 miles, 6.8 km) were surveyed by two four man crews. The two four man crew strategy was the most efficient, but it was impossible to implement during the first two weeks of the field season because only one field supervisor was available at that time. The Assistant Field Director constituted the only supervisory personnel present in the field, so the single crew strategy had to be employed. It was not until Lawrence Santeford assumed his position as Field Director of the Conway project, during the third week of the field season, that the more efficient two crew strategy was implemented. The composition of the crews was changed frequently in order to randomize survey errors resulting from differences in the survey skills of individual field workers (cf. Schiffer, Sullivan, and Klinger 1978).

The intensity of survey along the southern 60% of the pipeline corridor was quite high. Crew members were spaced 5 m apart for both pedestrian survey and shovel test survey. Shovel tests were placed at 20 m intervals in wooded and pasture areas. The depth of these shovel tests varied according to topography. For example, shovel tests were dug to depths of 40 to 50 cm along the Cadron Creek floodplain where sites may have been covered by substantial deposits of alluvium. Along terraces and hillslopes, on the other hand, shovel tests generally ranged from 20 to 30 cm in depth because sterile clay or bedrock was encountered at these depths.

The intensity of survey along the northern 4.4 miles (7.1 km) of the pipeline corridor, the spillway fee acquisition, and the road realignment was also high, but not quite that achieved by the seven man crew. Experience with 5 m intervals between crew members along the southern portion of the pipeline corridor indicated that larger intervals would not decrease the probability of discovery of the same number of sites. Therefore, members of each four man crew spaced themselves 10 to 15 m apart for both pedestrian survey and shovel test survey throughout the remainder of the field season. Shovel tests were placed at 20 to 30 m intervals and were dug in the same manner as those described above. In addition, once cultural material was recovered from a shovel test, the intensity was increased by spacing shovel tests at 1 to 5 m intervals in the vicinity of the find. Thus, the overall intensity of the 1979 survey was quite high.

Sampling Procedures

A sample is a subset of a population which is too large or too costly to study in its entirety. The purpose of sampling is to obtain information about the nature of the larger population under study by

examining a manageable set of data. Several sampling strategies may be employed to study a population including probability sampling, systematic sampling, opportunistic sampling, and judgment sampling.

Probability sampling involves drawing a random sample of units from the total population on which to base estimates about the nature of that population. For a sample to be random, each unit of the sampled population must have an equal probability of selection (Plog, Plog and Wait 1978). If this criterion is met, probability statistics can be used to evaluate the precision of estimates. Probability sampling is useful because it allows bias in estimates to be controlled, and statistically reliable statements about the population to be made. It constitutes a mathematical model of selected portions of the real world which is used to make inferences about the actual nature of the real world (Chenhall 1976:4).

Systematic sampling does not draw a sample of units from the total population on the basis of probability (e.g., a table of random numbers). Instead, units are selected from the total population in a regular predictable manner. For example, every other unit might be selected from the total population, or every third unit. Thus, units are selected systematically in a regular pattern (Read 1976). Probability statistics cannot be used to evaluate estimates made on the basis of systematic samples because units do not have equal chances of being selected since some units are intentionally excluded. Even though this reduces the reliability of the estimates, it is still a useful sampling strategy in certain instances.

Opportunistic sampling is the weakest strategy to employ because it represents a "grab-bag" approach toward sampling the total population. It involves drawing sample units from convenient areas which are neither random nor systematic. For example, opportunistic sampling occurs when artifacts are collected only from scattered erosional areas across a site. The representativeness of such a sample is highly questionable, yet, under adverse field conditions it is sometimes the only approach feasible.

Judgmental sampling is an intuitive technique in which specific cri eria of relevance to research goals are used to select a manageable number of important observations. For instance, a judgmental approach in archeological survey might involve using knowledge that sites are located on high ground close to water to examine only those areas exhibiting these characteristics. Cowgill (1976:260) calls this technique purposive selection rather than sampling. He states that such selection is important for the prevention of gross errors inherent in samples of archeological data. An example of a gross sampling error might be missing the Pyramid of the Sun in a survey of the Teotihuacan Valley (Cowgill 1976:260). In archeology, the risks of missing key data are difficult to evaluate. Purposive selection is a technique that helps to insure that key data does not get overlooked.

Two kinds of populations were sampled during the course of the 1979 survey. The first population consisted of the land surface area encompassed by proposed impact zones. This large area was sampled to find discrete loci of human activity (sites). The second kind of population that was sampled was the set of artifacts encompassed by each site. Samples of artifacts were drawn from most of the sites for laboratory analysis.

Sampling the first population, the landscape, was not a major problem because nearly all of the impact areas were intensively surveyed in compliance with the stipulations set forth in the Scope of Services (Appendix A). Therefore, there was no need to design a random quadrat or transect survey amenable to statistical manipulation. In one sense, no sample was taken because Arkansas Archeological Survey personnel investigated all accessible impact areas (i.e. the entire population was examined). In another sense, however, the areas covered by pasture and forest were systematically sampled by means of shovel tests placed at regular intervals. Sampling error was kept to a reasonable minimum by keeping shovel test intervals between 20 and 30 m in order to avoid overlooking small sites. In addition, purposive selection was employed to investigate areas in between regular intervals that previous research (Martin and Jones 1978) had indicated to be likely locations for sites.

The second population that was sampled, the population of artifacts present on each site, was sampled using a variety of strategies. Some archeologists have advocated using random sampling for making collections of surface artifacts (Hill 1967, Redman and Watson 1970). Others have stressed that such work is of little value because surface artifacts have been subjected to so many cultural and natural factors that the results of statistical manipulations are unreliable (Hole and Heizer 1973: 140). They believe that surface artifacts can serve as only a rough guide to the site's contents. No random sampling techniques were employed to collect artifacts because the cost in time and labor was prohibitive, especially in light of the low quality of results that could be expected. Also, planning and executing a random sample of sufficient size to produce reliable results would have been extremely difficult in heavily vegetated areas. Instead, systematic and opportunistic sampling were employed along with purposive selection. Artifacts were collected from road cuts and erosional areas (opportunistic), from shovel tests at regular intervals (systematic), and from shovel tests placed in areas thought likely to contain artifacts (purposive).

Select collections of artifacts were made from most of the sites on the basis of their ability to address the research problems. For instance, all diagnostic artifacts were collected in order to assess cultural affiliation and all recognizable tools were collected in order to assess site function. Samples of chert and novaculite flakes were collected from most sites in order to view the range of lithic types present in the study area. This information was used to address the problems related to lithic resource procurement. All of the chert and novaculite flakes were not needed for this analysis, so no attempt was made to collect flakes from each and every site. Historic artifacts were collected only if they were

thought to be datable and could address problems related to dates of occupation and abandonment of the site.

RESULTS OF THE SURVEY

Areas Surveyed

Approximately 87% of all proposed impact areas for the Conway Water Supply project have been surveyed to date. This figure includes 100% (6.8 km) of the road realignment for State Highway 92, 100% (141.6 ha) of the spillway fee acquisition area, 88% (15.9 km) of the pipeline transmission corridor, and nearly 60% (521.7 ha) of the reservoir. During the November fieldwork, approximately 4 miles (6.4 km) of pipeline transmission corridor realignment was also surveyed. No sites were discovered along this stretch, so no additional testing was required. Approximately 12% (2 km) of the pipeline corridor and 40% (396.6 ha) of the reservoir could not be surveyed due to landowners' requests to avoid their property. Approximately 335.9 ha of the unsurveyed portions of the reservoir were assessed to have extremely low probabilities for containing sites on the basis of the 1978 research (Martin and Jones 1978). Therefore, only 20.2 ha of the 60.7 ha assessed to have moderate to high potential for containing sites were not surveyed. In other words, most of the impact areas likely to contain archeological sites have been surveyed.

Table 2. Total areas surveyed during the 1978 and 1979 Conway Water Supply project

Impact Areas	1978	1979
Pipeline	---	9.85 miles (15.9 km)
Pipeline Realignment	---	4.00 miles (6.4 km)
Road Realignment	---	4.20 miles (6.8 km)
Spillway	---	350 acres (141.6 ha)
Reservoir	1,189 acres (481.2 ha)	100 acres (40.5 ha)

Quantity of Recorded Sites

Fifty-three sites were recorded during the 1979 survey including 27 prehistoric, 17 historic, and 9 with both prehistoric and historic components. Twenty-six sites were recorded during the 1978 survey including 14 prehistoric, 11 historic, and one with both prehistoric and historic components. Thus, a total of 79 sites was recorded within the Conway Water Supply project area. Including 3 sites found just outside of the reservoir area during the 1978 survey, a total of 82 sites were found during the course of the two field

seasons. Table 3 provides a summary of site assessments for all sites discovered during the 1978 and 1979 surveys.

Density of Recorded Sites

Site density was recorded by two similar methods for sites recorded in the proposed impact areas. The first method compared the number of sites recorded for the area with the number of acres surveyed. This method was used to calculate site density for the proposed reservoir and spillway fee acquisition areas. It can be stated mathematically by:

$$D = \frac{N}{A}$$

where D = site density
N = the total number of sites recorded
A = the total area surveyed

In the reservoir area, 33 sites were found (including all sites found in 1978 and 1979) and approximately 1,289 acres (521.7 ha) were intensively surveyed. Site density is computed as follows

$$\text{Site Density} = \frac{33}{1{,}289} = 0.030 \text{ sites/acre (0.06 sites/ha) (30 sites/1,000 acres)}$$

In the spillway area, 15 sites were found and nearly 350 acres (141.6 ha) were surveyed.

$$\text{Site Density} = \frac{15}{350} = 0.043 \text{ sites/acre (0.11 sites/ha) (43 sites/1,000 acres)}$$

The differences observed between site densities for the reservoir area and those for the spillway area may reflect differences in the distribution of topographic features associated with sites. Proportionately, much more of the spillway is comprised of terrace edge and primary alluvial flat than is the reservoir. These features are associated with most of the prehistoric and many of the historic sites (See Chapter 6). Conversely, less of the spillway is comprised of hillslope than is the reservoir. This feature is associated with a relative lack of sites (Chapter 6).

The second method used to compute site density compared the number of sites recorded with the number of miles surveyed. The site densities for the road realignment and pipeline corridor were calculated by this method. It can be expressed mathematically by

Table 3. Summary of site assessment for the Conway Water Supply project

Site Number	Cultural Affiliation	Possible Site Function	Potential for Additional Data	Impact of Project	Survey Area	Field Season Work Conducted
3CN33	Early Woodland-Mississippian	Base Camp	Poor	Adverse, inund.	Lake	1978/1979
3CN36	Archaic	Base Camp	Poor	Adverse, inund.	Lake	1978/1979
3CN37	Prehistoric	Isolated Find	None	None	Lake	1978
3CN38	Middle Archaic-Woodland	Unknown	Poor	Adverse, inund.	Lake	1978/1979
3CN39	Archaic	Base Camp	Poor	Adverse, inund.	Lake	1978
3CN40	Prehistoric	Specialized	None	None	Lake	1978
3CN41	Archaic	Specialized	None	None	Lake	1978
3CN42	Early Archaic-Late Woodland	Base Camp	Poor	Adverse, constr.	Dam	1978/1979
3CN43	Archaic	Unknown	Poor	Adverse, inund.	Lake	1978/1979
3CN44	Historic	Springhouse	Poor	Adverse, erosion	Lake	1978/1979
3CN45	Archaic	Base Camp	Poor	Adverse, inund.	Lake	1978/1979
3CN46	Early Archaic-Late Woodland	Base Camp	Poor	Adverse, inund.	Lake	1978/1979
3CN47	Historic		Poor	Adverse, inund.	Lake	1978/1979
3CN48	Prehistoric-Historic	Unknown School	None	None	Lake	1978
3CN49	Prehistoric	Unknown	Poor	None	Lake	1978
3CN50	Archaic	Isolated Find	Poor	None	Lake	1978
3CN51	Historic	Dwelling	Poor	Adverse, inund.	Lake	1978/1979
3CN52	Historic	Dwelling, Outbldg.	Poor	None, erosion	Lake	1978
3CN53	Historic	Dwelling	Good	None	Lake	1978
3CN54	Historic	Outbuildings	Poor	None	Lake	1978
3CN55	Historic	Springhouse	Poor	Adverse, inund.	Lake	1978/1979
3CN56	Historic	Mill	Poor	Adverse, inund.	Lake	1978/1979
3CN57	Middle Archaic-Woodland	Unknown	Very Good	Adverse, inund.	Lake	1978/1979
3CN58	Historic	Dwelling	Poor	Adverse, inund.	Lake	1978/1979
3CN59	Historic	Cemetery	Poor	Adverse, inund.	Lake	1978/1979

Table 3. Summary of site assessment for the Conway Water Supply project, cont.

Site Number	Cultural Affiliation	Possible Site Function	Potential for Additional Data	Impact of Project	Survey Area	Field Season Work Conducted
3CN60	Historic	Church	None	None	Lake	1978
3CN62	Historic	Church	None	None	Lake	1978
3CN63	Historic	Dwelling	Poor	Adverse, erosion	Lake	1978/1979
3CN64	Early-Late Archaic-Woodland	Base Camp	Very Good	Adverse, inund.	Lake	1978/1979
3CN67	Mississippian Historic	Specialized Dwelling	Fair	Adverse, constr.	Pipeline	1979
3CN68	Early Archaic-Middle Woodland	Base Camp	Good	None	Pipeline	1979
3CN69	Prehistoric Historic	Unknown Dwelling	Fair	Adverse, constr.	Pipeline	1979
3CN70	Early Archaic Historic	Base Camp Dwelling	Good	Possible or none	Pipeline	1979
3CN71	Prehistoric	Unknown	Good	None	Pipeline	1979
3CN62	Prehistoric	Unknown	Good	None	Pipeline	1979
3CN73	Prehistoric	Unknown	Good	None	Pipeline	1979
3CN74	Early-Late Archaic	Unknown	Poor	Adverse, constr.	Pipeline	1979
3CN75	Prehistoric	Unknown	Poor	None	Pipeline	1979
3CN76	Prehistoric	Unknown	Poor	None	Pipeline	1979
3CN77	Prehistoric	Unknown	Poor	None	Pipeline	1979
3CN78	Prehistoric	Unknown	Fair	None	Pipeline	1979
3CN79	Early Archaic-Middle Woodland	Unknown	Poor	None	Pipeline	1979
3CN80	Mississippian	Unknown	Poor	None	Pipeline	1979
3CN81	Middle-Late Archaic	Unknown	Fair	None	Pipeline	1979
3CN82	Early Archaic-Early Woodland	Unknown	Fair	Adverse, constr.	Spillway	1979
3CN83	Middle-Late Archaic	Unknown	Fair	Adverse, constr.	Spillway	1979

Table 3. Summary of site assessment for the Conway Water Supply project, cont.

Site Number	Cultural Affiliation	Possible Site Function	Potential for Additional Data	Impact of Project	Survey Area	Field Season Work Conducted
3CN84	Middle Archaic-Early Woodland	Unknown	Fair	Adverse, constr.	Spillway	1979
3CN85	Prehistoric-Historic	Unknown Dump	Poor	None	Spillway	1979
3CN86	Prehistoric	Unknown	Poor	Adverse, constr.	Pipeline	1979
3CN87	Historic	Road Refuse	Poor	Adverse, constr.	Road Reloc.	1979
3CN88	Historic	Road Refuse	Poor	Adverse, constr.	Road Reloc.	1979
3CN89	Historic	Road Refuse	Poor	Adverse, constr.	Road Reloc.	1979
3CN90	Historic	Road Refuse	Poor	Adverse, constr.	Road Reloc.	1979
3CN91	Late Woodland-Historic	Unknown Road Refuse	Poor	Adverse, constr.	Road Reloc.	1979
3CN92	Historic	Dwelling	Good	Adverse, inund.	Lake	1979
3CN93	Early Archaic	Unknown	Fair	None	Road Reloc.	1979
3CN94	Historic	Dwelling	Poor	Adverse, constr.	Spillway	1979
3CN95	Prehistoric	Unknown	Fair	Adverse, erosion	Spillway	1979
3CN96	Prehistoric Historic	Unknown Dwelling	Poor	None	Spillway	1979
3CN97	Early Archaic-Early Woodland	Specialized	Poor	None	Pipeline	1979
3CN98	Historic	Unknown	Poor	None	Pipeline	1979
3CN99	Prehistoric	Unknown	Poor	None	Pipeline	1979
3CN100	Prehistoric	Unknown	Poor	None	Pipeline	1979
3CN101	Prehistoric	Unknown	Poor	None	Pipeline	1979
3CN102	Historic	Unknown	Poor	None	Pipeline	1979
3CN103	Historic	Dwelling	Poor	None	Pipeline	1979
3CN104	Historic	Dwelling	Poor	None	Pipeline	1979
3CN105	Historic	Dwelling	Poor	Adverse; constr.	Road Relocation	1979
3CN106	Historic	Dwelling	Poor	none	Road Relocation	1979
3CN107	Middle Archaic	Unknown	Poor	Adverse; inun.	Lake	1979
3CN108	Historic	Dwelling	Poor	Adverse; inun.	Lake	1979
3CN109	Prehistoric	Unknown	Fair	Adverse; erosion	Spillway	1979

Table 3. Summary of site assessment for the Conway Water Supply project, cont.

Site Number	Cultural Affiliation	Possible Site Function	Potential for Additional Data	Impact of Project	Survey Area	Field Season Work Conducted
3CN110	Historic	Dwelling	Poor	Adverse;constr.	Pipeline	1979
3CN111	Prehistoric	Unknown	Fair	Adverse;constr.	Spillway	1979
3CN112	Historic	Dwelling	Good	None	Road Relocation	1979
3CN113	Prehistoric	Unknown	Fair	Adverse;constr.	Spillway	1979
3CN114	Prehistoric	Unknown	Poor	None	Spillway	1979
3CN115	Prehistoric Historic	Unknown Specialized	Poor	Adverse;constr.	Spillway	1979
3CN116	Prehistoric	Unknown	Poor	None	Spillway	1979
3CN117	Middle Archaic-Coles Creek-Mississippian	Dwelling?	Very Good	Adverse;inund.	Lake	1979
3CN118	Early Woodland Historic	Unknown Dwelling	Poor	Adverse;constr.	Spillway	1979
3CN119	Middle Archaic-Lake Woodland Historic	Unknown Dwelling	Poor	Adverse;constr.	Spillway	1979

$$D = \frac{N}{d}$$

where D = site density
N = the total number of sites recorded
d = the total distance surveyed

Along the pipeline corridor, 25 sites were recorded and 9.85 miles (15.9 km) were surveyed. Thus, the site density was

$$\text{Site Density} = \frac{25}{9.85} = 2.54 \text{ sites/mile (1.57 sites/km)}$$

Along the road realignment, nine sites were located and 4.2 miles (6.8 km) were surveyed. The site density was

$$\text{Site Density} = \frac{9}{4.2} = 2.14 \text{ sites/mile (1.32 sites/km)}$$

The Goals of Test Excavation

One requirement of the Scope of Services (Appendix A) stipulated that the significance of sites located in the project area be assessed.

The National Historic Preservation Act of 1966 established a National Register of Historic Places and an Advisory Council of Historic Preservation, under the authority of the Secretary of the Interior. It also directed federal agencies to consult with the Advisory Council prior to construction activities which might affect cultural resources listed on or eligible for nomination to the National Register. The National Environmental Policy Act of 1969 required federal agencies and private firms conducting federally funded or licensed construction activities, to consider the effects of such work upon the natural and cultural environment in addition to technical and economic considerations. Since adverse impacts to cultural resources which are eligible for nomination to the National Register of Historic Places must be mitigated (National Historic Preservation Act of 1966), federal agencies have stimulated a dramatic upsurge in contract supported archeological activity in their efforts to comply with the law. Mitigation can entail the physical preservation of significant sites or, if preservation is unfeasible and the site must be destroyed as a result of construction, mitigation involves the preservation of information that can be gained from the sites.

The purpose of the 1979 testing program was to assess the National Register significance of the sites found during the 1979 survey and those recommended for further work in 1978. Two criteria were employed to determine which sites should be excavated. These criteria were

1. The site must be located within an impact area
2. The site must have potential to yield additional data important to the study of history or prehistory

Significance was assessed on the basis of the overall integrity of each site. Lack of disturbance to the site, the presence of artifacts in

archeological context, the presence of discernible features and/or strata, and the site's potential for the preservation of organic material were all considered important factors for use in judging the site's significance. Several sites were eliminated from consideration for test excavation because their lack of significance could be established on the basis of surface examination. Such sites exhibited a paucity of artifacts, substantial disturbance, or both. All sites recommended for testing appeared to have potential to yield additional data important to scientific studies on the basis of surface finds. Test excavation was intended to assess the actual nature of each site's potential to address problems of scientific interest.

TESTING METHODOLOGY

Constraints on Research

Denial of access to sites due to landowners' refusals to allow work among crops or pastures was the principal factor hindering test excavation efforts. As a result of denial of access to several sites during the summer field season, another field season had to be scheduled for the fall. Few crew members were available in the fall because most were enrolled in classes at the University of Arkansas. Thus, one crew of four conducted the test excavations on sites 3CN33, 3CN36, 3CN64, and 3CN117. In order to meet the report deadline, only one week could be scheduled for the fall season. Working under such time constraints, fewer test units were excavated on these sites than were excavated on sites investigated during the summer season.

Testing Techniques

This section discusses the basic procedures utilized in the testing program. Specific details for each site are discussed in the site descriptions in the appendixes. Each site was tested first by means of shovel tests to attempt to determine the site boundaries and locate any possible features. In most instances, this preliminary testing was conducted across the entire site by means of systematic transects with shovel tests dug at set intervals. On some sites, a grid was established and shovel tests were placed at the intersection of grid lines. On others, the shovel test transects originated at a set point and radiated outward across the site like the spokes on a wheel. Both methods proved to be satisfactory for assessing site boundaries. Shovel tests were dug to depths of 30 cm on most sites since there was minimal development of soil above sterile clay or bedrock. Sites located on the primary alluvial flat, where deposition of alluvium could have masked the presence of subsurface artifacts, were test excavated by means of 1 m^2 units (Figure 13).

Following shovel testing, 1 m^2 test units or 1 m by 2 m test units were excavated. The units were staked out and the ground surface was

Figure 13. Shovel testing in the Conway Water Supply project area (PR794637)

cleared by means of shovel scraping. In most instances, levels were excavated arbitrarily with 10 cm per interval, but whenever it was possible levels were excavated by natural or cultural strata. Each level was excavated by a combination of shovel scraping and troweling. During excavation, the soil was carefully examined for signs of subsurface features (i.e., postmolds, hearths, foundations, pits, etc.). Artifacts and organic remains were removed whenever they were encountered during shovel scraping or troweling. All soil removed from test units was screened through 1/4 inch mesh in order to retrieve smaller materials (Figure 14). Upon reaching sterile soil, a posthole digger or shovel was used to quickly dig below to make sure no cultural deposits were missed. This also allowed a better view of the stratigraphic composition. All units were backfilled immediately after completion.

Written records were kept for each level that was excavated. In addition, upon completion of a unit, wall profiles were drawn and photographs were taken in both black and white and color. Written records were

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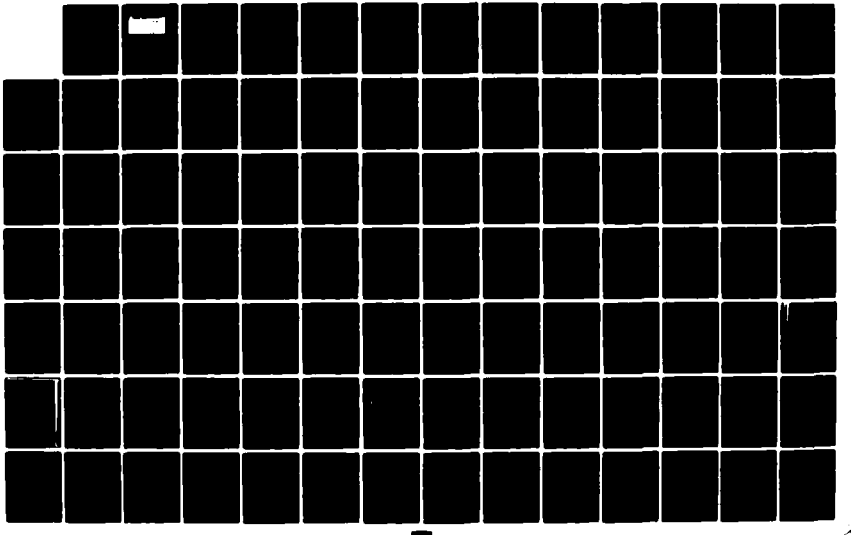
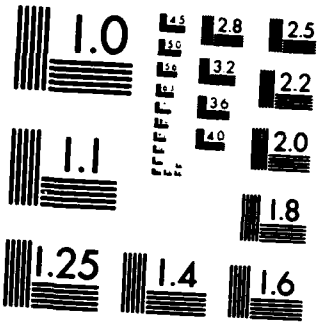




MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Figure 14. Screening techniques in the Conway Water Supply project area (PR795171)

kept for the artifacts and features present in each unit as well. The test units and shovel test transects were mapped by using a transit and stadia rod. Whenever possible, units were plotted on the large scale (1:200) maps provided by the Corps of Engineers.

Alternate Testing Procedures

Test excavation was not conducted on all of the sites that were recommended for additional work in the 1978 report because such sites did not warrant excavation. These sites included historic structures (3CN51, 3CN55, and 3CN62) and an historic cemetery (3CN59). The structures were photographed and examined by Dr. Stewart-Abernathy, historic archeologist for the Arkansas Archeological Survey, who made measurements of architectural features. The cemetery was photographed and written records collected by Corps of Engineers employees were examined by Arkansas Archeological Survey personnel. In the opinion of Dr. Stewart-Abernathy, no other work was required to adequately investigate these sites. Therefore, energy was directed toward the excavation of the other sites.

No random sampling or systematic sampling techniques were employed to determine the placement of the test units. Instead, judgment sampling, or purposive selection, was used. Factors influencing the placement of test units included:

1. The presence of high artifact density, as reflected by the results of the preliminary shovel tests

2. The presence of high artifact surface density, as observed on the basis of survey

3. The presence of topographic features most suitable for habitation (i.e. well drained, gentle slope, etc.)

4. Information provided by local informants. In the case of prehistoric sites, information concerning the portions of the site where they retrieved the most artifacts was used. In the case of historic sites, information about the locations of specific rooms and outbuildings was used.

RESULTS OF THE TESTING

Quantity of Sites Tested

During the 1979 testing program, 17 prehistoric and 11 historic sites were tested. Test excavation units were dug on 21 of these sites. Of the remaining seven sites, three were tested by means of shovel tests alone and four sites were photographed and measured (Table 4).

Table 4. Sites tested or photographed during the 1979 testing phase

Shovel Tests	Combined Shovel Test and Test Units				Photographed
3CN43	3CN33	3CN46	3CN79	3CN97	3CN51
3CN45	3CN36	3CN47	3CN82	3CN105	3CN55
3CN80	3CN38	3CN57	3CN83	3CN106	3CN59
	3CN42	3CN58	3CN84	3CN107	3CN62
	3CN44	3CN64	3CN92	3CN108	
				3CN117	

National Register Eligibility

In order to determine if sites should be considered for nomination to the National Register of Historic Places, three criteria were used. These were

1. Evidence from testing indicated that the site had good potential for the preservation of features.

2. The site contained artifacts in stratigraphic context and/or floral and faunal remains which could be used to study problems of scientific interest.

3. The site would be destroyed by subsequent construction activity, thus having an adverse effect on the site and the information contained in it.

Four sites were determined to be eligibile for nomination to the National Register on the basis of these criteria. They are the prehistoric Temper site, 3CN57, the Don Scroggins site, 3CN64, and the W. S. Alexander site, 3CN117, and the historic Wilder Log House site, 3CN92.

The Temper site, 3CN57 is located just west of a small intermittent stream which flows into Cypress Creek, approximately 65 m west of the site. Deciduous forest lies to the north of the site, with a canebrake at the forest edge. The site area is covered with short grass and is used for grazing cattle. The site was visited on July 11 and 12, 1979. It had been recommended for additional work by Martin and Jones (1978).

Six 1 m^2 test units were excavated at the site. Test Unit D levels indicated a dark brown highly organic midden and this area of the site was shovel tested to determine the approximate limits of the midden. Based on subsurface testing it appears that the midden is 8 m by 7 m and the total site area presently known is approximately .7 ha. A summary of the artifacts recovered from the site is presented in Appendix C, pp. 54-64. No bone was recovered from any of the test units although burned hickory nut shell fragments were found in Test Unit D at approximately 90-100 cm and at 110-120 cm below ground surface. The preserved nut shells were well below the present level of plowzone disturbance which extends approximately 20-23 cm below the surface.

Pottery sherds recovered were undecorated and grog tempered. Sherds were first found on the surface in the area of Test Unit C. Fragments were also found in Test Units C, D, and F when subsurface testing was conducted. The presence of this type of pottery indicates that the site was occupied during the Woodland period, and perhaps into the Mississippian period. Only one identifiable projectile point was recovered. This was a Johnson point, reportedly associated with sites of the middle to late Archaic period, and perhaps the early Archaic (Appendix G).

The Temper site appears to present opportunities for dealing with a number of problems relating to the aboriginal prehistory of the Cypress Creek basin in Conway County, Arkansas. Preliminary tests indicate that occupation of the site was prolonged enough to result in the deposition of enough organic refuse to result in a large deep midden area. Only

a small portion of the refuse deposits were tested. Lithic debitage, bifacial fragments, pottery sherds and burned nut shells were found. It can be anticipated that other parts of this site contain a more complete sample of cultural and organic materials. Therefore, the potential exists for the study of (1) lithic technology, including the processing of lithic resources to make tools, (2) functional studies of stone tools, (3) ceramic technology and stylistic modes, (4) exploitation of the environment and prehistoric use of various ecological zones, and (5) subsistence based on the examination of preserved floral and faunal remains. Although no daub or burned clay was recovered from the site, which might suggest the presence of a structure, it is conceivable that structures were present because of the extensive midden deposit, lithic debitage and ceramics. It is anticipated that subsequent examination of the site may detect postmolds from a structure. Additional details on this site are discussed in Appendix C, pp. 54-64.

The Don Scroggins site, 3CN64 is located on the terrace edge approximately 300 m west of Cypress Creek. The site area is restricted by a steep slope to the east, and fairly steep slopes to the north and south. These slopes are covered with trees and brush. The site area is covered with short grass and is used for grazing. The site was tested on November 8 and 9, 1979. It had been recommended for additional work by Martin and Jones (1978).

Two 1 m^2 test units were excavated. In Test Unit A, at the far southern end of the terrace, there was evidence of midden deposits from surface to approximately 50 cm below the surface. The unit was tested to 80 cm below the surface. Throughout the unit there were fragments of charcoal and burned bone, as well as lithic flakes, bifacial fragments, and pottery fragments. In Test Unit B, evidence of a possible postmold was discovered at approximately 20 cm below the surface. Extension of the test unit to the south revealed approximately three other possible postmold stains.

Charcoal samples were collected from the postmolds and were submitted for radiocarbon dating to Dicarb Radioisotope Company. The resulting date was modern (post-1950), but this may have been due to rootlet and insect contamination (Irene Stehli, Dicarb, personal communication).

This test unit also revealed a number of pottery fragments, flakes, and a large white, quartzite mano. Due to time constraints, Test Unit B was excavated only to a depth of 23 cm in order to preserve the feature for future work when it could be investigated more carefully. See Appendix C, pp. 65-74 for a summary of artifacts recovered from the site.

The pottery sherd recovered is undecorated and grog tempered. This would indicate a Woodland period occupation. Two points were recovered which were identified as a Bulverde point, associated with middle to late Archaic sites, and a Cache River point, found in early Archaic sites (Appendix G).

The Don Scroggins site presents opportunities for filling in many gaps in the definition of settlement patterns, socioeconomic behavior, subsistence and other aspects of prehistoric behavior. Scholtz (1969: 56-57), in his discussion of the prehistory of northwest Arkansas stresses that dry shelters have "a much more well-rounded picture of life-ways of their prehistoric inhabitants than can be found on any other kind of archeological site." He points out further in the paper many of the problems that remain unanswered due to a lack of examination of open sites. Many of his questions could be addressed with the information potential of the Don Scroggins site.

The Don Scroggins site is located rather close to another ceramic site, the W. S. Alexander site, 3CN117. This site has a Coles Creek, and possible Fourche Maline-related and Mississippian components. Due to the present ambiguous nature of the pottery sherds from the Don Scroggins site, the possibility cannot be eliminated that this site also may have a Coles Creek component. Due to the transitional nature of the Coles Creek culture, bifaces from the site may actually be cutting tools rather than projectile or spear points. Functional studies have not been undertaken. This site is unique in that the other two sites with prehistoric pottery are on the floodplain and this is on the terrace. It is also approximately 3.8 ha in area compared to the .16 ha of the W. S. Alexander site, 3CN117, and the .70 ha of the Temper site, 3CN57.

Although the nut shell and bone fragments found at the Don Scroggins site were poorly preserved, other parts of the site may exhibit conditions for excellent preservation. Examination of floral and faunal remains will provide information on seasonality of occupation, as well as the subsistence of the group that occupied the site.

The W. S. Alexander site, 3CN117, is located on a small rise approximately 70 m west of Cypress Creek. The site is actually on the floodplain of the creek and local informants observed that it is seasonally inundated. The site area was planted in milo in 1979, although this had been harvested when testing was carried out on November 5 and 6, 1979.

Twenty-nine shovel tests were dug to determine the site boundaries. The site appears to cover an area of approximately .16 ha. Two 1 m^2 test units were also excavated. Test Unit A was excavated to a depth of 53 cm below surface. At the base of the plowzone level, 17-23 cm below the surface, the soil changed from a dark, sandy silt to a darker brown midden soil containing burned soil, bone, ceramics, and lithics. Cultural materials were recovered to a depth of 53 cm. The unit was shovel tested to 80 cm, but the levels below 53 cm were sterile of cultural materials.

Bone, primarily deer, was submitted to Dicarb Radioisotope Company for dating. This was taken from the 23-33 cm level. The resulting date was 400 years B.P. $\pm$ 95 (A.D. 1455-1645). Based on the Coles Creek and possible Fourche Maline-related ceramics recovered from the site,

it was believed that the dates would be ca. A.D. 700-1000. The late date of the sample may be the result of contamination from rootlets, reoccupation of the site by Mississippian peoples, or the continuation of Coles Creek for 400-500 years longer than currently defined. The first two alternatives are the most likely.

Test Unit B was excavated to a depth of 41 cm. The plowzone level appeared to end at 15 cm. Burned sandstone was found at 21 cm, in addition to pottery sherds, lithics and charcoal flecks. The darker soil of the excavation level began to change to a lighter brown at 38-40 cm. Cultural materials were very sparse in the bottom of the test unit. All artifacts recovered are listed in Appendix C, pp. 75-91.

In addition to pottery sherds, a number of points were recovered. Based on recognized typologies, these included a Gary (early Woodland to Historic), Marshall (middle to late Archaic), Rockwall (late Woodland to Mississippian), and Epps (late Archaic to early Woodland)(Appendix G).

The most intensive examination of Coles Creek culture in the central part of the state is being done at the Toltec site in Lonoke County. Coles Creek Incised pottery from this site suggests affiliation with the Coles Creek culture in Louisiana. Many of the artifacts recovered from the Toltec site (e.g., quartz crystals, chert types, pottery types), as well as other Coles Creek sites, appear similar to those recovered from the W. S. Alexander site. However, differences among the sites appear to suggest diverse aspects of occupation and function. While the Toltec site is a large ceremonial center, the W. S. Alexander site seems to have been a specialized seasonal occupation camp. Like Toltec, animal bones include white-tailed deer, small mammals, turkey, fish, and box turtle. The presence of burned hickory and walnut shells, along with the seasonal flooding of the area, would suggest a seasonal, probably fall occupation. The preservation of bone already recovered from the site reflects potentials for the preservation of other materials which could give insights into seasonality of camps along the Cypress and other creeks in the region.

It is also possible that the W. S. Alexander site can provide data for an intensive examination of prehistoric technology and acquisition of chert materials. Such studies can be initiated in what may be a temporally brief and spatially restricted and/or isolated occupation unit. While the Toltec site is large and reflects continuous occupation and the influence of many groups, the Alexander site may be more temporally constrained. No formal study is available at this point on the acquisition of chert resources by peoples of the Coles Creek or Fourche Maline-related cultures. Examination of the resource material in this site should provide a basis for comparison with distributions of resource materials at other Coles Creek or Fourche Maline-related sites. It is also possible that functional studies can be initiated on tool assemblages collected from the W. S. Alexander site.

The Wilder Log House site, 3CN92, is an historic house site presently covered with a mixture of deciduous trees and some conifers. Where the house once stood there is some clear area although trees are reclaiming the site. The ground surface is covered with grass and thorny bushes and vines. A barn was located across the Old Morrilton Road which can be seen at the base of a slope to the north of the house. There was also a privy once located at the bottom of the slope between the house and the barn, and a smokehouse east of the house. The entire site is approximately 107 m north-south by 91 m east-west.

In July 1979, ten 1 m^2 test units were excavated in the area of the house. One unit was excavated within a well depression south of the house but excavation was terminated at 1 m below ground surface because safety considerations prohibited digging any deeper. Three test units and shovel tests were excavated on the slope north of the house and numerous artifacts of the early and midtwentieth century were recovered to a depth of 33 cm. The remaining test units were excavated within and by the house area. The depths from which artifacts were recovered varied. Under the main room, artifacts were found to 20-25 cm, under the bedroom, to 12 cm, under the kitchen area, to 60 cm, north of the kitchen, to 36 cm. The artifacts are listed in Appendix D, pp. 28-62, and date from the 1870s to the early 1900s.

This site is considered representative of a number of sites possessing the potential to provide information on the historical development of Conway County, Arkansas. It is generally contemporaneous with other known historic sites, reveals a similar artifact assemblage, and has apparently not been disturbed by plowing. The history of the Wilder Log House site and the role of its occupants in the history of the Cypress Creek basin are given much more attention in Chapter 7 of this report.

Chapter 6

Research Design, Analytical Methodology, and Interpretation of Prehistoric Data

by

William A. Martin

A discussion of the problem orientation used to develop the research design is presented in the first section of this chapter. The research design is then described in detail, including a statement of assumptions, limitations, and hypotheses and test implications. The strengths and weaknesses of the methodology employed to analyze data collected during the 1979 survey and testing program are discussed, and the results of the analysis are presented. Finally, the data are interpreted within the framework of the problem domains and hypotheses presented in the initial sections of the chapter.

PROBLEM ORIENTATION AND DATA BASE LIMITATIONS

Several problems of scientific interest could legitimately be pursued in Conway County, since little is known about the prehistory of the area. Some of the problems most commonly addressed in archeological studies include:

1) settlement pattern, Where did people live and why did they live there?

2) subsistence pattern, What types of food did people eat and how did they procure their food?

3) social organization, How did people govern themselves and interact with one another?

4) technology, What kind of tools were employed in the processes of resource exploitation?

5) raw material procurement, What kinds of stone were used to manufacture tools and where was the stone obtained?

6) cultural affiliation, When was each site occupied and by whom?

7) site function, What specific activities were conducted at each site?

Many other problems could be added to the list because the possible topics of interest are virtually unlimited. However, it would be impractical to attempt to present a more comprehensive discussion of these possibilities here.

Certain problems are more appropriately addressed with data recovered from excavation than data recovered from survey. For instance, social organization can be studied by examining mortuary practices (grave goods), relative frequencies of house sizes and frequences of exotic goods present within houses which are uncovered in extensive excavations. However, only limited statements about prehistoric social organization can be made on the basis of surface artifacts.

In contrast, problems particularly well suited to the nature of data recovered during a survey are settlement patterns, lithic resource procurement, and to a lesser extent, cultural affiliation and site function.

Settlement pattern studies seek to explain the manner in which sites are arranged and associated in space (Hole and Heizer 1973:357). The results of archeological survey are generally compatible with settlement pattern analysis because they yield a distribution of sites across the landscape. Some problems may be posed by the fact that this distribution is limited to the confines of artificial project boundaries, especially in the case of linear surveys such as pipeline routes. Nevertheless, it is usually possible to formulate some general statements about settlement patterns on the basis of survey data.

Two aspects of settlement patterns may be studied. The environmental aspect investigates man-land relationships, or man's adaptation to the natural environment. The economic aspect studies the process behind these man-land relationships, as well as that behind man-man relationships, such as the flow of goods among communities. Archeologists have commonly studied the environmental aspect, whereas geographers have investigated the economic aspect (Hole and Heizer 1973:360). In recent years however, archeologists have begun to focus their studies on the economic aspect of settlement patterns as well. Plog and Hill (1971) used environmental information to study the decision-making process behind the selection of areas for prehistoric site locations. Thus, data from environmental studies was incorporated into the study of prehistoric economic decision making. Steponaitis (1978) approached the study of Moundville Phase settlement patterns in Alabama from an economic perspective in which site distributions were interpreted as a reflection of a redistributive economic system associated with a chiefdom level of social organization. For the purposes of the 1978 and 1979 Conway reports, the environmental aspect of settlement patterns was examined because environmental data was

easily collected from topographic maps and field observations. The economic aspect of decision making is addressed in a limited way in another section of this chapter using environmental data.

Lithic resource procurement studies involve laboratory analysis of the stone artifacts recovered from sites to determine the kinds of stone that were used by the aboriginal occupants of the sites. Geological maps are used to assess the natural distribution of the different types of stone identified in the lab, so that possible sources of lithic raw materials can be identified. Presently, problems inherent in the visual identification of lithic materials prevent precise identifications of source areas from being made. Some cherts can be easily identified on the basis of their color and texture, but many cherts are so similar with respect to these characteristics that positive identification cannot be made without the aid of chemical tests. Trace element analysis is a chemical test which links lithic artifacts to their source areas by assessing the amount of specific trace elements present in the stone. This is a more precise technique than visual identification and it has been used effectively elsewhere, especially with artifacts made of obsidian (Cann and Renfrew 1964). However, much more geological analysis must be conducted in Arkansas before this technique can be applied to the study of chert and novaculite artifacts.

Cultural/chronological affiliation and site function can be assessed by analyzing artifactual data collected from either survey or excavation. The cultural affiliation of any given site is determined by the presence of specific diagnostic artifacts. For instance, a site containing small triangular projectile points and shell tempered pottery is classified as Mississippian. However, determinations of cultural/chronological affiliation made of the basis of diagnostic artifacts are not always trustworthy because projectile point and ceramic typologies sometimes exhibit overlap among several time periods. For example, Gary points were apparently manufactured from the early Woodland period all the way through the Historic period. Assessments of cultural/chronological affiliation are much more trustworthy when several classes of diagnostic artifacts are recovered from a site and/or reliable radiocarbon dates are obtained.

Site function is determined by the presence or absence of specific tool kits, groups of artifacts thought to have been employed together to complete a single task. For example, sites containing only knives, projectile points, and scrapers are classified as specialized activity sites, probably butchering sites, because such artifacts constitute a hunting/butchering tool kit. Sites containing several tool kits related to a variety of domestic activities are classified as base camps. However, determinations of site function from surface evidence may be inaccurate, even under the best circumstances, because uncontrolled bias in artifact collections can create a misleading picture of the activities that took place at a given site. The primary sources of uncontrolled bias in artifact collections are prehistoric curation behavior and modern collection activity.

Prehistoric curation behavior refers to the fact that many artifacts were often not discarded where they were used, but were carried to other sites to be used again. In other words, artifacts were curated by their manufacturers until they were rendered nonfunctional either through breakage or normal wear. As a result, only discarded tools entered into the archeological record under normal circumstances (Schiffer 1972). Therefore, some activities which were conducted at sites may not be detectable in the archeological record. Consequently, functional assessments based on the presence or absence of specific tool kits may be incomplete.

Modern collection activity refers to the behavior of people who collect artifacts as a hobby. Specific classes of artifacts important for determining site function are regularly removed from sites by these hobbyists. Projectile points, knives, drills, and pottery vessels are favorite items of collectors. Analyses which depend upon the presence or absence of specific tool kits are often inaccurate when sites have been subjected to extensive collecting activity. This source of error may be partially controlled by analyzing certain classes of artifacts which are rarely collected by hobbyists, such as flake tools and pottery sherds. However, it is often difficult to assign these artifacts to particular tool kits, since many were multifunctional tools.

Survey data presents another source of error when used to assess site function. Artifacts necessary for use in making functional assessments may not always be visible on the ground surface or in shovel tests. Lack of these artifacts does not necessarily mean that they are not present below the surface. Data recovered from an undisturbed archeological context during excavation is better suited to analysis of site function. Yet, it is usually possible to formulate general statements about site function on the basis of survey data.

ARCHEOLOGICAL MODELS AND THEORETICAL ORIENTATION

Models are constructs which are intermediate between theory and the real world. Hueristic models help organize and guide thoughts about a given subject. Explanatory models describe relationships between variables, and illustrative models describe situations in graphic form (Hole and Heizer 1973:319). Archeologists construct scientific models which can be tested in order to make inferences about the behavior of prehistoric populations from examination of their material remains (cf. Clarke 1972). The models underlying the hypotheses presented in this chapter are discussed below.

Binford and Binford (1966) proposed a rather generalized model of settlement systems for hunter-gatherer groups that are relevant to the Conway research design. This model delineates two basic types of sites dependent upon behavioral variables. Maintenance tasks (e.g., food preparation, tool repair, etc.) related to the nutritional and technological requirements of the group can be distinguished from extractive tasks (e.g.,

food gathering, lithic resource procurement, etc.) that involve the direct exploitation of environmental resources (Binford and Binford 1966:291). The sites at which these tasks occurred should be differentially distributed across the landscape and can be identified on the basis of the artifact assemblages and environmental variables associated with these sites. Base camps (maintenance areas) and work loci (extraction areas) form the two site types comprising the settlement system.

The Binford and Binford model explains one aspect of the dimension of location-use variability among hunter-gatherer groups, but it does not provide an exhaustive exploration of the behavioral complexity of such groups (House and Wogaman 1978). Other models have since been proposed which deal with other aspects of behavior, including change in behavior over time (Cleland 1976, Stuart 1977, Watanabe 1972). One of these models, the Focal-Diffuse model is outlined below.

The Focal-Diffuse model is based on three assumptions:

1. The adaptive pattern of a culture is determined by the long term cycle of repetitive choices in energy expenditure through a total subsistence round (usually a single year).

2. Cultural adaptations are patterned and predictable because nature is patterned and predictable.

3. Adaptive patterns are constantly evolving due to a constant search for economic security. During this process, adaptive patterns become more productive in terms of input-output energy ratios (Cleland 1976:60).

Focal economies are highly specialized, relying exclusively on the exploitation of a few resources. Diffuse economies are generalized, exploiting a great variety of resources. However, these polar opposites are ideals between which there exists a continuum. Focal subsistence strategies can be identified archeologically by the presence of limited functional variability among tools associated with the limited activities involved in resource extraction (Cleland 1976:62). Diffuse subsistence strategies can be identified by the presence of a wider functional variety of tools or a greater number of multifunctional tools in the archeological record (Cleland 1976:62).

Focal systems usually exhibit settlement patterns with sites reflecting brief occupations. Once the extractive process depletes the resources in one area, new areas must be sought. However, intensive cyclical occupation of the same site is common where resources are renewable (Cleland 1976:63). Diffuse systems, on the other hand, exhibit a series of base camps which are surrounded by satellite sites where specialized activities took place. Base camps are differentiated from satellite sites on the basis of artifact content and site size. Tools used to exploit a particular resource are left on sites in the vicinity of that resource, whereas tools associated with the diverse activities of

daily living are found at base camps (Cleland 1976:64). The presence of a number of contemporaneous sites varying in size and artifact content within a given area would suggest that a diffuse economy had existed there. On the other hand, the presence of sites of similar size and function over a broad area would indicate that a focal economy had existed.

Cleland does not consider the effects of prehistoric curation behavior on the composition of the archeological record. As a result, he assumes that tools should be found on the sites where they were used. This assumption may not be valid if curation was practiced, but this weakness does not greatly detract from the principal tenets of his argument. Base camps and satellite sites should still be recognizable, but the tool kits present on each may not be complete due to the curation of usable artifacts by prehistoric peoples.

Cleland (1976) views the development of the cultural stages outlined in Chapter 3 as evolutionary changes in patterns of subsistence proceeding from focal to diffuse and back to focal again. Such changes came about when changes in climate or technology made it more efficient to pursue one type of subsistence over the other. For example, the Paleo-Indian groups practiced a focal economy, concentrating on the exploitation of big game (Cleland 1976:68). Then at the end of the Pleistocene, a change in climate resulted in a change in the ecology with conditions more favorable for a diffuse economy. The diffuse pattern began during the Archaic stage when meat, fish, shellfish, nuts and berries all became important food resources. It continued through the Woodland stage when certain domesticated plants became important in addition to these other resources. Once agriculture became well established at the end of the Woodland period, the efficiency in supplying sufficient quantities of food on a regular basis brought about a change back to a focal system. Late Mississippian populations survived by concentrating almost entirely on the exploitation of maize, beans, and squash (Cleland 1976:71). Thus, an agricultural rather than a hunting focal system was established.

Cleland's model is presented here because it contains an excellent discussion of some of the principles upon which the Conway research is based. No attempt is made in this report to assess the evolution of economic strategies in the project area throughout prehistoric times. Rather, the relationships between artifact types and site function, as well as Cleland's assumptions about the nature of cultural adaptation, are used in interpreting the data. Other principles inherent in the Conway research design were used by Plog and Hill (1971) and were discussed by Sullivan and Schiffer (1976). Plog and Hill (1971) proposed the following hypotheses in their research design for the Southwest Archeological Research Group (SARG):

1) Sites were located with respect to critical on-site resources.

2) Sites were located so as to minimize the effort expended in acquiring quantities of critical resources.

3) Sites were located so as to minimize the cost of resource and information flow among sites occupied by interacting populations. (Sullivan and Schiffer 1976:170).

The procedures SARG used to test these hypotheses were based on the Minimax principle and the Principle of Least Effort. Both principles hold that human groups develop and adopt strategies designed to deliver the maximum return for the least amount of effort. Schiffer and Sullivan believe that these models of economic decision making do not conform to the processes underlying actual human decision making. To operationalize these principles, prehistoric groups would have had to consider all relevant variables, compute possibilities, and select the best outcome. It is more likely that prehistoric groups chose courses of action which were simply good enough to satisfy their needs, rather than those which would maximize returns. This idea is used in the interpretation of the Conway data.

Another principle employed in the Conway data analysis has been termed Propinquity Theory by Sullivan and Schiffer (1976). Propinquity Theory involves the study of prehistoric behavior by using proximity relationships between present-day environmental features and prehistoric archeological site patterns. Sullivan and Schiffer (1976) criticize this theory because it assumes relative stability of resource boundaries between the past and the present which is an invalid assumption in most areas. It is most certainly invalid for the Conway project area as evidenced by the movement of Cypress Creek, which has destroyed at least one site created during historic times (3NC60, the location of the first church in the area, currently in the bed of Cypress Creek). The presence of numerous swampy relict channels along the Cypress and Cadron floodplains suggests that the channels have shifted back and forth several times. In addition, paleoenvironmental data suggests that climatic changes occurred throughout the prehistoric period which could have affected settlement patterns. For example, the mixed oak forests present during the Dalton period changed to mixed gum and pine forests during the Archaic period (see Chapter 2). This change must have been accompanied by change in faunal composition of the area, which would have greatly affected the available food supply. Settlement pattern would have changed in accordance with these changes in the natural environment.

Sullivan and Schiffer (1976) note that Propinquity Theory addresses archeological site patterns, but does not necessarily address settlement patterns. They make a distinction between the questions "Why do people live where they do?" and "Why are sites located where they are?" The first question involves population aggregates and their decision framework, phenomena which are not directly observable. It is the second question, which involves directly observable data (i.e. site locations), that is investigated by means of Propinquity Theory. Sites do not always correlate on a one-to-one basis with population aggregates because sites were often formed from successive occupations of population aggregates who performed different activities during each occupation. The actual nature of each site's contents becomes even more difficult to interpret due to secondary deposition of cultural material by natural and cultural processes, such as flooding and plowing. Therefore, Sullivan and Schiffer (1976) conclude

that Propinquity Theory is very useful for Cultural Resource Management, but not for the formulation and testing of behavioral principles.

Keeping in mind its limitations, Propinquity Theory is used in this report to analyze the combined 1978 and 1979 site distributions. Although specific behavioral principles cannot be investigated, general statements about the parameters affecting settlement clustering can be made. In addition, this analysis may allow a predictive statement of site location to be generated which could prove useful for future Cultural Resource Management decisions involving the Arkansas River Valley region.

RESEARCH PROBLEMS

The four problems addressed for the purposes of this report include the following:

1) Settlement patterns as reflected by the distribution of sites with respect to eight environmental parameters.

2) Cultural and chronological affiliation as indicated by the analysis of diagnostic artifacts.

3) Functional variability among sites as suggested by variability in artifact assemblages and variability in site size.

4) Lithic resource procurement as indicated by analysis of the kinds of stone collected from sites.

The environmental variables recorded for each site during the 1979 survey were identical to those recorded for sites found during the 1978 survey. Thus, the data is directly comparable. The eight environmental variables included:

1) specific topographic setting
2) site elevation
3) distance from the site to the nearest source of water
4) elevation of the nearest source of water
5) distance to the nearest permanent source of water
6) elevation of the nearest permanent source of water
7) specific soil type
8) slope

Specific topographic setting is expressed in terms of the categories described in Chapter 2. All measure of elevation are expressed in feet above mean sea level, read directly from the U.S.G.S. 7.5 minutes Quadrangles or, when possible, from the 1=200 scale maps provided by the Corps of Engineers. All measures of distance are expressed in meters. Soil Conservation Service specific soil categories are used to designate soil type (Appendix E). Slope is expressed in percentages obtained from the slope factor assigned to the soils by the Soil Conservation Service. In cases where a range of slopes

is assigned by the Soil Conservation Service, the maximum slope is used for this analysis. For example, a site with a slope ranging from 3 to 8% is considered to have a slope of 8% for the purposes of the site distribution analysis.

HYPOTHESES AND TEST IMPLICATIONS

The research problems outlined above are stated here as hypotheses (H) and test implications (TI). All of the hypotheses and test implications are based on a set of logical assumptions (A). Therefore, these assumptions are stated first, and the hypotheses and test implications follow.

The following assumptions are made in regard to the relationship between material culture and behavioral patterns.

A_1: Specialized activities conducted on sites required the use of specialized tools.

A_2: A wide variety of artifacts were required on sites where numerous activities were conducted.

A_3: Conversely, a narrow variety of artifacts were required on sites where only a few activities were conducted.

A_4: Sites inhabited for extended periods by large numbers of people necessarily encompassed relatively large areas in order to accommodate all of the people.

A_5: Sites inhabited for short periods by small numbers of people encompassed relatively small areas during any given occupation.

A_6: Sites inhabited on a repeated seasonal basis, by small numbers of people, may have encompassed relatively small areas if each successive occupation occurred within the same boundaries as the original occupation. Conversely they may have encompassed relatively large areas if successive occupations spread out over different areas from year to year instead of remaining within the confines of the original boundaries.

A_7: Sites inhabited for extended periods by large numbers of people involved a wide variety of activities (e.g. food preparation, tool manufacture, and ceremonial activities). Following from A_2, the archeological record of these large sites should reflect a wide variety of artifacts.

A_8: Sites inhabited for short periods of time, by small numbers of people, may have involved all of the activities associated with large sites. However, they were more likely to involve a limited range of specialized activities (e.g., food procurement or the extraction of some other resource). In the first case,

following from A_2, a wide variety of artifacts would have remained on these sites. In the latter case, following from A_3, a narrow variety of artifacts would have entered into the archeological record.

A_9: Sites inhabited for extended periods, regardless of the number of inhabitants, allowed for the extended accumulation of cultural debris. Such sites should exhibit dense concentrations of artifacts reflecting the intensive activity which occurred over long periods of time.

A_{10}: Sites inhabited for short periods, regardless of numbers of inhabitants, allowed for little accumulation of cultural materials. Such sites should exhibit sparse concentrations of artifacts reflecting their brevity of occupation.

A_{11}: Sites inhabited for short but repeated periods by small numbers of inhabitants may exhibit dense concentrations of artifacts of occupations occurred repeatedly at the same location (Case 1 of A_6) or they may exhibit sparse concentrations if occupations spread out over a large area (Case 2 of A_6).

A_{12}: Sites may be grouped into functional categories on the basis of similarities exhibited with respect to areal extent, kinds of artifacts present, and artifact density.

Problem I: Settlement Patterns

H_1: Prehistoric site locations were chosen on the basis of proximity to exploitable resources.

TI_1: Large sites with high variability in artifact content and/or deep stratigraphy (indicative of habitation sites) should be located close to water in terms of horizontal distance because both the inhabitants themselves and the game they ultimately sought to exploit required water.

TI_2: Habitation sites, particularly Base Camps, should occur close to water in relation to vertical distance (elevation above water) because water was required for many maintenance activities.

Tl_3: Specialized activity sites should occur in areas which are situated both near and far from water, reflecting exploitation of specialized floral, faunal, or lithic resources which may or may not be found close to water.

Habitation sites have been observed in both upland and lowland settings in portions of the Arkansas River Valley. Some sites, such as Spinach Patch (cf. Bond 1977), occur on terraces which are located at considerable

distances from the river, but are free from flooding. Other habitation sites, such as Mississippian hamlets, have been found within the floodplain adjacent to the river in areas which must have been seasonally inundated (Hoffman, personal communication). On the basis of this information, it is hypothesized that:

H_2: The dichotomous settlement pattern observed in other parts of the Arkansas River Valley also existed in the Conway project area. This settlement pattern was the result of a seasonal round in which upland sites were occupied during seasonal flooding and lowland sites were occupied during dry seasons.

TI_1: Some habitation sites should be found along topographic features which are not subject to flooding, such as terraces and hillslopes.

TI_2: Some habitation sites should be found within the primary alluvial flat.

TI_3: Habitation sites located on upland features should contain evidence of spring/winter or year-round occupations as determined by faunal and floral remains recovered from excavation.

TI_4: Habitation sites located in the floodplain should contain only floral and faunal remains indicative of summer/fall occupation.

A recent study of site distribution with respect to soil attributes in the Western Lowlands of northeast Arkansas has shown that habitation sites cluster on areas with gentle slopes (Imhoff, personal communication). Areas selected for habitation sites had slopes of 2-3%. Areas having slopes of 0-2% and more than 3% appear to have been avoided. On the basis of this study, it is hypothesized that;

H_3: Habitation sites in the Conway project area were located on gentle slopes. Since there is much more variability in slope within the Conway area than within the Western Lowlands, gentle slopes are arbitrarily considered to include slopes of 10% or less for the purposes of this report.

TI_1: Most habitation sites should be found in areas having slopes between 2% and 10%.

The results of the Western Lowlands study reveal that habitation sites clustered on well-drained and moderately well-drained soils, but were consistently absent on poorly drained soils. Specialized activity sites clustered on well-drained soils to a greater degree than habitation sites. This may have been due to the fact that important food resources, such as nut trees, deer, and turkey occur most frequently in areas with well drained soils (Imhoff, personal communication). On the basis of this study, it is hypothesized that:

H4: Well drained soils were selected for habitation site locations.

TI_1: The majority of habitation sites should cluster on well drained and moderately well drained soils.

TI_2: Conversely, few habitation sites should occur on poorly drained soils.

TI_3: Specialized activity sites should occur on both well drained and poorly drained soils, with the greatest proportion occurring on well drained soils.

H_5: The distribution of prehistoric sites is different from the distribution of historic sites because different variables are responsible for clustering.

TI_1: Prehistoric sites should cluster with respect to the environmental variables discussed above.

TI_2: Historic habitation sites should cluster with respect to some of the environmental variables (i.e. topography and elevation above flooding and well drained soils), but not with respect to distance to water since wells usually supplied water rather than streams.

TI_3: Historic sites should cluster with respect to socio-cultural variables not present during the prehistoric times, such as proximity to roads, section lines, stores, and the like.

Problem II. Cultural and Chronological Affiliation

Artifacts diagnostic of each of the major chronological periods described in Chapter 3 have been found throughout the central Arkansas River Valley (Hoffman, personal communication). For this reason, it is hypothesized that:

H_1: The Conway project area was inhabited during all major periods ranging from Paleo-Indian through Historic.

TI_1: Diagnostic artifacts from each of the major periods should be found within the vicinity of the Conway project area.

H_2: Choice locations with respect to proximity to resources, slope, drainage, etc. were reoccupied on a roughly continous basis.

TI_1: Many sites should be found which contain artifacts diagnostic of more than one time period, indicating successive occupations by different cultural groups.

TI_2: Few sites should be found which contain artifacts from a single time period.

Problem III. Functional Variability

Previous research has indicated that sites in the central Arkansas River Valley vary with respect to function (cf. Hoffman 1977, Martin and Jones 1978). Some sites represent base camps, some farming hamlets, and others specialized activity sites associated with the former two. On the basis of this knowledge, it is hypothesized that:

H_1: Site function varied from site to site within the Conway project area as evidenced by variability in site size, artifact content and artifact density.

TI_1: Technical variability (different assemblages of artifacts) should be observed among sites.

TI_2: Differences in the concentration of artifacts on sites should be observed.

TI_3: Differences in areal extent of the artifact scatters (differences in site size) should be observed among sites.

H_2: Some sites within the Conway project area had similar or identical functions.

TI_1: Similarities should be observed among different sites with respect to site size, artifact content and artifact density.

There is evidence within the central Arkansas River Valley that site function changed over time as evolutionary changes in subsistence strategies occurred. For instance, the base camps of the Paleo-Indian through Woodland periods gave way to permanent farming villages during the Mississippian period (cf. Harrington 1924, Hoffman 1977, Jennings 1952). In portions of Arkansas which are more remote and isolated with respect to access to the Arkansas River, such as the hills of the Ozarks or the Ouachita Mountains, little evidence of such changes has been reported. It was once hypothesized that the inhabitants of these areas continued to follow an Archaic lifestyle throughout the entire course of prehistory, instead of adopting an agricultural mode of subsistence (Harrington 1960). Recently, a more plausible hypothesis has been suggested by Raab (personal communication) which states that these remote parts of the state were used by Mississippian peoples for specialized activities, such as hunting, while agricultural sites were located along the floodplains of major streams. Thus, late prehistoric sites located in remote areas would have yielded similar assemblages to early prehistoric sites, even though the overall subsistence strategy had changed.

Since little archeological data has been gathered on the Conway project area, two opposing hypotheses are presented here with respect to changes in site function over time. If the soil in the project area was suitable for horticulture, then the first hypothesis should hold.

If, on the other hand, the project area was unsuitable for horticulture and was used primarily for specialized resource extraction during Mississippian times, then the second hypothesis should hold.

H_3: Peoples of all archeological stages (Paleo-Indian through Mississippi) utilized the Conway project area in a very similar specialized manner despite evoluationary differences in social structure and subsistence patterns (hunter-gatherers versus farmers). In other words, no major changes occurred in site function over time in this area.

TI_1: The relative ratios of Base Camps and Specialized Activity Sites should be the same or nearly the same for sites of the Paleo-Indian, Archaic, Woodland and Mississippi periods.

H_4: (alternative hypothesis) As social structure and subsistence patterns changed over time from hunting and gathering to farming, observable changes occurred in site function and distribution as well.

TI_1: Changes in site configuration (distribution of artifacts on sites) and artifact functional types should be apparent among sites occupied during different time periods.

TI_2: Archaic and early-middle Woodland sites should occur with approximately equal frequencies in upland and stream valley areas, suggestive of hunting and gathering activities not dependent on proximity to permanent streams.

TI_3: Late Woodland and Mississippian site frequencies should be far greater along Cypress and Cadron Creeks than along upland areas or along intermittent streams, reflecting the farming activities and permanent settlements dependent upon workable soil and a permanent water supply.

Problem IV. Lithic Resource Procurement for Prehistoric Sites

Chert and novaculite, important lithic resources for prehistoric tool manufacture, do not occur naturally within the Conway project area. The project area is approximately equidistant from sources of chert to the north and sources of novaculite to the south (Figure 7, Chapter 2). Therefore it is hypothesized that:

H_1: Chert and novaculite sources were exploited uniformly by prehistoric inhabitants of the Conway project area.

TI_1: Roughly equivalent ratios of Boone chert, Pitkin chert, and novaculite should be observed among artifacts and debitage collected from sites, reflecting uniform exploitation of these resources.

This first hypothesis assumes that distance to lithic resources was the only factor considered by prehistoric populations with respect to selection of materials to be exploited. Another factor which may have influenced choice of materials to a greater extent than distance was the workability of the stone. Experimental flint knapping has demonstrated that all of the cherts and novaculite can be used to produce tools of equal quality. However, some grades of novaculite and Boone chert must be modified by heat treating before they can be easily worked (Charles Hoffman, personal communication). Therefore, it is hypothesized that:

H_2: Pitkin chert was exploited to a greater extent than either novaculite or Boone chert because it could be easily worked without additional heat treatment.

TI_1: Higher ratios of Pitkin chert should be observed among sites than ratios of Boone chert or novaculite.

ANALYTICAL PROCEDURES

Two classes of data were analyzed for the purposes of this report. The first class of data was comprised of the artifacts collected from the sites. These were analyzed in an attempt to assess specific cultural and functional affiliations in order to view each site from a culture-historical perspective. The artifact analysis included:

1. Classifying artifacts into appropriate tool type categories on the basis of their functional characteristics.

2. Identifying the raw material from which each tool was manufactured.

3. Identifying projectile point types on the basis of recognized typologies.

The second class of data encompassed the environmental information pertaining to the location of each site. This information was derived from field observations, SCS soils maps, and the U.S.G.S. 7.5 minutes quadrangle. Analysis of the environmental data included:

1. Plotting site distribution in relation to each of the environmental variables.

2. Comparing observed site distributions with random distributions for each variable, in order to observe differences which might explain clustering of sites across the landscape.

Cultural affiliation and temporal assignment were determined on the basis of traditional criteria (i.e., projectile point type). Although a number of sources were used in an attempt to classify projectile points (Bell 1958, 1960; Suhm and Jelks 1962; Perino 1968), it was not possible to positively identify many of the points. However, cultural affiliations were assigned to sites on which projectile points were found if such points exhibited the traits characteristic of a particular cultural tradition, whether they could be specifically typed or not.

Possible site function was assessed by examining the functional classes of artifacts present on each site using the following categories derived from Klinger's (1976) study of sites in the Village Creek basin of northeast Arkansas.

1) Hunting/butchering tools
2) Floral processing tools
3) Woodworking tools
4) Manufacturing tools

Projectile points, knives, and scrapers are included under the first category. Grinding stones, such as manos, metates, and pitted nutting stones are grouped under the second category. Axes, adzes, and celts are included under the third category. Finally, hammerstones, cores and flakes of chert and novaculite (by-products), and unmodified chert and novaculite cobbles (raw materials) are included under the fourth category.

Artifacts were classified according to their probable uses by lab personnel in the Arkansas Archeological Survey archeology laboratory at the University of Arkansas in Fayetteville. Classifications were made on the basis of visual inspection, rather than by statistical analysis of artifact attributes, since the cost of such analysis would have been prohibitive. In addition, prehistoric curation behavior and modern collecting activity may have had a substantial affect on the kinds of artifacts that were recovered from sites. Therefore, the determinations of site function must be considered approximations, rather than final assessments. These determinations represent possible site functions, but final determinations can only be made on the basis of data retrieved from extensive excavation.

Prehistoric sites were classified as either base camps or specialized activity sites on the basis of the model employed by Klinger (1976) in the study of the Village Creek area, which is similar in many respects to Cleland's (1976) and Binford and Binford's (1966) models. According to this model, base camps should exhibit artifacts from all or most of the functional categories described above. Specialized activity sites should exhibit a predominance of artifacts from a single functional category, while certain classes of artifacts associated with other categories should be conspicuously absent. For example, a site yielding hammerstones, chert flakes and partially finished tools, but lacking ground stone artifacts, fire-cracked rock, adzes, etc., would be called a specialized activity site, probably a tool manufacturing site.

Historic sites were classified as either dwellings, which include both house structures and associated outbuildings, or historic specialized sites which include mills, cemeteries, churches, cotton gins, and other sites associated with non-residential activities. Historic site function was classified as much on the basis of informant interviews as it was on laboratory analysis of artifacts.

SITE DISTRIBUTION ANALYSIS

The site distribution analysis presented in this chapter includes the data from both the 1978 and 1979 surveys for a more comprehensive view of the overall site distribution observed for the Conway project area. Since the observations made on all sites were the same during both seasons, the data was directly comparable. A total of 82 sites (26 from 1978 within the proposed reservoir, 3 from 1978 just outside the reservoir, and 53 from 1979 along the proposed pipeline, spillway, reservoir, and road areas) was used for the analysis.

Due to the sparse nature of the artifacts present on sites recorded during the 1979 survey, assessments of site function and cultural affiliation could not be made in many instances as reflected by the many unknowns listed in Table 4 (Chapter 5). Differences in ground cover and increased modern collecting activity along the 1979 survey areas probably account for this lack of data. Since data on site function was important to the 1978 analysis of the distribution of sites within the reservoir area, this kind of analysis was not feasible for use with the 1979 data. Still, it was possible to view the distribution of sites across the landscape using an alternate method. This method involved:

1) plotting 82 random points on the project area map and taking measurements for all eight environmental variables

2) using a nearest neighbor statistic (Whallon 1974) to test the randomness of the generated random distribution, as well as the degree of clustering among the observed site distribution

3) plotting histograms and raw frequencies for each variable using Statistical Analysis System (SAS)

4) assessing differences between the random distribution and the observed distribution by means of the chi-square goodness of fit test.

The use of the generated random distribution is not a perfect methodology. Ideally, thousands of random distributions should be compared to the observed distribution, with the results averaged. It might be argued that although the observed distribution differs in some respects from the generated random distribution used here, it may conform exactly to some other random distribution. It is impossible to confirm or refute this argument, but recognizing that this problem exists, it is still important to make such a comparison in order to avoid gross errors in interpretation of the data. For example, if the

distribution of sites with respect to soil type were examined alone, it would appear that the most important soils for site location were the 604 (Linker fine sandy loam) and 683 (Leadvale silt loam) series because 28% of the sites were located on the 604 series and 38% were located on the 683 series (see Figure 26 in Results). Yet, when compared to the random distribution, it becomes apparent that these soil types are insignificant for explaining site location decision-making processes, since 27% of the random points occurred on the 604 series and 27% occurred on the 683 series.

The random points used in this analysis were plotted on the map in the following manner. In the proposed reservoir and spillway fee acquisition areas, a grid dividing up each area into 10 acre units was constructed using a commercially available U.S.G.S. Land Area and Slope Indicator. Each 10 acre unit was numbered consecutively (1-235 for the reservoir, 1-35 for the spillway). A table of random numbers was consulted to select squares, and a point was placed in the center of each square selected. In order to insure comparability, random points were plotted in proportion to the number of sites occurring in each area. In other words, since 33 sites were located in the vicinity of the proposed reservoir, 33 random points were plotted within the same area. Since 15 sites were present within the spillway fee acquisition area, 15 random points were plotted there.

The proposed pipeline transmission corridor and road realignment routes were essentially one-dimensional (linear) in nature, so the 10 acre per unit grid was not used. Instead, each line was marked off in units the length of one side of a 10 acre unit. This represents a linear distance of approximately 650 feet per unit. These linear units were numbered consecutively beginning with the southern end of the pipeline and the western end of the road realignment. In the same manner, nine points were plotted along the road realignment and 25 points along the pipeline, corresponding to the number of sites found in each area.

Once the random points were plotted across the landscape, measurements were taken for the same environmental parameters that were measured for the observed sites. Then nearest neighbor analysis, a technique designed to determine whether a spatial distribution is random, clustered, or uniform, was used to test the degree of randomness achieved by the generated distribution. This was important to insure that the observed site distribution was actually being compared to a random distribution, rather than to some other clustered or uniform distributions which could not be used with statistical tests.

The statistic is relatively simple to compute. First, the shortest distances between points are recorded (i.e. the distance between each point and its "nearest neighbor" in space). The total area of space being investigated, in this case the proposed reservoir and spillway, is then calculated. The values are then placed into the formulas presented by Whallon (1974:18) and computed. The ratio of the mean of the observed distances between points over the mean of the expected distances between points is used to assess the degree of clustering. A value of 0 represents a perfectly clustered distribution; 1 represents a perfectly random distribution; and 2.1491 represents a perfectly uniform distribution.

This statistic can only be used to assess distributions in two-dimensional space; it cannot be used to test linear transects such as the pipeline corridor and road realignment route. Since the points selected along these routes were selected in the same manner as those in the proposed reservoir and spillway areas, they are assumed to represent the same degree of randomness in distribution. Because the results of the nearest neighbor analysis produced ratios of 1.10 for the reservoir and 1.07 for the spillway (nearly perfectly random), the points plotted along the pipeline and road realignment routes are also thought to be perfectly random in their distribution.

The next step in the analysis was to apply nearest neighbor analysis to the observed distribution of sites in order to see if it was clustered, as hypothesized, or whether it too was random. The results of the analysis revealed ratios of 0.38 for sites in the spillway area (well clustered), but only 0.64 for sites in the reservoir area (slightly closer to random than to clustered). The reason for the poorly clustered results may have been due to the fact that historic sites and prehistoric sites were not separated for nearest neighbor analysis, and that each group may cluster with respect to different variables. Therefore, by assessing them together, a more homogeneous distribution is observed. To examine this possibility, histograms were plotted by the Statistical Analysis System (SAS) computer program for prehistoric sites and historic sites, both separately and together. These are discussed in detail in the Results section of this chapter.

Attempts to use the chi-square statistic in comparing the goodness of fit between the observed site distribution and the generated random distribution presented major difficulties with respect to reliability and validity. Reliability refers to the precision of the measurement used whereas validity reflects the ability of a test to measure what it is intended to measure (Roscoe 1975:130). A test cannot be very valid if it is unreliable, and the two sources of uncontrolled error inherent in applying chi-square to this analysis make the test quite unreliable.

First of all, the chi-square statistic was designed to compare an observed distribution to a hypothetical expected distribution; not to a distribution generated from a table of random numbers. Chi-square is expressed mathematically by:

$$X^2 = \sum_{j=1}^{k} \frac{(O_j - E_j)^2}{E_j}$$

where O_j = the observed frequency for the ; th cell

E_j = the expected frequency for the ; th cell

k = the number of cells

df = k-1

However, by using a generated random distribution in place of a hypothetical distribution, a source of error is introduced. In this case the observed minus the expected frequencies squared are actually equal to the observed frequency minus the real frequency squared plus the real frequency minus the random frequency squared.

This is expressed mathematically by:

$$(O - E)^2 = (O - T)^2 + (T - E)^2$$

where O = the observed frequency
T = the real frequency
E = the expected (random) frequency

Thus, the statistical test has one built-in source of error when used in this analysis. However, this error will be negligible if the term $(T-E)^2$ approaches zero. An attempt was made to use this test as a rough indicator of statistical significance of differences between observed and the random distributions, keeping in mind the flaw described above. Once again, another source of error became apparent which dissuaded further attempts to apply the test.

The second source of error became apparent after the data had been processed by the computer. It was caused by the fact that more than 5% of the cells in the matrix had expected counts of less than 5. Thus, the tables were so sparse that the validity of the chi-square test was questionable. Under most circumstances, this problem could be corrected by collapsing the data into smaller categories. For example, if three observations were recorded as being 600 m from permanent water and four were recorded as being 1000 m from water, a new category labeled "greater than 600 m from permanent water" could be created with seven observations recorded. However, in many cases data would have to have been collapsed into so few categories to obtain an adequate number of observations that the results of the test would have been meaningless. For this reason, the chi-square test was not employed at all. Instead, the results of the analysis were interpreted simply by inspection of the histograms, raw frequencies, and percentages. This form of intuitive inspection is not ideal because differences between random and observed distributions cannot be tested for significance. However, it is an appropriate method for suggesting trends in the data.

RESULTS OF THE ANALYSIS

Artifact Categories

Artifacts collected from sites during the 1979 survey and testing program were identified by lab technicians on the basis of visual identification of their morphological characteristics. Eighteen categories of prehistoric artifacts were recognized. Projectile points were further broken down according to specific type using published typologies. Four general categories of historic artifacts were recognized. Specific identifications of historic artifacts were possible in many instances as well. Table 5 presents a list of the general prehistoric and historic categories recognized for artifacts recovered during the 1979 investigations. The specific artifact classifications are listed in Appendixes B, C, and D, along with the descriptions of individual sites. Definitions

of prehistoric artifacts are contained in Appendix F. Descriptions of projectile point types recognized within the project area are contained in Appendix G.

Table 5. General artifact categories recognized for the Conway project area

Prehistoric		Historic	
Ax	Hammerstone	Brick	
Biface	Knife	Ceramics:	whiteware, stoneware, transferware, etc.
Blade	Mano		
Core	Metate		
Drill	Projectile point	Glass:	bottle, window, etc.
Flake (unretouched)	Quartz crystal	Metal:	nails, tools, horseshoes, etc.
Flake (retouched)	Scraper (end)		
Fire cracked rock	Scraper (side)		
Groundstone	Spokeshave		

PROJECTILE POINT TYPOLOGY AND CULTURAL/CHRONOLOGICAL AFFILIATION

Typology has long been considered an important aspect of archeological research and a number of projectile point typologies have been developed (cf. Bell 1958, 1960; Perino 1968; Chapman 1975; Suhm and Jelks 1962). These typologies were developed by grouping projectile points sharing similar morphological characteristics into types. General chronologies were assigned to each type on the basis of dated excavated materials found in association with them. Cultural affiliations have been assigned to each type on the basis of the kinds of materials found in association with them. In other words, projectile points found with grit tempered pottery would be assigned to the Woodland tradition; those found with other hunting tools and no pottery might be assigned to the Archaic tradition and so on. As previously mentioned, assessment of cultural/chronological affiliation made on the basis of typologies may be inaccurate. It is assumed that morphologically similar projectile points date from the same period, but chronologies are not always consistent throughout all areas. In general though, projectile point typologies offer a rough indication of the periods of site occupation and of the cultural groups that occupied the sites. Periods of site occupation are indicated in Table 6 for those sites from which diagnostic materials were collected.

SITE DISTRIBUTION WITH RESPECT TO THE ENVIRONMENT

The environmental data collected for each of the sites recorded in the Conway project area during the 1978 and 1979 surveys is presented in Table 7. Each of the environmental variables is discussed in relation to its degree of importance in the decision making processes involved in

Table 6. Conway Water Supply Chronology and Cultural Affiliation

Site No.	Dalton	E. Archaic	M. Archaic	L. Archaic	M.-L. Archaic	M. Archaic-L. Woodland	L. Archaic-E. Woodland	E.-M. Woodland	E. Woodland Historic	M. Woodland	M.-L. Woodland	L. Wood.-Miss.	L. Wood.-Historic	Mississippian	Miss.-Historic
3CN33								X					X	X	
3CN36			X												
3CN37		X					X								
3CN38			X		X			X			X				
3CN39					X										
3CN41		X													
3CN42		X									X				
3CN46		X		X	X	X	X	X	X						
3CN50								X							
3CN57					X										
3CN64		X			X										
3CN67												X			
3CN68		X			X		X								
3CN70	X	X		X											
3CN74		X		X											
3CN79													X		
3CN80															X
3CN81					X										
3CN82		X	X				X	X	X						
3CN83			X	X											
3CN84			X				X								
3CN91													X		
3CN93		X													
3CN97		X			X		X		X						
3CN107			X												
3CN117					X		X		X			X			
3CN118									X						
3CN119						X									

Table 7. Environmental characteristics of the sites recorded in the Conway Water Supply project

Site Number	Topographic Setting	Site Elevation		Nearest Water			Nearest Perm. Water			Soils Association*	Slope %
		feet	meters	Distance meters	Elevation feet	Elevation meters	Distance meters	Elevation feet	Elevation meters		
3CN33	Primary alluvial flat	310	95	0	310	95	0	310	95	676	0-5
3CN36	Point of terrace edge	300	91	65	280	85	110	280	85	683	3-8
3CN37	Primary alluvial flat	290	88	120	285	87	120	280	85	626	1-3
3CN38	Primary alluvial flat	300	91	20	290	88	20	290	88	675	0-2
3CN39	Terrace edge	310	95	440	280	85	440	280	85	626	1-3
3CN40	Terrace edge	325	99	90	320	98	90	310	98	683	1-3
3CN41	Terrace edge	350	107	20	340	104	110	320	98	626	3-8
3CN42	Ridgetop	345	105	90	275	84	90	275	84	619	12-40
3CN43	Terrace edge	300	91	20	285	87	20	285	87	616	8-12
3CN44	Terrace surface	350	107	80	340	104	1050	285	87	604	3-8
3CN45	Terrace surface	305	93	240	287	88	400	285	87	653	0-2
3CN46	Terrace edge	350	107	10	287	88	180	285	87	683	1-3
3CN47	Hillslope-floodplain	330	101	350	287	88	500	285	87	604	8-12
3CN48	Minor terrace relief	345	105	260	310	95	390	295	90	606	8-12
3CN49	Terrace surface	365	111	40	350	107	470	325	99	683	1-3
3CN50	Terrace surface	320	98	2	318	97	900	295	90	683	3-8
3CN51	Terrace surface	340	104	260	325	99	390	300	91	653	0-2
3CN52	Terrace surface	345	105	150	335	102	850	300	91	653	0-2
3CN53	Terrace surface	385	117	90	370	113	1330	325	99	626	3-8
3CN54	Terrace surface	370	113	230	345	105	1180	335	102	683	1-3
3CN55	Terrace surface	320	98	40	315	96	660	285	87	683	1-3
3CN56	Primary alluvial flat	300	91	0	290	88	0	290	88	675	0-2
3CN57	Primary alluvial flat	280	85	65	280	87	65	280	85	675	0-2
3CN58	Terrace edge	340	104	320	295	90	480	285	87	626	1-3
3CN59	Terrace edge	310	95	130	305	93	510	285	87	626	1-3
3CN60	Primary alluvial flat	310	95	0	310	95	0	310	95	676	0-5
3CN62	Terrace edge	300	91	200	287	88	550	280	85	683	3-8

Table 7. Environmental characteristics of the sites recorded in the Conway Water Supply project, cont.

Site Number	Topographic Setting	Site Elevation feet	Site Elevation meters	Nearest Water Distance meters	Nearest Water Elevation feet	Nearest Water Elevation meters	Nearest Perm. Water Distance meters	Nearest Perm. Water Elevation feet	Nearest Perm. Water Elevation meters	Soils Association*	Slope %
3CN63	Terrace surface	350	107	150	340	104	980	280	85	604	3-8
3CN64	Point of terrace edge	300	91	60	285	87	300	275	84	626	8-12
3CN67	Primary alluvial flat	280	85	30	260	79	30	260	79	127	0-2
3CN68	Terrace surface	295	90	200	275	84	300	270	83	149	1-8
3CN69	Hillslope-floodplain	285	87	10	280	85	750	260	79	193	1-20
3CN70	Terrace edge	290	88	200	270	83	460	260	79	683	3-8
3CN71	Terrace edge	290	88	200	270	83	550	260	79	683	3-8
3CN72	Terrace edge	295	90	125	270	83	500	260	79	683	3-8
3CN73	Terrace edge	285	87	10	280	85	640	260	79	683	3-8
3CN74	Hillslope-floodplain	290	88	80	270	83	650	260	79	604	8-12
3CN75	Terrace surface	285	87	380	270	83	400	260	79	604	8-12
3CN76	Terrace surface	285	87	250	260	79	250	260	79	604	8-12
3CN77	Terrace surface	280	85	240	260	79	240	260	79	604	8-12
3CN78	Terrace edge	270	83	120	260	79	120	260	79	683	1-3
3CN79	Terrace edge	280	85	30	270	83	30	270	83	683	1-3
3CN80	Terrace edge	280	85	110	270	83	110	270	83	683	1-3
3CN81	Terrace edge	280	85	80	270	83	80	270	83	683	1-3
3CN82	Primary alluvial flat	285	87	10	280	85	10	280	85	676	0-1
3CN83	Primary alluvial flat	285	87	50	280	85	50	280	85	676	0-1
3CN84	Primary alluvial flat	285	87	40	280	85	40	280	85	676	0-1
3CN85	Primary alluvial flat	290	87	150	280	85	150	280	85	683	1-3
3CN86	Primary alluvial flat	275	84	100	275	84	450	260	84	127	0-2
3CN87	Terrace surface	320	98	350	310	95	1175	300	91	604	1-3
3CN88	Hillslope	380	116	225	340	104	900	310	95	616	8-12
3CN89	Terrace surface	340	107	80	340	104	840	310	95	626	8-12
3CN90	Terrace surface	350	107	15	340	104	400	310	95	683	1-3
3CN91	Terrace surface	350	107	200	340	104	800	310	95	683	1-3
3CN92	Terrace edge	320	98	60	315	97	650	290	88	683	1-3

Table 7. Environmental characteristics of the sites recorded in the Conway Water Supply project, cont.

Site Number	Topographic Setting	Site Elevation feet	Site Elevation meters	Nearest Water Distance meters	Nearest Water Elevation feet	Nearest Water Elevation meters	Nearest Perm. Water Distance meters	Nearest Perm. Water Elevation feet	Nearest Perm. Water Elevation meters	Soils Association*	Slope %
3CN93	Terrace surface	310	95	250	290	88	990	270	81	683	1-3
3CN94	Ridge top	360	110	200	280	85	200	280	85	604	8-12
3CN95	Point of terrace edge	295	90	90	280	85	90	280	85	604	8-12
3CN96	Terrace edge	310	95	30	280	85	110	280	85	604	3-8
3CN97	Point of terrace edge	290	88	170	270	83	170	270	83	683	3-8
3CN98	Minor terrace relief	310	95	330	280	85	500	280	85	683	1-3
3CN99	Terrace surface	305	93	300	280	85	400	280	85	683	1-3
3CN100	Terrace edge	300	91	100	280	85	250	280	85	683	1-3
3CN101	Minor terrace relief	300	91	250	280	85	250	280	85	683	3-8
3CN102	Terrace edge	290	88	25	285	87	350	280	85	683	1-3
3CN103	Terrace edge	290	88	90	290	88	700	270	83	683	1-3
3CN104	Terrace edge	300	91	50	290	88	600	270	83	683	1-3
3CN105	Terrace surface	300	91	300	290	88	1225	280	85	604	1-3
3CN106	Terrace surface	300	91	10	290	88	1350	280	85	604	1-3
3CN107	Terrace edge	290	88	90	280	85	180	270	83	683	1-3
3CN108	Terrace surface	310	95	40	295	87	40	295	87	604	3-8
3CN109	Point of terrace edge	295	90	15	280	85	15	280	85	683	1-3
3CN110	Hillslope	350	107	300	280	85	300	280	85	604	8-12
3CN111	Terrace edge	310	95	25	280	85	25	280	85	604	8-12
3CN112	Hillslope	320	98	25	280	85	550	280	85	604	8-12
3CN113	Hillslope-floodplain	335	103	70	280	85	180	280	85	604	8-12
3CN114	Terrace edge	310	95	250	280	85	250	280	85	604	3-8
3CN115	Hillslope-floodplain	320	98	10	280	85	250	280	85	604	3-8
3CN116	Point of terrace edge	305	93	30	280	85	120	280	85	604	3-8
3CN117	Primary alluvial flat	290	88	70	290	88	70	290	88	675	0-1
3CN118	Ridge top	380	116	150	280	85	150	280	85	604	8-12
3CN119	Terrace edge	315	96	400	285	87	400	285	87	683	1-3

the choice of site locations. The usefulness of each variable as a predictor of site location for use in future archeological studies in the central Arkansas River Valley region is also addressed. The reader is cautioned that the results discussed in this section are derived from intuitive interpretations rather than from statistical tests. They suggest that the relationships described here exist, but they cannot demonstrate their significance or lack of significance.

Topographic Setting

This variable refers to the specific topographic features defined in Chapter 2. The data indicates that these features were important factors contributing to the selection of site locations by both prehistoric and historic inhabitants of the area.

Figure 15 illustrates the distribution of the 82 observed sites and the distribution of the 82 random points with respect to specific topographic setting. Examination of this figure indicates that substantial differences occur between the two distributions. Approximately 16% of observed sites are on the primary alluvial flat, 33% are on the terrace edge, and an additional 7% are on points on the terrace edge for a total of 40% associated with terrace edge features. An opposite trend is seen for the random points, with 33% occurring on the primary alluvial flat, 17% on the terrace edge and 0% on points on the terrace edge. The only similarity between the two is that 27% of observed sites are on the terrace surface and 24% of the random points occur on this feature.

Figure 16 illustrates even more substantial differences between prehistoric and historic sites with respect to topography. (Note that the nine sites containing both prehistoric and historic components have been counted twice, once for each component, for each of the variables discussed in this section.) Nearly 36% of the 53 prehistoric sites are situated along the terrace edge and an additional 11% are on points on the terrace edge for a total of 47% of prehistoric sites clustering along this feature. Only 28% of the 38 historic sites were found along the terrace edge and none were present on points on the terrace edge. The majority of historic sites (34%) occurs along the terrace surface whereas only 18% of prehistoric sites are present on this feature. The primary alluvial flat contains the next largest amount of prehistoric sites, 21%, whereas only 11% of the historic sites are found there. Finally, 8% of historic sites are present on the hillslope, but none of the prehistoric sites are.

Several possibilities are suggested by these results. Prehistoric groups may have selected site locations along the terrace edge because this feature is free from seasonal flooding and yet close to water resources (both water for consumption and aquatic faunal and floral resources as well). Therefore, winter-spring seasonal occupations or year round occupations could have occurred at prehistoric sites situated on this feature. Historic sites were primarily located along the terrace

surface and the terrace edge. This probably reflects a selection process for locations above flooding, but not dependent on distance to water due to the presence of wells which supplied potable supplies. An examination of the GLO maps reveals that the earliest roads through the project followed the terrace edge and that dwellings were located near these roads. Thus, the presence of roads, rather than the topographic feature itself, appears to account for some of the observed clustering of historic sites along the terrace edge.

The presence of prehistoric sites on the primary alluvial flat indicates that these were occupied on a seasonal basis during the summer or fall or both. Three out of the four historic sites present on the floodplain happen to be historic specialized sites including a dump, a mill, and a church. It is apparent that most dwellings were built on features above seasonal flooding, but that the floodplain was used for some specialized sites. The term "specialized" as applied to historic sites is not intended to suggest that such sites were temporarily occupied, as were prehistoric specialized sites. Rather, it indicates a site which was used on a permanent basis for specialized activities of a non-domestic nature. The absence of prehistoric sites on the hillslope may indicate that it was too far away from supplies of water or too steep to set up camp. Both of these factors could have been easily overcome by the historic settler's well and structure construction technology, so some historic sites are present on this feature.

Specific topographic setting may have been one of the most important variables considered in the decision making processes of both prehistoric and historic groups in the Arkansas River Valley region. It is a very useful predictor of site locations for the region. Future researchers investigating prehistoric patterns should pay close attention to terrace edge and primary alluvial flat for evidence of seasonally occupied sites. Terrace surface and terrace edge should be intensively investigated for historic dwellings, but the primary alluvial flat must not be overlooked if the entire historic pattern is to be investigated because specialized sites often occur there.

Site Elevation

Site elevation was determined by calculating the mean elevation of each site. If a particular site ranged from 840 feet to 860 feet, for example, then its mean elevation was listed as 850 feet.

Figure 17 illustrates the distribution of the 82 observed sites and the distribution of 82 random points. The principal difference between the two occurs with respect to the 270-290 and 291-310 categories. Nearly 43% of the random points occur on elevations between 270 and 290 feet above mean sea level, whereas only 30% of the observed sites fall within this range. Only 16% of random points occur on elevations between 219 and 310 feet whereas 36% of the observed sites are within this range.

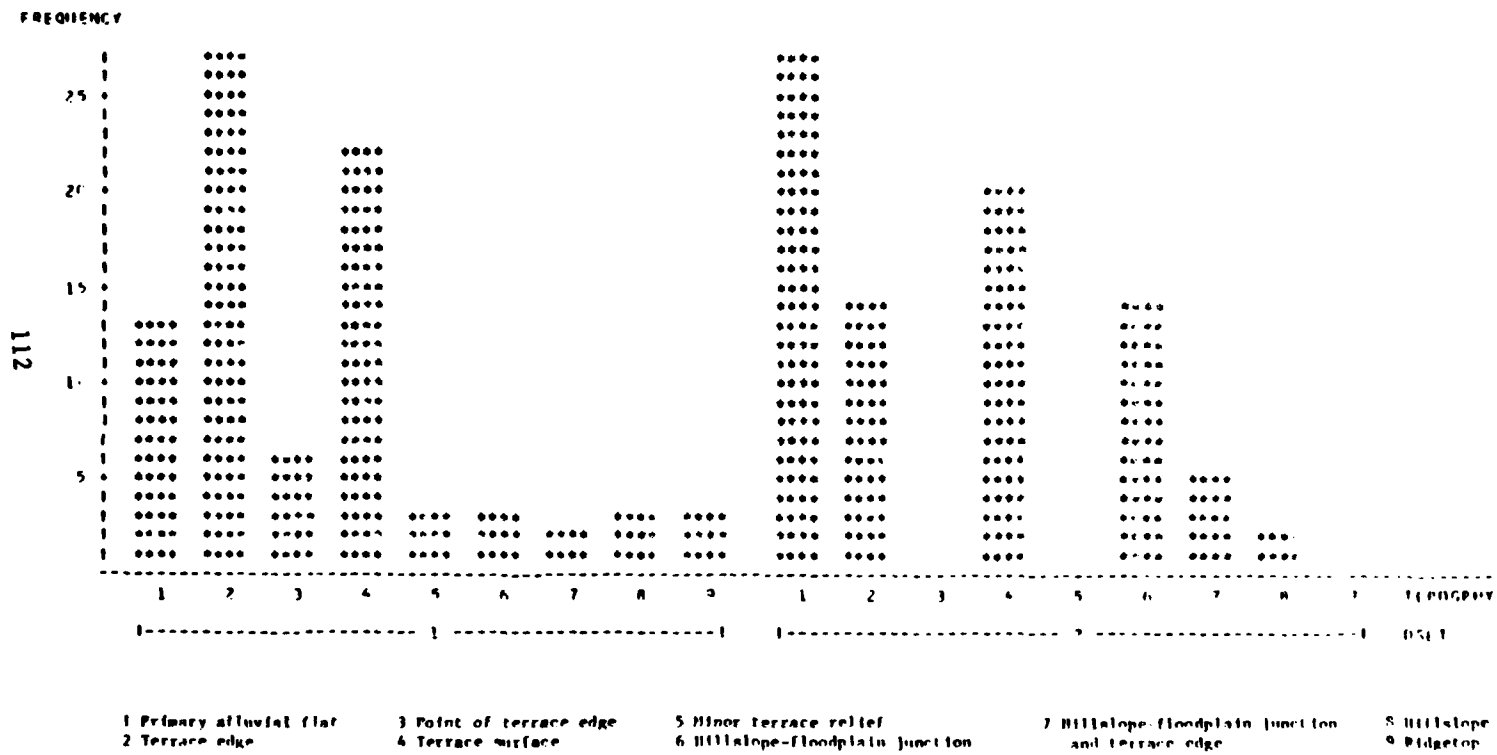


Figure 15. Frequency bar chart for observed sites (1) and random points (2) with respect to topographic setting

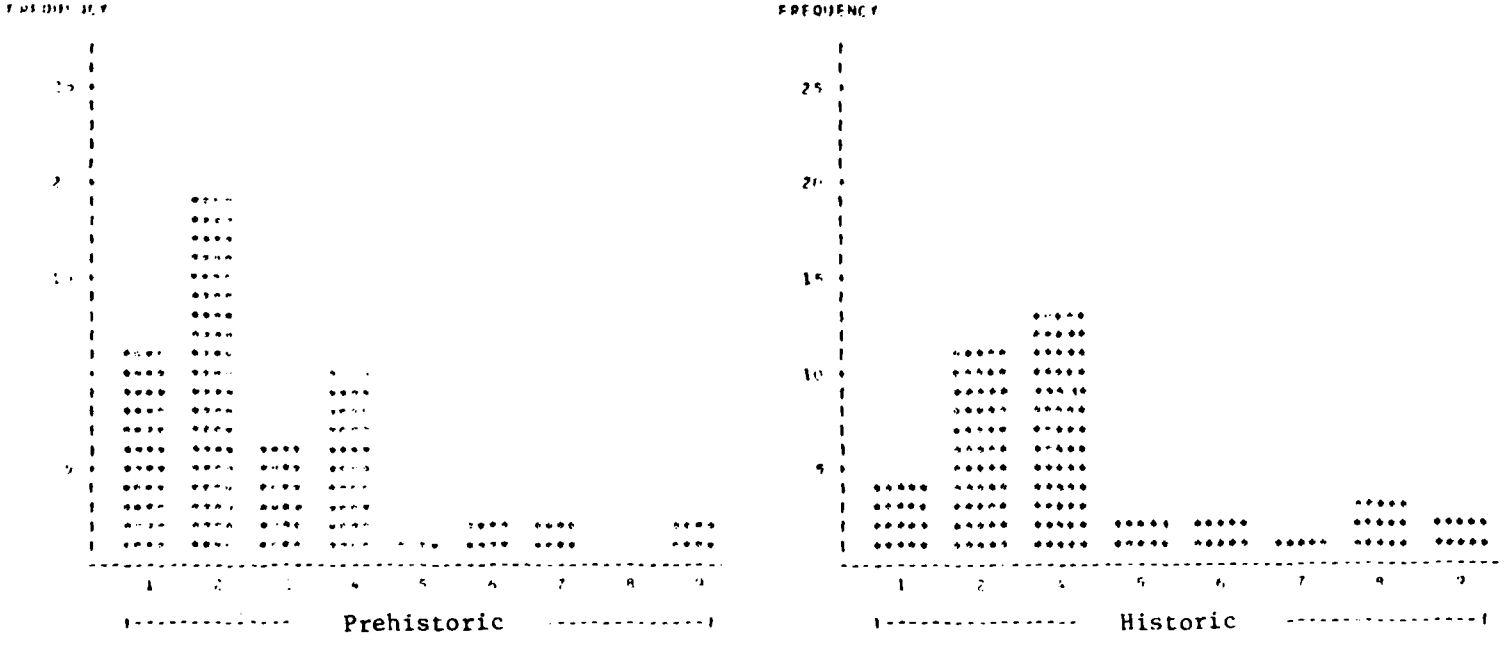


Figure 16. Frequency bar chart for prehistoric sites and historic sites with respect to topographic setting

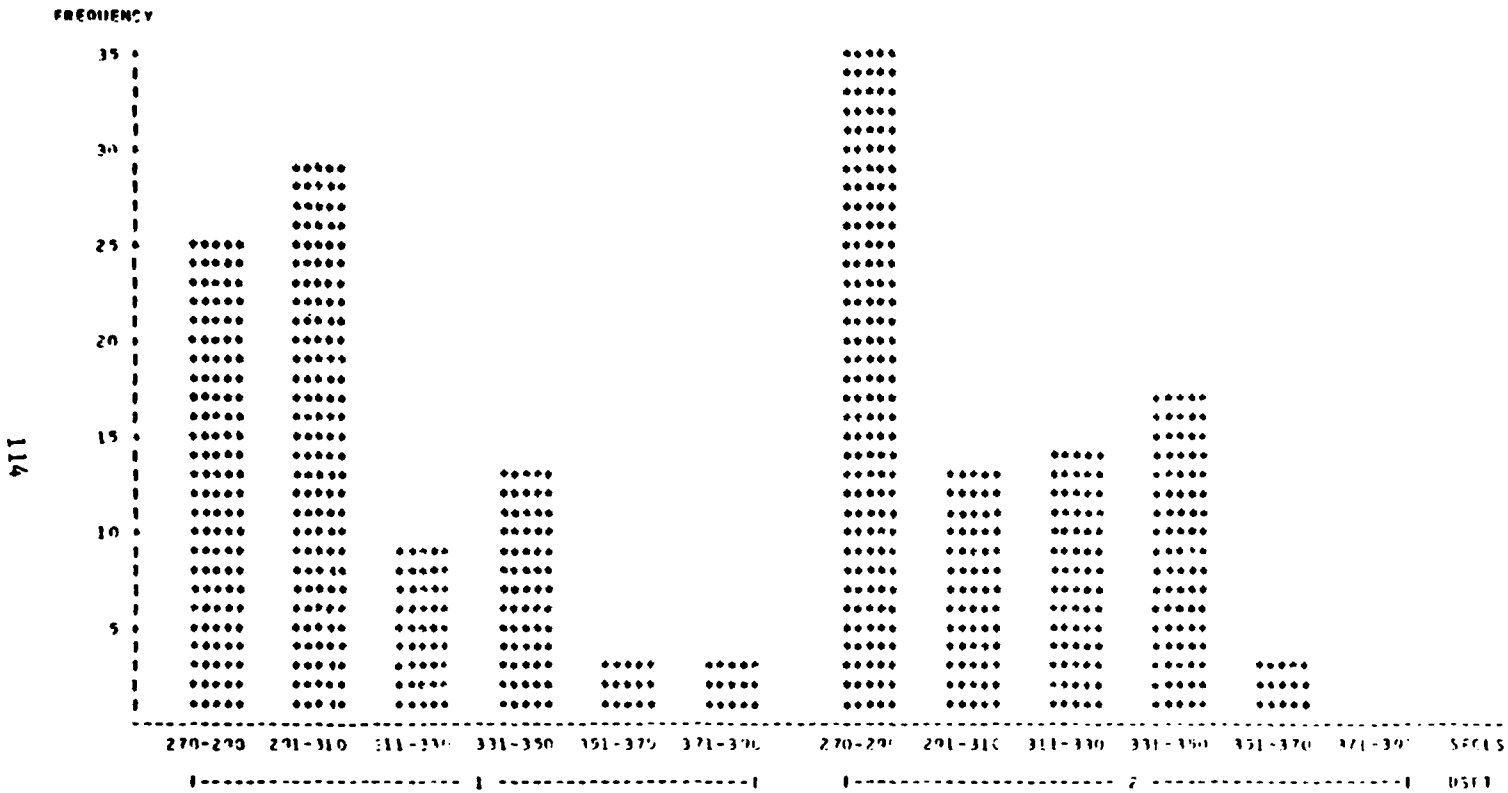


Figure 17. Frequency bar chart for observed sites (1) and random points (2) with respect to site elevation

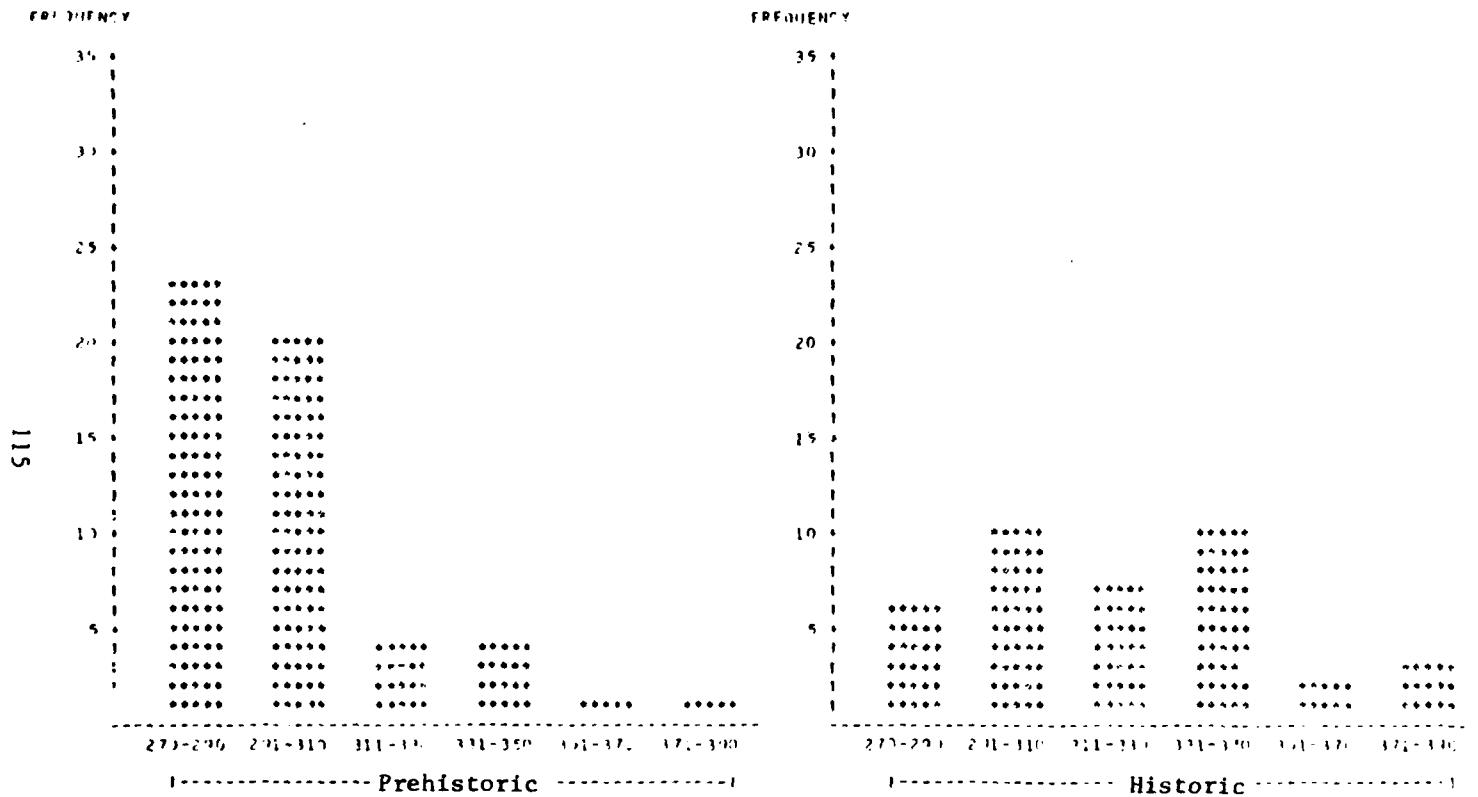


Figure 18. Frequency bar chart for prehistoric sites and historic sites with respect to site elevation

Figure 18 shows a dramatic difference between the distribution of prehistoric sites and the distribution of historic sites with respect to this variable. Approximately 81% of the prehistoric sites occur between the elevations of 270 and 310 feet whereas historic sites are distributed rather uniformly with respect to elevation. The largest clusters of historic sites are only 26% between 291 and 310 feet and between 331 and 350 feet. This variable appears to be more important in decisions made for choosing locations of prehistoric sites than it does for historic sites.

The results seem to indicate that site elevation played an important role in the selection of prehistoric site locations, but it should be noted that the terrace edge throughout most of the project varies between 280 and 310 feet in elevation. Thus, the large values in this range indicate that site elevation is probably measuring the same phenomena as the terrace edge topography. In and of itself, it may not be as important a factor as topography. It certainly does not appear to have influenced historic site location. It does not seem to be a very reliable predictor of site location.

Distance to Nearest Source of Water

This variable refers to the horizontal distance from a given site to the nearest stream including both intermittent and permanent streams.

Figure 19 shows that the distribution of the 82 observed sites follows a very regular exponential curve with the greatest amount of sites (34%) occurring within 50 m of water and the least (3%) occurring between 351 and 400 m away from water. This would appear to be an important pattern if it were not for the fact that the distribution of random points looks almost identical. This probably suggests that there is very little area within the areas surveyed that is not close to an intermittent or permanent stream.

Figure 20 shows that greater differences are apparent between the distribution of historic sites and the distribution of prehistoric sites than between the distribution of all sites and that of random points. Aside from the cluster of 34% within 50 m of water, the historic sites are essentially uniformly distributed with respect to this variable. On the other hand, the distribution of prehistoric sites appears to cluster close to water with 60% of sites occurring within 100 m of water and 81% within 200 m. Still, the overall distribution is no different from the random distribution which has 60% of the points within 100 m of water and 80% within 200 m.

Distance to streams may have been one consideration in the decision making process of prehistoric groups, but this cannot be demonstrated for the Conway area. The fact that streams occurred throughout most of the project area suggests that it would have been difficult to find a location for a site that was not within 100 m of water. Thus, this factor

was probably less important than others for the choice of site locations. Distance to nearest streams was irrelevant to historic decision making with respect to choice of site location because wells, not streams, were used as sources of water. Thus distance to nearest streams appears to be a poor predictor of site location for use in studies conducted in the Central Arkansas River Valley.

Elevation Above Nearest Source of Water

This variable refers to the vertical distance from a given site to the nearest stream. It was computed by subtracting the elevation of the point of the stream nearest the site from the elevation of the site itself.

Figure 21 illustrates a substantial difference between the distribution of sites and the distribution of random points. The distribution of observed sites displays clustering between 5 and 10 feet above nearest water (37%) and between 20 and 30 feet above nearest water (27%). This distribution of random points has three clusters with 39% at 0 feet above nearest water, 29% at 10 feet above nearest water, and 15% at 20 feet above nearest water.

Figure 22 illustrates substantial differences between the distribution of historic sites and the distribution of prehistoric sites. It is interesting to note that a similar distribution occurs for prehistoric sites and for all sites combined. Nearly 30% of the prehistoric sites are between 5 and 10 feet above nearest water and 38% are between 20 and 30 feet above nearest water. The historic distribution displays a single cluster with 45% of the sites situated 5 to 10 feet above nearest water. The remainder of historic sites are relatively uniformly distributed with respect to this variable.

Possible reasons for the observed distribution of the prehistoric sites are that one cluster (5-10 feet) represents sites located near intermittent streams on the terrace where flooding is unlikely, whereas the other cluster (20-30 feet) represents sites located closest to permanent streams subject to seasonal flooding. The distribution of historic sites 5-10 feet above water probably reflects the high percentage of sites located on the terrace surface which would be closer to intermittent streams than the permanent streams.

This variable appears to be highly correlated with topographic setting. It probably played an important role in the decision making processes of prehistoric groups, as suggested by the dichotomous distribution. However, it may have been less important in historic decision making processes because the technology for well construction eliminated the need for sites to be located in close proximity to streams. The variable may be a moderately useful predictor of prehistoric site location, but it is a poor predictor of historic site locations.

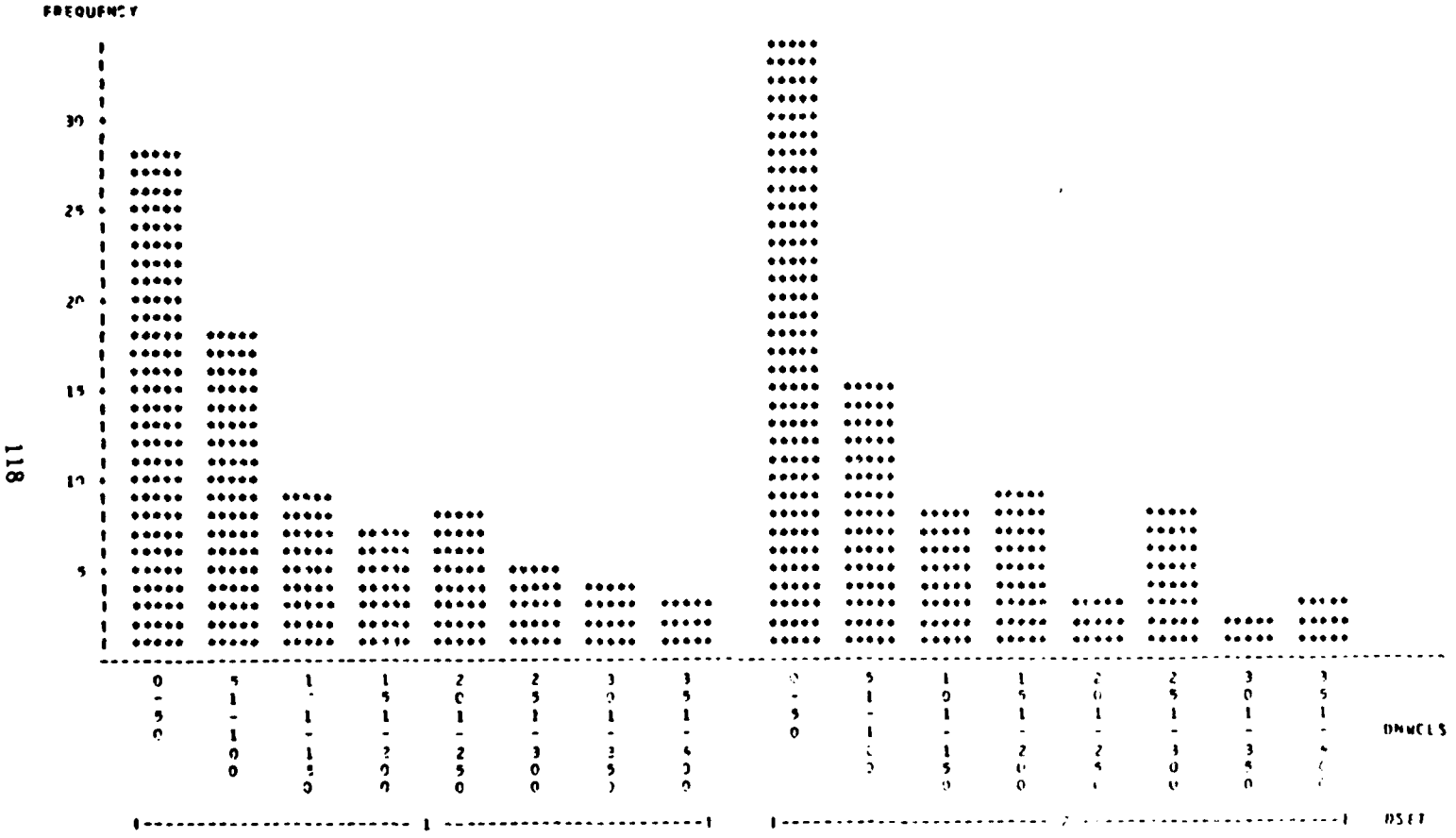


Figure 19. Frequency bar chart for observed sites (1) and random points (2) with respect to distance to nearest source of water

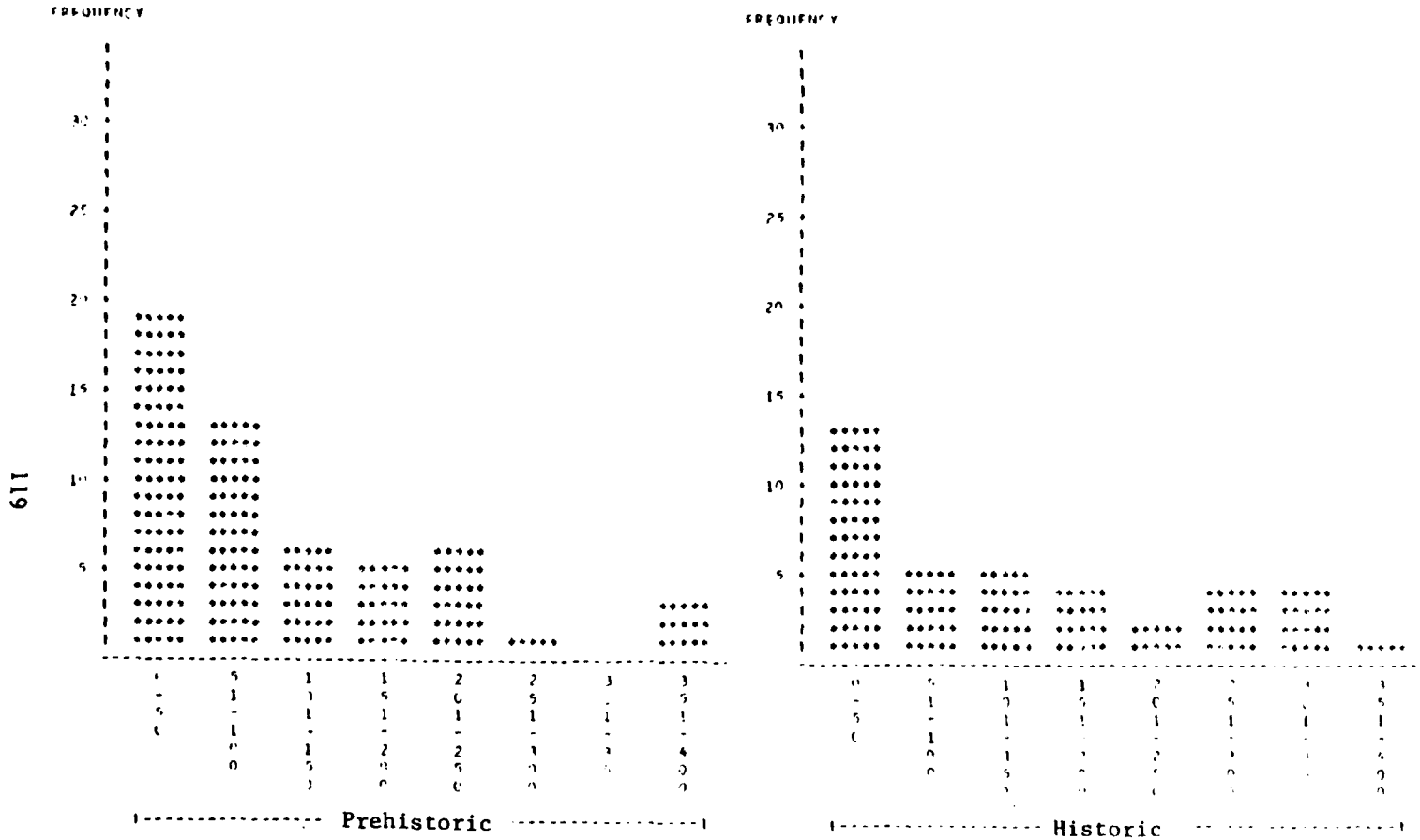


Figure 20. Frequency bar chart for prehistoric and historic sites with respect to distance to nearest source of water

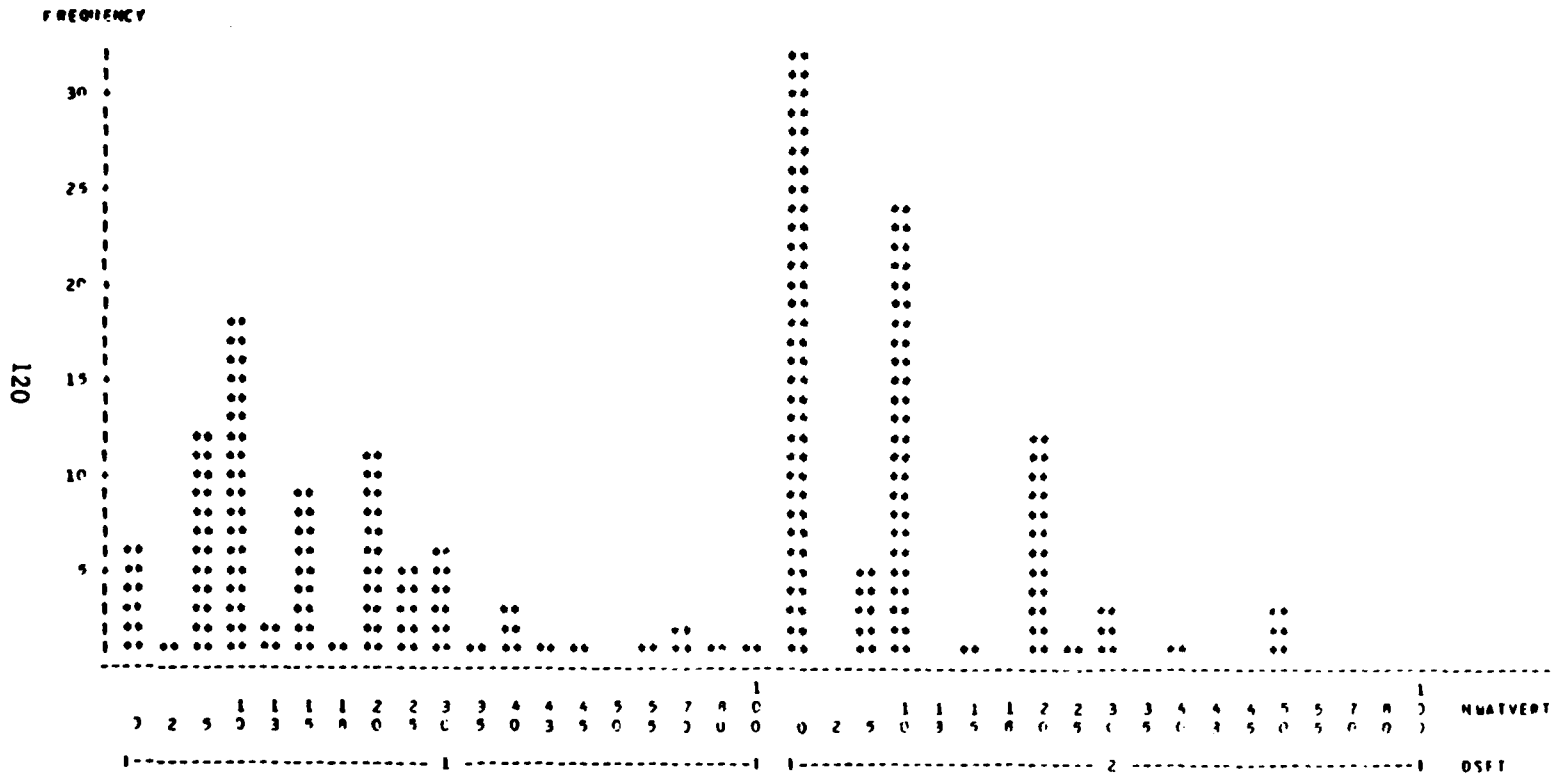


Figure 21. Frequency bar chart for observed sites (1) and random points (2) with respect to elevation above nearest source of water

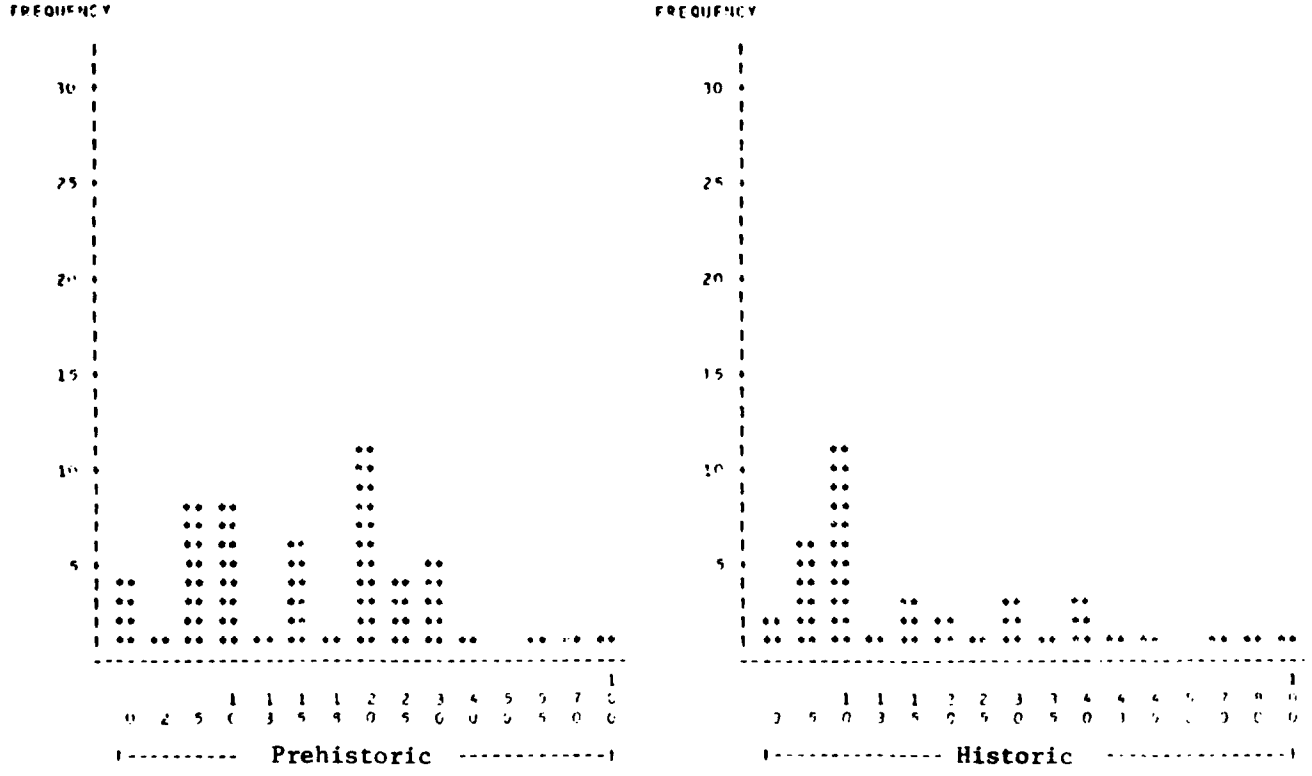


Figure 22. Frequency bar chart for prehistoric sites and prehistoric sites with respect to elevation above nearest source of water

Distance to Nearest Permanent Source of Water

This variable refers to the horizontal distance from a given site to the nearest stream which flows on a year round basis. Thus, intermittent streams are not included.

Figure 23 illustrates the similar nature of the distributions of the observed sites and of the random points. For instance, nearly 24% of observed sites were found within 100 m of permanent water and 28% of random points occurred within this range.

A substantial difference is apparent in Figure 24 between the distribution of historic sites and that of prehistoric sites. The historic distribution is almost completely uniform, whereas the prehistoric distribution displays a pronounced fall off pattern toward the right of the graph. For example, 70% of the prehistoric sites are located within 300 m of permanent water whereas only 27% of the historic sites fall within this range.

The discrepancy observed between the prehistoric and historic distributions may be due to the reliance of prehistoric populations on permanent streams as sources of water for consumption, sources of aquatic resources, and sources of transportation and the lack of reliance on these factors by historic groups. Water for consumption during the historic period was supplied by wells and transportation was conducted along roads rather than streams (except along major naviable streams such as the Arkansas River and the lower reaches of the Cadron). Thus, historic groups were more independent of permanent streams than prehistoric groups for decision making concerning site location. The only exception to this trend was the location of mill sites which were dependent on permanent streams as a source of power.

Distance to permanent water appears to be an extremely poor predictor of historic site locations and not much better for predicting prehistoric site locations. Although it is correct to state that prehistoric sites often occur close to water, it is also true that such a distribution could occur randomly.

Elevation Above Nearest Permanent Source of Water

Vertical distance from a given site to a permanent stream was computed by subtracting the elevation to the point of the permanent stream closest to the site from the elevation of the site itself.

Figure 25 illustrates a difference in the distribution of all observed sites and the distribution of random points. The majority of random points (68%) cluster between 0 and 20 feet above permanent water, whereas the majority of observed sites (75%) cluster between 10 and 40 feet above water with the largest proportion (43%) between 20 and 30 feet.

Figure 26 shows a substantial difference between the distributions of historic and prehistoric sites. Prehistoric sites cluster around elevations close to permanent water with 70% of prehistoric sites within 30 feet above water. A large percentage (49%) of these cluster between 20 and 30 feet above permanent water. On the other hand, the historic sites are more uniformly distributed with respect to elevation above permanent water. Clusters of 15% occur at 20, 30, and 40 feet above permanent water, but the distribution is fairly evenly dispersed elsewhere.

The reason for the noticeable clustering of prehistoric sites with respect to this variable probably reflects the reliance on permanent water described above. The clusters of sites between 20 and 30 feet above permanent water probably indicates the sites clustered along the terrace edge. They are in a situation that is free from flooding, but close enough to water to obtain critical resources. The cluster of sites 0 to 5 feet above water represent the seasonally occupied floodplain sites. The uniformity of the distribution of historical sites indicates a lack of reliance on permanent streams, with a cluster indicating a desire to avoid flooding. Elevation of permanent water appears to have been an important factor in prehistoric decisionmaking processes with respect to site location, but does not seem to have been very important in historic decisionmaking, other than with regard to flooding. Thus, this variable is a good predictor of prehistoric site location, but a poor predictor of historic site location.

Soils Association

Fourteen specific soil types were present within the survey area. These types have been defined by the Soil Conservation Service. Precise descriptions of each type are presented in Appendix E.

Figure 27 illustrates the relationship between the distribution of the observed sites and the distribution of random points. They are similar in that the majority of observations in both cases occur on soil types 683 and 604. Nearly 38% of observed sites were located on 683 whereas 26% of the random points were associated with this soil. About 28% of the observed sites were situated on 604 as compared with 27% of the random points. However, these distributions differ with respect to the number of observations for soil types 127 and 676 which are both floodplain soils. Only 2% of the observed sites were situated on 127, whereas 10% of the random points were. Only 6% of the sites were located on 676 as compared with 13% of the random points.

Figure 28 shows how similar the distributions of historic and prehistoric sites are with respect to soil type. The only noticeable differences are that 41% of the prehistoric sites are located on 683 as compared with 31% of historic sites. Nearly 37% of historic sites are situated on 604 as compared with 27% of prehistoric sites. About 8% of prehistoric sites are located on 676 as compared with 3% of historic sites.

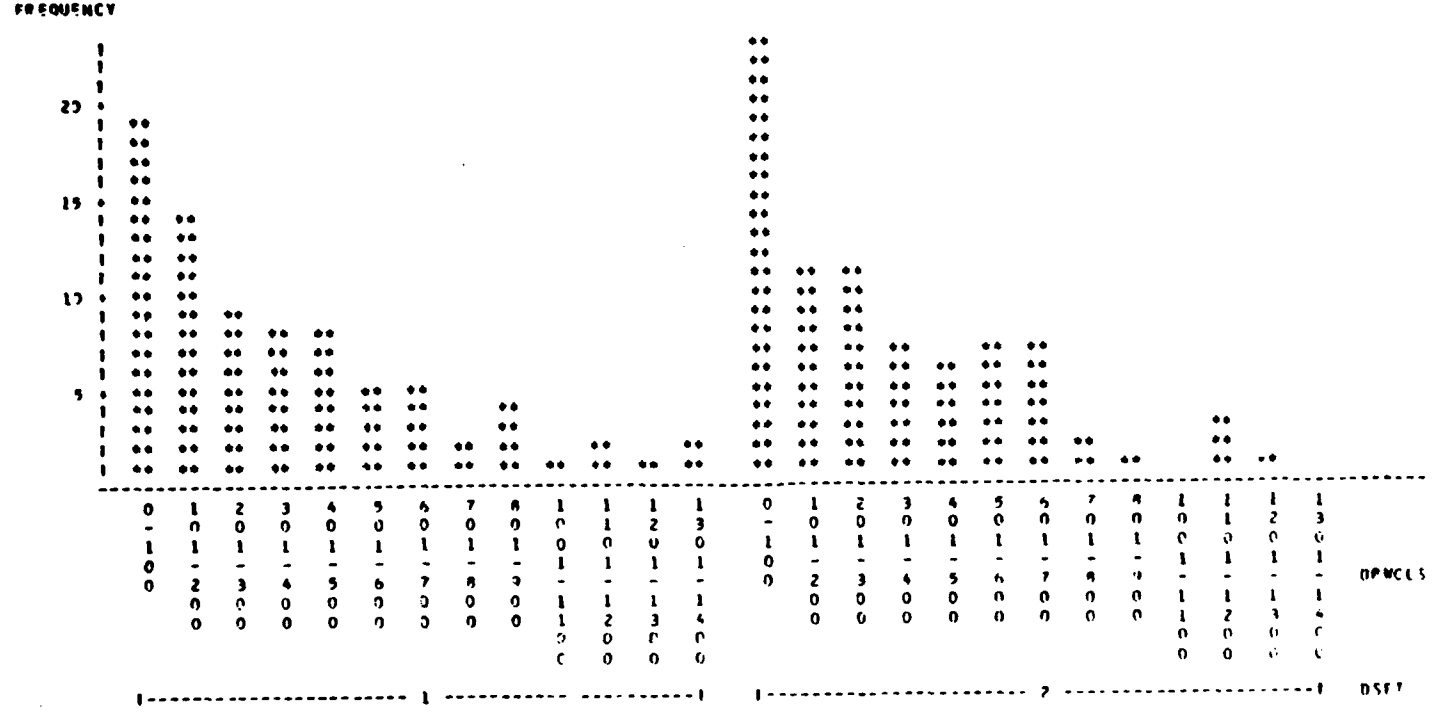


Figure 23. Frequency bar chart for observed sites (1) and random points (2) with respect to distance to nearest permanent source of water

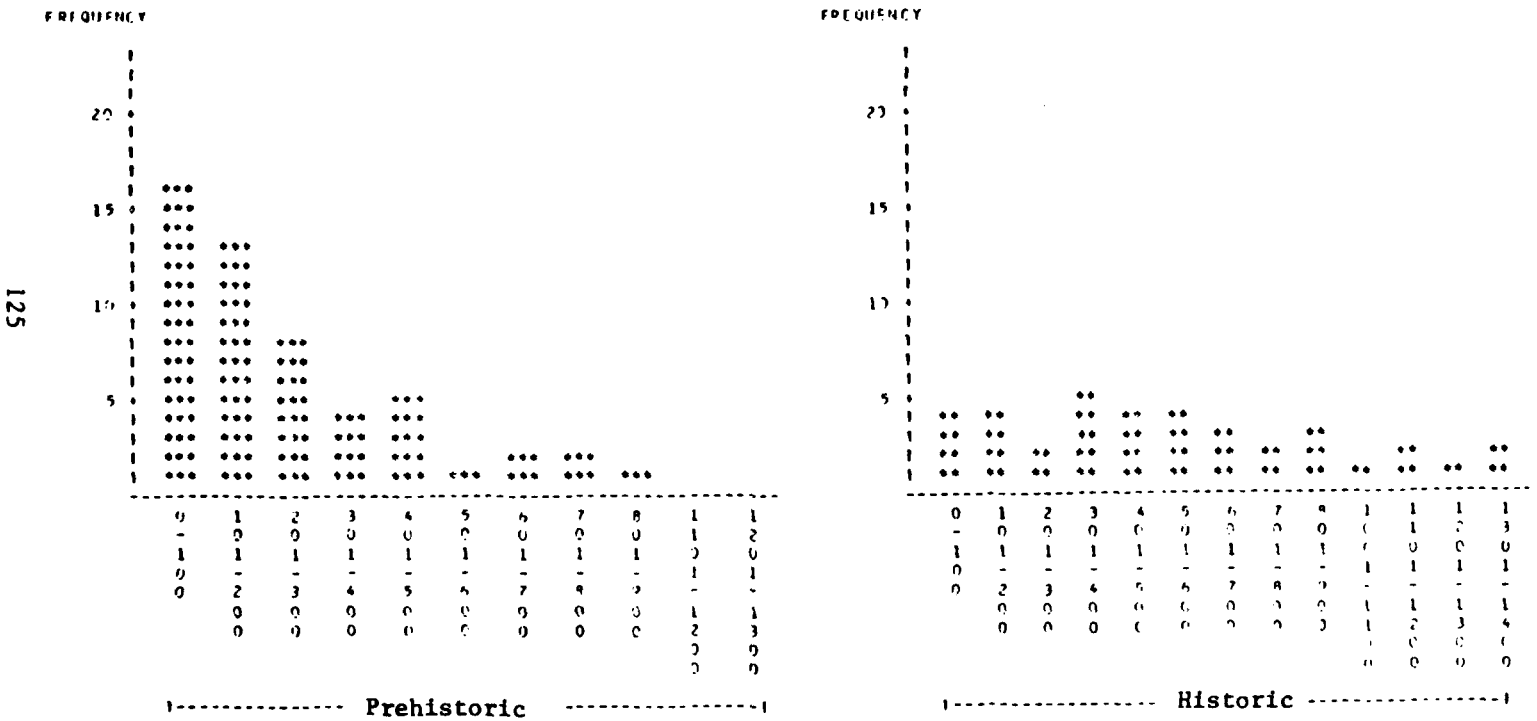


Figure 24. Frequency bar chart for prehistoric sites and historic sites with respect to distance to nearest permanent source of water

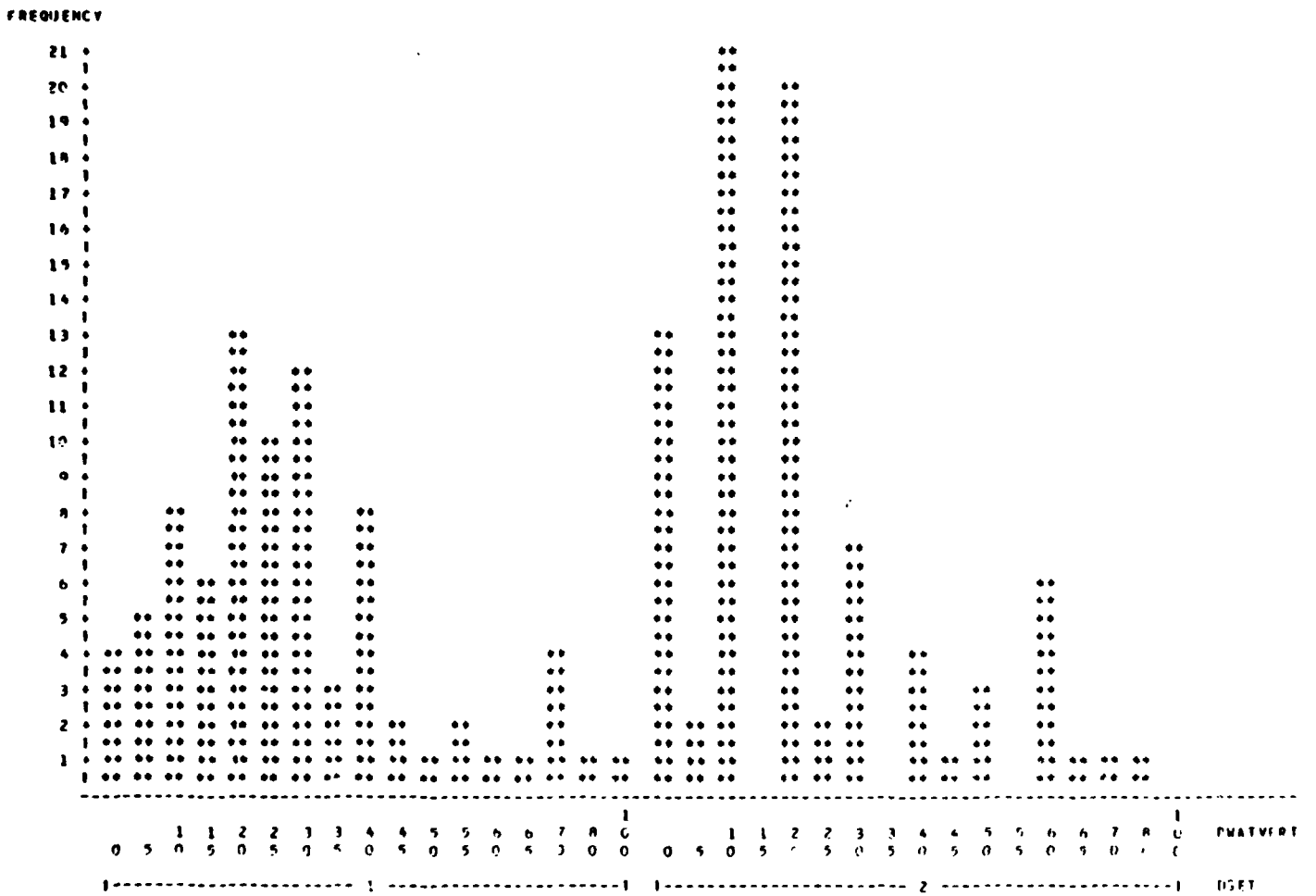


Figure 25. Frequency bar chart for observed sites (1) and random points (2) with respect to elevation above nearest permanent source of water

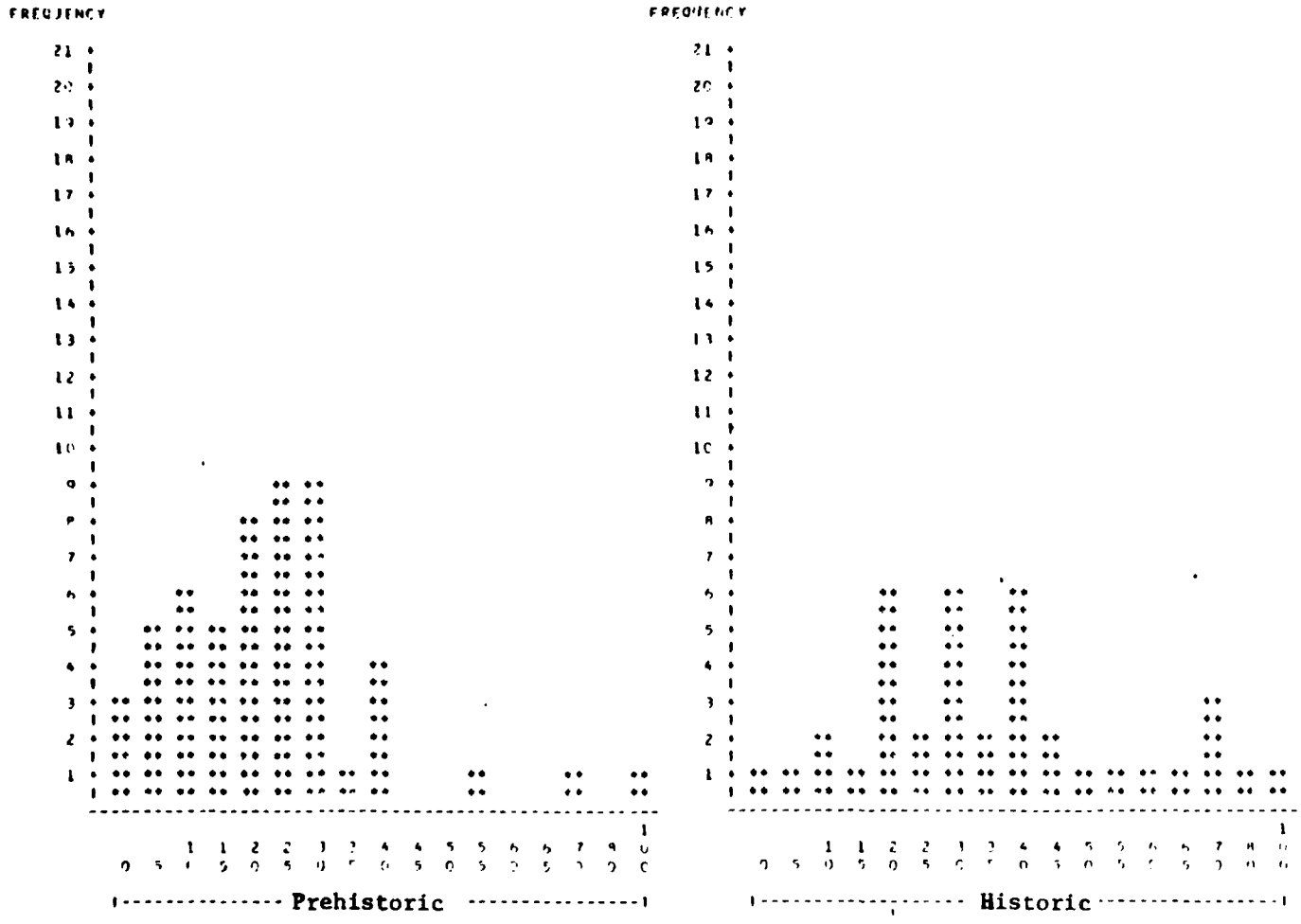


Figure 26. Frequency bar chart for prehistoric sites and historic sites with respect to elevation above nearest permanent source of water

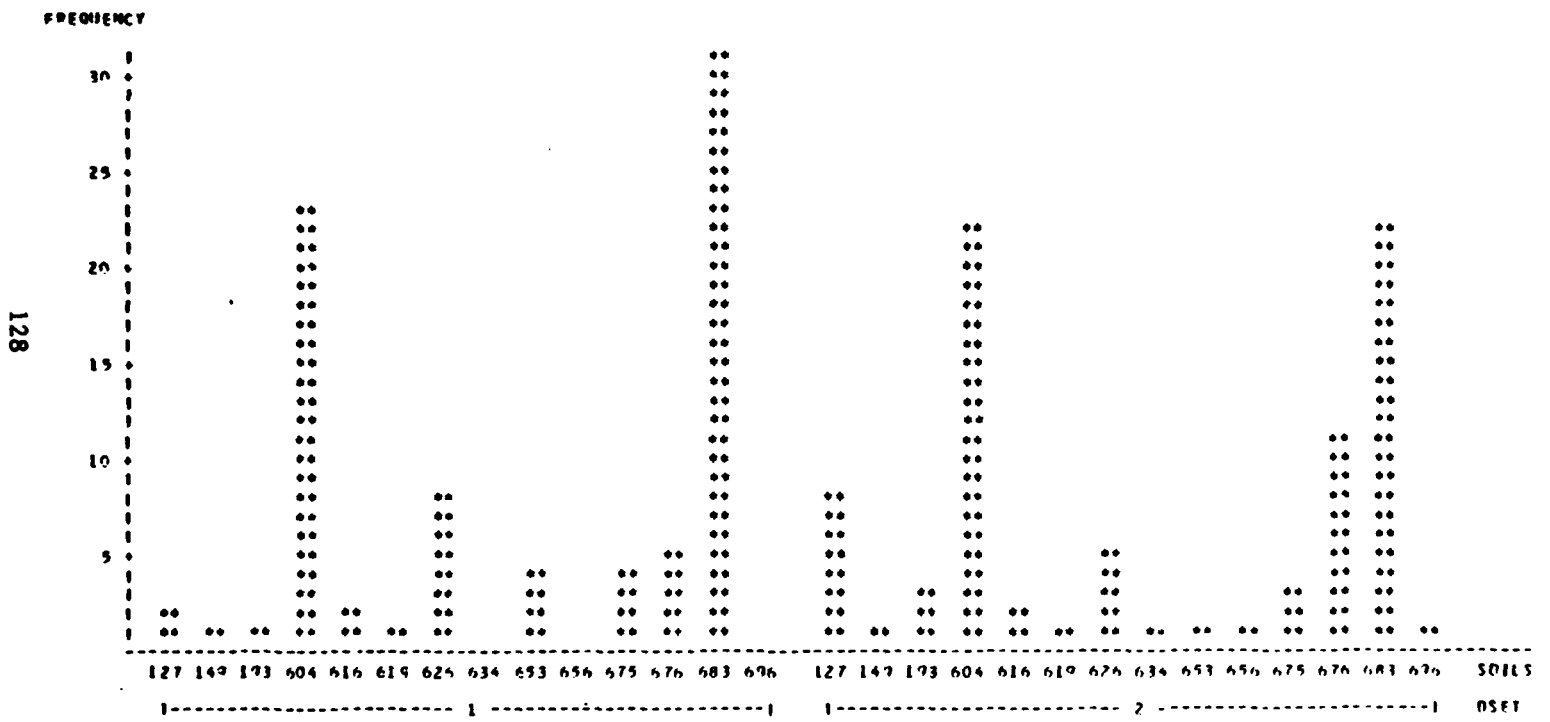


Figure 27. Frequency bar chart for observed sites (1) and random points (2) with respect to soils association

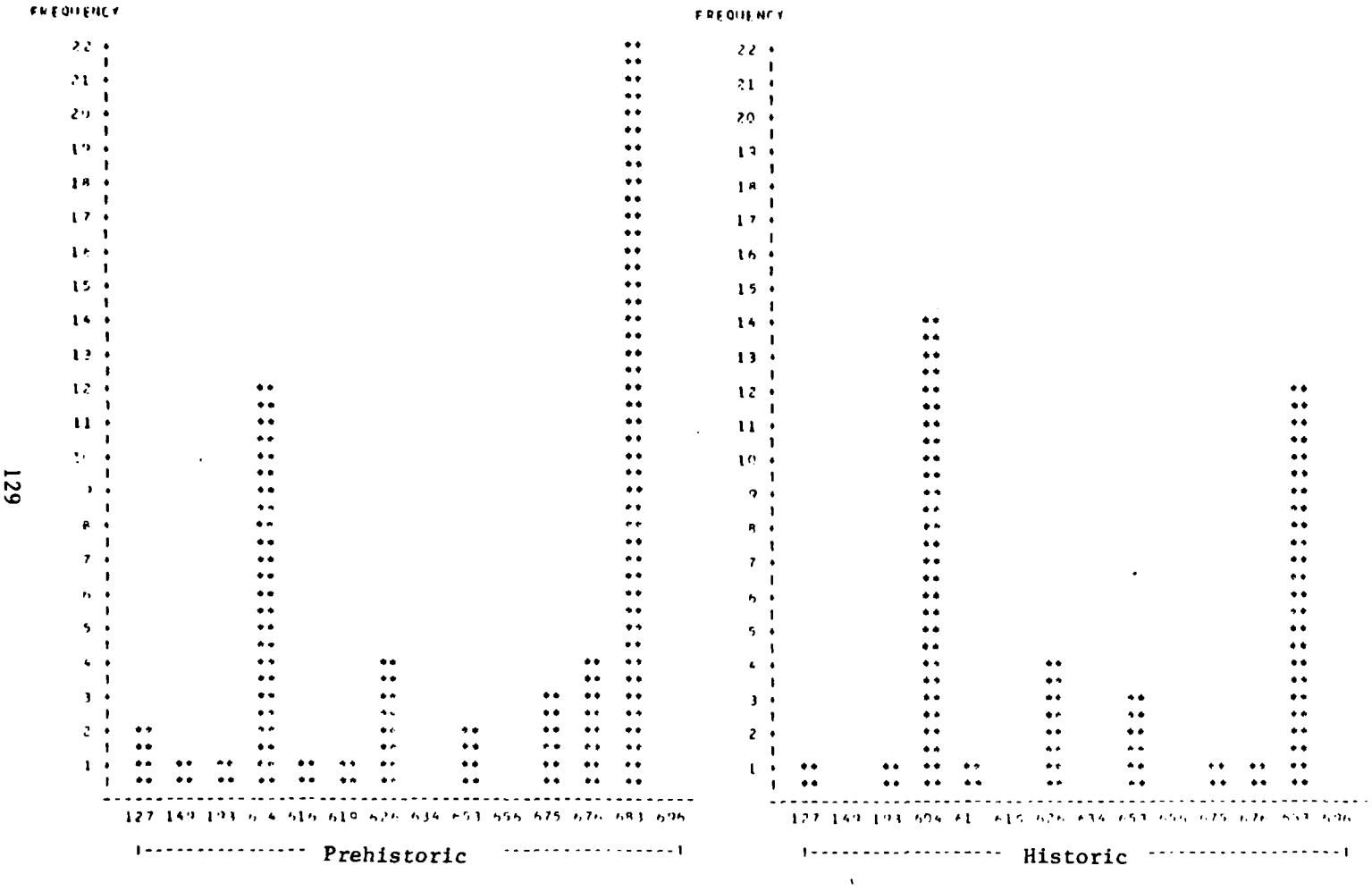


Figure 28. Frequency bar chart for prehistoric sites and historic sites with respect to soils association

These results show no major differences between distribution which suggests that this variable was not important in the decisionmaking processes of either prehistoric or historic groups. This variable may actually have been considered, especially by the agricultural historic population, but this cannot be inferrred from the results. Soil type appears to be a poor predictor of either prehistoric or historic sites.

Slope

This variable refers to the maximum slope present on any given site, not to the mean slope. For example, if a scatter of cultural material was found along an area ranging in slope from 12-20%, it was recorded as 20%. It must be noted that most of the materials found during the 1979 survey were encountered along more gently sloping portions of sites.

Figure 29 shows the differences between the distribution of sites and that of random points. The highest frequencies in the random distribution are found on slopes of 8% (29%) with the second highest frequencies on slopes of 3% (27%). The observed sites were distributed in an opposite manner with 35% situated on slopes of 3% and 23% on slopes of 8%. However, the differences between these trends are very small.

Figure 30 shows that the distribution of historic sites is quite similar to that of prehistoric sites with respect to this variable. Nearly 39% of historic sites and 32% of prehistoric sites were located on slopes of 3%. About 21% of historic sites and 26% of prehistoric sites were situated on land with slopes of 8%.

Slope cannot be shown to have been an important factor influencing the choice of site locations for prehistoric groups on the basis of the Conway project data. Most sites in the project area are located on slopes of less than 8%, but such a distribution could have occurred randomly because much of the project area is comprised of slopes of 8% or less. This does not mean that slope was not considered in the decisionmaking process of prehistoric groups. The results of site distribution in regard to this variable in the Conway project area are similar to those obtained by Imhoff (1980) in his western lowlands study where significant clustering was observed. Thus, slope may have been an important consideration, but its importance cannot be demonstrated. Therefore, slope may not be a very good predictor of site location within the central Arkansas River Valley when areas comprised primarily of slopes of 8% or less are being examined.

RESULTS IN RELATION TO RESEARCH PROBLEMS

Problem I. Settlement Pattern

Hypothesis H_1, that the prehistoric site locations were chosen on the basis of proximity of exploitable resources can be supported to a limited degree on the basis of survey and test excavation data. Large sites such as 3CN36 and 3CN64 and deep midden sites such as 3CN57 and 3CN117 were located close to water with respect to vertical and horizontal distance, as required by Tl_1 and Tl_2. In addition, 3CN117 yielded faunal evidence of aquatic resource exploitation, which would further support the hypothesis. Due to problems encountered in the assessment of site function, it was impossible to investigate Tl_3, that specialized activity sites should occur both close to and far away from water.

Hypothesis H_2, that a dichotomous settlment pattern was present with habitation sites located so as to avoid seasonal flooding, was also supported to a degree. The majority of sites clustered along the terrace edge, above levels of flooding and other were located on the terrace surface and hillslopes (Tl_1). The function of some sites could not be determined, but many are thought to have been habitation sites. Good evidence was uncovered at 3CN64 to suggest that it was a habitation site. This evidence included daub, postmolds, and midden staining. Test implication Tl_2, that some habitation sites should be found on the primary alluvial flat, was also observed. Sites 3CN57 and 3CN117 were found on this topographic feature. A summer/fall occupation (TI_4) is suggested for 3CN117 on the basis of faunal and floral material recovered from limited test excavations. Although some of the faunal species present on the site could have been hunted on a year round basis, the presence of box turtle, which would have been active during late spring, summer, and early fall, suggests a summer or fall occupation. The presence of hickory nut shells in 3CN57 suggests a fall occupation, but this cannot be conclusively demonstrated. No seasonal evidence was recovered from 3CN64 which would suggest a winter/spring occupation. Therefore, TI_3 was not observed.

Hypothesis H_3, that sites were located along gentle slopes, was supported by the Conway evidence, but this does not appear to be very meaningful in light of the fact that most of the project area was comprised of gentle slopes. Most sites were found on slopes between 2% and 0%, as required by Tl_1, but this appears to be of little significance given the high percentage of land surface having slopes within this range.

Hypothesis H_4, that well drained and moderately well drained soils were selected for site locations, was also supported. Most sites clustered on Leadvale soils which are moderately well drained, and on Linker soils, which are well drained. Sites 3CN57, 3CN82, 3CN83, 3CN84, 3CN85, and 3CN117 were located on Spadra soils which are well drained, even though they occur on the floodplain. Thus, Tl_1 was observed. Because it was difficult to assess site function, it was impossible to observe Tl_2,

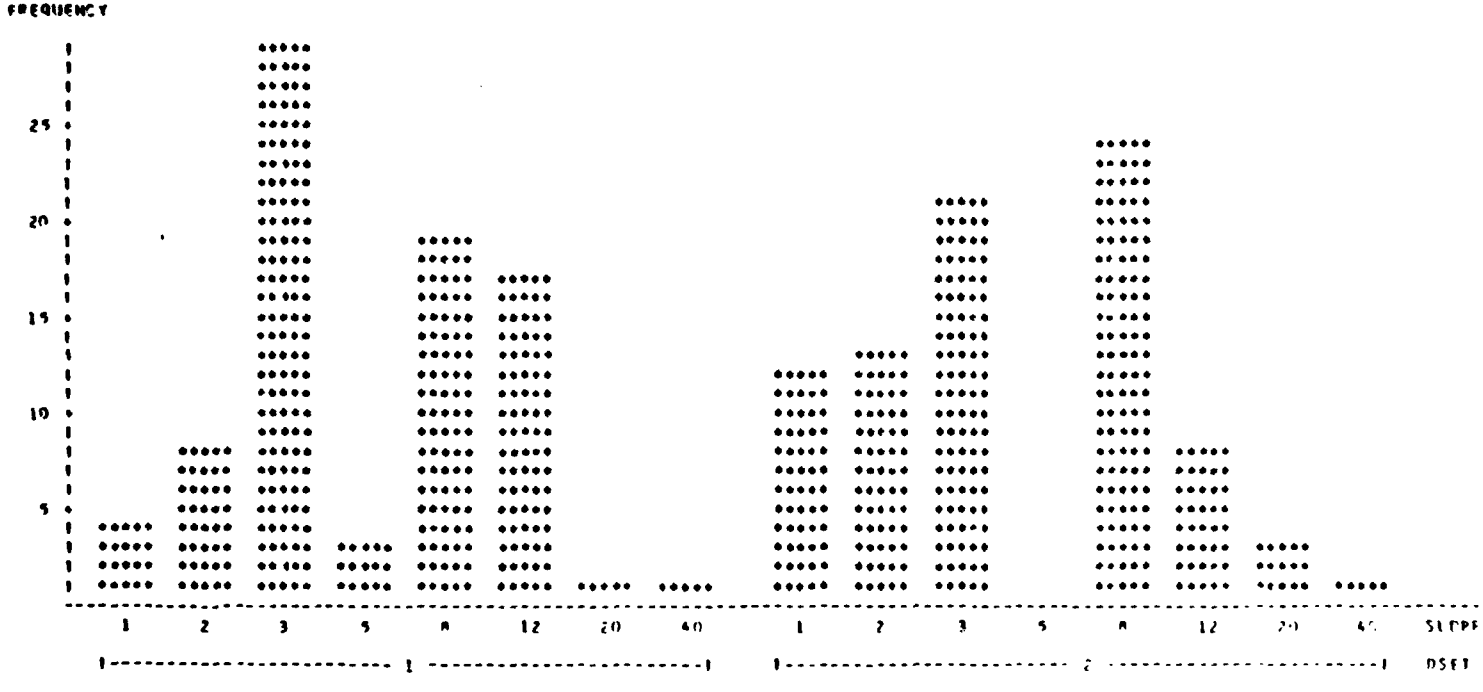


Figure 29. Frequency bar chart for observed sites (1) and random points (2) with respect to slope

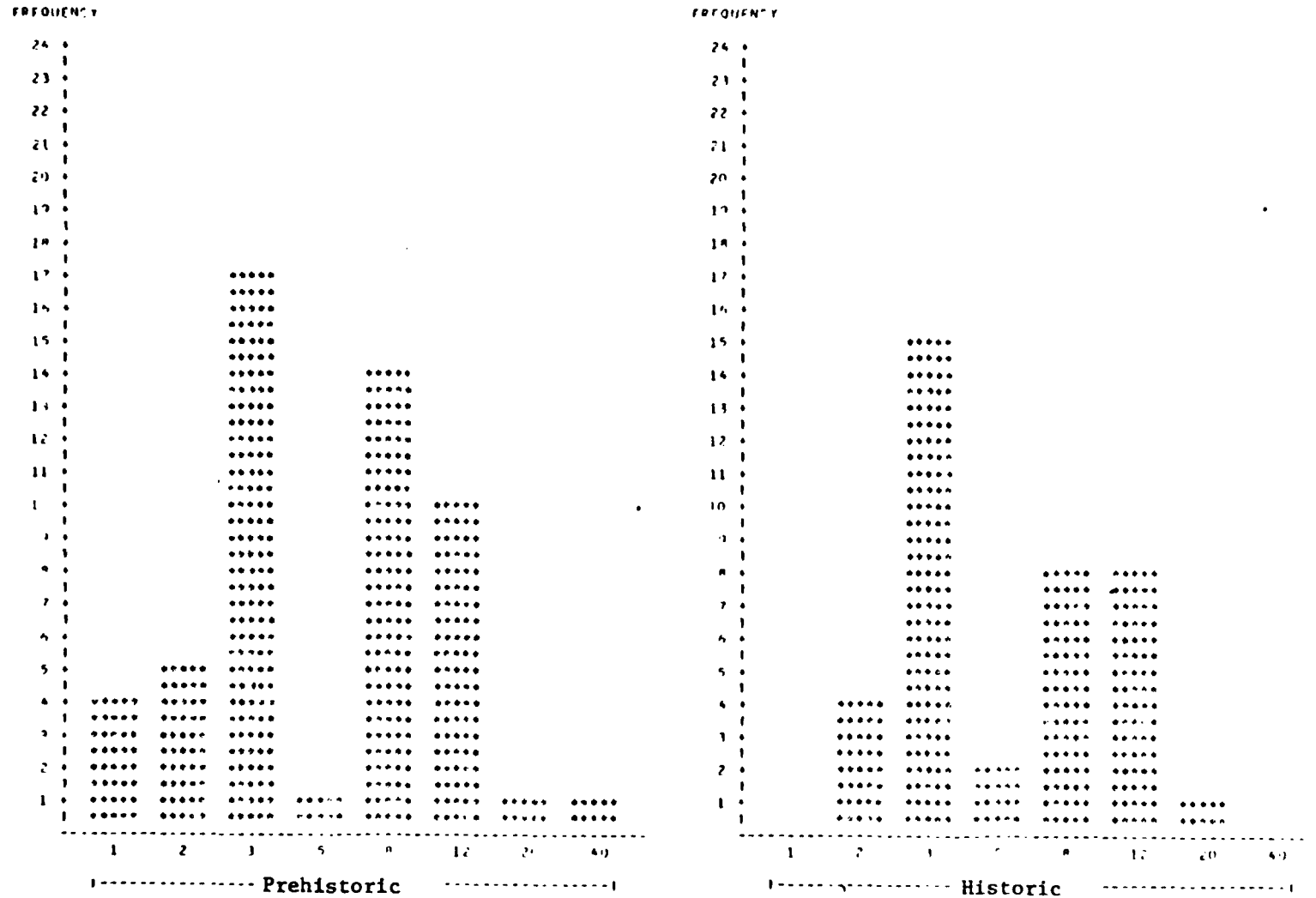


Figure 30. Frequency bar chart for prehistoric sites and historic sites with respect to slope

that specialized activity sites should occur most often on well drained soils.

Hypothesis H_5, that prehistoric and historic sites clustered with respect to different variables, was strongly supported. Prehistoric sites were observed to cluster with respect to certain environmental variables (TI_1) whereas historic sites clustered with respect to topography and soils, but not to other environmental variables (TI_2). In addition, historic houses were all oriented towards roads (Chapter 7), indicating that roads rather than environmental variables, were important factors affecting historic decisionmaking processes. Thus, TI_3, that historic sites should cluster with respect to sociocultural variables was observed.

Problem II. Cultural and Chronological Affiliation

Hypothesis HI_1, that the project area was inhabited from the Paleo-Indian period through historic times was supported to a degree. No Paleo-Indian artifacts were recovered from any of the sites, so the results do not support the hypotheis as it is currently stated. Although it is possible that Paleo-Indian sites may be present in the vicinity of the project area, the only artifacts discovered during the 1979 research date from the Dalton period through historic times. Thus TI_1, that artifacts from each major period should be found, was not realized.

Hypothesis HI_2, that choice locations were reoccupied in a roughly continuous basis, was strongly supported. Many sites yielded projectile points diagnostic of several time periods indicating multiple occupations by diverse cultural groups occurred, as suggested by TI_1. For instance, 3CN46 yielded projectile points diagnostic of early, middle, and late Archaic periods as well as of early and middle Woodland periods. The data gathered from both the 1978 and 1979 surveys, as well as from the 1979 test excavations, clearly indicate that the Cadron and Cypress Creek valleys were occupied on a more or less continuous basis for the past 10,000 years. A few sites were found which revealed evidence of single occupations, as required by TI_2. For instance, 3CN107 yielded projectile point types associated only with the middle Archaic period.

Problem III. Functional Variability

The data collected during the 1979 survey support both H_1, that site function varied from site to site, and H_2, that clusters of sites with the same general function existed. Differences were observed among sites with respect to technological variability, artifact density, and areal extent as required TI_1, TI_2, and TI_3 of H_1. Strong similarities were also observed among groups of sites with respect to these three variables as required by TI_1 of H_2. Site function did vary among sites during different periods, but clusters of sites with similar functions were also observed.

Insufficient data was collected during the 1979 survey to support or contradict either H_3 or H_4, i.e., that site function remained unchanged over time (H_3) or that it changed as subsistence patterns changed (H_4). The principal reason that variability of site function among sites of different time periods could not be assessed, was that it was impossible to determine which time period many of the sites belonged to. In addition, it was difficult to assess the site function of many of the sites due to the sparse collections of artifacts that could be made under poor ground visibility conditions.

Problem IV. Lithic Resource Procurement

Laboratory analysis of the lithic artifacts collected during the 1979 survey and testing program reveals that neither hypothesis H_1, that raw materials were exploited uniformly from chert and novaculite sources, nor H_2, that Pitkin chert was preferred over Boone chert and novaculite because it was easily worked without heat treating, can be supported. Higher frequencies of Boone chert were obtained than of Pitkin chert, and more Pitkin was collected than novaculite. Thus, TI_1 of H_1, that equal ratios of all kinds of stone should be found on sites, was not observed. Evidence during the early Archaic period appears to support TI_1 of H_2, that more Pitkin chert should be found on sites than Boone chert or novaculite. Approximately 70% of the projectile points associated with the early Archaic period were made of Pitkin chert, whereas only 15% were made of Boone chert and 15% were made of novaculite. As time passed however, Pitkin chert frequencies fluctuated while Boone chert frequencies increased. Novaculite remained rather sparse by comparison. Thus, for the most part, TI_1 of H_2 was not observed.

Several sources of bias could be responsible for the observed changes in chert frequencies over time. First of all, the results could represent sampling error since the total number of projectile points collected was small. Secondly, it is possible that differential processing procedures took place. For example, the prehistoric inhabitants may have visited novaculite source areas and performed all reduction at the quarry site, but traded for Pitkin and Boone cherts. This would account for low novaculite debitage counts and high Boone and Pitkin counts.

Different tools may have been manufactured from different materials. If, for example, knives were made of novaculite, but projectile points were made of Pitkin chert, little or no novaculite would be found at a specialized activity site where knives were not used. Also, flakes cannot be identified as to cultural affiliation, so there is no way of knowing which flakes collected from a site were deposited during the Archaic and which were deposited during Mississippian times.

Collectors greatly influence any research based on the typological analysis of projectile points used to assess cultural periods. Collectors

almost exclusively collect projectile points, which depletes important information from the resource base. It was apparent that many collectors were active throughout the project area. Thus, any attempts to quantify the number of Pitkin, Boone, or novaculite projectile points present on a site of a particular cultural period may have been quite inaccurate. In addition, some of the "diagnostic" artifacts collected during the 1978 and 1979 field seasons are not diagnostic of any particular time period, but may span several chronological categories. For instance, Gary points were made from early Woodland times into historic times. Therefore it is impossible to determine whether the raw material from which a Gary point is made was worked during the Woodland, Mississippian, or Historic period.

Considering all the potential sources of bias and error involved in the analysis of changes in the use of stone over time, it seems inappropriate to propose that such changes actually occurred. Rather, it is proposed here that such changes may have occurred and that future research might be profitably directed toward this problem.

Chapter 7

Initial Perspectives on "Log House Society" in the Cypress Creek Basin, Conway County, Arkansas

by

Lawrence Gene Santeford

INTRODUCTION

This chapter examines a number of characteristics of "Log House Society" in the Cypress Creek basin. The concept of a log house society is presented here in recognition of the regularities and commonalities which characterize the early Euro-American inhabitants of this area. Roberts has argued that architecture is a "major key" to the understanding of such subjects as cultural differences, the relationship between the individual and society, the persistence of cultural traits, and the adaptation of culture to new environments or the lack of it (1972:282-283). The survey and testing work has recorded and documented a number of historic rural American house sites which have (or had) log structures as the initial primary residence.

Using written documentation, material remains, and oral histories obtained from residents of the area, characteristic construction techniques and the relationship between the regional distribution of the techniques and the point of origin of the settlers of the area were examined. A second area of consideration was an evaluation of the orientation of the structures within the natural and cultural environment. The material remains were studied to determine patterns of activities and discard and to evaluate the degree to which the Cypress Creek basin was isolated from interregional commerce and manufacturing. Finally, the nature of the productive economics of the McKindra family, a prosperous black family, is studied in comparison with the general regional pattern.

The material presented in this chapter must be viewed as only tentative since each of the issues raised are of themselves worthy of substantial scholarly consideration. Within the context of the Conway project, however, this chapter serves to demonstrate the importance of the historic archeological record and the productivity of an approach which

examines the archeological evidence in the context of historic documentation, oral history, and a multidisciplinary focus.

As a final note, it should be emphasized that although this chapter focuses on log structures, there are other types of constructions which could be investigated. There are a few frame houses present in the project area. Most of these were built in the 1920s to 1930s period. Log structures were concentrated upon because of their association with the earlier historic settlement in the area, their continued use into the midtwentieth century, and the apparentlygreater number of them compared to frame houses.

LOCAL AND REGIONAL TECHNIQUES OF CONSTRUCTION

When speaking of log structures, Jordan (1978:105) observes that American log cabins ". . . are small and windowless, built of logs crudely notched and projecting beyond the corners, with the bark remaining intact." The cabin floor is bare earth and chimneys are stick and dirt. These are generally structures designed for temporary service. In contrast, the American log house is a second generation dwelling with carefully hewn timbers neatly notched at the corners, and sawn off flush. Walls are tightly chinked, the house is equipped with a wooden floor, a window or two are installed, and a chimney of stone or brick is erected (Hutslar 1977:32; Wilson 1975:25). By these definitions, all log structures within the Conway Water Supply project area were log houses. The earliest settlers in the area may have built cabins for expediency to house themselves and their families until a permanent house could be erected. Roberts (1972) states:

> First of all, a log building, relatively simple to construct in comparison with a frame or masonry building, is durable, easy to maintain, and, thanks to the thickness of the walls, warm in winter. The raw materials in forested areas were everywhere at hand; indeed, the first major task a pioneer had was to clear enough trees from the land to plant crops. Logs, therefore, were a hindrance to him, something to be got rid of, and most pioneers had to resort to huge bonfires to help clear their lands. A log building can be put up almost without nails or other hardware, for the weight of the logs as they rest on one another plus the way they are notched together make it unnecessary to nail the logs together. Wooden pegs, or trunnels, were also used extensively where nails would be used today. Special carpenter's tools also were unnecessary in constructing a simple log building, and a pioneer moving into a new area could ill-afford to bring large quantities of specialized tools and nails with him. Because of the difficulties of transportation and the scarcity of blacksmiths, hardware of this sort was in short supply and very expensive in newly settled regions. Finally, the specialized skills of a house carpenter were unnecessary in the

construction of a simple log building, and any man capable of surviving under frontier conditions had the skills needed for log construction (1972:288).

The construction of a log structure was not an affair necessarily demanding an extremely long period of time. There is a record of three men felling and trimming the trees for a cabin, dragging the logs to the nearby home site, notching them, and erecting a one room cabin complete with chimney and fireplace in two days. Even a solitary builder could construct a cabin in a week or two, ". . . although it necessarily had to be small, because one man, unaided, had difficulty lifting heavy logs to a wall position above his head" (Weslager 1969:19). A lone builder could generally raise logs to about six or eight tiers, but beyond that help was needed. The family also had numerous other activities to carry out while constructing the house and this played a significant part in requiring neighbors to assist in housebuilding. In contrast to the speed with which a cabin could be constructed it could take several months to build a house, as farm work could not be neglected. Wilson (1975:9) cites one example in which it took six weeks for three men to construct a dogtrot house since they were actively engaged in farming which took most of their time during the day.

Communal house raisings were common in which members of the community would cooperate. Utter (1942:139-140) observes that a general overseer would be chosen who divided the men into groups and assigned them various duties. Four men, who were most skillful with axes, were responsible for the corners of the structure. They must preserve the plumb as they "carried up" their respective corners. The end men fixed skids in place and rolled logs up as they were needed for the upper courses of the wall. Jordan (1978:107) indicates that while cabins may have been built at communal house raisings, many log houses were constructed by professional or semiprofessional carpenters who went around building houses for hire. Masons followed them, building chimneys of stone or brick. While this may be true in some instances, accounts given in many other sources suggest that many houses were erected by persons within a community.

GEOGRAPHIC DISTRIBUTION OF NOTCHING TYPES

Log houses constructed in the Cypress Creek basin reflect a strong continuity of European and eastern United States tradition. The character of this tradition is illustrated by the notching types which appear on standing structures in the Cypress Creek area. The types found in the area are saddle notching, V notching, full and half-dovetailing, and square notching. Each of these notching types reveals particular advantages and disadvantages and is usually employed for specific purposes in log building construction. In the following subsections, each of the notching types is briefly defined and examples of structures within or adjacent to the project area are presented.

Saddle Notching. The saddle notch (Figure 31 a, b, c) is probably the most ancient type of notching (Jordan 1978:58). Variants of this type of notching include double notching (Figure 31c), in which the notches are on both sides of the log; and single notching (Figure 31a, b), in which the notch may be either on the top or bottom of the log (Kniffen 1969:1). For the corner to be tight on a structure in which this method is employed, the logs must extend somewhat beyond the plane of the wall (Kniffen and Glassie 1966:54), creating ragged corners. Siding can be applied only with great difficulty. A log barn (3CN54), located west and just outside of the reservoir area, exhibits saddle notching. The method was single saddle notching (Figure 31b), with the notches cut on the bottom of the logs.

V Notching. V notching is apparently a variant of the saddle notch. The notch forms a solid, locked corner and is used both on hewn logs and on those left in the round (Figure 31d, e, f). It mostly occurs on square-hewn logs. The ends of the logs are cut off flush; therefore, board siding or brick veneer can be added (Kniffen and Glassie 1966:54). This notching is present on a structure which is just outside of the project area, but within the Cypress Creek basin; the Harrison-Nisler House (3CN112), which was constructed in 1875. The type of V notching is consistent with that shown in Figure 31f. The logs have been squared so that the ends represent the gabled end of a house. This is often called "roof topping."

Full-Dovetail Notching. The full dovetail notch is a lock joint of superior strength. It also possesses the advantage of draining rainwater to the exterior due to the angle cuts (Figure 32a). Since this is one of the most complicated methods of notching, it is more commonly found on houses. This type of notching is found on the Stell Lodging House (3CN62), within the Conway Water Supply project area.

Half-Dovetail Notching. Half dovetailing (Figure 32b, c) is a variant of the full dovetail. While the head of the notch slopes upward, the bottom is flat (Kniffen and Glassie 1966:56). It is as effective as the full dovetail, but easier to make.

This type of notching appears on a log house (3CN53) located just north and outside of the project area. Unfortunately, no informants in the project area could provide supplemental information on the age of or the occupants of the house.

Square Notching. The last major method of corner-timbering was square notching (Figure 32d, e). It may be best regarded as a degenerate type of notching because it requires less skill and does not produce locked joints (Jordan 1978:65; Kniffen 1969:3). Kniffen (1969:3) states that this method appears commonly on the margins of the major areas of log construction. Pegs must be used to lock the joints. The half notch is a variant of the square notch, and appears quite commonly with that type as a means of adjusting the position of a particular log (Kniffen

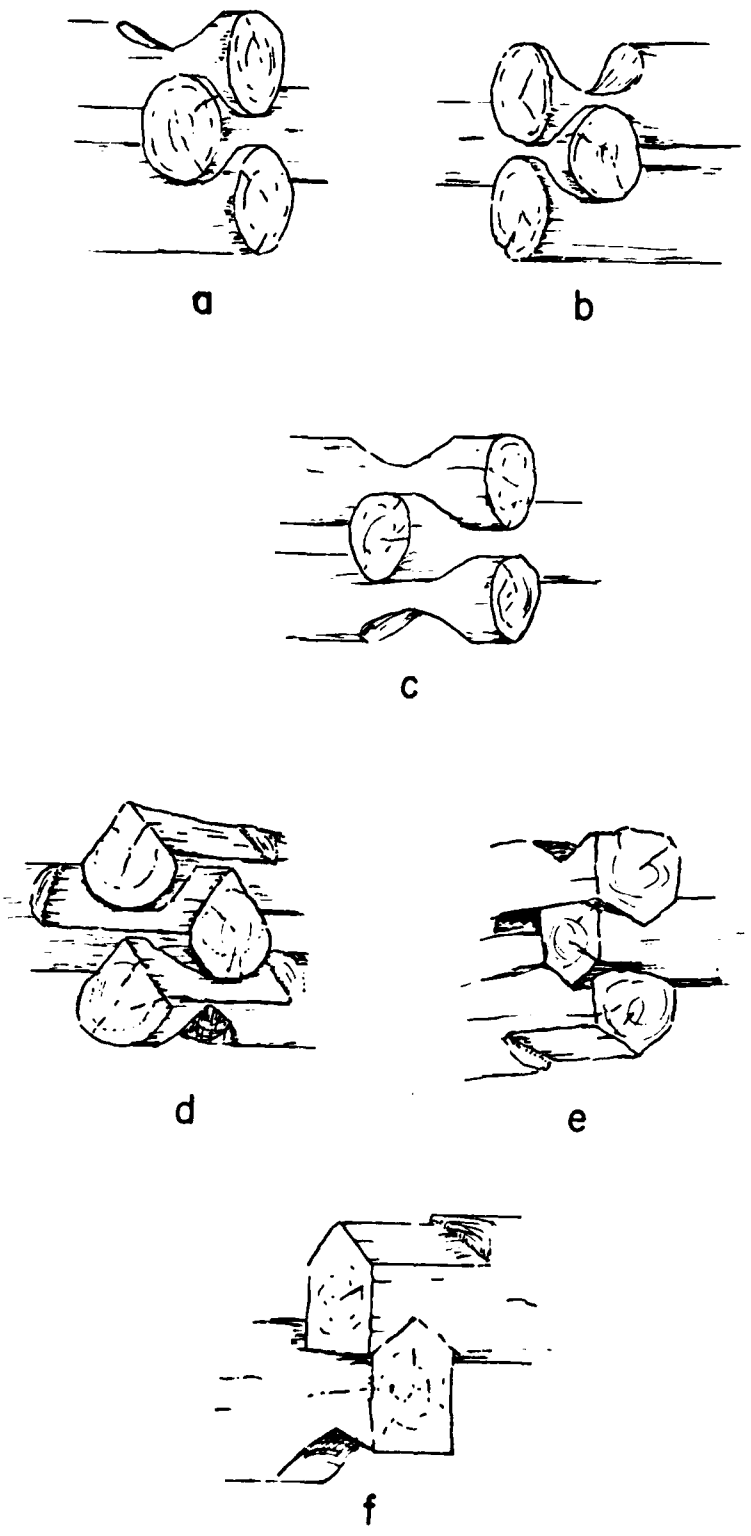


Figure 31. Corner-timbering methods. (a-c) variants of saddle notching, (d-f) variants of V notching

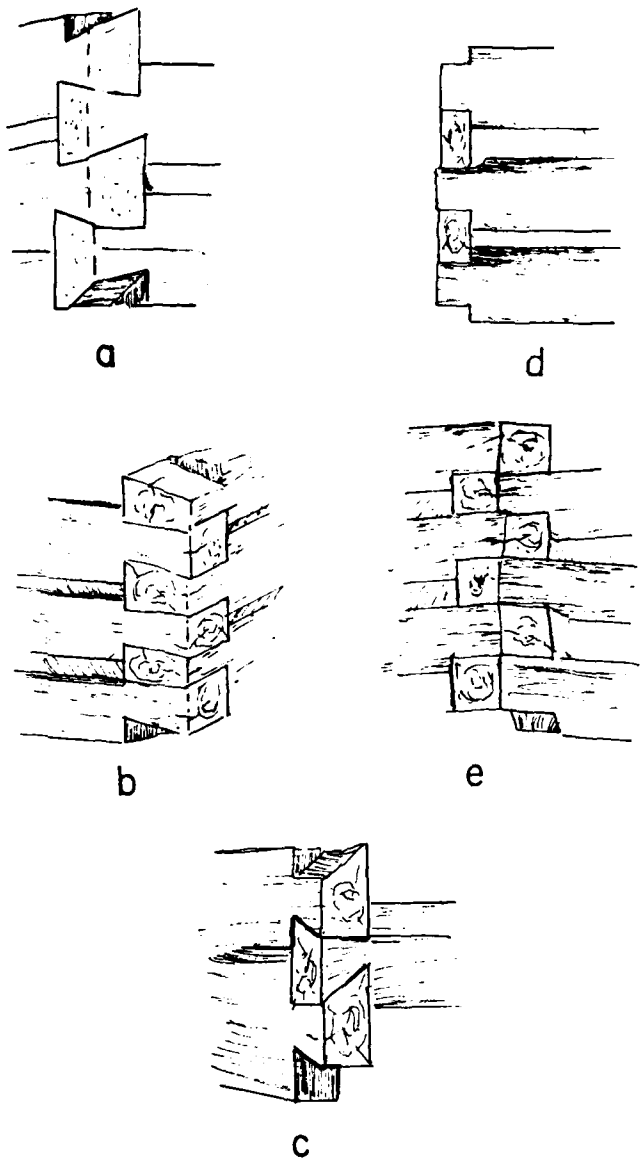


Figure 32. Corner-timbering methods. (a) full dovetailing, (b-c) half-dovetailing, (d) square notching, (e) half notching

1969:5). Bealer and Ellis (1978:41-42) make some interesting observations in terms of square notching.

> A study of square-notching cabins reveals a number of common characteristics that fit a particular function for the structures. For instance, virtually all are constructed of logs finely hewn to a square section of from six to eight inches. When notched and joined, this size timber leaves interstices between the logs of about two inches, much wider and more even than the interstices of typical frontier log buildings. The corners of square-notched buildings are precisely plumb and the wall surfaces, inside and out, are invariably far more even than on backwoods structures. Many square-notched log houses have had channels hewn vertically in certain wall logs, obviously for the attachment of furring strips to which clapboards could be nailed.
>
> The conclusion to be drawn from a careful observation of square-notched log houses is inescapable and incontrovertible but largely unrecorded. Such structures were intended from the beginning to be house frames, as a substitute for the massive mortised, tenoned, and pegged frames that provided the skeleton for most fine weatherboarded houses built in America prior to 1840.

One standing structure in the Conway Water Supply project area reveals this type of notching. This is the McKindra House (3CN47) (Figure D-2 in Appendix D). This site was built after 1888, and was covered with weatherboarding. The exact date when it was covered is unknown, but it may have been after 1900 when the structure was structurally modified.

Geographic Distributions of Notching Types

Using the literature available on the distribution of notching types (Kniffen and Glassie 1966, Jordan 1978), it is possible to compare the distribution of these types with the various points of origin of the settlers in the Cypress Creek basin. Implicit in this comparison is the view that individuals moving into the Cypress Creek basin from an area where a given notching type was common would be familiar with the type and would probably apply the knowledge to the new construction. This somewhat misleading and simplisitc view should be tempered by a recognition that the use of a saddle notch might imply more about the proposed function of a structure or the time available for its construction than it would about the point of origin of the builder. Furthermore, we can assume that newcomers into an area would (either through discussion or example) share their knowledge of the various types and selection of a notching type might be based on a number of factors beyond the simple issue of point of origin. With all the caveats it is still useful to compare the areas where notching types are found with the types found in the project area.

From the Pennsylvania area, the Germans and Scotch-Irish carried various notching types in all directions (Figures 33 and 34). There were three primary streams of diffusion from the east. Central Arkansas was in the path of the southern Pennsylvania stream.

> Saddle notching, V notching, square notching, and half dovetailing, the last strongly predominant, were carried through the Tennessee Valley, and thence southeast into Georgia, south into Alabama, southwest into Mississippi and Louisiana, and west into Arkansas and Missouri. Although the log work of the mountainous areas of Arkansas and Missouri is comparable in quality with that of the Tennessee Valley, in the Deep South the quality declined with distance (Kniffen and Glassie 1966: 64).

The distribution of saddle notching is extremely wide. Simple forms are found in areas of northeast Georgia where Scotch-Irish settled in the 1830s (Bealer and Ellis 1978:41). Jordan (1978:58) states that the Pennsylvania Germans introduced the form in which the notching is only on the bottom of the log. It is most common on Pennsylvania German log houses.

> V notching is found throughout most of Pennsylvania, particularly in the German counties, and its spread west was mainly by way of the central Appalachians and Ohio Valley. It is the dominant type in the mountains of western Maryland and Virginia and occurs widely through Kentucky, Ohio, Indiana, Illinois and Missouri. Generally, the further south one goes in the eastern part of the United States, the less frequent the occurrence of V notching. In the Blue Ridge and Great Valley of the Appalachians the V notch prevails as the dominant type about as far south as the Virginia-Tennessee border, beyond which it is less common (Jordan 1978:65).

In Texas, V notching is closely associated with settlers of the upper Southern and German heritage. It appears as a corner method on houses from the pre-1840 period, becoming predominant after 1870 (Jordan 1978:Table 4-6). For a brief period from 1880-1889, it is the major corner method.

As an important notch the full dovetail type is found in the Delaware Valley, eastern Pennsylvania, and portions of the Great Valley of the Appalachians as far south as northwestern Virginia (Jordan 1978:48).

In Texas it was a predominant form from pre-1840 to 1869. After 1870, it was still used, but it was of lesser importance. The same pattern probably holds true for Arkansas.

> The half-dovetail notch was first used extensively in the border region of Virginia and West Virginia rather than in Pennsylvania. It becomes dominant through most of the Upper South and Ohio

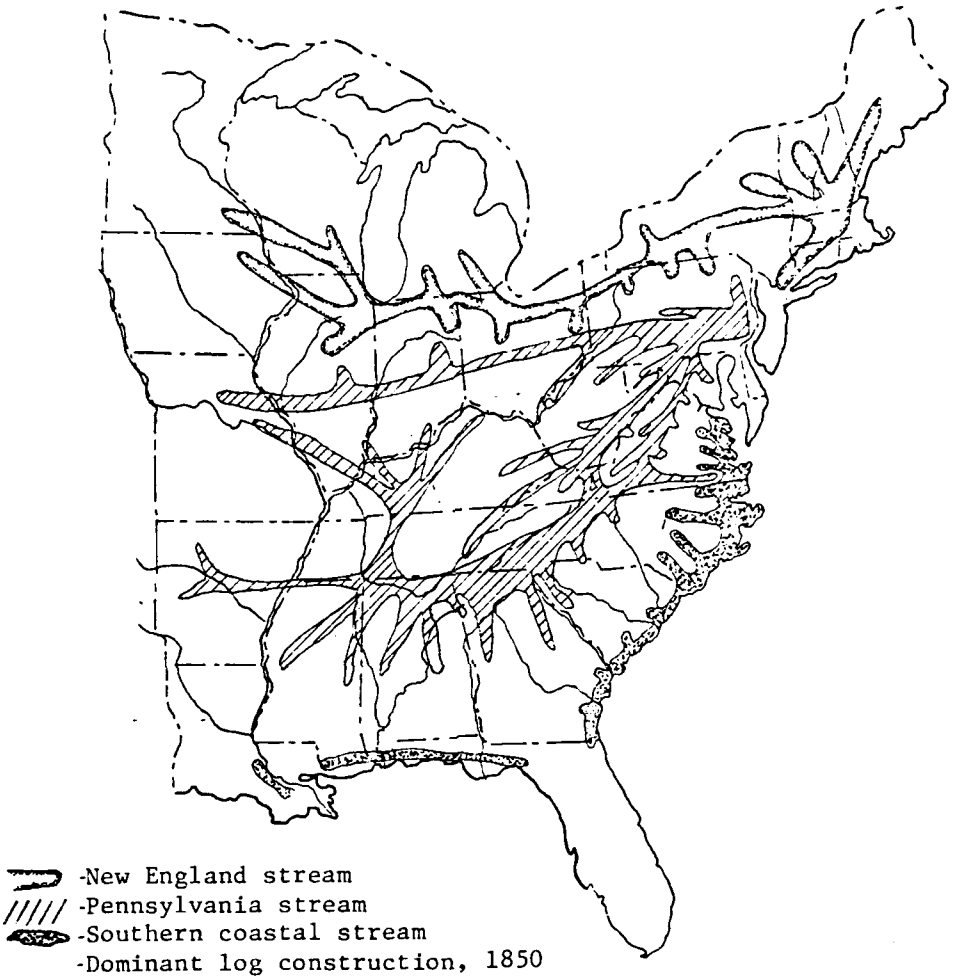


Figure 33. Diffusion of building methods as of 1850. Routes are diagrammatic. Variation in width of stream suggests strength of diffusion. (adapted from Kniffen and Glassie 1966)

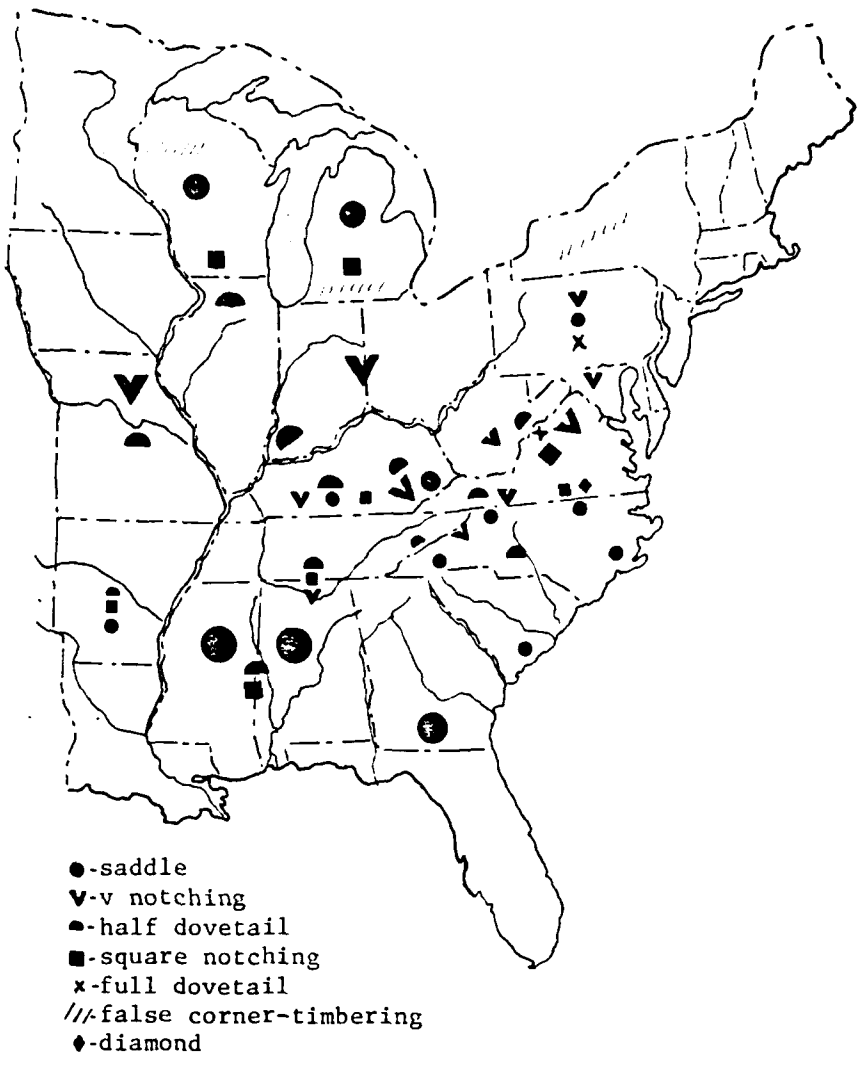


Figure 34. Predominant types of notching and their areas of distribution in the East. (adapted from Kniffen and Glassie 1966)

> Valley, in areas as far-flung as the hills of Arkansas, the North Carolina Piedmont, and the southern half of Ohio. Some residents of North Texas call the half-dovetail a 'Missouri notch,' suggesting its importance in that state (Jordan 1978: 54).

According to Jordan (1978:65) this type of notching is most widely encountered across the inner coastal plain of the South, from the Virginia Piedmont to east Texas, areas which were largely settled by persons of English stock derived from eastern Virginia. It is relatively rare in the upper South although numerous examples can be found in eastern Kentucky, Ohio and southern Illinois.

A map showing the previous residences of many of the earlier settlers in the Cypress Creek basin was prepared using information provided in local records, the documentation provided in Chapter 4 and Appendix D, and information made available by local residents. This map (Figure 35) demonstrates that the movement of settlers into the area followed the southern Pennsylvania stream as defined by Kniffen and Glassie (1966:64). They note that four notching types, saddle, V, square, and half dovetail were involved. This again is supported by evidence from the project area since one structure has saddlenotching, one square notching, one V notching and two have dovetailing, one a full dovetail, one half. While the sample of each type is small and generalizations should be made only cautiously it would appear that the log construction techniques in the Cypress Creek basin conform well to the wider eastern patterns documented by Kniffen and Glassie.

Log House Form and Size

In addition to the methods of corner-timbering, many other aspects of log house construction are ingrained with a rich eastern heritage. The dimensions of the structures are one example. By 1807, the dimensions for log houses were fairly standard and widespread in the East. They were usually 18 feet for the front and rear sides and about 16 feet for the gable sides (Wilson 1975:5). These varied only slightly. Houses in Alabama averaged 20 feet, 10 inches by 17 feet, 2 inches. Zelinsky (1953:175) observed that single pen houses, those with only one room, in Georgia were generally 20 feet by 15 feet, varying somewhat with the size of available logs. [Zelinsky's work is particularly significant for the studies carried out in the Cypress Creek basin since many of the area's early settlers were from Georgia.] Jordan (1978:111) stated that the majority of square single pen structures in Texas were normally 16 feet to 18 feet square. The rectangular houses are typically 22 feet by 16 feet, 24 feet by 16 feet, 20 feet by 15 feet, or 30 feet by 18 feet. Hutslar (1977:16) states that the usual lengths of measurement found on log structures in Ohio are, in feet: 12, 15, 18, 24, and 36. Therefore, it appears that measurements are fairly uniform throughout areas where log construction was significant.

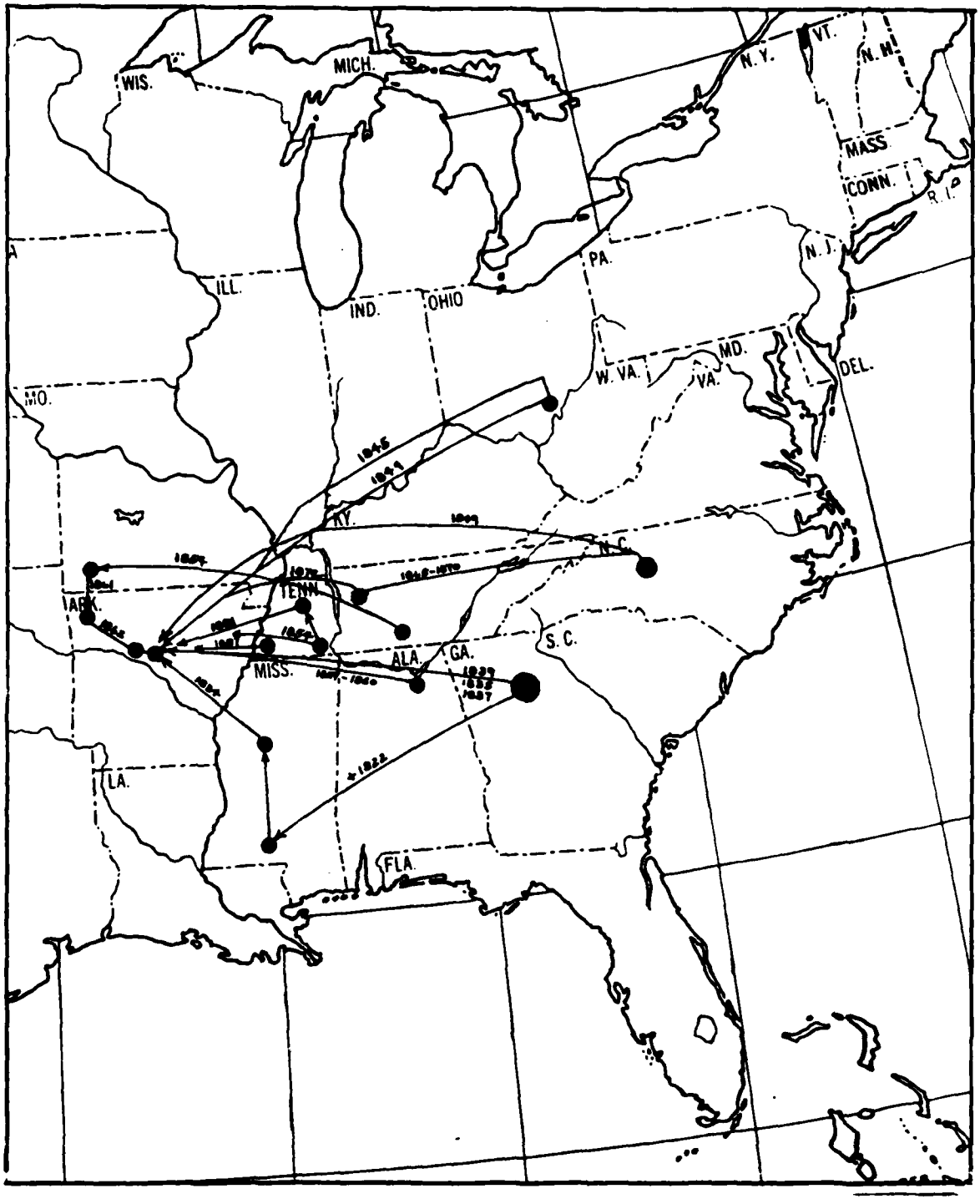


Figure 35. Movement of settlers into the Cypress Creek basin. Routes indicated are direct and do not imply historic patterns of movement (Goodspeed 1960, local informants)

The overall form of the structure was also directed by tradition. Two basic log house types were constructed by the English or Scots-Irish settlers, the "one bay" and the rectangular. The square English "one bay" house (bay is an English measure for 16 feet square) had one door and one or two windows, a loft, and a fireplace with an exterior chimney centered at the gable side. The rectangular had a door in the front and one directly opposed in the back. It should be stressed that the earliest settlers in North America, the British, Dutch and French, were unfamiliar with horizontal log construction which was later introduced by Swedish and German immigrants (Roberts 1972:287-288). Americans of British ancestry did not take over log construction until the eighteenth century.

Based on the descriptions of local informants, it was possible to determine that most of the structures in the project area were of the single log pen type with eventual construction of a board addition to the rear and/or side of the house. This addition usually contained a dining area and the kitchen (Figures 36 and 37).

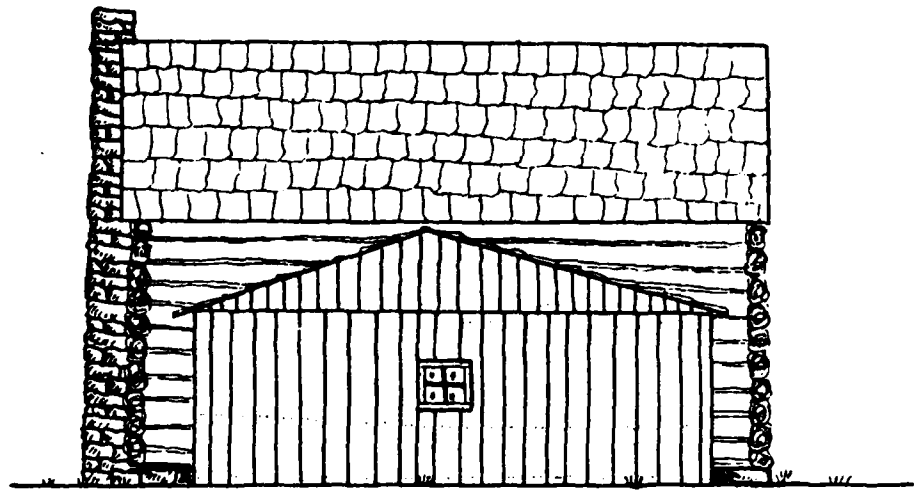
There were two possible exceptions to the above pattern in the project area. The Weatherly House, 3CN105, reportedly was constructed of logs and had two rooms with a hallway between (Figure 38). This house may have been of the dogtrot type, a structure with two log rooms and an open hallway in between. The house may have been constructed as early as 1854-1855 by William V. Weatherly who came to Arkansas from Tennessee. The dogtrot type of house is distributed throughout the South, particularly across the inner coastal plain of the Deep South from Georgia to East Texas, but also occurs in Indiana, Illinois and Iowa (Jordan 1978:119). A second possible dogtrot house existed in the project area, according to Colonel Paul Harrison (personal communication), just east of Highway 92 where a frame structure is now standing. This was either a one and a half story or two story structure and was referred to as a double house.

Construction of a frame addition to log houses was common. These additions are described by Jordan.

> Another common, almost universal, means of enlarging a log house is the shed room, also called a 'side' room. These are typically about one-half to two-thirds the width of a pen and added on the back side of the house, directly behind a pen . . . The name shed room is derived from the single-slope shed roofs covering these additions. Attached to the main roof at the eaves, the shed roof projects at a lesser pitch, forming a break in the profile (1978:187).

The shed room was an important feature of Southern folk houses and when frame houses were later constructed, the shed room became an integral part of the structure (Wilson 1975:50).

Typically the additions to the log houses in the Cypress Creek basin are not shed rooms. Only the Alberta Alexander House, 3CN119, possibly



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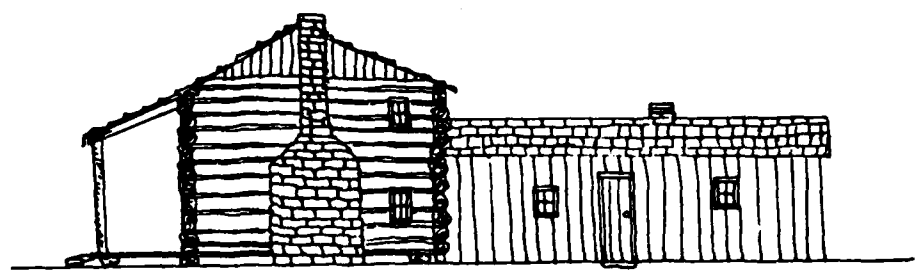

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Figure 36. An example of a single pen log house with a board addition, the Ledbetter House, 3CN108. (a) north elevation, (b) south elevation. Not to scale.

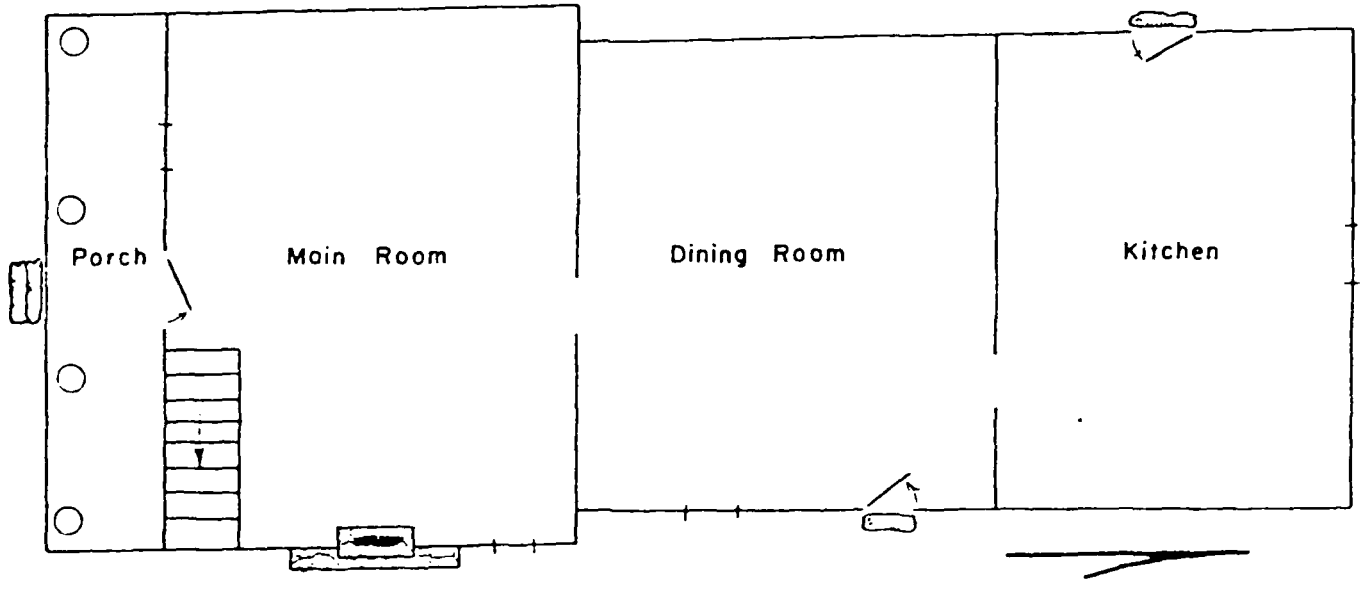

Figure 37. Room arrangement in a single pen log house with a board addition, the Ledbetter House, 3CN108. Not to scale.

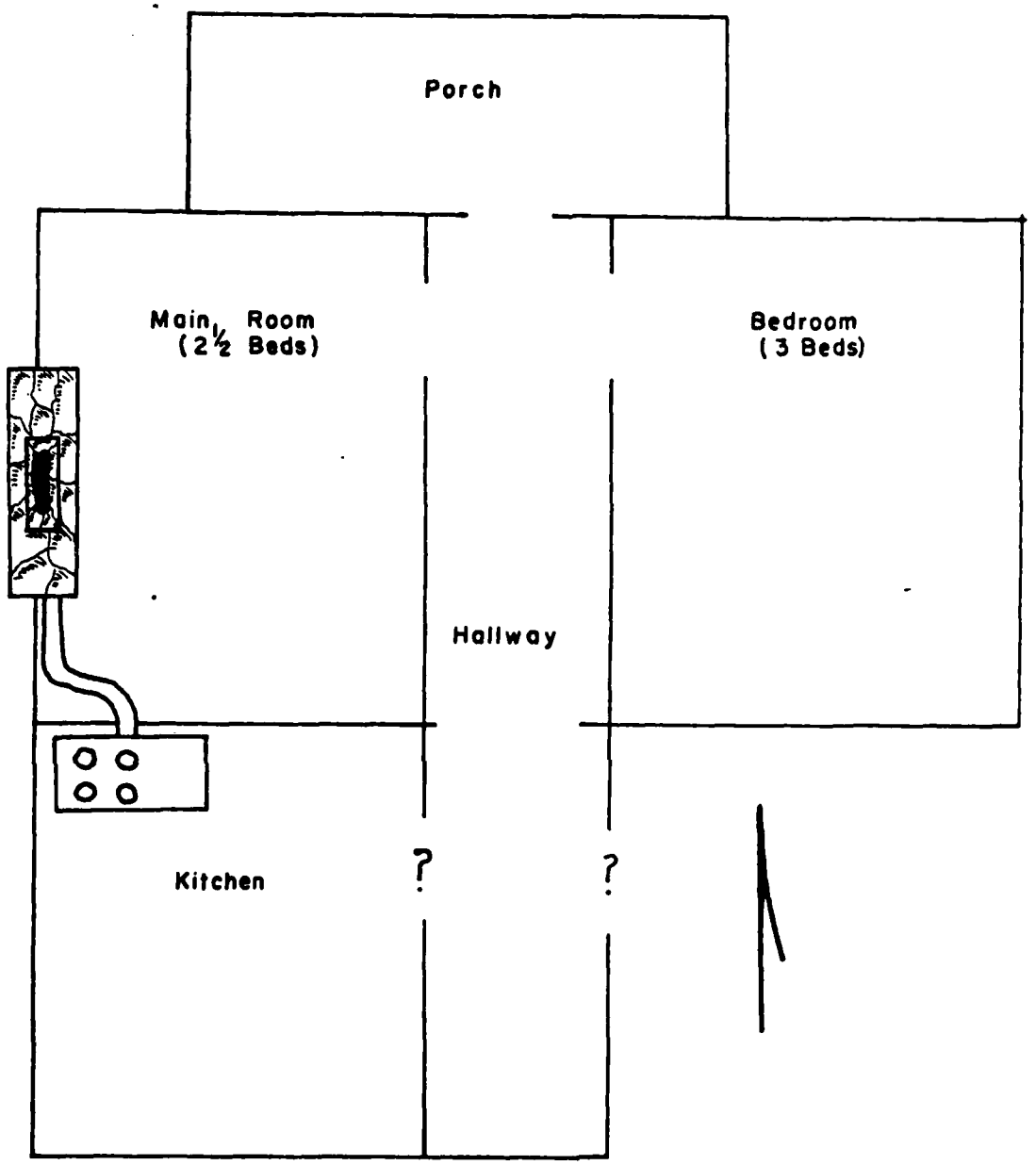

Figure 38. Floor plan of a possible dogtrot log house, the Weatherly House, 3CN105. Not to scale.

built by one of the Stell family, reportedly had a shed room on the rear of the structure. The Wilder Log House, 3CN92, had an addition which was separated by an open hallway. According to independent informant descriptions, the addition was probably initially added as a dining area although it was later used as a bedroom.

The Use of Stone Piers

Another feature which reveals the eastern heritage of the structures in the project area is the use of stone foundation blocks or piers. Wilson (1975:9) in his discussion of Alabama houses, observes that settlers cleared the house site and collected local rock which was used as piers for the construction of the house. In the Cypress Creek basin, Atoka sandstone was readily available for piers. Use of stone piers prevailed across the East and across the South into Texas.

> A close spatial correlation is evident in Texas between the low stone foundation and settlement by upper southerners from Tennessee, Kentucky, Missouri and Arkansas. Similarly the settlement zone occupied by lower southerners from the coastal plain of Alabama, Mississippi, Louisiana, and Georgia is dominated by taller pier foundations (Jordan 1978:32-33).

Good sized stones were placed on the ground at the corners of the structure. The spaces between the lower logs and the ground were filled with stones to exclude animals and wind, but these did not serve to support the walls.

> It is a curious fact, often overlooked, that the weight of a log structure is borne entirely at the corners, and that a seemingly massive building is dependent on a very small contact area from log to log. Most log buildings seen today seem to squat on the ground, their sills actually resting on the soil. Certainly this was not the original intent of the builders. However, because so much weight was concentrated at the corners, the gradual erosion of earth and shifting of the cornerstones cause the building to settle onto, and sometimes into the ground (Hutslar 1978:71-72).

The stone arrangement observed *in situ* at the Wilder Log House site, 3CN92, exhibited the rocks placed at one, two or more places between the corners of the structure (Figure 39, see Appendix D, pp. 29-46, for additional details). The Weatherly House site, 3CN105, showed a similar pattern.

Structure Orientation

Hutslar (1977:42) observed that in Ohio, orientation of the house north and south was a general practice. This was particularly true when

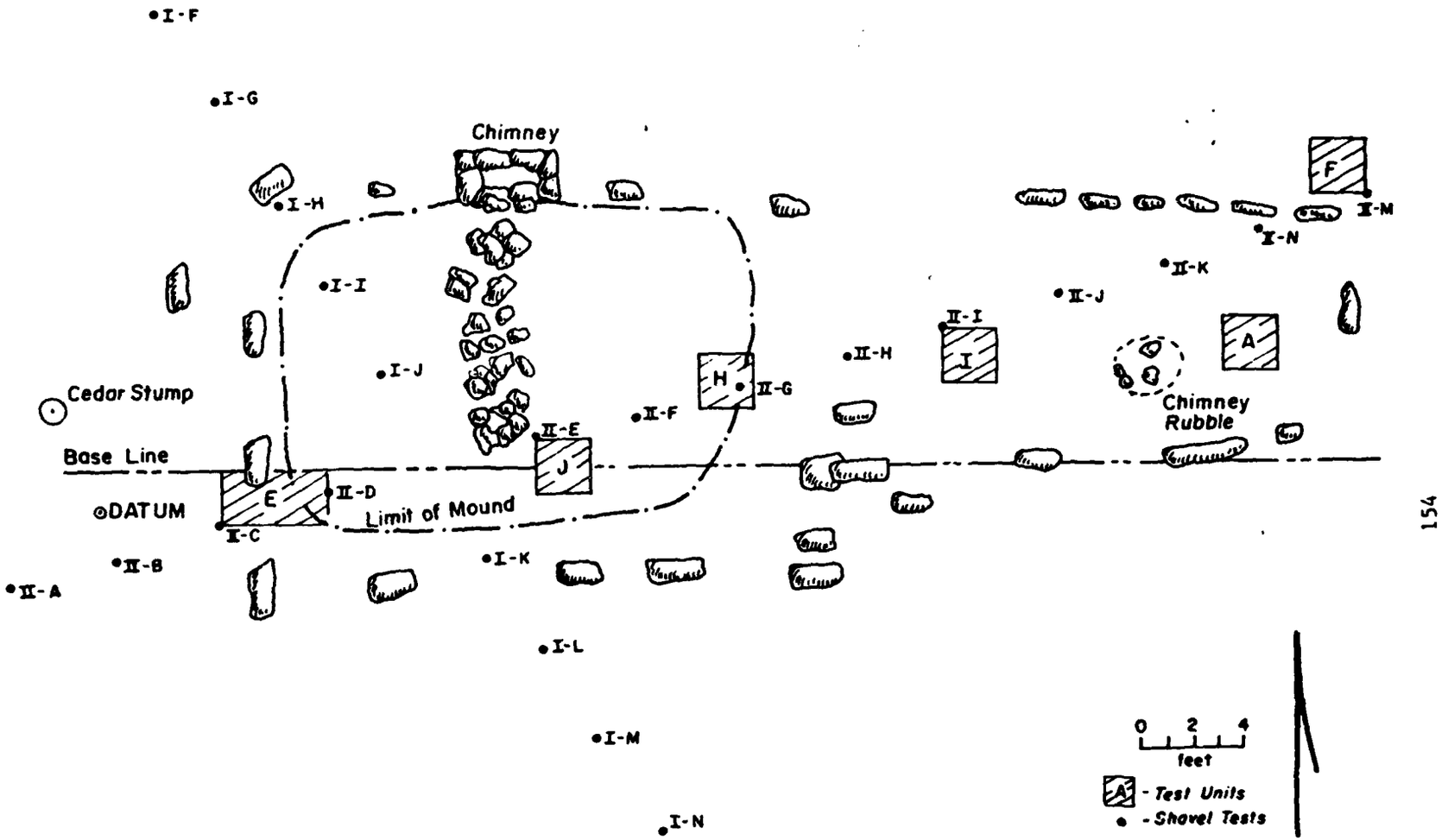

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Figure 39. Foundation stone (pier) arrangement at the Wilder Log House site, 3CN92

there were no roads or topographic features to use for a particular orientation. The most logical reason for the north-south orientation was "to get as much sunlight as possible into the structure--through the windows, if any, and the door, which would normally be to the front, or south" (1977:42). Jordan (1978:31) maintains that most of the log houses in Texas are oriented by the cardinal directions, e.g., most have the front facing south, followed by those facing east, west and north. The semirectangular land survey pattern in that region, with the roads running north-south or east-west along survey and property lines, has been the major influencing factor.

Table 8 records the locations of doors and windows on structures in the project area. It is apparent that windows and/or doors are found on most sides of the structures. All the structures were probably built after the main road was constructed, i.e., after the mid-1850s.

Table 8. Locations of doors (D) and windows (W) based on the cardinal directions

Site	North	South	West	East
Bell-Norwood	D,W	D,W	W	D,W
McKindra	W	D,W	D,W	W
Stell Lodging	?	W	?	D,W
Wilder	W	D,W?	D,W	W?
Weatherly	D,W	W?	?	?
Ledbetter	W	D,W	D	D,W
Harrison-Nisler	W	D	None	W
Alberta Alexander	D,W	W	W	None

The orientation of the log structures in the Cypress Creek basin provide no indication of preference for cardinal direction (Table 9). Based on evidence of former roads, it appears that orientation was directed primarily toward the roads running past the house.

Table 9. Information on log houses in the Cypress Creek Basin

Site	Front Door	Orientation	Construction	Possible Builder/Owner	State	House Moved/ Destroyed
Bell-Norwood (3CN44)	East	Road	1860s	?	?	1949
McKindra (3CN47)	South	Road?	1888	McKindra	Tenn.	---
Stell Lodging (3CN58)	East	Road	+1858	Stell	Ga.	1950
Wilder (3CN92)	West	Road	1851	Wilder	Ohio	1944
Weatherly (3CN105)	North	Road	1855	Weatherly	Tenn.	ca. 1957
Ledbetter (3CN108)	South	Road	1853-1860	Witt/ Reynolds?	?	1964
Harrison-Nisler (3CN112)	South	Road?	1875	Harrison	Ark.	---
Aloerta Alexander (3CN119)	North	Road	1850s	Stell	Ga.	1920

Temporal and Spatial Perspectives

The various characteristics of log house construction represented in the Cypress Creek basin should be considered in both temporal and spatial perspectives. The construction of log houses is a good indication of the relative isolation or economic success of an area.

Zelinsky (1953:187) stressed that the presence or absence of log houses in an area will be partly a matter of the date of settlement and of differential isolation.

> The incidence of log houses in a given locality seems to be inversely proportionate to the tempo of traffic in men, goods, and ideas. Good roads are the bane of log houses, and cities the harshest possible environment. (In spite of constant vigilance, not a single log house has been found on a site that could be termed urban). . . . Besides being a sensitive gauge of cultural isolation and a clue to culture areas, the log house remains to testify to the paramount fact that the human geography of the South is one of an arrested frontier (Zelinsky 1953:187, 189).

Zelinsky is supported by Hutslar who states:

> Although log building continued throughout the century in Ohio, the reasons for its continuance were relative to each specific site. By mid-nineteenth century the log house had become confined to the rapidly disappearing unsettled areas and to the less economically successful sections of the state. By then sawed timber could be obtained throughout Ohio and the frame house had become the standard, reasonably priced housing. Before settlement had become general through the state, the easiest method of constructing a log building had been to erect it in the midst of a forest, so that the logs did not have to be moved far to the building site. However, once the overall forest covering Ohio had been broken into small units by settlement, it was easier to saw the timber into usable sizes and transport it to the site (1977:11).

Based on the information available on the transport network present in the Cypress Creek basin, it appears that families residing in the project area in the early to late nineteenth century were restricted in their contact with outside areas. Most of the activity during the period was focused on the Arkansas River, south of the project area. Until the railroad was constructed into the central part of Conway County in the late nineteenth century, most of the goods brought into the area were introduced by boat, and most people found this the best way to travel. There was only one "major" road through the project area to Springfield, Arkansas. This dirt roadway served people in the area until the early twentieth century. More attention is given to the details of the transport system in Chapter 4.

Examination of the material evidence appears to support the tentative conclusions that families in the project area were isolated, at least throughout most of the nineteenth century, in access to goods from outside areas. The results of this work are tentative and require more intense examination of informant information before detailed conclusions can be reached.

MATERIAL OBJECTS OF RURAL CULTURES IN CENTRAL ARKANSAS

One of the primary contributions of the historic archeologist is the investigation of elements of human behavior which often are not reported in written documents. This may include characteristics of daily routine tasks which were thought too "ordinary" to be recorded. From a different perspective it can also be recognized that written documentation has a potential element of bias in that it must have been prepared by a literate person. As a result historic documentation about major classes of American society may have significant errors. Alternately it is also clear that archeologically recovered materials are themselves subjected to bias from many sources, not the least of which is the incomplete record which must result from a limited sample of material goods. The obvious solution is the critical and careful interdigitation of both written and artifactual sources.

In this vein archeologists investigating historic sites have increasingly turned to examination of written inventories of household goods from the nineteenth and twentieth centuries in order to assess what sorts of artifacts may be found. Deetz (1977:14), for example, recorded the personal property of Cato Howe, a freed slave in Plymouth, Massachusetts in 1820. A comprehensive inventory was made when he died in 1824; he owned one fire shovel, two tables, crockery and glassware, and other materials. Price and Price (1978) in a report on settlement patterns and subsistence on the Ozark Escarpment in southeast Missouri during the first half of the nineteenth century, provided numerous records of goods owned by persons there. Cathey (1944:90) provided some inventory of furniture in a slave cabin in Lawrence County, Arkansas, in the 1840s. Slaves owned a little furniture; homemade beds and tables were frequently built against the walls. An owner often furnished chinaware, looking glasses, and chests of clothing.

Jones (1935), in his sociological study of Menifee, a black community southwest of the project, provides further information on material objects. With the scarcity of money and poor transportation in the late 1800s, it was often necessary for blacks to leave most of their possessions behind when they came to central Arkansas. They took only what they could transport--mostly clothing and bedding. Even into the 1930s and 1940s, furnishings in homes of black residents of the county were simple. These included beds, tables, milk churns, wash tubs, lamps, dishes, knives, dish pans, and other objects in the house. Farm equipment included harnesses, whips, Georgia stock plows, axes, and other tools and

equipment. The primary games played were checkers, dominoes and marbles. One class of artifacts which can be expected to be numerous, however, is the canning jar fragment since 300-500 quarts of fruit and vegetables were canned each year (English 1969:3).

It is possible however to employ artifacts recovered from historic sites to address problems of changing emphasis in resource procurement during the late nineteenth and early twentieth centuries. For example, Ascher and Fairbanks (1971) discussing artifacts from a slave cabin in Georgia which was occupied around 1834 to 1865 report:

> All the slivers of glass, pottery she s, and bits of metal came from everyday things common in t e first quarter of the nineteenth century. Much of it was imported. . . . They have been found at places as diverse as townhouses in Virginia, ranch houses in New Mexico, at a trading post in South Dakota, a log cabin in Tennessee, and at the one time capitol of the Cherokee Nation, New Echota, in Georgia (Ascher and Fairbanks 1971:11).

It has been noted earlier that Zelinsky (1953) argued that the presence of log houses generally correlates with isolation resulting from poor roads, etc. Zelinsky further implies that the presence of log houses generally goes along with restricted distribution of goods from an outside source. However, Toulouse (1970) provides stimulating contrast in a paper on the presence of bottles in mining towns of California that date from 1850 to 1890. He stresses that much of the written material points to the hardships of the early western miner's life, but the recovery of bottles from sites paints a different picture. Bottles once containing wines and whiskies, drugs, bitters, cosmetics and other resources from the East, England, Scotland, France, Germany and Italy were readily available to the miner (Toulouse 1970:59). While the written resources would describe a life of hardship, the archeologist discovers that early mining towns were in direct contact with outside sources and resources were easily procured.

Archeological testing of historic log house sites provides an excellent opportunity to evaluate the relative isolation of households in the Conway project. A number of sites which were tested were probably built in the 1850-60s, and were occupied into the 1930-40s. Therefore, by determining the ages of artifacts found within the sites, it should be possible to assess if contact with outside sources was low and has remained consistent through the period of settlement, or if it had increased at some point although the log structures were still occupied throughout the period.

Using the information secured from land transfers, which has been discussed in Appendixes B and D, dates can be determined for the construction of the historic houses in the project area. Artifacts from these sites can then be examined to determine if the dates of the artifacts are consistent with those assigned to the sites.

Temporal identifications of artifacts from sites located in the project area are presented in Appendix D.

Examination of artifacts from the Bell-Norwood House site (3CN44) indicates that the dates of most of the artifacts range between 1880 and 1951. Since the site was abandoned and the house dismantled in 1949, this can be used as the terminal date of occupation. The only artifact that could have dated to 1830 was stoneware, but the slipping method prevailed until 1900. Examination of the ceramics also indicates that the transferware and decalcomania sherds found at the site range in date from the late nineteenth century to circa 1950. The period of house construction is ca. 1860s, but the artifacts consistently date 20 years later in time.

The McKindra House (3CN47) was constructed circa 1888 and was occupied into the 1940s. The majority of artifacts from the site date from the late nineteenth century into the 1960s. The presence of automobile parts suggests that the site was disturbed subsequent to abandonment. Only one bottle could be dated to the pre-1860 period, based on methods of manufacture. This was perhaps carried into the site sometime during the occupation. Therefore, dates of the artifacts found at the McKindra House site are consistent with known dates of construction and occupation.

The Stell Lodging House (3CN58; 3CN62) was apparently constructed in or after 1858. This is based on the sale date of the land to the Stells. The structure was moved in circa 1950, so that can be used as the terminal occupation date, although the house was probably abandoned before that time. The earliest artifacts recovered from the house area date from circa 1884 to circa 1950. Many of the canning jar fragments, and related items, date primarily to the 1910-1920 period. The only artifacts from this unit that could date to the 1830-60s period are fragments of annular ware ceramics, a ceramic doll's foot, and a fragment of stoneware found in test Unit I located in the roadway. These artifacts could have been manufactured as late as 1900. Although the site may have been occupied as early as the 1850-60s, the artifacts generally date from the 1880s to the 1940s.

The Weatherly House (3CN105) may have been erected as early as 1855. It was destroyed circa 1957, although it was abandoned previous to that year. Only one test unit was excavated at this site, although shovel testing was employed to supplement this unit. Material from this unit consistently dated to the post-1900 to the 1940s period. It is proposed that patterns are probably consistent with those exhibited at other sites, but due to the nature of testing and paucity of artifacts this site is not included in subsequent discussion.

The Ledbetter House (3CN108) was the last site on which major testing was conducted. This site may have been occupied as early as the 1853-1860 period, based on land sales records. Significant quantities of stoneware were recovered from the site, but the methods of slipping were

employed from circa 1840 to 1920. The structure was reportedly torn down in 1964, but it may have been abandoned as late as 1940. Only one ceramic sherd reveals a painted floral pattern of the 1840-60s. There are enough artifacts present from the late nineteenth and early twentieth centuries to suggest that most of the artifacts relate to the post-1870 and 1880s period.

Based on a site-by-site examination of the artifacts that were recovered, it is apparent that most of the artifacts date to the 1880s-1940s period. In the case of the McKindra House site (3CN47), this is consistent with the known construction date and period of abandonment of the house. Other structures in the Cypress Creek basin were apparently built in the 1850-60s period. Since it is definitely known that the area was first settled in the 1830s, and the sites examined include most of the historic house sites in the area, at least a sample of these should have been erected previous to the 1880s. However, the artifacts that are found in the sites consistently date from the 1880s into the 1940s. Four possible alternatives could explain why few or no artifacts from the pre-1880s period have been recovered from the sites. These are:

1. Excavation and shovel testing procedures were biased toward the testing of areas where artifacts of the late nineteenth and twentieth centuries were deposited and concentrations of artifacts from earlier periods were not located.

2. The historic sites in the Cypress Creek basin were not occupied as early as has been assumed, based on information contained in land transfers, local histories, oral information, etc.

3. Many of the artifacts found at the sites include bottles made with modern manufacturing techniques developed in the late nineteenth century. Up to this time, cultural materials were scarce so that they were carefully protected and were recycled more intensely than those of later periods when mass production was intensified.

4. Construction of the Little Rock and Fort Smith Railway into the area (close to the Arkansas River) in 1870 changed the patterns of access to material goods from sources outside of the central Arkansas River Valley. Therefore, more permanent goods were introduced in greater quantities and less durable items used previous to the time have not been preserved (e.g., wooden bowls, hide containers, etc.).

Based on an examination of the testing procedures employed on the historic sites in the Cypress Creek basin, it can definitely be stated that the first alternative does not explain the absence of earlier artifacts at any of the sites. Materials were commonly discarded under the house or close to the house, and a few ceramic sherds should be found dating to earlier periods. In almost all instances, shovel testing and

the excavation of one or more 1 m^2 units was directed toward the testing of the area where the structure stood, in addition to the yard area.

Furthermore, at the McKindra House comparable testing techniques did recover material in quantity from the earliest occupation of the house. In this case, however, the earliest occupation was in the 1880s. This would suggest that the testing procedures per se were not the cause of the substantial paucity in artifacts dating before ca. 1880.

It has been stressed that records indicate that the Cypress Creek basin was first occupied in the 1830s. Post office records show that Dennis Stell was post master at the Stell mill from 1840 to 1843. Census and other records indicate that families were living on the properties under discussion in the 1860s. Since these historic sites are included within the project area and date to the pre-1840s period, at least a few of these houses should have been constructed before 1880. Therefore, the second alternative does not accurately provide a reason why there are no artifacts from the pre-1880s period.

The third alternative should be given further attention in future studies. To date few archeologists have addressed the patterns of artifact repair and reutilization in historic sites in rural communities. The complex character of repair and reutilization is indicated by Price and Price (1978) who conducted archeological work on the previously discussed Widow Harris Cabin site.

> The large quantity of some items such as pins, brass buttons, clay pipes and even English ceramics, suggests ready access to manufactured items. There is little evidence of re-use, or repair, or re-cycling on the site. In fact, it appears that frugality was not a trait of these people. For example, an iron trivet was discarded in Feature 8 at the base of the midden--early in the site occupation--which was missing one of the three legs but was readily repairable or even usable as it was. Also discard of the whole shovel blade in Feature 11 suggest that repairable and usable items were often thrown out. The presence of such large items in the refuse cannot be attributed to loss during use as can the presence of such small items as pins and buttons. It appears that the family could easily replace these items if necessary thus suggesting ready access to trade items and participation in trade networks. The family was certainly not self-sufficient (Price and Price 1978:98).

The Widow Harris site was located adjacent to the Natchitoches Trace and this may have effectively put the occupants in touch with outside resources since the Trace was a major road during the nineteenth century and ran from Vincennes, Indiana to Natchitoches, Louisiana and into Texas (Price and Price 1978:7). In contrast, persons occupying sites in the Cypress Creek basin may have had a much more limited access to manufactured goods. Nearby Lewisburg was the location for acquisition of goods. Prior

to 1870 goods available in Lewisburg would have had an extensive and possibly expensive train shipment route. Therefore, artifacts may have been more effectively repaired and utilized by persons in the area.

Alternative four draws attention to what may have been one of the major factors in the increase in cultural materials in sites in the late nineteenth century. In the 1870s the railroad was extended to Morrilton (located south of the project area). The railroad changed the settlement patterns and commercial aspects of the area. The journalist Edward King, on a tour of Arkansas in 1874, reported ". . . that settlers were rapidly filling up the lands five to ten miles back on either side of the newly completed railroads" (cited by in Watz 1958:324).

In the late 1870s many people moved to Morrilton.

> Many people coming from abroad and seeing the advantages it possessed, located, and have since thrived and prospered here. Miller & Hannaford started a general store on quite a large scale, and nearly every merchant kept constantly enlarging and extending his quarters. . . . In 1880 J. T. Hannaford and W. M. Clifton each erected large brick storehouses. Other brick business houses were erected every year nearly. In 1887 Mr. Hannaford erected the large brick known as the Bank Building, and fitted up the upper story for an opera-house. . . .
>
> Besides the people who come from abroad, Lewisburg was drawn upon to supply her commercial men, and early in 1880 that town was obliterated to supply the business material for this. All who came with business qualifications proved a success, and many have established businesses that rank with the solid and substantial firms of the State (Goodspeed 1960:33).

The residential areas thrived along with the business interests. Previous to the 1870s, Lewisburg was the most thriving town in the area. Between 1850 and 1860, it was one of the best business points in the state. It was the shipping and receiving point, via the Arkansas River, ". . . for all the produce shipped and supplies received for a large region of territory" (Goodspeed 1960:36). But, as Lewisburg died and Morrilton thrived with construction of the railroad and establishment of new business enterprises, it appears that persons of the Cypress Creek basin were more effectively placed in contact with new resources from outside areas. Future studies should concentrate on the relationships between the project area and the towns of Lewisburg and Morrilton.

Zelinsky's comments regarding the absence and presence of log houses as a sensitive gauge of cultural isolation were introduced at the beginning section. Some evidence has been presented indicating that the rural community in the Cypress Creek basin was relatively isolated until the post-1870s period. Once the railroad was constructed, and the city of Morrilton grew commercially and culturally, the people in the basin area were also able to acquire new resources. This is reflected in the

archeological assemblage. Nonetheless, people did not elect to abandon log houses. These were frequently occupied into the 1940s. Future work should be focused on examination of the relationships between the archeological assemblage, developments of commercial enterprises, and perpetuation of rural communities and log house economy in central Arkansas.

Artifact Distribution: Patterning of Refuse Areas

South (1979:218) observes that on historic sites smaller artifacts ". . . are thrown around the yard adjacent to the house, whereas the larger ones are not usually found there but are more peripheral to the structure, in a gully, pit, abandoned well, or privy hole." He also states that bone is generally deposited in areas peripheral to dwellings rather than adjacent to them. This pattern was followed at the Widow Harris Cabin site, where larger quantities of bone were carried some distance away (Price & Price 1978:82).

In the Southeast, it was once a common practice for people to sweep the yards. Virgil Scroggins was quite familiar with this practice. He observed that the yard at the Ledbetter House (3CN108) was swept, and trash was deposited outside of the fence around the back of the yard (Figure D-32). He also observed that in the area the grass was generally removed from the yard leaving just a dirt surface. Therefore, artifacts would be more visible and could be removed. South states that when the yards are swept, only the smallest artifacts remain inside the swept area. Around this is a zone of large and small debris, often in the form of a horseshoe or rectangle (South 1979:218). Since houses were raised, bottles, cans, broken toys, bones, and other debris are tossed under the structure, forming a central pattern of large refuse. Furthermore, dogs probably dragged bones under the house.

The pattern that South proposes is shown in Figure 40. The black squares in the center represent house piers or foundation stones. The rectangular dotted line may be taken to represent the fence around the yard. This can be referred to as the primary yard. The zone outside of this constitutes the secondary yard.

Table 8 indicates where test units were excavated or shovel tests were made at historic sites in the project area.

Using the relationship of excavated units and shovel tests assigned to positions within the hypothetical refuse type areas, classes of artifacts can be recorded to determine if there are any significant differences between sites in the distribution of artifacts (Tables 10 and 11). On the whole, it appears that items in most classes were spread randomly over all three refuse areas. Ceramics, bottle fragments, canning supplies (e.g., canning jar fragments, white glass liners, and metal lids), and nails were consistently recovered in all three areas. However, flatware (e.g., spoons, knives, forks) and toys and games (e.g., checkers,

Table 10. Distribution of test units in relation to types of refuse areas

Site	Central Refuse Area					Adjacent Refuse Area		Peripheral Refuse Area			
	Main Room	Dining	Kitchen	Bedroom	Porch	Kitchen Area	Yard (Primary)	Smokehouse Barn	Slope	Road	Yard (Secondary)
Bell-Norwood (3CN44)	D,S	C	A			B	S	S			
McKindra (3CN47)					A,S		B,S				C,S
Stell Lodging (3CN58)	A,B				C,S	S	S			D,S	S
Wilder (3CN92)	J,S		A,S	I,S		E,H S	F,S	C,S	B,D G,S		
Weatherly (3CN105)	S		S	S	S	S	A,S	S			S
Ledbetter (3CN108)	D,S	C,S	B,S			S	A,E S				S

A,B,C...J = test unit
S = shovel test

Table 11. Distribution of artifact classes by types of refuse areas

Site	Artifact Classes (Housewares/Toys and Games)						
	Ceramics*	Bottles	Canning Supplies	Stoneware	Flatware	Bone	Toys/Games
Bell-Norwood							
Central Refuse Area	X	X	X			X	
Adjacent Refuse Area	X	X	X	X		X	
Peripheral Refuse Area	X	X	X				
McKindra							
Central Refuse Area	X	X	X	X	X	X	X
Adjacent Refuse Area	X	X	X	X		X	
Peripheral Refuse Area	X	X	X	X		X	
Stell Lodging							
Central Refuse Area	X	X	X	X	X	X	X
Adjacent Refuse Area	X	X	X				
Peripheral Refuse Area	X	X	X	X		X	
Wilder							
Central Refuse Area	X	X	X	X		X	
Adjacent Refuse Area	X	X	X				
Peripheral Refuse Area	X	X	X	X		X	
Weatherly							
Central Refuse Area							
Adjacent Refuse Area	X	X	X				
Peripheral Refuse Area	X	X		X			
Ledbetter							
Central Refuse Area	X	X		X			
Adjacent Refuse Area	X	X	X	X		X	
Peripheral Refuse Area	X	X					

*except stoneware

Table 11. Distribution of artifact classes by types of refuse areas, cont.

Site	Artifact Classes (Clothing, Building Materials, and related classes)						
	Flat Glass	Lamp Chimney	Electrical Parts	Buttons	Buckles	Tools	Nails
Bell-Norwood							
Central Refuse Area	X		X	X	X	X	X
Adjacent Refuse Area	X	X		X	X	X	X
Peripheral Refuse Area							X
McKindra							
Central Refuse Area	X						
Adjacent Refuse Area	X	X	X	X	X	X	X
Peripheral Refuse Area							X
Stell Lodging							
Central Refuse Area	X	X		X	X	X	X
Adjacent Refuse Area							X
Peripheral Refuse Area	X			X	X	X	X
Wilder							
Central Refuse Area	X	X		X	X	X	X
Adjacent Refuse Area	X						X
Peripheral Refuse Area	X	X		X	X	X	X
Weatherly							
Central Refuse Area							X
Adjacent Refuse Area	X			X			X
Peripheral Refuse Area							X
Ledbetter							
Central Refuse Area	X			X		X	X
Adjacent Refuse Area	X				X		X
Peripheral Refuse Area							X

marbles, dolls) were recovered only in the central refuse area. However, these artifacts were only found at two sites. Flat glass (possibly window glass) and lamp chimney glass are also found in the central refuse area, and they are also present in the adjacent refuse area at all sites except the Stell Lodging House site. In addition, these artifacts are found in peripheral areas at the Stell House and the Wilder house sites. Other patterns are shown in Table 5. With the data at hand it does not appear that specialized refuse areas can be defined throughout all three refuse areas.

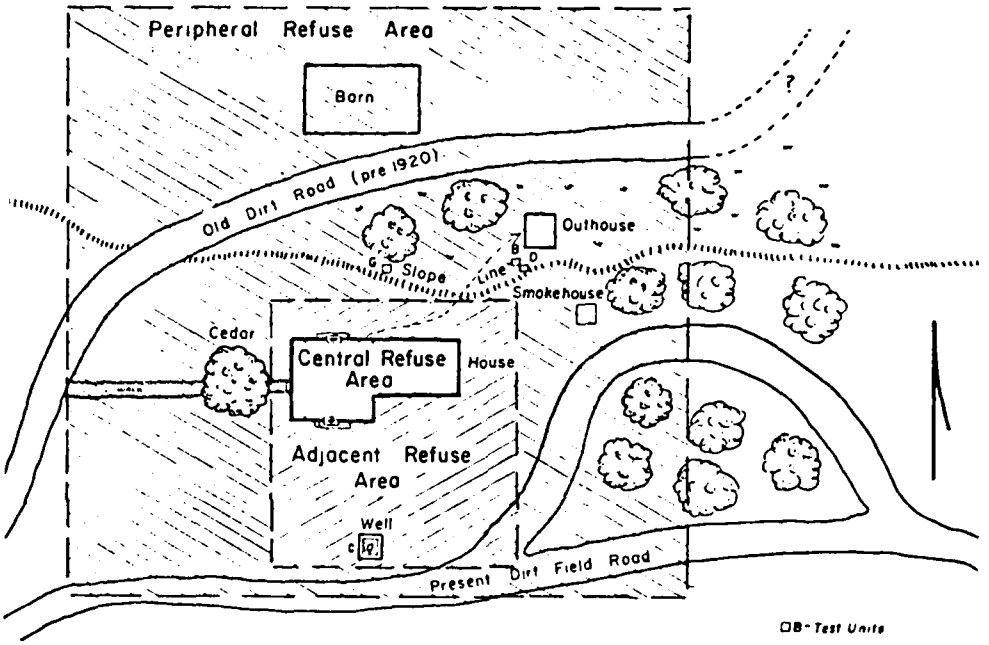

Figure 40. Plan of a twentieth century dwelling with porch, on footings showing the relationship of refuse in yard and beneath house (South 1979:Figure 2)

Artifacts were also examined in terms of size, condition, and spatial patterns to determine how accurately the plan shown in Figure 41 depicts the situation at historic sites in the project area (Table 12). The separation of artifacts considered small and those classed as large was

Table 12. Size, condition and spatial patterns of artifacts in relation to refuse types

Site	Refuse Type	Size	Condition	Spatial Patterns
Bell-Norwood (3CN44)	Central	sl	pw	c
	Adjacent	s	p	c
	Peripheral	s	p	c
McKindra (3CN47)	Central	sl	pw	c
	Adjacent	s	p	c
	Peripheral	sl	p	c
Stell Lodging (3CN58)	Central	sl	pw	c
	Adjacent	s	p	c
	Peripheral	sl	p	c
Wilder (3CN92)	Central	sl	pw	c
	Adjacent	s	p	c
	Peripheral	sl	p	c
Weatherly (3CN105)	Central	s	p	c
	Adjacent	s	p	c
	Peripheral	s	p	c
Ledbetter (3CN108)	Central	sl	p	c
	Adjacent	sl	p	c
	Peripheral	s	p	c

s=small; l=large
w=whole; p=part or broken
c=cluster; i=item

arbitrary. Therefore, in most instances, objects larger than 3-4 inches (7.6-10.2 cm) were considered large, and those smaller than those sizes were included in the small category. Nails were not included since they generally do not break. It seems particularly difficult to assess if the sample was truly representative in those instances when shovel testing was employed.

It appears that the patterns proposed by South regarding the deposition of refuse at historic sites are not as clearly observable at sites in the Cypress Creek basin area. Small and large artifacts, many broken but some complete, were found in units excavated in the central refuse area (e.g., within the proposed limits of the structure). In the adjacent (primary yard) refuse area, most of the artifacts were small (Table 11). One large harness buckle was recovered in this area but this could have been deposited on the site after it was abandoned and the structure was removed. South (1979:218) maintains that larger artifacts should be recovered from peripheral areas, but this pattern was not consistent at all sites in the project area (Table 11). Only three of six historic sites exhibit both small and large artifacts in the peripheral refuse areas. The other three sites exhibit only small artifacts in that area. It appears that all artifacts found in adjacent and peripheral refuse areas were broken and clustered, perhaps indicating that archeologists often encountered concentrated refuse deposit areas.

When testing was employed at the historic sites in the project area, the testing procedures were not directed toward specific problems regarding the distributions of artifacts in relation to structures. Testing was directed toward the determination of site size, subsurface disturbance and related problems. Based on the work that was carried out, it is still possible to propose tentative conclusions. First, distributions of artifacts of most classes do not conform to functional areas and appear to be scattered across historic sites in the project area. Second, while larger artifacts are often found in central refuse areas, the patterns that emerge in adjacent and peripheral refuse areas are not consistent with those suggested by South (1979:218). It cannot be determined at this time if this represents a local or regional variation in patterns proposed by South.

LOG HOUSE SOCIOECONOMICS IN THE CYPRESS CREEK BASIN

Examination of the written documentation and the extensive oral history which had been obtained suggested that the socioeconomic patterning of the Cypress Creek basin was complex and that there were at least two different settlement patterns present. The complexity of the occupation of the area had not been evident utilizing the general histories of the area. Price and Price (1978:4) discovered the same problem when they investigated early nineteenth century settlement patterns and subsistence on the Ozark Escarpment in southeast Missouri. They stated:

> Available descriptions of the settler on the American frontier tend to be too generalized to be of great value in themselves in anthropological work. There is a need for archaeological data to accompany the literature descriptions in order to provide a wider base for the development of anthropologically based models of frontier cultural systems. The lack of archaeological data is particularly limiting in areas such as the Ozark Border where documentary data for the early period of American settlement are scarce and usually very general in nature.

In addition, as more attention was concentrated on settlement patterns and population movement into Conway County, it became apparent that the Black population had been insufficiently reported in most histories. The primary sources on the Black population in the area are the works of two sociologists (Jones 1935; Morgan:1973). In addition, a local teacher prepared a brief account of Menifee, a Black community in Conway County (English 1969). Each of these works contains some information on Black history and life styles, but the primary focus is on twentieth century rural Black-American economy in central Arkansas. Jones's (1935) work is perhaps the most detailed in regard to the early settlement patterns, economy, origins, and behavior of Black Americans in the area, but written information about the rural Black economy has been limited. It was anticipated that archeological investigation could not only supplement the information that had been provided on black settlement in the area, but could also fill in significant gaps on rural socioeconomics and other patterns of behavior. In addition, with the collection of information on and artifacts from house sites occupied by Euro-American farmers which were contemporaneous with sites occupied by Black families, it was anticipated that comparisons could be made of the two groups.

The Wilder House: "White and Black in Microcosm"

The remainder of this study focuses primarily on the above issues using information derived from the Wilder Log House site (3CN92); a brief history of the property will therefore be reiterated. The house site is located in Section 16. This section was reserved by the federal government for common school purposes and disposal began only after 1843 (Watz 1958:310-311). Miles L. Stell, son of Robert Stell, purchased the land in 1858 in a private sale. In April, he sold 40 acres of the land to Charles L. Wilder, a recent immigrant from Ohio who arrived in Arkansas in 1849. The plat map drawn from the 1855 survey (GLO 1855:7N 15W) shows a structure in a field at the approximate location of the Wilder house. Perhaps Wilder constructed the house before he had title to the property. He reportedly resided in what is now Faulkner County, Arkansas for a few years before moving to the land he owned in Conway County (Goodspeed 1960:125). Wilder was first married in 1852, and he may have built the house just previous to that time. Since the Stell family was quite influential (for example, Robert Stell was County Judge from 1854 to 1856), there may have been an agreement that upon purchase of the

land, Miles Stell would sell Wilder the portion that he occupied. Abstracts indicate that Stell paid $1.25 per acre for the land and sold it to Charles Wilder for the same amount.

According to the 1890 biographical history of Conway County, Wilder was a farmer and a stock raiser, in addition to being a mechanic (Goodspeed 1960:124). Although one descendant referred to him as a "poor dirt" farmer, his inclusion in the biographic memoirs of the county suggests that he was a respected citizen, and perhaps somewhat affluent. During the time that he owned the farm, Wilder continued to expand his holdings until he owned 200 acres, of which 80 acres were under ". . . high state of cultivation and improvement" (Goodspeed 1960:124). Charles Wilder sold the property to his son, James A., in 1884, but he reportedly continued to reside, with his son, in the log house until his death in 1893. Due to financial setbacks, the property passed out of the Wilder hands some years later, and by 1900 James A. Wilder was renting a farm elsewhere (see Appendix D, pp. 29-46 in this report).

Based on the available information, the Wilder property was organized economically as a subsistence farm. Price and Price (1978:60) note that in subsistence farming, settlers practiced subsistence agriculture (often with a multi-crop farming/animal herding strategy), with marginal participation in a market system. On the whole, the pattern revealed here is also demonstrated at other farm sites established in the midnineteenth century in the Cypress Creek basin area. Family members appear to have contributed solely to the operation of the farm.

The primary plant resources on these farms included corn and peaches (see Price and Price 1978:75-79 for discussion). Black walnuts were also collected and are represented in the archeological remains at the site.

Faunal remains found within units excavated at the site, which may relate to the Wilder occupation, include hog teeth. The apparent importance of hogs appears consistent with the pattern observed by Price and Price (1978:72) in the Ozark Escarpment area of southeastern Missouri (see also Chapter 4 of this report). They discovered that hogs constituted the bulk of meat consumed on the Widow Harris Cabin site (ca. 1815-1870).

> Swine have traditionally been the stable protein source in the South (Hilliard 1969). In the Ozarks of Missouri and Arkansas, hogs were allowed to range freely and feed upon the mast and other wild resources. Open range laws required that all hogs had to bear the owner's mark on the ears and these official marks were registered in the county courthouses. Strict laws were enforced against the altering of marks on animals. Open range prevailed in the area until ca. 1950.

Chicken bones have also been recovered, which is again consistent with the pattern observed in southeast Missouri. No remains of cow have been observed at the Wilder site, although they were perhaps butchered close to the smokehouse and the bones discarded somewhere in that part

of the site. Many of the hog teeth were recovered under the structure. It appears to be common that when dogs are allowed to scavenge bones, major destruction occurs and teeth are often the only significant remains (F. Limp, personal communication).

Numerous burned bones from feral species have been recovered from units within the central refuse area (areas under the house). These include rabbit and squirrel. Bones recovered are generally those of the pelvis and legs, although the mandible and ribs (probably of a squirrel) were also found. Many of these were intensely burned; perhaps they were discarded in the fireplace.

Numerous domestic artifacts were deposited under the structure and around the adjacent refuse area. These are organized below by various functional classes.

Food Preparation/Storage

- Stoneware (crockery)
- Ceramics (Transferware, flow blue, white undecorated)
- Glass Bottles (probably medicine)
- Canning Jars/Liners

Clothing and Miscellaneous

- Buttons (metal, glass)
- Safety pin

Shelter Construction

- Nails (cut and wire)
- Flat Glass (windows)

Housewares

- Lamp Chimney glass

Although the archeological operations were directed toward testing instead of full-scale excavation, it is apparent that most of the artifacts associated with the structure during the Wilder occupation are domestic objects involving primarily food preparation and storage. This is consistent with the observations made by South (1977:220).

> Archaeological surveys of late-nineteenth-century sites are characterized by a high percentage of kitchen-related artifacts compared with the Carolina Pattern indicator of domestic occupation found to be in effect for eighteenth- and early-nineteenth century sites. This may be a function of survey conditions, i.e., due to the high visibility of ceramics, or it may be that ironstone-whiteware is the primary indicator of this dispersed settlement pattern because of its availability even to those in a low socioeconomic household; I suspect that this phenomenon will be seen as a 'historic site survey pattern' index reflecting the dispersed settlement pattern and the socioeconomic level of sharecroppers and tenants during the late nineteenth century and through the first half of the twentieth century.

AD-A124 271 THE CONWAY WATER SUPPLY: RESULTS OF ARCHEOLOGICAL SURVEY AND TESTING AND A..(U) ARKANSAS ARCHEOLOGICAL SURVEY FAYETTEVILLE L G SANTEFORD ET AL. NOV 80 RR-20

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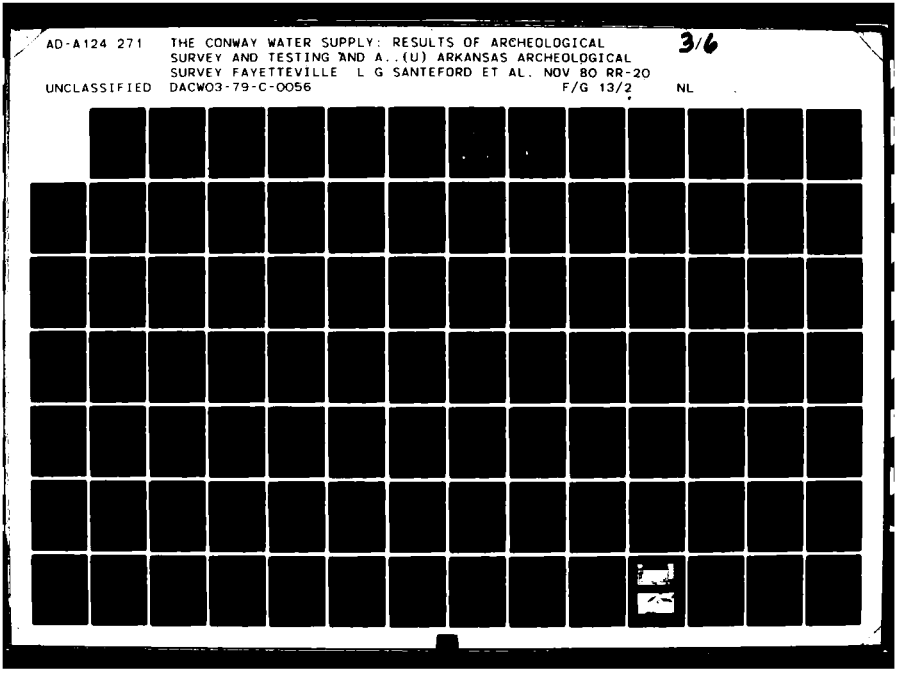
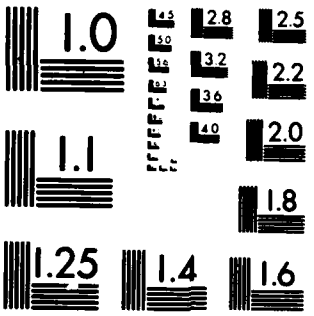




MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

It can be proposed that the Wilder farm was fairly isolated from markets during at least the early periods of occupation, and apparently until after circa 1875-1880. The primary activity in the 1850s was along the Arkansas River, approximately 18 miles (28.9 km) south of the site. Stagecoaches were operating in the county by the 1850s, but these did not go through the Cypress Creek basin. It has been pointed out that the only road through the area in 1836, and perhaps until much later, was one from Batesville, Arkansas southwest by way of Clinton to Lewisburg on the Arkansas River. Lewisburg was the major trade center during the period of occupation, but the trip would have been slow and difficult over the poor roads. The isolation of the Wilder family appears reflected in the sparsity of artifacts from the pre-1880 period.

Goodspeed (1960:28-29) provides information on significant crops during the 1890s in Conway County.

> The average production of the bottom lands is from one bale to one and a half acre of cotton, and forty-five to seventy bushels of corn, while on the uplands the yield is from one-half to three-quarters of a bale per acre, and twenty-five to forty bushels of corn. . . .
>
> Though the entire State of Arkansas is recognized as a fruit-growing district, no part of it is superior in its adaptation to general fruit culture to Conway County. Apples, pears, peaches and plums thrive splendidly where they have been introduced, and certain it is that this industry must become an important source of income, when a proper appreciation of its value and profit as a market crop is realized. . . .
>
> Vegetables of all kinds grow with but slight cultivation. . . .

James A. Wilder lost the farm in 1898-1900 through indebtedness. From that time to approximately 1909, the farm was occupied by tenants. In 1909, the 205 acres were purchased by Mack C. and Frank McKindra Sr. Frank and Ellen McKindra were freedmen who brought their family from Tennessee to Arkansas in 1887. Jones (1935:3) has reported that a great number of Black families came to Arkansas from Tennessee in the late nineteenth century.

For example, in Shelby County, Tennessee, near Colliersville, was the Philadelphia Baptist Church. A land agent came through the community and ". . . pictured Arkansas as a fertile paradise where land was cheap and natural resources bountiful" (Jones 1935:3). A few members of the church moved to Arkansas, settled in Menifee, and induced other families to come. One immigrant from Tennessee explained his reasons for coming to Menifee.

> A Mississippi agent named Copper came through our country and opened up this immigration. He was a blind man and I heard him talk a lot before I came here. I was in Shelby County, 18 miles from Memphis. I made a trip to Arkansas, then I came

> in and migrated. Land was very high in Shelby County and I couldn't see how I was going to buy over there. I bought my first land here from the railroad. Land was then five dollars an acre, with ten years to pay for it (Jones 1935:3).

The McKindra family came to Arkansas from Shelby County, Tennessee (Freeman McKindra, personal communication). Frank McKindra was noted to be a prosperous farmer, and Mack McKindra was his eldest surviving child.

The McKindras settled on the land south of the Wilder Log House site. It is locally believed that McKindra purchased the property in 1888 (W. S. Alexander, personal communication; Barry Marshall, personal communication), but it appears that he probably rented the land at that time with intentions to buy. Miles Stell mortgaged the land in 1890 and 1891, and the latter was not paid until 1895. By 1900 McKindra did own the land. With this property, and the Wilder property purchased at approximately the same time, the McKindra family owned over 240 acres in the area. According to various sources, Mack McKindra increased the family prosperity, raising mules and owning land worked by five sharecroppers.

While the other farms in the area were settled and occupied continuously by Euro-Americans practicing subsistence farming and marginal cash crop farming, it appears that the McKindras migrated into the area at a late date and instituted a farming system diverse from that commonly observed in the Cypress Creek basin area.

Price and Price (1978:60) point out that there were three systems of Euro-American frontier subsistence practiced in the early nineteenth century. They are the hunter-squatter, subsistence farmer, and the planter or plantation system. The first two systems are self-explanatory. The planter system, present in the pre Civil War period, was ". . . based on intensive commercial agriculture centering on production of usually one cash crop, active participation in a widespread market economy, and the exploitation of a non-free labor force" (1978:60).

Within the memory of Black farmers near Menifee, Arkansas, close to the project area, two types of farming had been practiced, one of an essentially subsistence nature, the other focusing more on "cash" crops. Jones (1935) described this change from the farming practices which occurred in the early twentieth century.

> The difference between them was aptly stated by _____: 'My father farmed to make a home and I farmed to make money.' The older subsistence economy was based on a diversified type of agriculture. It was supplanted by cotton farming in which the high prices paid for cotton made the transition appear advantageous (Jones 1935:19).

While many of the Euro-American farmers in the Cypress Creek basin area also turned to increased production of cotton as a cash crop, none of them appear to have established a system like that established by the

McKindra family. Merle Prunty (1955), a geographer, prepared a paper on the renaissance of the southern plantation, which provides a basis for examining the socioeconomic system established by the McKindra family in terms of broader developmental trends. While the McKindra farm cannot be defined as plantation, based on six elements outlined by Prunty (1955:460), it reveals many characteristics shared by the "fragmented plantation" described by him.

Prunty (1955:466) states that there are two subtypes or variations, dominant in the "fragmented plantation" which appeared at the close of the Reconstruction Era and became widespread thereafter. These were the cropper, and the tenant-renter. The cropper, or sharecropper, is the more common form. In this system, the owner supplies everything used in production (including fertilizers). Hoe-and-mule cultivation were nearly universal. The mules were owned by the manager/owner. These were also often centrally housed at the barn for maintenance during the winter only. During the cultivating season they were individually housed on the cropper subunits (Prunty 1955:469). While Prunty includes the cropper and tenant-renter occupance as types of plantations, the socioeconomic characteristics reflect a form different from the traditional plantation. In order to reveal that the McKindras' introduction of the sharecropper system in the Cypress Creek basin area is consistent with Prunty's "fragmented plantation," the terminology has been employed, but awareness should be maintained of the variations in socioeconomics, settlement patterns, and other aspects.

In the tenant-renter system, the renter paid a specified amount of produce, or a stipulated sum, to the owner annually. Settlement dispersal tends to be great, but there are fewer house sites. Subunits tend to be larger. Central barns and sheds disappear, since the work stock (mules) and implements belong to the tenant, not the owner. A small barn and storage shed appear on each tenant subunit. Fencing also tends to separate the units.

Prunty (1955:461) stresses that the landholding of any "plantation" must be large enough to distinguish it from the larger "family" farm. Thus, a "plantation" is found only on landholdings of more than 260 acres, with an average size of 700-800 acres (Prunty 1955:461). The McKindra family definitely owned 240 acres, and probably more land. This made it larger than the average family farm (100-200 acres), but not as large as most plantations.

Prunty (1955:461-462) further points out that there are distinct divisions between labor and management functions in the "plantation" system. Management is customarily in the hands of the owner. There must be sufficient productive acreage to require a labor force of at least five families. The McKindra family does appear unique in contrast to most families residing in the area in that five sharecropper families resided in houses located on their lands. At least two, and perhaps more, of these structures were log houses constructed and initially occupied by

Euro-American settlers in the area [the Wilder Log House (3CN92) and the Alberta Alexander House site (3CN119)].

Prunty (1955:460) stressed that on the ante bellum plantation there was a high degree of centralized control of cultivating power. The residence of the management was central in relation to pasture, cropland and labor quarters. With the breakdown of the earlier system following the war, the compact plantation village became fragmented, so that settlement was dispersed over the cropland at ". . . a ratio of about one housesite to each 30 or 40 acres" (Jones 1935:469). Informant interviews indicate that there were five sharecroppers on the McKindra land. They occupied houses dispersed over the property. If we include the McKindra House site in with the number of houses occupied by sharecroppers, and employ the approximate 240 acres for total acreage, we derive an average of 40 acres per house site. Part of the land is traditionally left in woods, and fields are generally small. Evidence of barbed wire at the sites suggests that fields were fenced. Prunty (1955:469) reports that fences generally followed irregular courses along the margins of woods.

Examination of these socioeconomic patterns based on comparison of written and oral information indicates that there was more complexity in the Cypress Creek basin area than would be observed through examination of written documentation and local history alone. While information could be derived on the socioeconomic patterns of white farms in the area, there is no written information available on variants to the pattern. The "fragmented plantation" system instituted by the McKindra family was such a variant. In addition since Black history has not been recorded to the degree which white history in the area has, much of the information secured through use of oral tradition would have been lost if it was not included in this study.

Work in the area also provided archeologists with the opportunity to view some aspects of the finer internal socioeconomic patterns within the "fragmented plantation." In the next subsection, attention is given to examination of archeological materials from the McKindra site and the Wilder site, occupied for a time by one of the sharecropper families.

SOCIOECONOMIC DIFFERENTIATION: THE MCKINDRA AND WILDER SITES

Evidence has been presented which indicates that the McKindra family had developed a "fragmented plantation" production system which involved the efforts of five sharecropper families. The economic differentiation between the McKindras and their "croppers" is examined through the evidence of the artifactual and structural remains at the McKindra site and one of the sharecropper's houses, the Wilder Log House site.

According to various informants in the Cypress Creek basin, the Wilder Log House was occupied by a sharecropper family named Griggs

working for the McKindras. We presently have no information on Mr. Griggs, but do know that Mrs. Griggs moved to Arkansas in 1889. She was a freedman, born in South Carolina in 1854. Wattie Griggs, her son, was also born in South Carolina. He was born in 1886 and was brought to Arkansas by the family. Perhaps as early as 1909 they moved into the Wilder Log House. When Wattie Griggs married, he and his wife moved into a house constructed for them by Mack McKindra, Sr. This house was located southeast of the Wilder Log House. They occupied that structure until the 1920s. At that time, Wattie Griggs's mother moved to Oklahoma, and he and his wife moved into the Wilder house. They occupied the house until 1944. The room and furniture arrangement is shown in Figure 41. According to W. S. Alexander, as many as seven people occupied the house at one point. These included Wattie Griggs, his wife, his mother, three of Wattie's sister's sons, and his wife's nephew. The boys reportedly slept in the bedroom and the adults slept in the main room of the house (Figure 41). Informants state that the structure was not modified during the Griggs occupation.

Since archeological testing had been conducted at both the Wilder Log House site (occupied by the sharecropper family) and the McKindra House site (occupied by the manager/owner of the plantation), a summary of the results of the archeological investigation as well as information collected from local informants (oral tradition) is presented in three subsections below. These focus on (1) differences and similarities in house construction and organization; (2) differences and similarities in artifacts; and (3) evidence of subsistence.

1. Differences and similarities in house construction and organization: Jones (1935:8) observes that "house raisings" followed the task of clearing the land among Black families in the nineteenth century in Conway County, Arkansas.

> Houses were constructed of logs and with the neighbors' assistance a house was quickly erected. Depending on the size of the family, the new structure was either a "single" house or a "double" house. The single house contained two rooms, which consisted of a kitchen and sleeping quarters. The double house was in the form of two single houses with an open hall-way between. The two additional rooms were used as additional sleeping quarters.

Attention has been given in another subsection of this chapter to log houses in the Cypress Creek basin and how they conform to log houses traditionally constructed in the East. The Wilder Log House conforms to this pattern, although it has been stressed that the frame addition to the house was unique. A number of local informants described the open hallway between the main room and the rooms in the addition. The main room of the McKindra house is still standing (Appendix D, p. 5), although this single log pen will be destroyed when the reservoir is constructed. W. S. Alexander observed that there were two additional rooms on the rear of the house (Figures 42 and 43). He also defined the room arrangement

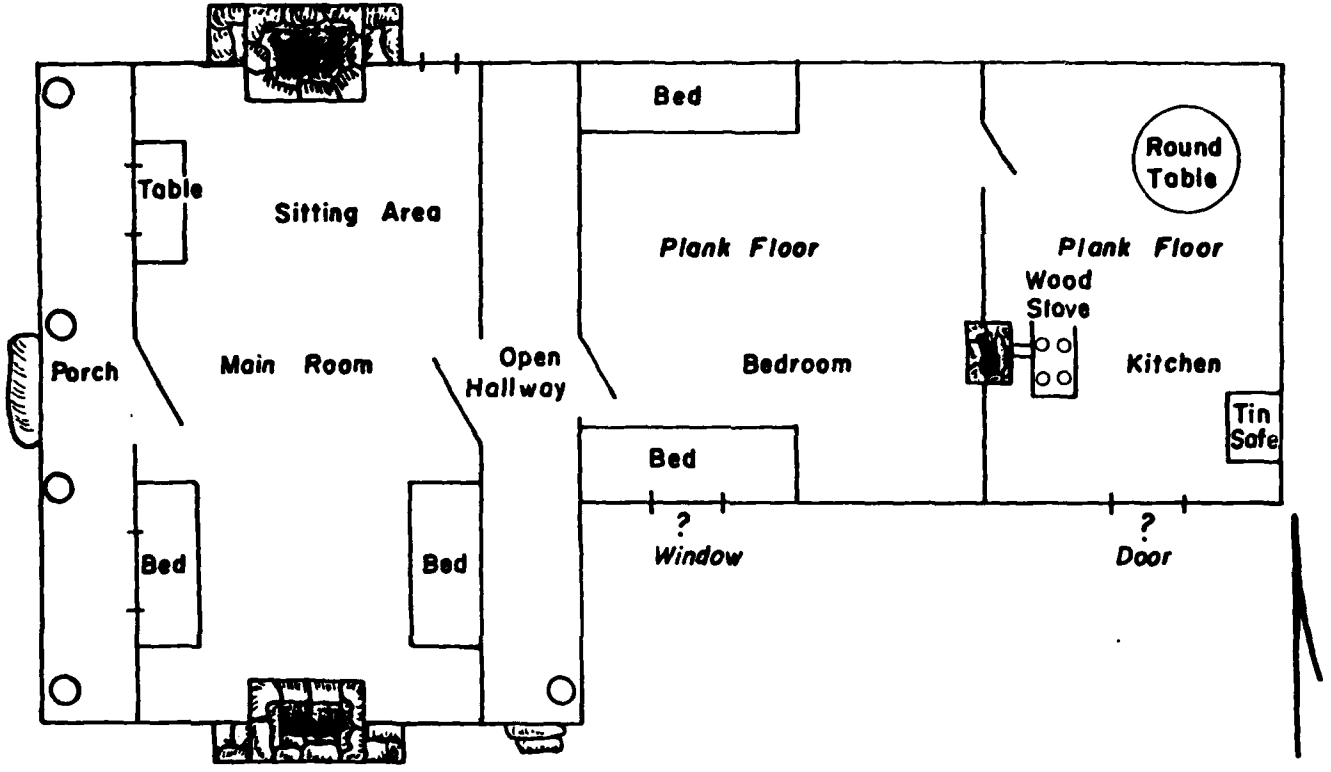
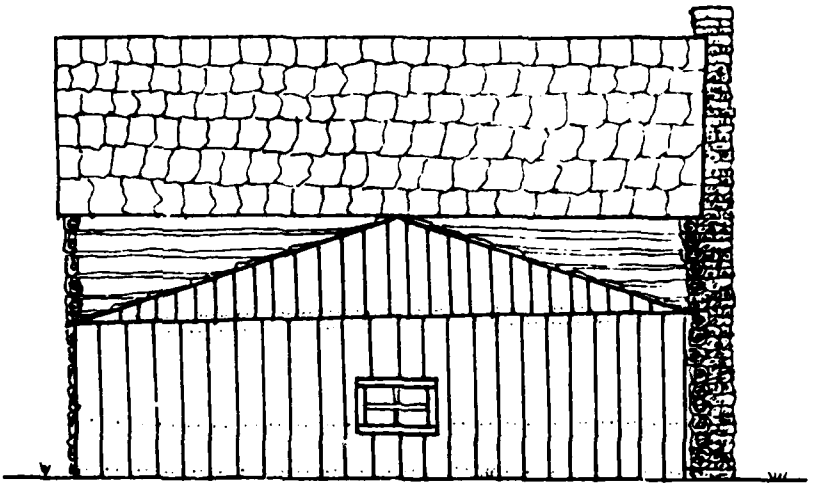


Figure 41. Floor plan of the Wilder Log House, 3CN92, during the Wattie Griggs occupation, based on the descriptions of Veatrice Henson. Not to scale.



a

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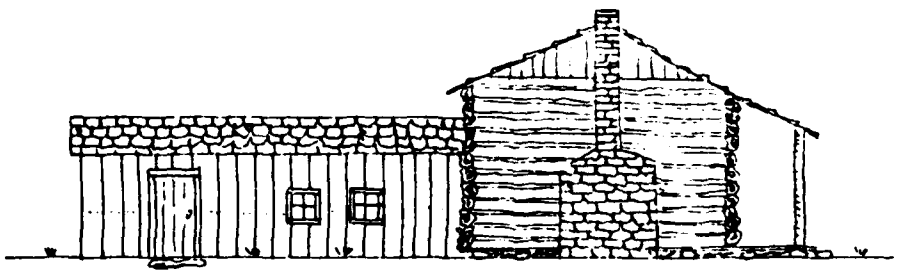
Figure 42. The McKindra House, 3CN47, circa 1888 to 1900. (a) north elevation, (b) south elevation. Not to scale.



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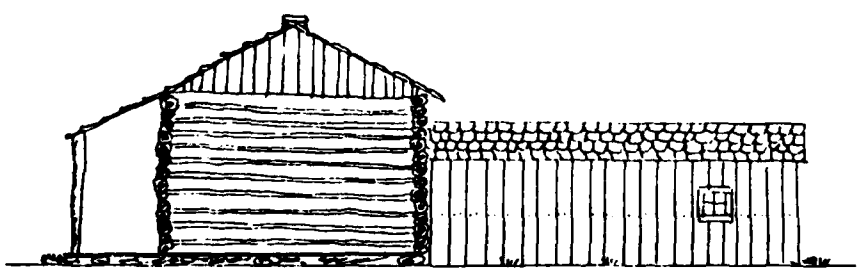

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Figure 43. The McKindra House, 3CN47, circa 1888 to circa 1900. (a) west elevation, (b) east elevation. Not to scale.

of the house (Figure 44). This house appeared no different in these respects to other log houses constructed in the project area, even though this house was apparently built 30-40 years after the other log houses. The square notching is different, but this pattern of corner-timbering is not unique when attention is given to types of corner-timbering found in the South.

Mr. Alexander observed that in the early 1900s, McKindra added three rooms to the east side of the structure (Figures 45 and 46). The internal arrangement of the house at that stage is shown in Figure 47. Whereas the adults traditionally slept in the main room of the house and the boys slept in a loft above the main room (another common practice to be seen in the literature), with the addition of the rooms to the east, the function of rooms changed. The main room became a sitting room and the living room in the addition functioned as a parlor. Development of log houses in the Cypress Creek basin does not appear to conform to this pattern. None of the other informants indicate that other log houses were enlarged once the frame addition was constructed on the rear of the structure.

Another feature which appears to be unique within the area is the addition of weatherboarding on the exterior of the structure. It was pointed out earlier that when square notching is employed, it was generally assumed that the structure would be eventually covered (Bealer and Ellis 1978:41-42). A number of persons in the project area have stressed that the McKindras were affluent. Jordan (1978:46) observes that horizontal siding was associated with status.

> Most commonly, horizontal or vertical siding forms the exterior covering (of log houses). Vertical siding, of the board-and-batten type, is confined to log houses of the lower socioeconomic groups, though an even greater stigma was attached to unadorned exterior walls with exposed logs. Horizontal siding is more expensive than board-and-batten, and it early became a symbol of economic success. . . .
>
> Status seeking was certainly a powerful stimulus for applying milled siding, but another consideration was protection for the log wall. Exposed to weathering, even the best seasoned oak logs will decay.

In addition, while there appears to have been no attempt made to modify the windows in most of the log houses in the Cypress Creek area, the front windows in the McKindra House were large and modern compared to those found in the "typical" log house. M. Alan Overstreet (personal communication) indicates that the glass in these windows was probably made by the cylinder method. He also observes that the possession of windows this size would also indicate status. Overstreet (1979:11-16) summarizes the information available on glass manufacturers in the late nineteenth century. It appears that most of the glass was manufactured in Pennsylvania. Until the establishment of the railroad into central

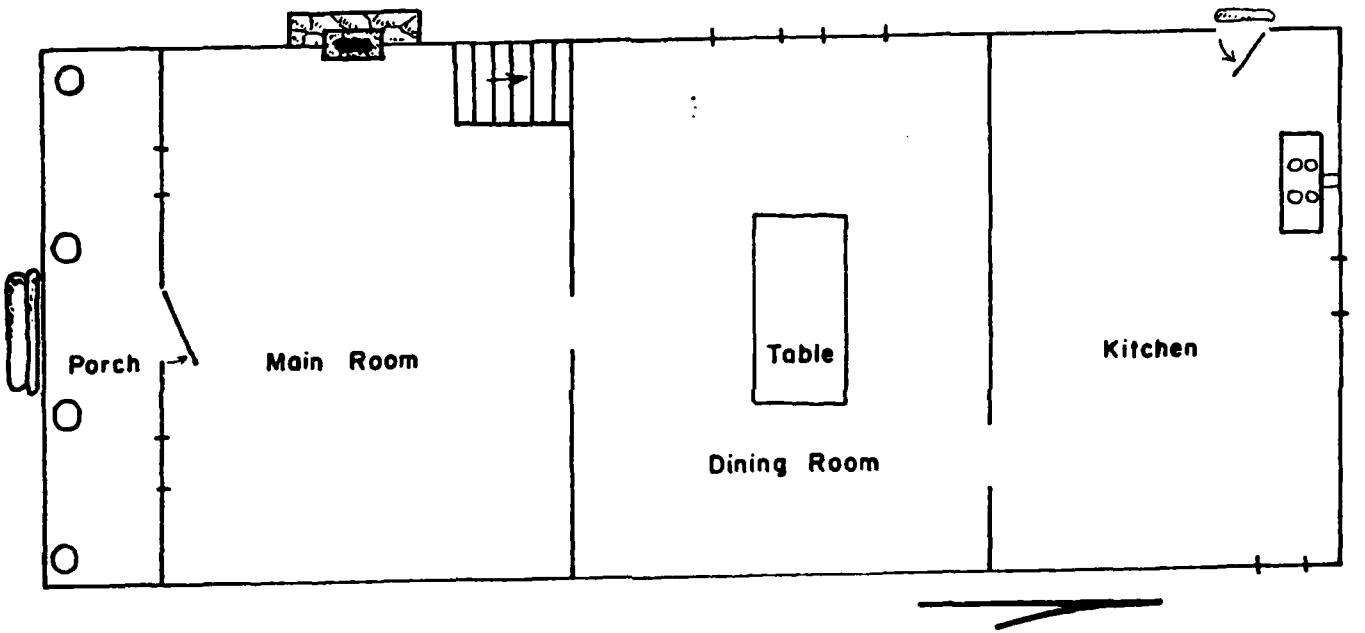


Figure 44. Room arrangement of the McKindra House, 3CN47, circa 1888 to circa 1900. Not to scale.

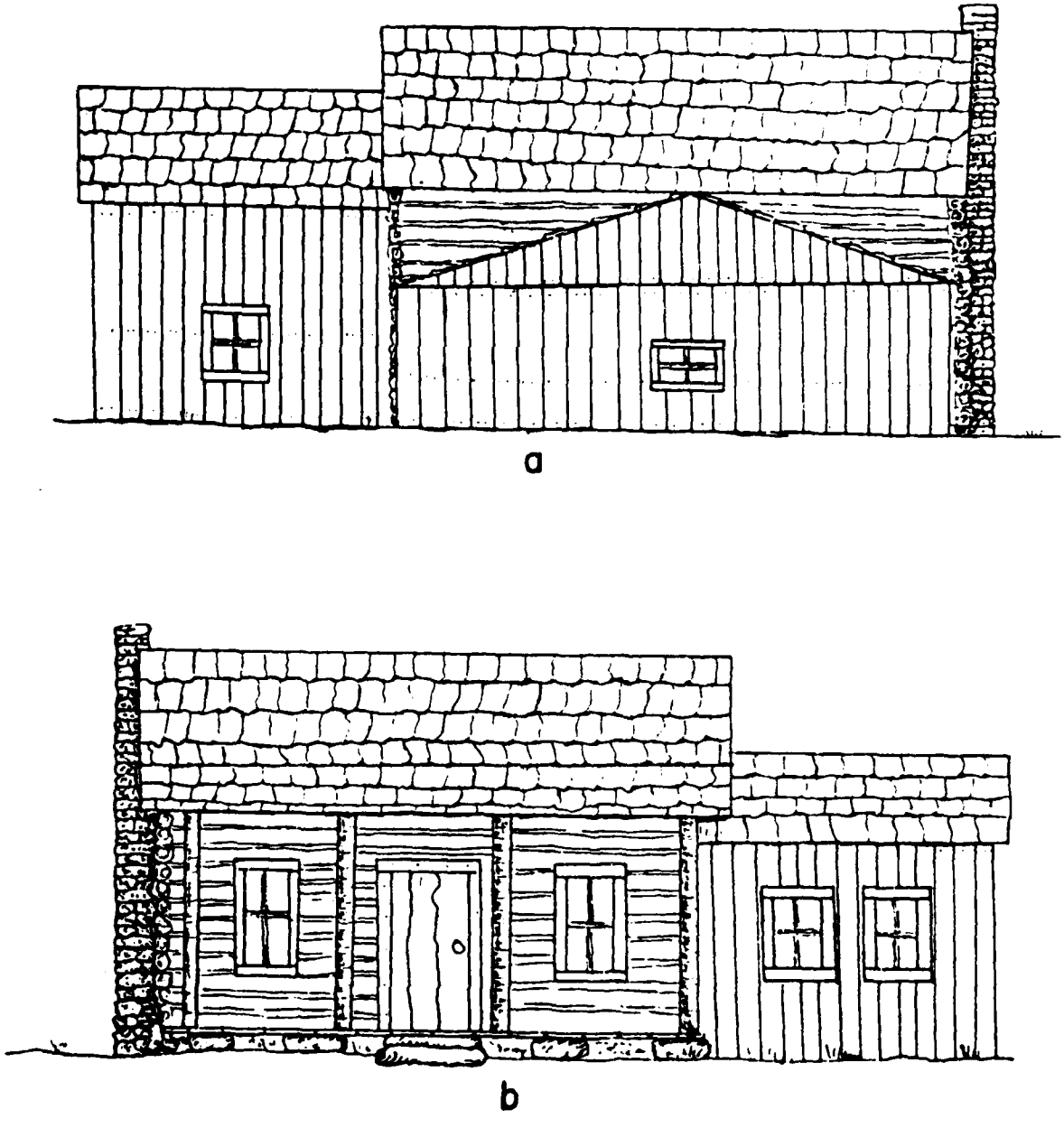
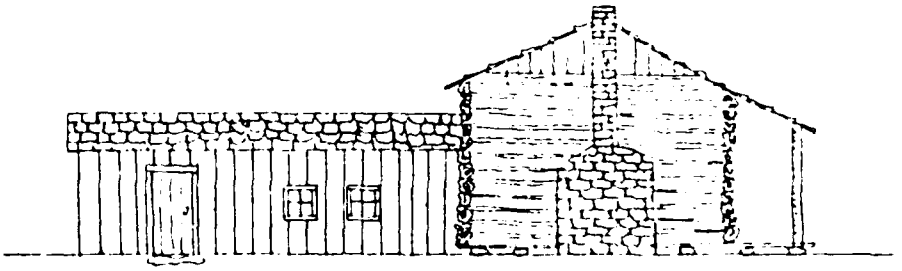


Figure 45. The McKindra House, 3CN47, circa 1900 to 1940. (a) north elevation, (b) south elevation. Not to scale.



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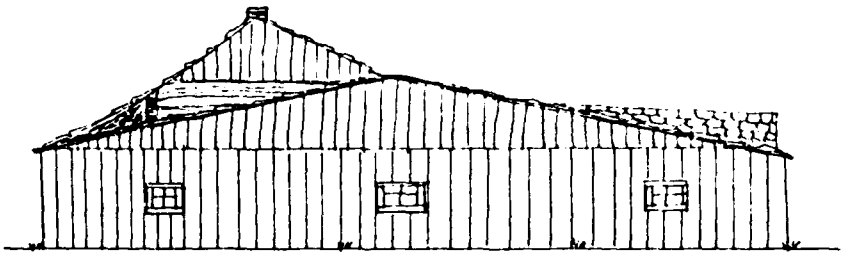

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Figure 46. The McKindra House, 3CN47, circa 1900 to 1940. (a) west elevation, (b) east elevation. Not to scale.

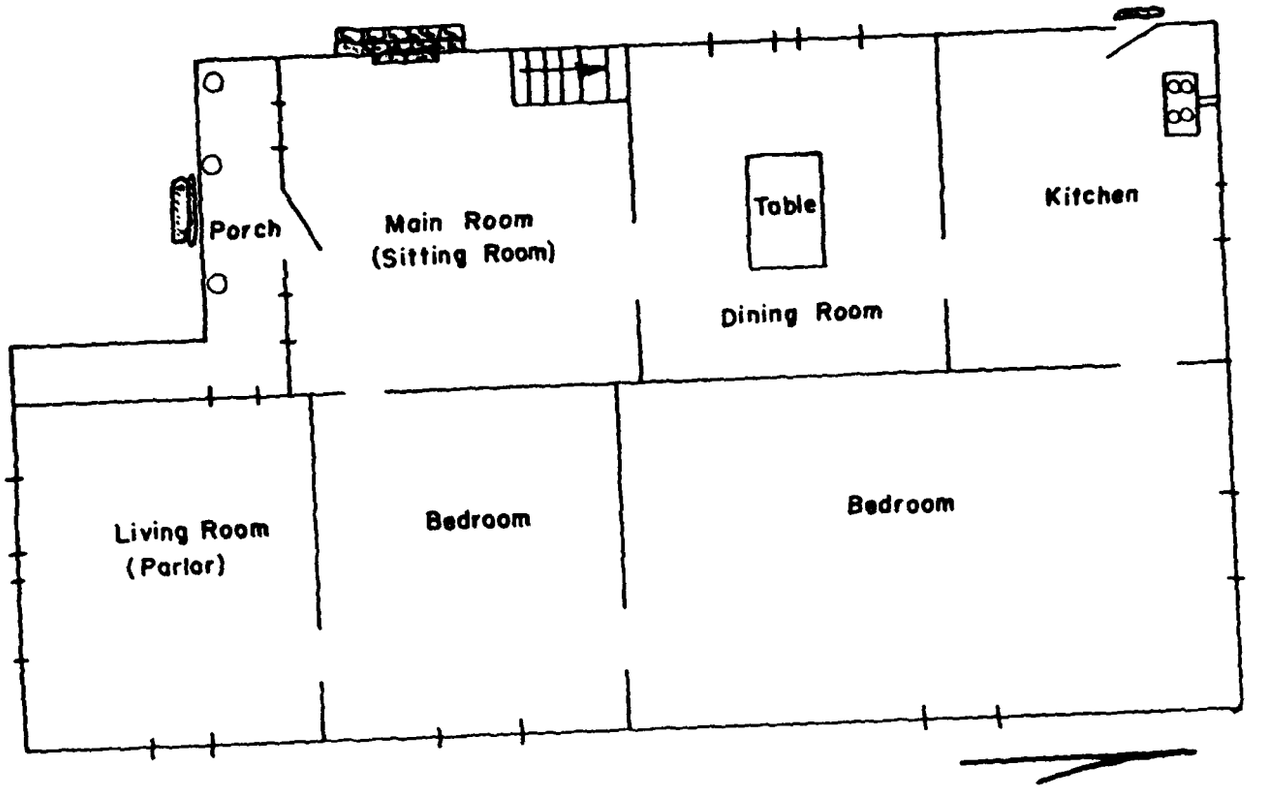

Figure 47. Room arrangement of the McKindra House, 3CN47, circa 1900 to 1940. Not to scale.

Arkansas in the 1870s, it would have been prohibitive to receive glass of any large sizes in the area. Presence of this glass suggests not only the affluence of the McKindra family, but also the new opportunities for deriving resources from new markets with the railroad and commercial growth of Morrilton.

Interior finish also varied between the McKindra house and the Wilder house. According to Mrs. Veatrice Henson (personal communication), a relative of the Griggs family, the interior of the Wilder Log House was finished in brown and gray heavy-grade construction paper tacked to the walls. This effectively hid the logs and served to stop drafts. The interior of the McKindra house was paneled in narrow boards or wainscoting. Fragments of wallpaper have also been observed at the site. The variations in wall treatment again seem to mark the status differences between the sharecropper and the owner/manager. Jordan (1978:46, 48) states:

> Interior walls are often left uncovered, but even the lower socioeconomic groups frequently affixed a wallpaper consisting of pages torn from mail-order catalogues or newspapers. Wainscoting or wall boards grace the finer log houses, and a light blue paint was often applied to the ceiling.

Local informants also stated that electricity was never installed in the Wilder house. Archeologically the only indication of lighting devices were fragments of lamp chimney glass. Other log house sites also revealed lamp chimney glass. While fragments of lamp chimney were found at the McKindra house, there is also evidence that electricity was installed at some point. This includes light bulb fragments, a fuse, a light pull prism, and a porcelain insulating disc through which the light wire hung from the ceiling. Only one other log house in the area has some evidence of electrification. Small fragments of light bulb were recovered at the Bell-Norwood House site (3CN44), but there was no other evidence of electricity. Attention should be given to the types of lighting, introduction of electricity, etc., in subsequent studies of development in the Cypress Creek basin area.

2. Differences and similarities in artifact assemblages: According to Jones (1935:5), Black families that came to Arkansas were generally forced to leave most of their possessions behind. This was due to scarcity of money and poorly developed transportation, among other factors. Clothing and bedding were the general items that immigrants brought with them. Therefore, it may be assumed that the assemblages associated with the structures consist primarily of objects that families secured after having arrived in Arkansas. Based on the archeology conducted at the Wilder site, occupied by the Griggs family, artifacts can be shown to fall in five main categories. These are:

Food Collection/Preparation/Storage	Clothing and Miscellaneous
Glass jars	Work clothes button (metal)
Ceramics (white undecorated; possible transferware)	Coat button (plastic)
	Shoe polish

Food Collection/Preparation Storage (continued)
Stoneware vessels (crockery)
Canning jars/liners
Drinking glasses
Knife handle

Housewares
Lamp chimney
Chamber pot
Wood stove parts
Scissor blade

Farm tools/equipment
Saw parts
Mule harness buckles
Hoe thimble

Artifacts collected by archeologists from historic log house sites occupied by Euro-American farmers in the area reveal essentially the same sorts of materials. Previous to the construction of the railroad and commercial development of Morrilton, most families in the Cypress Creek basin appear to have little in the way of material goods and contact with towns to the south was more limited. By the time that the Griggs family came into the area, however, even the sharecropper was able to secure various domestic goods transported from outside source areas.

In contrast with the patterns stated above, archeological materials found at the McKindra house are more varied and appear of better quality. One class had to be added to the list which was not included on those lists presented previously in this section. This is titled Recreation, and includes toys and games. There was one ceramic doll's foot recovered in the unit along the old road and a glass marble in a unit east of the porch at the Stell Lodging House site (3CN58). These appear to be the only toys at other sites. There appear to be no objects from the Wilder house which would fit into this category. It was believed that testing may have been biased against such functional activity areas, but a statement by Jones (1935:33) appears to clarify the situation.

> The home life and organization of activities in different families present wide variations and the foregoing description does not fit a large part of the population. . . . Home activities remain very largely work. Only in the more sophisticated families do we find the home supplying recreation. Small children have time for ring games, wrestling, running and unorganized play, but the older children have very little. Older children play checkers and dominoes in sophisticated families, but there are no dances or parties or other amusements of that type.

In the classes of artifacts that follow, I have included one called Shelter Construction. Since the Griggs family moved into a structure built earlier, they were apparently not involved in such activities. They may have been involved in minor repair over time, but this has not been substantiated. The McKindra family, on the other hand, was possibly involved in continuing construction of their house and materials of construction (e.g., glass, nails, etc.) are necessarily included.

Food Collection/Preparation/Storage
- Canning jars/liners
- Fish hooks
- Spoons and forks
- Drinking glasses/goblets
- Ceramics (White undecorated; transferware)
- Stoneware Vessels (crockery)
- Jelly jars
- Glass jars from purchased foods

Shelter Construction
- Flat glass (windows?)
- Nails (wire and cut)
- Hinges
- Screws

Recreation
- Checkers
- Marbles
- Dolls/doll bottle
- Toy shovel
- Bicycle parts

Writing Devices
- Ink pen parts

Clothing/Grooming Devices
- Childrens' shoes (buckles)
- Adults shoes (not collected)
- Nail polish remover
- Shoe polish
- Buttons (metal, plastic, shell)
- Beads (plastic)
- Comb
- Overall suspender hooks

Housewares
- Lamp chimney
- Electric light components
- Graphite battery cores

Tools
- Screwdriver
- Hoe blade
- Pocket knife
- Wrench

3. Evidence of subsistence: According to Jones (1935:28), the usual breakfast consisted of biscuits, salt pork, molasses with butter, and rice. Dinner usually included greens, corn bread and something sweet (i.e., fried apple pie, egg custard, etc.) (Jones 1935:29). Supper probably consisted of similar foods. Chickens were typically raised on farms, and most likely one was eaten occasionally. Based on the materials recovered in archeological work at the sites, we have a rather incomplete picture of subsistence. It would appear that the Griggs exploited the feral animal species in the area. Thus, rabbits and squirrels were hunted. This pattern repeats that observed of the Wilder family. Hogs were probably also butchered and eaten. Unfortunately very little faunal material was recovered from the McKindra site. Part of one possible cow rib and the leg bone of a chicken were found. There was no evidence of the exploitation of feral species. In terms of plant resources, peach pits and a walnut shell were found at the site. It appears, based on recovery of archeological remains, that the same resources were exploited by the Griggs family, although exploitation of feral species and wild plant resources was more intense.

CONCLUSIONS

In many instances, archeological sites are merely recorded and select collections of artifacts are made at these sites. In the Cypress Creek basin, it became apparent that unique information could be collected on house styles, room arrangements, settlement patterns, socioeconomic patterns and other aspects of farm life in central Arkansas. Therefore, efforts were made to have local informants describe log houses so that a record could be preserved for most of these houses which are completely gone. As this information was collected, it became apparent that there were relationships between persons occupying houses that could not be perceived from the archeological record. One pattern revealed that most of the Euro-American landowners in the area continued to live on subsistence-based farms, although increased production was devoted to cash crops, particularly cotton. At the same time, the McKindras, a Black family that came to Arkansas in the late nineteenth century, was able to purchase land and was able to support five sharecroppers when they established a small plantation in the Cypress Creek basin. The sharecropper families generally lived in log houses once occupied by Euro-American settlers in the area and the owner/manager built a house similar to the traditional pattern to be observed in the area. But, as he prospered, he apparently made substantial changes in the house which reflected his increasing status. In addition, the assemblage of cultural materials preserved at the site would reflect more activities associated with a more affluent life style. The assemblages from the Euro-American subsistence-based farm sites and that occupied by the sharecropper appear much more similar in regard to access to various materials. Morgan (1973:11-12) observes that there were few opportunities for antagonisms to emerge between the blacks and whites in the area. Since the clearing of land was so difficult, the groups often joined together in house raisings. Religious differences and life styles or even political preferences did not serve to effectively delineate the populations. The majority of mountain people, black and white, were poor. Therefore, farming technology of the hill black people and mountain whites did not differ. As Morgan (1973:84) continues:

> Blacks, bond and free, shared the technology of the colonial and western expansion period. They had similar versions of the arts and crafts of the whites.

This is true, but at the same time archeological testing has demonstrated that variations did exist between blacks and whites in the Cypress Creek basin of central Arkansas in the late nineteenth and early twentieth centuries. At least one black family was able to marshal the funds and purchase the land to develop a plantation in central Arkansas.

Chapter 8

Summary, Conclusions and Recommendations

by

William A. Martin

and

Lawrence Gene Santeford

A summary of the problem domains investigated during the Conway Water Supply archeological investigations, the methods of data collection and analysis, and the results of the investigations are presented in the first section of this chapter. The conclusions drawn from the results of the analysis are presented next and finally the recommendations for the mitigation of adverse impacts to four sites are presented.

SUMMARY

Problem Domains

The problem domains of scientific interest addressed during the Conway project included: for prehistoric sites, (1) settlement and subsistence patterns, (2) cultural/chronological affiliation, (3) functional variability among sites, (4) lithic resource procurement; for historic sites, (1) log house construction techniques, (2) chronological affiliation, (3) functional and discard areas within sites, (4) economic and sociocultural patterns.

Methods of Data Collection

Pedestrian survey and shovel test survey were used to discover sites within the proposed impact areas. In addition, interviews with local residents proved to be an invaluable technique for location of sites, for information about artifacts collected from local sites by hobbyists, and for knowledge about the people and structures of historic interest to the area.

The testing methods involved further shovel tests and 1 m^2 or 1 m by 2 m excavation units dug at arbitrary 10 cm levels when stratigraphy was not evident. When natural strata were encountered, units were excavated accordingly.

Artifacts were collected during the survey and testing phases. Environmental data was collected by taking measurements from U.S. Geological Survey topographic maps and Soil Conservation Service soils maps in conjunction with field observations.

Methods of Data Analysis

Laboratory analysis of the artifacts was performed primarily at the Arkansas Archeological laboratory in Fayetteville. Lithic and ceramic artifacts were analyzed using recognized typologies to assess cultural chronological affiliation. Lithics were also analyzed to assess site function and to determine the kinds of raw materials that were used. Floral and faunal analysis identified species used by prehistoric groups for study of subsistence patterns. Historic artifacts were examined to determine dates of site occupation and to address problems related to socioeconomic variables.

Dicarb Radioisotope Company in Ohio performed the radiocarbon assay of organic materials recovered from test excavations at two sites. Site distribution was studied in relation to environmental variables by comparing the distribution of observed sites to a distribution of generated random points for each variable measured. This information was used to assess settlement patterns.

Results of the Investigations

During the course of the 1978 and 1979 archeological surveys, 82 sites, including 53 from 1979, 26 from 1978, and three found just outside the project area boundaries, were recorded. Test excavations were conducted on 21 of these sites. Four of these sites were considered potentially eligible for nomination to the National Register of Historic Sites. The remaining sites provided valuable information but were either disturbed to such a degree that they lacked integrity, or they exhibited little potential for more data recovery.

CONCLUSIONS

Prehistoric Site Investigations

Several conclusions were derived from the analysis of the prehistoric data which have been discussed in detail in Chapter 6.

1. The most important variables for the prediction of prehistoric site location in the Cypress Creek basin of the central Arkansas River Valley region may be topography and elevation of the site above permanent streams. Prehistoric sites clustered along the terrace edge at elevations of 10 to 30 feet above permanent streams within the project area. These variables were apparently important factors in the decisionmaking process of selecting a site location, however other factors may have been important. Sites occurred close to permanent water on well drained soils with gentle slopes. This phenomenon might be explained by the fact that much of the project area was associated with these same characteristics, making it difficult to assess the degree of importance prehistoric groups attached to these environmental features.

One advantage of assessing prehistoric settlement patterns with respect to examining topography is that many of the criticisms leveled against Propinquity Theory by Sullivan and Schiffer (1977) do not apply. Furthermore, comparing archeological sites to modern environmental variables has been criticized because the environment has changed during various periods of prehistory. This is true of stream patterns and forest cover, which may change at relatively rapid rates, but it is generally not true for topography within the project area since this has changed at a much slower rate. Therefore, the terrace edge present today was probably also present during the first occupation of the Cypress Creek basin some 10,000 years ago. Thus, topography can be related directly to the decision making process of prehistoric groups without assuming that drastic changes may have taken place which make such analysis meaningless.

2. A dichotomous seasonal occupation occurred with some sites on the primary alluvial flat and others along the terrace edge. It was believed that floodplain sites should exhibit summer/fall occupation because floods occur annually in the late winter and spring. Faunal and floral evidence recovered from test excavations at 3CN57 and 3CN117 suggest that a summer/fall occupation did occur. However, additional data must be acquired before any final conclusions can be reached. No evidence which would suggest seasonal occupation has been recovered from sites on the terrace edge.

3. Prehistoric sites and historic sites were distributed differently with respect to environmental variables. Prehistoric sites clustered along the terrace edge and primary alluvial flat, whereas the historic sites clustered along the terrace surface and terrace edge. Historic sites were located near roads which formed networks for transportation and communication. Prehistoric sites were located close to permanent streams which to a degree fulfilled the same function.

4. The Cadron and Cypress Creek basins were occupied during all major cultural/chronological periods from Dalton through Historic. This represents a time span of approximately 10,000 years. It is possible that Paleo-Indian sites existed in the vicinity of the project area, since Paleo-Indian artifacts have been found in other parts of the central

Arkansas River Valley, but none were found during the Conway Water Supply project archeological investigations.

5. Few conclusions can be reached with respect to variability in site function among prehistoric sites. A few base camps and specialized activity sites have been recognized, but most sites have not been classified because they contained too little data to make functional determinations.

6. Lithic artifacts were manufactured primarily from sandstone, Boone chert, Pitkin chert, and novaculite. Crowley's Ridge chert gravels, Fort Payne chert, and orthoquartzite were also used, but to a lesser extent. No firm conclusions were reached concerning the processes behind the selection and procurement of lithic raw material.

Historic Investigations

As discussed in Chapter 7, a number of conclusions were reached concerning historic sites. These conclusions are:

1. The styles of log houses and corner-timbering observed in the Conway project area were consistent with those observed for log houses in the east. The basic eastern techniques of construction were introduced into the Cypress Creek basin by settlers who came from Georgia, Tennessee, Ohio, and other eastern states with strong log house traditions. The ready availability of sandstone blocks, which were used as piers, allowed the settlers to support sill logs to a greater degree than commonly observed in the east. Also, only one house within the project area had a typical eastern shed room addition. Most of the houses had two room frame additions instead.

2. Oral tradion can provide significant information about the character of log houses which are no longer present. Many of the people living within the vicinity of the project area were descendents of the original settlers. In addition, many of the log houses were occupied into the 1940s. Some of the persons interviewed during the course of the fieldwork had lived in or visited these structures. Thus, several people were able to provide important information on the orientation of the houses, window and door patterns, room arrangements, relationships of outbuildings, and other information.

3. Most materials recovered from historic sites dated from the 1880s to the 1940s. Since documentation had shown that many of these houses were first occupied in the 1850s, the paucity of earlier artifacts posed an interesting problem. Apparently, prior to the construction of the Little Rock to Fort Smith railroad and the growth of Morrilton, recycling and repair of goods was more common. After the construction of the railroad in the 1870s, people of the Cypress Creek basin were introduced to a greater quantity and variety of goods. As items became easily replaceable, more broken artifacts were entered into the archeological record.

4. Zelinksy (1953) has observed that the presence of log houses within a given area is a good indicator of cultural isolation. This appears to have been true for the Conway project area in the midnineteenth century. After the development of the railroad, people were able to secure a greater number of goods from outside, though they continued to live in the log houses until the 1940s. Therefore, Zelinksy's observation only applied to the early settlement period.

5. South (1979) has observed that the size of artifacts varies with the part of the site in which they are deposited. In the project area, larger artifacts are more commonly found in the central refuse area (under the structure) than in peripheral refuse areas (outside of the yard) or in the adjacent refuse area (the yard). In the Conway project (according to local informants), house yards were generally cleared of larger refuse when they were swept periodically. However, a representative sample of artifacts of all classes can still be collected from such areas.

6. Most artifacts recovered from house areas are kitchen related artifacts. These include a great number of canning jar fragments and liners, ceramic fragments, and glass bottles which contained food products and medicine.

7. During the late nineteenth and early twentieth centuries, two types of socioeconomic patterns were operative in the Cypress Creek basin. Most of the Euro-American farmers, descended from the early settlers, retained the practice of subsistence farming with some emphasis on cash crops. In contrast, the McKindra framily, freedmen who migrated into the area from Tennessee in the last of the nineteenth century, were able to purchase land and instituted a "fragmented plantation system" with five black sharecroppers residing in log houses formerly occupied by Euro-American settlers.

Assessment of National Register Eligibility

Of the 79 sites which will be impacted by the construction and operation of the Conway Water Supply project, four were eligible for nomination to the National Register of Historic Places, in the opinion of the Arkansas Archeological Survey. Documentation supporting this opinion was submitted to the U.S. Army Corps of Engineers on December 20, 1979. The State Historic Preservation Office and Keeper of the National Register have concurred with this evaluation (letter dated January 7, 1980 from Carol Shull, Keeper of the Register to Colonel Dale K. Randel, Corps of Engineers, Little Rock).

The specific criteria used to evaluate the project sites leading to the eligibility determination was structured using an explicit framework involving the consideration of the sites within the project's and the region's research domains, site integrity, representativeness, as well as a number of site specific criteria. The characteristics of this evaluation follow the structures proposed by Raab and Klinger (1977) as expanded by Sharrock and Grayson (1979) and Dunnel and Dancy (1978).

Specific details on a site by site basis are presented in Appendix B, C, and D.

One site, 3CN70, recorded during the survey of the proposed pipeline corridor will apparently not be impacted by the proposed corridor realignment. It is the opinion of the Arkansas Archeological Survey that this site may be eligible for nomination to the National Register for reasons detailed in Appendix B, pp. 5-7. Since the site will not be impacted by the project, a request for eligibility determination was not prepared. In the event that revisions in the corridor alignment are made which will impact this site, preparation of documentation supporting an eligibility determination should be made and appropriate steps should be taken to mitigate the adverse impact, if the site is determined eligible.

Mitigation Alternatives

The four eligible sites will be adversely impacted by construction or operation of the proposed Conway Water Supply project. Two basic alternatives are possible to mitigate this adverse impact; preservation of the sites themselves or preservation of the information present at the site through data recovery.

Following the basic conservation orientation under which this project was conducted, the most desirable alternative, from a purely archeological perspective, is the assured preservation of the sites. The basis for this position is well articulated by Lipe (1974). Preservation of the four sites could be accomplished either by relocation of the project or by protection of them during construction and application of riprap or similar materials to the surface of the sites prior to inundation of the area. This latter option is not recommended because important characteristics of the sites, e.g., floral and faunal remains and historic metal artifacts, would be adversely affected. The effects of inundation on archeological remains is currently under continuing study (cf. Padgett 1978). Preservation by avoidance, through relocation of the project, is a second option but at this point is not an acceptable one. Since the archeological work to date has focused attention on these sites, there is the possibility that relocation of the project would result in the destruction of the resource by pothunting.

The four sites have been declared eligible because of the scientific information which could potentially be recovered from them. Therefore, a second alternative, mitigation through data recovery, is the recommended alternative. A program of well designed and executed field excavation followed by comprehensive analysis will serve to obtain extensive and valuable information on these sites. The next chapter details the specifics of this option. Documentation including the plan for mitigation through data recovery was submitted to the U.S. Army Corps of Engineers, Little Rock District on December 24, 1979.

The Advisory Council on Historic Preservation has reviewed this documentation and concurred with the determination of no adverse affect (letter dated January 10, 1980 from Louis S. Wall to Colonel Dale K. Randels).

Chapter 9

Mitigation Plan for Four Sites in the Conway Water Supply Project

by

Frank Rackerby

General

As a result of our investigations, four sites are identified as having qualities and research potential that would warrant their eligibility for nomination to the National Register of Historic Places. Now that such a determination has been made, adequate plans must be laid for the mitigation of these important sites. We recommend that an extensive excavation program be undertaken at each of these sites prior to their inundation. The prehistoric sites should be investigated in a multi-phase fashion to maximize feedback from analyzed data and make the sequential excavation seasons most productive. Appropriate research on the historic site can be accomplished in a single field season, if excavation is carried out simultaneously with archival work and additional informant interviews for oral history.

The three prehistoric sites all have qualities that, through judicious planning, excavation, and analysis, can contribute invaluable knowledge and insights into the subsistence-settlement patterns of Coles Creek culture, and other as yet unidentified archeological cultures in this portion of Central Arkansas.

The Sites

The sites which are recommended for mitigation are (1) the Temper site (3CN57), a culturally unidentified prehistoric ceramic site on the Cypress Creek floodplain; (2) the Don Scroggins site (3CN64), a culturally unidentified prehistoric ceramic site on the terrace above the Cypress Creek floodplain; (3) the W. S. Alexander site (3CN117), a Coles Creek-Fouche Maline related cultures site on the floodplain of the Cypress Creek; and (4) the Wilder Log House site (3CN92), a historic log house site with outbuildings occupied from 1852 to 1944.

Research Strategy

Recommended studies relating to the four sites listed above should be carried out over a maximum of two field excavation seasons followed by adequate analyses and write up time. Total project time, from initial excavation to publication could easily take 4 to 5 years. If fieldwork for the project could commence in mid-1980, the final reports on the archeology could realistically be completed by the time the construction project is over and the reservoir is a reality.

At the inauguration of the mitigation project, the Principal Investigator, the Project Archeologists, and necessary support staff must develop a detailed, integrated research design for each of the sites. The development of this research design should be budgeted as the first phase of the mitigation. No single "cookbook" approach can be utilized. Based on our present knowledge, the following approaches should be taken, and are recommended as a starting point, with modifications to occur as additional field data are recovered.

The Alexander site, with its excellent faunal preservation, a defined Coles Creek (and possible Fourche Maline) component, and well defined plow zone, can be approached in the following manner. The site can be plowed or disc-harrowed. A controlled surface collection should then be made with complete recovery of surface materials in spatially controlled units. With simultaneous preliminary field analysis of the cultural debris, distribution maps of the classes of artifacts can be developed. A sampling design would then be generated for hand excavation units. We anticipate the presence of pit features and structural remains here; these excavation units should assist in the identification of feature concentrations.

The artifactual, faunal, soils, and floral data recovered during this season will then be analyzed and a detailed strategy developed for the second season of work, if required. During this final phase of fieldwork heavy equipment could be used selectively to remove plowzone and expose features which could then be hand excavated. The research orientation on this site is to be toward maximum recovery of Coles Creek-Fourche Maline subsistence-settlement data.

At the Temper site it would not be appropriate to begin work with plowing and a controlled surface collection. The cultural deposits are buried under recent alluvium and we assume that a distribution analysis of surface debris would not reflect the true subsurface nature of the site. Extensive random excavation units with possibly some use of power equipment during the first field season, followed by detailed analysis of these results and a second season combining large scale block excavations, assisted to the extent necessary by power equipment, should provide maximum data recovery from this site. Because of the known deep midden deposit with its excellent preservation, major research questions here will be oriented toward environmental and subsistence topics, but if separate stratigraphic episodes are present, questions of cultural chronology can also be addressed.

The Don Scroggins site should not be plowed for surface collecting until additional units have been excavated. According to local informants, the area was not cleared of its virgin timber until the 1930s, and has never been subjected to deep plowing. Our testing operations revealed the presence of post molds and other structural evidence quite near the surface. Although the surface area of this site is almost double the other two, the overall depth seems to be more shallow. It is possible that a single component living complex could be unearthed here by controlled use of power equipment and extensive hand excavation. Here also we recommend a two season approach so that information recovered the first year could be analyzed and used to plan the final excavation strategy.

Since the historic Wilder House site is more extensively documented we estimate that adequate mitigation could take place within a single excavation season of 12 to 14 weeks duration. The Project Archeologist assigned to this task should have experience in historic archeology and, in addition to supervising the excavations, must spend considerable effort collecting oral tradition from the local residents. We recommend that this site be excavated during the first field season before extensive relocation of residents so that local participation in the project can be maximized.

In a project that potentially could provide the basis for the culture history of this entire section of the Arkansas River Valley, a number of specialized studies and techniques must be included in the Research Design. Since bone and other organic remains are prevalent at all of the sites there is a definite need for both a paleobotanist and a paleozoologist to serve on or be available to the project staff for the life of the project. They should be involved in the conceptualization and design of the sampling strategy, should analyze the ongoing field results, design subsequent fieldwork, and ultimately analyze and write up the paleo-environmental chapters for the final reports.

Our current information also suggests the need for a competent lithics analyst who would study the worked stone technologies that are present in the archeological record at the three prehistoric sites. Similar detailed ceramic studies may also be required and both lithic and ceramic specialists should be available as part of the project staff, either as permanent members of the team, or as consultants. All current and applicable archeological data recovery and analytic techniques, such as water screening, flotation, C-14, and archeomagnetic dating, should be employed.

Public Benefit

In addition to the production of a series of archeological reports which would stand as a significant tangible result of the mitigation of the destroyed cultural resources, several other public interest benefits would accrue from this project. The city of Morrilton is planning to develop a

municipal museum and artifacts and other interpretive aids could be provided to this museum. Since the collections from the sites would be U.S. Government property, however, evaluations of this action would lie with the Corps of Engineers.

During the field seasons it would be advantageous to have site interpreters available to give tours and to inform the interested public about the nature of the project, the types of information being derived, and the role of the Corps of Engineers and other federal and state agencies in its development. An interpretative pamphlet could also be distributed which briefly outlines what is being done at the sites and the reasons for archeological excavation. Public interest activities, such as slide lectures and television or radio broadcasts could also be developed as part of this project. Upon the project's conclusion exhibits and explanatory brochures can be developed in conjunction with the Corps of Engineers program of public information.

Conclusions

The above recommendations constitute a mitigation plan that is adequate to collect, preserve, and disseminate the cultural knowledge contained in sites which will be inundated by the proposed Conway Water Supply project. Detailed site-specific research strategy and overall project management must be developed within the context of the project Research Design. In order that the proposed cultural resource studies not hinder project construction and to complete the necessary research prior to the end of construction, the mitigation plan should be implemented by mid-1980.

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Appendix A

Cultural Resource Testing and Evaluation of Selected Sites, Proposed Conway Water Supply Lake Mile 6.7 on Cypress Creek Conway County, Arkansas

Scope of Services

by

The Little Rock District, U.S. Army Corps of Engineers

and

The Proposal

by

The Arkansas Archeological Survey

APPENDIX A
CULTURAL RESOURCE TESTING
AND EVALUATION OF SELECTED SITES
PROPOSED CONWAY WATER SUPPLY LAKE
MILE 5.7 ON CYPRESS CREEK
CONWAY COUNTY, ARKANSAS

1. General. The contractor shall furnish all materials, equipment, supplies, labor, transportation, and services required to conduct an intensive historical and archeological survey on unsurveyed lands and to test specific sites to determine significance based on National Register Criteria. A plan of mitigation will be developed based on the findings.

2. Scope of Services.

a. To the extent that land access can be obtained (see item 3), the contractor shall conduct an intensive survey on those unsurveyed lands identified in the contract report[1] as having the proper combination of variables for the likely presence of base camps. An intensive survey will also be conducted on the proposed road realignment and the water pipeline transmission corridor. Description of the roadway route and the pipeline corridor are on the inclosed maps (Incl 1 & 2). All sites located will be plotted on applicable USGS quad sheets, one set of which will be provided to the Government at the time the report is submitted.

[1]Martin and Jones, The Conway Water Supply: An Intensive Archeological and Historical Survey of a Proposed Reservior Area in Conway County, Arkansas, AAS August 1978, page 52.

No exact site locations will be identified in the main report. Arkansas Archeological Survey site sheets shall also be completed.

Each site will be described in a separate paragraph.

b. Testing to determine significance and eligibility of sites for nomination to the National Register will be conducted on the following 16 sites[2]:

3CN33	3CN45	3CN47	3CN63
3CN36	3CN46	3CN51	
3CN38	3CN57	3CN55	
3CN42	3CN64	3CN58	
3CN43	3CN44	3CN59	

National Register nomination forms will be completed for sites appearing to be eligible for the register. Testing will also be conducted on any sites found in the area to be surveyed under subparagraph 2a above. Areal extent and depth will be given on each site. Procedures used to collect and evaluate information on all sites will be described in sufficient detail to allow for adequate review and critique of the investigations and assessments. This will include:

(1) The kinds of cultural resources present or inferred to be present and an estimate of regional distribution relationships thereof:

[2]Arkansas Archeological Survey assigned numbers.

(2) The effects of loss of all or parts of the resource upon future investigations or appreciation of cultural values.

c. A mitigation plan including a detailed breakdown of recommended actions and associated costs shall be developed. The costs will be furnished as a separate statement from the report. A discussion of the public or scientific value of the proposed actions will be included.

Where the cost is reasonably comparable to or less than the amount required to recover data, the mitigation plan will consider preserving the sites, if possible.

The plan will contain a research design with a definite set of questions, taking into account relevant previous research, to be answered in analysis of the data to be recovered. It should provide for recovery of an adequate sample of data on those significant research topics that can reasonably be addressed.

d. Recommendations for development of interpretive displays will be developed, if appropriate.

e. The report shall summarize the previous investigations.

f. A summary of the findings and recommendations will be included in a section at the front of the report.

3. Rights-of-Entry. The contractor shall be responsible for obtaining all necessary permits, licenses, leases, or other property rights associated with the carrying out of contractor's responsibilities under terms of this contract. If difficulties are encountered in securing rights-of-entry, the Contracting Officer or the Authorized Representative of the Contracting Officer will be contacted for assistance.

4. Coordination. The contractor shall be responsible for coordination with local, State, and Federal agencies as needed. The State Historic Preservation Officer will be consulted to identify properties on the National or State Registers of Historic Places. The contractor shall be available throughout the contract period for consultation with the contracting officer or his authorized representative.

5. Personnel. The principal investigator will have a graduate degree in archeology, anthropology, or a closely related field, or equivalent training accepted for accreditation purposes by the Society of Professional Archeologists and the following:

a. At least 16 months of professional experience or specialized training in archeology field, laboratory, or library research, including at least 4 months of experience in general North American archeology and at least 6 months of field experience in a supervisory role.

b. A demonstrated ability to carry research to completion, usually evidenced by timely completion of a thesis, research reports, or similar documents.

c. For that part of the work concerned with prehistoric archeology, at least 1 year's experience in research concerning archeological resources of the prehistoric period.

d. For the part of the work concerned with historic archeology, at least 1 year's experience in research concerning archeological resources of the historic period.

The principal investigator will be responsible for accuracy and completeness of the information contained in the contract report.

6. Format. The report shall be in a narrative form following an order that can be easily read and understood. Each cultural site shall be

described in a separate paragraph. Photographic appendixes are encouraged when, in the opinion of the contractor, a better knowledge of the site will be presented to the reader. The typed final report shall be single-spaced with format size approved by the contracting officer. The final report shall consist of the original text, art work, maps, and photographs. Binding edge dimensions of all tables and maps presented in the report shall conform to report format size and title blocks will be visible when folded. The contractor shall submit to the Government five copies each of draft text of the report for review and comment. Only one copy each of photographic prints will be required for the draft. Comments resulting from the review shall be furnished to the contractor for incorporation into the final report unless deletion is agreed to by the Government. The contractor shall submit one copy of the final report including art work, maps, and photographs suitable for reproduction.

7. Materials Furnished by the Government.

a. The Government shall furnish appropriate maps, drawings, and related engineering data, detailing the damsite and impoundment area.

b. The Government will furnish the contractor an appropriate number of copies of the final reproduced report for coordination with other interested agencies and environmental groups.

8. Disposition of Materials Collected. Materials collected will be deposited in an Arkansas depository approved by the Government and the State Archeologist. Materials will be properly curated by acceptable scientific standards such that they can be easily recalled for scientific study and additional analysis. These materials which belong to the U.S. Government will be available to the Corps upon request.

9. Schedule of Work. The contract work shall be completed in accordance with the following schedule.

a. All field work shall be completed within 90 calendar days after receipt by the contractor of the notice to proceed.

b. Five copies of the draft report shall be submitted within 180 calendar days after the receipt by the contractor of the notice to proceed.

c. The Government review of the report shall be completed and returned to the contractor within 45-calendar days.

d. One copy of the final report suitable for reproduction shall be submitted 30 days after receipt of the Government's comments. Reproduction of the required number of copies will be accomplished by the Government.

c. All work and services required by this contract shall be completed within [redacted] calendar days after receipt by the contractor of written notice to proceed with the work.

PROPOSAL FOR CULTURAL RESOURCE TESTING AND EVALUATION OF SELECTED SITES IN THE PROPOSED CONWAY WATER SUPPLY LAKE MILE 6.7 ON CYPRESS CREEK, CONWAY COUNTY, ARKANSAS

Submitted to: Little Rock District
U.S. Army Corps of Engineers
P.O. Box 867
Little Rock, Arkansas 72203

Submitted to: Arkansas Archeological Survey
Coordinating Office
University of Arkansas Museum
Fayetteville, Arkansas 72701

March 8, 1979

Revised April 9, 1979

INTRODUCTION

On February 21, 1979, the Arkansas Archeological Survey was invited to submit a proposal responsive to an Appendix A calling for cultural resource testing and evauluation of selected sites in the proposed Conway Water Supply Lake at mile 6.7 on Cypress Creek, Conway County, Arkansas. The Survey has considered the scope of work and hereby proposes to perform the work in the manner described.

Specifically, the Scope of Services for the project calls for: (1) an intensive archeological survey of 11.3 miles of water pipeline right-of-way; (2) an intensive survey of 4.2 miles of proposed road realignment; and (3) an intensive survey of an appropriate sample of 940 acres in the proposed reservoir area which could not be investigated during our initial fieldwork. This survey shall follow lines of inquiry recommended in our previous survey report (Martin and Jones 1978).

In addition to these surveys, 7 historic and 9 prehistoric archeological sites will be tested to determine their significance and eligibility for nomination to the National Register of Historic Places. These sites, identified by Arkansas Archeological Survey number, are:

Prehistoric	3CN33	3CN42	3CN46	Historic	3CN44	3CN58
	3CN36	3CN43	3CN57		3CN47	3CN59
	3CN38	3CN45	3CN64		3CN51	3CN63
					3CN55	

Sites which are subsequently determined to be significant will have National Register Nomination forms prepared for them.

Any sites located during the three surveys mentioned above that appear to warrant testing for significance will be tested during this field program and evaluated in terms of National Register criteria.

To accomplish this project in the required time frame, the work will be carried out by multiple field teams, each handling various research tasks (Fig. 1). Reccnnaissance, testing and laboratory projects will be carried out at the same time. The project will consist of the two major areas of fieldwork, concurrent laboratory processing, and a period of report preparation. All of these tasks will be carried out under the direct supervision of the Project Archeologist, a position which will be staffed at the level of Research Associate or Assistant Archeologist. He/she is budgeted for 155 man days and will be directly involved in all field and laboratory activities enumerated below in Tasks I-VII. The Principal Investigator and Contract Administrator will direct and advise the Project Archeologist in such a manner as to complete the project in a timely and competent fashion.

RESEARCH OBJECTIVES

For the first week of the project the Project Archeologist, Reconnaissance Field Supervisor, Testing Field Supervisor and other appropriate survey staff will meet and prepare an explicit research design for the fieldwork. The project Historic Archeologist and Historian also will be consulted at this time. They are budgeted for the equivalent of 10 working days each and will participate in the project on an as-needed basis.

Seven of the sites to be tested are historic sites. Investigations to determine significance of these sites will include, but not be limited to: (1) recording of the standing structures and above ground features photographically and/or with scale drawings; (2) an attempt to locate outbuildings,

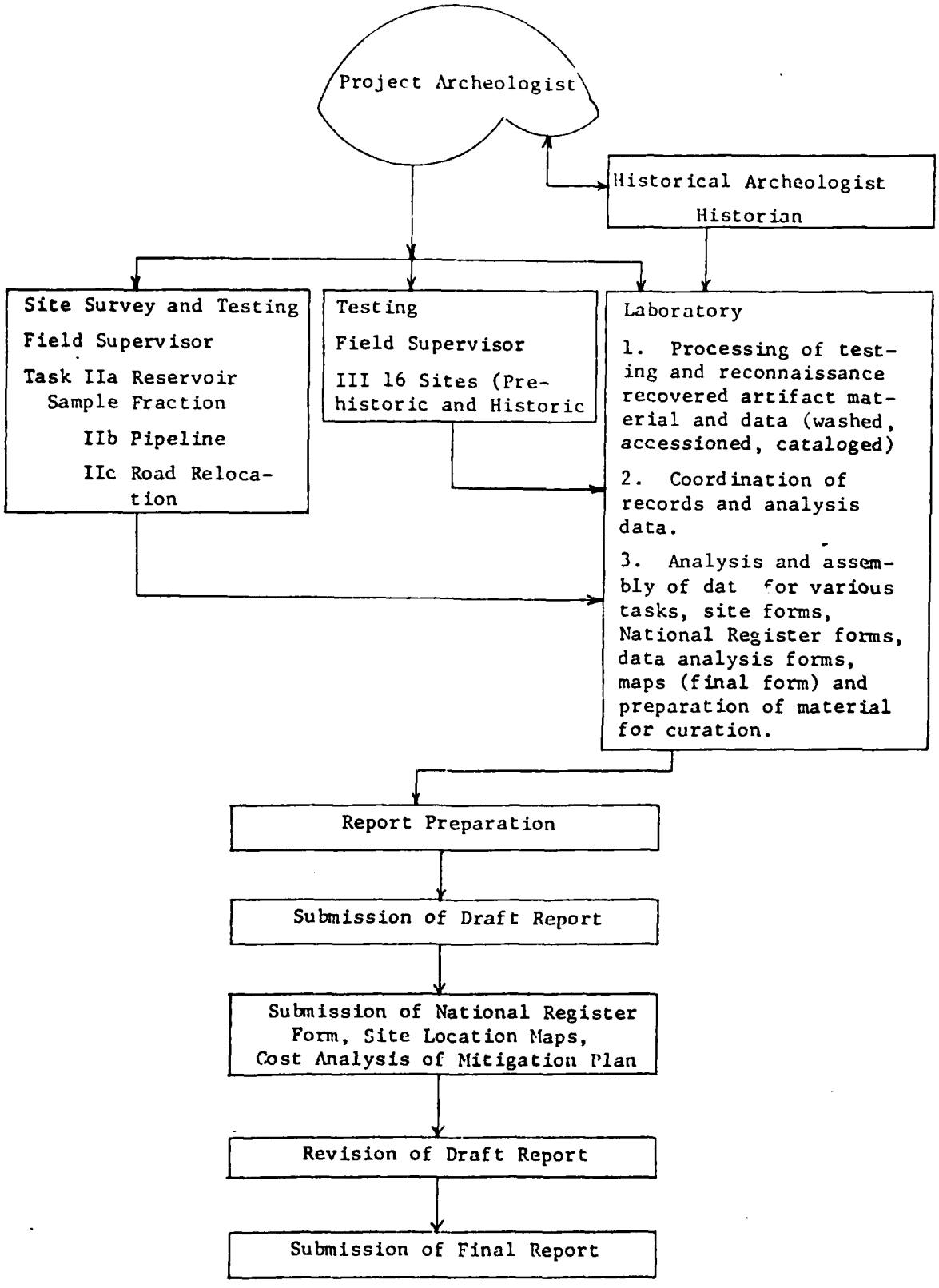

Figure 1. Project research Tasks.

dumps, wells, cisterns, etc., and conducting test excavations to collect artifactual material and structural detail; (3) further research of historic documents to aid in interpreting the features. The documentary research carried out for the first report demonstrated the paucity of extant documentary information so further archival work on the project will be quite limited.

Six of the nine recommended prehistoric sites exhibited a good variety of cultural material and will be excavated to determine their eligibility for the National Register by determining: (1) the depth of the plowzone or the amount of other surface disturbance; (2) the nature and integrity of any subplowzone deposits; (3) the quantity and quality of artifactual and environmental data recoverable from the site; (4) the areal extent of the site; and (5) possible concentrations of material or activity areas across the site.

Three of the remaining sites to be tested (3CN38, 3CN57, 3CN64) were recorded in areas of heavy ground cover. Although the amount of cultural material recorded in 1978 was not extensive at these sites, local informants indicated that these sites have produced quantities of artifacts in the past. These sites also will be intensively investigated by a combination of shovel testing and test excavations to obtain sufficient information to determine significance.

The field methods to be used for the site survey of the three areas to be surface surveyed will include transect walking, shovel testing and auger testing, if appropriate. Presumably the surveying can begin early enough in the spring that dense vegetation will not be a serious problem. Experience from the 1978 survey has indicated, however,

that much of the area is in permanent pasture and extensive shovel testing will be required. Utilizing this technique greatly decreases the number of acres per day that can be covered by the survey crew.

TASK BREAKDOWN

Task I: Project planning and research design preparation will be accomplished in the first week of the project. In addition to the Project Archeologist and appropriate Survey staff, the following project staff will be involved

1 week	5 man days	Reconnaissance Field Supervisor (Archeological Assistant II)
	5 man days	Testing Field Supervisor (Archeological Assistant II)

Task II: (a) Survey of appropriate sample of 940 acres in reservoir area and testing of selected sites founds in this survey.

(a.1)	4 weeks	40 man days	Archeological Field Assistant II
			Archeological Field Assistant I

(a.2) Testing

2 weeks	20 man days	Archeological Field Assistant II
		Archeological Field Assistant I

(b) Survey of 11.3 miles of pipeline route and testing of selected sites.

3 weeks	30 man days	Archeological Field Assistant II
		Archeological Field Assistant I

(c) Survey of 4.2 miles of road realignment and testing of selected sites

2 weeks	20 man days	Archeological Field Assistant II
		Archeological Field Assistant I

Task III: Testing of 7 historic and 9 prehistoric archeological sites.

11 weeks	275 man days	Archeological Field Assistant II
		Archeological Field Assistant I (4)

Task IV: Laboratory preparation and analysis of artifact data from testing and survey.

2 weeks	20 man days	Testing and Reconnaissance Supervisors (2)
13 weeks	195 man days	Archeological Lab Assistant I (3)

Task V: Report preparation

13 weeks	130 man days	Project Archeologist (65 days)
		Data Analyst (65 days) (1/2 time)

A draft report will be prepared by the Project Archeologist and appropriate staff and will address, but not necessarily be limited to, the following specific topics:

1. Management Summary
2. Brief summary of previous investigations
3. Description of intensive survey, Task IIa, b, c
4. Results of intensive survey--paragraph description and evaluation of each site.
5. Research procedures used to collect and evaluate information in Field and Laboratory
6. Inventory of resources present and relationship of resources to the regional distribution of cultural resources
7. Results of significance testing on designated sites
8. Impact on cultural resources (in depth and specific detail)
9. Mitigation plan to include a research design
10. Appendixes as appropriate

Task VI: Subsequent to the submission of the draft report, the Project Archeologist will prepare and submit under separate cover the following items:

1. Maps showing sites recorded in reservoir, road realignment, and on the pipeline right-of-way.
2. Detailed cost breakdown of mitigation plan.
3. Submission of National Register Nomination forms, if any.

2 weeks	10 man days	Project Archeologist

Task VII: Upon receipt of the Government's comments, the Project Archeologist shall prepare revisions and oversee the preparation of the final report. At this time the Project Archeologist also shall assemble all project notes for permanent curation by the Survey Registrar.

3 weeks	15 man days	Project Archeologist

FIELD SCHEDULE

All aspects of fieldwork will be completed in 90 calendar days after receipt of the Notice to Proceed (Fig. 2). The fieldwork will be under the direction of the Project Archeologist who will be responsible for the day-to-day conduct of the project. The supervisors for the survey and testing crews will be responsible for the supervision of their specific areas of fieldwork and the coordination of data recovery. All field survey work will be completed within 90 calendar days after the Notice to Proceed, which provides enough time for testing of significance of sites discovered during this task. All testing for significance will be completed within 90 calendar days from the Notice to Proceed. All laboratory preparation and analyses are scheduled to be completed within 100 calendar days of the Notice to Proceed.

The project schedule assumes that significant field delays will not be caused by adverse weather conditions or other factors beyond the control of the Arkansas Archeological Survey. If such conditions do arise the Corps Contracts Officer or his representative will immediately be contacted and an appropriate adjustment in the project time schedule will be made.

ANALYSIS AND REPORT SCHEDULE

All analyses and a draft report will be completed within 180 calendar days of the Notice to Proceed. Five copies of the draft report will be submitted for review by the Government (Army Corps of Engineers, Little Rock District). The Government's review of the draft report will be completed in 45 calendar days and one copy of the final report, suitable for reproduction and prepared in format to governmental specification, will be submitted within 30 days after the receipt of the Government's

ANTICIPATED WORK SCHEDULE
in
PROJECT WEEKS

STAFF	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
Project Archeologist	/----------/----------/
Data Analyst	/----------/
Field Assistants (2)	/----------/
Test Excavation Crew (4)	/----------/
Reconnaissance Crew (2)	/----------/
Drafter	/--------/
Archeological Drafter	/--/ /--/
Photographer	/--/ /--/

Figure 2. Conway Water Phase II staffing requirements.

Appendix B

Nontested Sites Located During the 1979 Survey

by

William A. Martin

with Historic Documentation by

Beverly J. Watkins

PREHISTORIC SITES

The Simon Site (3CN67)

Description. This floodplain site is located in a plowed field and along a road paralleling Cadron Creek. It extends nearly 200 m (north-south) by 40 m (east-west). Cadron Creek borders the site to the east. Another plowed field, which is devoid of cultural material, borders the site to the west.

Method of examination. Pedestrian survey was sufficient to assess artifact distribution and approximate site size because the entire site had been plowed.

Ground surface artifacts.

Nonutilized flake with cortex
- 2 Boone chert, blue
- 1 Boone chert, white
- 1 Pitkin chert

Retouched flake with cortex
- 1 Boone chert, blue

Nonutilized flake without cortex
- 4 Boone chert, white
- 1 novaculite, white

Retouched flake without cortex
- 1 Boone chert, red
- 1 Boone chert, pink
- 1 Pitkin chert

Cores
3 Boone chert cores, blue
5 Boone chert cores, white

Bifaces (excluding diagnostic points)
1 Boone chert biface fragment, pink
1 Pitkin chert biface fragment

Historic artifacts
Bottle glass fragments
Canning jar fragments
Nails
Ceramics
Brick

Proposed site function and cultural affiliation. One projectile point was recovered from this site. It has been identified as a Rockwall type (Plate 2a) which was common during the late Woodland and Mississippian periods. This point was made from pink Boone chert. The lack of prehistoric ceramics on this site, as well as the small site size, indicate that 3CN67 was not a habitation site. It must have functioned as a specialized activity site (possibly a hunting camp) sometime during the late Woodland or Mississippian period. The site was occupied again in the relatively recent historic period. Artifacts indicate that a dwelling was situated on this site early in the twentieth century.

Evaluation. Due to the paucity of prehistoric material found at the site, it appears to have very little potential to yield additional data. No further work is recommended.

The Minor Site (3CN68)

Description. This site is located on an erosional remnant of terrace which is surrounded by the floodplain of Cadron Creek. It has the appearance of a large mound even though it is a natural formation. The site itself consists of two lithic scatters concentrated along two parallel rises atop the terrace. The northernmost scatter is 100 m (north-south) by 60 m (east-west) and the other scatter is 100 m (north-south) by 50 m (east-west). A gap of about 50 m separates the concentrations, with only a thin scatter of artifacts present.

Method of examination. Surface inspection was sufficient to assess site size and artifact distribution because the area had been plowed.

Ground surface artifacts.

Cores
4 Boone chert, gray
3 Pitkin chert

Nonutilized flake with cortex
1 Boone chert, gray
4 Pitkin chert

Nonutilized flakes without cortex
- 3 Boone chert, white
- 1 Boone chert, gray
- 10 Pitkin chert
- 3 novaculite, white

Retouched flake without cortex
- 1 Boone chert, purple
- 2 Pitkin chert

Scrapers
- 1 Boone chert side scraper, gray

Bifaces (excluding diagnostic points):
- 1 Boone chert drill, white
- 1 Boone chert drill, gray
- 1 Pitkin chert drill

Non-chert artifacts
- 14 ground sandstone (manos and/or hammerstone)
- 2 unmodified sandstone fragments
- 2 miscellaneous stone fragments

Historic artifacts
- Some glass and ceramics

Proposed site function and cultural affiliation. The following projectile point types have been identified from this site:

1 Rice Corner Notched	(early Archaic)	(Pitkin chert) (Plate 2c)
1 Lange	(middle-late Archaic)	(Pitkin chert) (Plate 2d)
1 Martindale	(middle-late Archaic)	(novaculite) (Plate 2f)
1 Ensor	(late Archaic-early Woodland)	(novaculite) (Plate 2b)
2 Big Creek	(late Archaic-early Woodland)	(Pitkin chert) (Plate 2g)
1 Marcos	(late Archaic-early Woodland)	(Pitkin chert) (Plate 2h)

The site may have been occupied either seasonally or continuously throughout this 7000 year period, but the scarcity of artifacts appears to indicate repeated seasonal occupations rather than long term continuous occupation. The fact that manos, drills, and hammerstones were present in addition to knives and projectile points indicates that this may have been a seasonal base camp where a variety of activities took place.

The scarcity of modern historic material indicates recent deposition, probably by persons engaged in cultivating the land. Bottle glass is the predominant historic artifact.

Evaluation. According to maps supplied by the Corps of Engineers, impact to 3CN68 from pipeline construction will be negligible. The pipeline route avoids the two major artifact concentrations altogether. Only a sparse

scatter of artifacts was recovered from the actual right-of-way. These were well outside the probable occupation area, and may have simply washed downhill or been dragged downhill by plow action. Since construction will apparently not impact the site, no further work is recommended.

The Dusty Site (3CN69)

Description. This site is located at the base of a hillslope on the terrace edge. It is comprised of two concentrations of artifacts separated by a gap of 30 m. The northernmost scatter is 40 m (north-south) by 40 m (east-west) and the other scatter is 80 m (north-south) by 45 m (east-west).

Method of examination. Pedestrian survey was employed to assess approximate site size and artifact distribution because the site had been plowed.

Ground surface artifacts.

Nonutilized flake with cortex
- 1 Boone chert, green
- 1 Boone chert, white
- 1 Boone chert, gray

Retouched flake with cortex
- 2 Boone chert, gray

Nonutilized flake without cortex
- 1 Boone chert, green
- 1 Boone chert, white
- 2 Pitkin chert

Retouched flake without cortex
- 1 Boone chert, white
- 1 Boone chert, gray

Scrapers
- 1 Boone chert side scraper, white

Bifaces
- 1 Boone chert biface, white

Nonchert artifacts
- 2 unmodified sandstone fragments
- 1 sandstone mano

Historic artifacts
- Several types of bottle glass
- Cut glass
- Ceramics and fragment of a harmonica

Proposed site function and cultural affiliation. No projectile points or other artifacts diagnostic of specific cultural periods were recovered from this site. Therefore, cultural affiliation cannot be accurately assessed. In addition, the scarcity of artifacts recovered from the site prevents an accurate determination of site function from being made. However, the small site size suggests that it may have been a specialized activity site.

The historic artifacts recovered from this site suggest that a dwelling once stood on or near the site.

Evaluation. According to maps supplied by the Corps of Engineers, the originally proposed pipeline route would have had no effect upon the site. However, the revised route will bisect the site. Even so, the small quantity of cultural material recovered from the site indicates that the site has little potential to yield additional data. Therefore, no further work is recommended.

The Travis Moreland Site (3CN70)

Description. This site is located along the terrace edge on two slight rises. The first rise is approximately 80 m (north-south) by 45 m (east-west). The Cadron Creek floodplain lies immediately below the site, but the creek is approximately 500 m east of the site.

Method of examination. Pedestrian survey was sufficient for assessing site boundaries and artifact distribution because the site was plowed.

Ground surface artifacts.

Nonutilized flake in cortex
- 5 Boone chert, blue
- 2 Boone chert, white
- 5 Boone chert, pink and mottled
- 1 Pitkin chert
- 1 novaculite, white

Retouched flake with cortex
- 2 Boone chert, blue
- 2 Boone chert, white
- 1 Boone chert, pink

Nonutilized flake without cortex
- 2 Boone chert, blue
- 4 Boone chert, white
- 9 Boone chert, pink and red
- 12 Pitkin chert
- 2 novaculite, white

Retouched flake without cortex
2 Boone chert, blue
8 Pitkin chert

Scrapers
1 Pitkin chert side scraper

Cores
4 Pitkin chert

Bifaces (excluding diagnostic points)
1 Pitkin drill (Plate 2k)

Nonchert artifacts
2 unmodified sandstone fragments
5 sandstone manos
1 sandstone metate
1 sandstone abrader
1 miscellaneous sandstone artifact

Historic artifacts
Bottle glass
1 tinglaze sherd

Proposed site function and cultural affiliation. The projectile point types recovered from this site include:

2 Dalton (Dalton)(1 Pitkin chert, 1 novaculite)(Plate 2l, 2m)
2 Cache River (early Archaic)(1 Pitkin chert, 1 Boone chert)(Plate 2n)
1 Morhiss (late Archaic)(Boone chert)(Plate 2j)

Projectile points commonly found on sites dating from the Dalton, early Archaic, and late Archaic periods were recovered from this site. This site is the only site found during both of the 1978 and 1979 surveys which contained Dalton points. It is therefore believed to represent one of the earliest occupations of Cadron Valley.

The presence of groundstone artifacts along with a variety of chert artifacts indicates that 3CN70 may have functioned as a base camp when a variety of activities were carried out. However, multiple occupations with different specialized activities could have been responsible for the observed variety.

In addition to containing the earliest prehistoric artifacts in the area, this site also contained the earliest historic artifacts found during both the 1978 and 1979 surveys. The tin glaze sherd recovered near the modern barn is of a type manufactured between 1700 and 1825 (Abernathy, personal communication). The site appears to have been a dwelling, but it is difficult to assign specific dates of occupation. Although the tin glaze sherd suggests occupation during the early 1800s, it is possible that it was brought into the area at a later date (as a family heirloom, perhaps).

Evaluation. This site is one of the most interesting sites found during the 1979 survey. It is of great importance for the further study of both history and prehistory. In particular, it may be able to provide good information on Dalton period settlement in this portion of the state. The pipeline alignment as now determined appears to have no effect on the bulk of the site. Based on maps provided by the Corps of Engineers, the eastern-most edge of the site may be damaged. If there is field adjustment to the pipeline, and the site is impacted, the Corps of Engineers and the archeologists will coordinate their efforts to insure that appropriate measures are followed for the preservation of information preserved in this important site.

The Terry Moreland Site (3CN71)

Description. This site is located on a sandy knoll along the terrace edge. Its estimated dispersion is 100 m (north-south) by 50 m (east-west).

Method of examination. This site is located approximately 150 m west of the proposed water pipeline corridor. It was reported to Arkansas Archeological Survey personnel by Mr. John Trafford, who has found 20 projectile points on it. However, it was not examined by the Arkansas Archeological Survey crew because the proposed pipeline should not affect it.

Ground surface artifacts. No artifacts were collected.

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. Due to the fact that the pipeline construction will have no impact on the site according to maps provided by the Corps of Engineers, no further work is warranted.

The Weedy Knoll Site (3CN72)

Description. This site is located on top of the highest knoll encountered along the terrace edge during the entire survey. Artifacts of sandstone and chert were thinly scattered in the plowed area along the base of the knoll, but the top was covered with weeds. Areal extent is roughly 80 m (northeast-southwest) by 50 m (northwest-southeast).

Method of examination. Since this site is located approximately 30 m west of the proposed pipeline corridor, it was not investigated as intensively as sites found within direct impact areas. Pedestrian survey was conducted along the plowed portion of the site to document the presence of artifacts and estimate the site dimensions.

Ground surface artifacts. No artifacts were collected.

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. According to maps supplied by the Corps of Engineers, pipeline construction will have no impact on the site. Therefore, no further work is recommended.

The Moreland Garden Site (3CN73)

Description. This site is located on a sandy knoll along the terrace edge. Artifacts were found in the garden, driveway, and lawn surrounding Mr. Moreland's house. The site extends 40 m (north-south) by 70 m (east-west).

Method of examination. Since this site is located about 40 m west of the proposed pipeline corridor, it was not investigated as intensively as sites located in direct impact zones. Pedestrian survey was employed to assess site boundaries.

Ground surface artifacts. No artifacts were collected.

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. Due to the fact that the site will not be affected by pipeline construction, no further work is warranted.

The Robert's Dozer Site (3CN74)

Description. This site is situated along the base of the hillslope at its junction with the Cypress Creek floodplain. It extends approximately 50 m (north-south) along a dozer cut paralleling the hillslope-floodplain junction. This cut was flanked by forest cover and weeds.

Method of examination. Pedestrian survey was conducted along the dozer cut. Shovel tests were placed at 20 m intervals in vegetated areas on either side of the layer cut, but no artifacts were recovered from these shovel tests.

Ground surface artifacts.

Nonutilized flake with cortex
- 1 Boone chert, mottled red and white
- 2 Pitkin chert

Nonutilized flake without cortex
- 3 Boone chert, blue
- 14 Boone chert, white
- 1 Boone chert, pink
- 1 Boone chert, mottled blue and white

Bifaces (excluding diagnostic points)
- 2 Pitkin chert biface fragments

Nonchert artifacts
1 sandstone metate

Historic artifacts
1 canning jar lid fragment

Proposed site function and cultural affiliation. The following projectile points were recovered from the site:

1 Cache River (early Archaic)(Pitkin chert)(Plate 2p)
1 Williams (middle to late Archaic)(Boone chert)(Plate 2o)

The site appears to have been occupied during the early and middle or late Archaic period. The small size and scarcity of artifacts suggest that this may have been a specialized activity site, but no accurate determination of site function can be made. The historic component is negligible and appears to represent discarded trash.

Evaluation. Due to the fact that shovel testing gave no indication of subsurface deposits, and the dozer cut had greatly disturbed the site, no further work is recommended.

The Lone Flake Site (3CN75)

Description. This site is located north of 3CN74 along the same dozer cut. It consists of a single flake and a modified piece of sandstone.

Method of examination. Shovel tests were placed at 20 to 30 m intervals throughout the forest adjacent to the dozer cut, but no further artifacts were found.

Ground surface artifacts.

Retouched flake without cortex
1 Boone chert

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. Due to the paucity of cultural material present on this site no further work is recommended.

The Dry Foot Site (3CN76)

Description. This site is located along the terrace north of 3CN75. Artifacts were found in an erosional area measuring 20 m by 20 m. The entire extent of the site may be larger, but heavy weed cover prevented a precise determination from being made.

Method of examination. Pedestrian survey was conducted along erosional areas. Shovel tests were placed at 20 to 30 m intervals in the vicinity of erosional areas, but no artifacts were found.

Ground surface artifacts.

Nonutilized flake without cortex
1 novaculite, tan

Nonchert artifacts
1 unmodified sandstone slab

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. Due to the scarcity of cultural material present on the site, and the fact that the shallow, stony soil is unlikely to contain subsurface deposits, further work seems unwarranted.

The Half-way Site (3CN77)

Description. This site is located on the terrace north of 3CN76. The site is at least 10 m by 10 m in extent, but heavy weed cover prevented a precise determination from being made.

Method of examination. Pedestrian survey was conducted in erosional areas. Shovel tests were placed in pasture surrounding erosional areas, but no additional artifacts were found.

Ground surface artifacts.

Nonutilized flake without cortex
1 Boone chert, blue

Retouched flake without cortex
1 Boone chert, tan

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. No further work is recommended due to the lack of cultural material and lack of potential for the site to contain subsurface features.

The Moreland Knoll Site (3CN78)

Description. This site is located on a slight rise in the floodplain of Cypress Creek. Most of the site is located in forest. Vegetation prevented a precise determination of areal extent from being made, but the site is at least 40 m (north-south) by 50 m (east-west).

Method of examination. Pedestrian survey yielding some flakes was conducted along a dirt road through the forest. Shovel tests, placed extensively around the forest and overgrown pasture over the rest of the site, yielded additional artifacts.

Ground surface artifacts.

Nonutilized flake without cortex
- 4 Pitkin chert
- 1 novaculite, gray

Bifaces
- 1 Pitkin chert biface

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. According to maps supplied by the Corps of Engineers the revised pipeline route will avoid the site. Therefore no further work is recommended.

The Wet Foot Site (3CN81)

Description. This site is located along the terrace edge above the Cypress Creek floodplain. It is partially covered by forest, but most of the site is covered with weeds, briars, and second growth clearcut vegetation. The areal extent is approximately 200 m (north-south) by 50 m (east-west).

Method of examination. Extensive shovel tests were placed across the site at 30 m intervals. Lithics were recovered from several of these shovel tests.

Ground surface artifacts.

Nonutilized flake with cortex
- 1 Boone chert, red
- 3 Boone chert, gray
- 1 Pitkin chert

Retouched flake with cortex
- 1 Boone chert, gray

Nonutilized flake without cortex
- 3 Boone chert, blue
- 4 Boone chert, white
- 2 Boone chert, mottled tan
- 9 Pitkin chert
- 2 novaculite, white
- 1 novaculite, tan

Retouched flake without cortex
1 Boone chert, white
1 Boone chert, gray
1 Pitkin chert

Bifaces (excluding diagnostic points)
1 Boone chert biface, white
1 Boone chert biface, red

Nonchert artifacts
3 sandstone manos (or hammerstones)
2 metate fragments
1 nutting stone

Proposed site function and cultural affiliation. One projectile point was recovered from this site.

1 Williams (middle-late Archaic)(Pitkin chert)

This site is believed to have been occupied during the middle to late Archaic period, but a single diagnostic artifact cannot provide enough data for an accurate assessment of cultural affiliation. Likewise, the small sample of lithics collected under adverse ground visibility conditions prevents an accurate assessment of site function from being made.

Evaluation. No further work is required on this site because the revised pipeline route will completely avoid the site (according to maps provided by the Corps of Engineers).

The Metate Site (3CN85)

Description. This site extends over an area 50 m (north-south) by 25 m (east-west) along the floodplain of Cypress Creek.

Method of examination. Pedestrian survey proved sufficient for observing site boundaries and artifact distribution because the site was plowed.

Ground surface artifacts

Nonchert artifacts
1 sandstone metate

Historic artifacts
4 bottle glass sherds
3 cut glass sherds
4 ceramic sherds
1 metal fragment
1 shoe sole

Proposed site function and cultural affiliation. The prehistoric component of this site consisted only of a metate. It is most likely that this metate was originally located in the central portion of the bean field along with sites 3CN82, 3CN83, and 3CN84. It was probably moved to the edge of the field when it was found by the farmer who cultivates this land.

The historic component of this site is reportedly an old dump which had been in use from ca. 1946 up until just a few years ago when the land was cleared of forest. This information was supplied by Mr. Trafford, the landowner.

Evaluation. Since the pipeline construction will not affect this site, no further work is required.

The Egret Site (3CN86)

Description. This site consists of a single mano found in a low wet area on the floodplain.

Method of examination. Shovel tests were placed at 10 to 20 m intervals in the area surrounding the mano, but no additional artifacts were found.

Ground surface artifacts.

Nonchert artifacts
1 sandstone mano

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. Due to the paucity of material present at the site, further work does not seem warranted.

The Alexander Garden Site (3CN93)

Description. This site is located on the terrace near an intermittent stream. All material was collected from a plowed garden approximately 10 m by 15 m in extent.

Method of examination. Pedestrian survey was employed in the plowed area. Shovel tests were placed at 20 to 30 m intervals in the field surrounding the garden, but no additional artifacts were found.

Ground surface artifacts

Retouched flake with cortex
1 Pitkin chert

Nonutilized flake without cortex
1 novaculite, gray

Retouched flake without cortex
1 Boone chert, blue
1 Boone chert, gray

Proposed site function and cultural affiliation. One diagnostic projectile point was recovered from this site:

1 Searcy (early Archaic)(Boone chert)(Plate 3h).

This site appears to have been occupied during the early Archaic period, but its function cannot be determined due to a lack of data.

Evaluation. This site is located approximately 80 m northwest of the proposed road relocation route. According to maps provided by the Corps, it will not be affected by road construction and no further work will be necessary.

The L. Kellar Site (3CN95)

Description. This site extends along a point of the terrace edge which juts out onto the Cypress Creek-Prairie Creek floodplain. The majority of the site is covered by grass and forest, but the southern edge, adjacent to the floodplain has been plowed. The extent of the area is 170 m (east-west) by 55 m (north-south).

Method of examination. This site was extensively shovel tested with tests placed at 20 to 30 m intervals. Pedestrian survey was conducted along erosional and plowed portions of the site.

Ground surface artifacts.

Nonutilized flake with cortex
8 Boone chert, blue
4 Pitkin chert

Nonutilized flake without cortex
4 Boone chert, blue
3 Boone chert, green
21 Boone chert, white
73 Pitkin chert
2 novaculite, black
6 novaculite, red

Retouched flake without cortex
1 Boone chert, blue
6 Pitkin chert
1 novaculite, black

Cores
1 Pitkin core

Bifaces (excluding diagnostic points)
- 1 Pitkin chert drill (plate 3i)
- 2 Boone chert bifaces, white
- 1 Pitkin chert projectile point fragment
- 1 Pitkin chert spokeshave
- 8 Pitkin chert bifaces
- 2 novaculite projectile point fragments, black
- 2 novaculite bifaces, black
- 2 novaculite projectile point fragments, white
- 2 novaculite bifaces, white

Nonchert artifacts
- 1 sandstone mano
- 1 sandstone nutting stone
- 1 miscellaneous ground sandstone artifact
- 1 unmodified sandstone fragment
- 2 worked flakes of quartz crystal
- 1 unmodified quartz crystal

Proposed site function and cultural affiliation. None of the projectile point fragments could be identified as to specific type. Therefore, no cultural affiliation can be postulated. Lack of representative data from the site prevents any determination of site function from being made.

Evaluation. This site is located within the fee acquisition area for the spillway and will be adversely affected by the Highway 92 relocation. Due to the relatively limited impact of the project and the general sparsity of cultural materials, it is recommended that no further work be conducted at this site.

The Well Site (3CN96)

Description. This site is located along the terrace edge above the floodplain of Prairie Creek. It extends approximately 262 m (north-south) by 73 m (east-west). A farm road runs across the center of the site in a north-south direction. Most of the site is covered by pasture.

Method of examination. The farm road and all erosional areas were inspected by pedestrian survey. Shovel tests were placed at 20 to 30 m intervals throughout the pasture, yielding some additional lithics.

Ground surface artifacts.

Nonutilized flake with cortex
- 1 Boone chert, gray
- 1 Boone chert, tan
- 1 Pitkin chert

Retouched flake without cortex
1 Boone chert, blue
1 Boone chert, white
1 novaculite, black

Scrapers
1 Boone chert end scraper, gray

Bifaces
2 Boone chert biface fragments, gray

Nonchert artifacts
1 groundstone grooved ax

Proposed site function and cultural affiliation. Unknown prehistoric. The presence of an old well at the northern end of the site along the edge of the farm road indicates that a historic dwelling once stood there.

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. According to maps provided by the Corps of Engineers, this site lies approximately 40 m south of the proposed Highway 92 relocation route. Therefore, construction activities should have no effect on the site. It is located within the land which is to be purchased as part of the spillway area, but no adverse impacts to the site are thought to be likely. Therefore, no further work seems warranted. However, if future erosion proves to greatly affect the site, this recommendation must be reevaluated.

The Gregory Flake Site (3CN99)

Description. This site consists of a single flake located along the terrace edge.

Method of examination. Shovel tests were placed at 5 to 10 m intervals once a flake had been located in an erosional area, but no additional artifacts were found.

Ground surface artifacts. 1 flake (not collected)

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. This site is not situated along the realigned pipeline right-of-way. No further work is recommended because it will not suffer any adverse impact.

The Natural Stone Site (3CN100)

Description. This site is located along the terrace edge overlooking Cypress Creek. It is located in a pasture, but much of the site has been disturbed by a dozer cut.

Method of examination. The dozer cut was inspected by means of pedestrian survey. Shovel tests were placed at 20 to 30 m intervals throughout the pasture.

Ground surface artifacts.

Retouched flake without cortex
- 2 Pitkin chert
- 1 novaculite, black
- 1 novaculite, red

Nonchert artifacts
- 1 sandstone metate
- 1 unmodified sandstone fragment

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. According to maps supplied by the Corps of Engineers, the site is located north of the pipeline right of way and will suffer no adverse impact. No further work is recommended.

The Fence Corner Site (3CN101)

Description. This site is located on top of a knoll on the terrace overlooking the Cypress Creek floodplain. Weeds and forest cover prevented a precise determination of areal extent from being made.

Method of examination. Shovel tests were placed at 20 to 30 m intervals surrounding erosional areas where artifacts were present. However, no additional artifacts were found.

Ground surface artifacts.

Nonutilized flake without cortex
- 1 Pitkin chert

Nonchert artifacts
- 1 sandstone mano/hammerstone

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. According to maps supplied by the Corps the site is situated approximately 30 m south of the proposed pipeline route, and will not be affected by construction. Therefore, no further work is necessary.

The B. Marshall Site (3CN109)

Description. This site is located on a point of terrace edge which extends out into the Cypress Creek floodplain. The site is roughly circular in shape with a diameter of 80 m. Half of the site is in pasture while the

other half is forested. Recent dozer cuts and an old road cut across portions of the site.

Method of examination. Pedestrian survey was conducted along dozer cuts, roads, and erosional areas. Shovel tests were placed at 20 to 30 m intervals in the forest and pasture.

Ground surface artifacts.

Nonutilized flake without cortex
- 1 Boone chert, blue
- 2 Boone chert, white
- 1 Boone chert, red
- 8 Pitkin chert
- 5 novaculite, white
- 6 novaculite, gray

Retouched flake without cortex
- 3 Pitkin chert
- 1 novaculite, gray

Bifaces
- 1 Boone chert biface, red
- 1 Pitkin chert biface
- 1 novaculite biface, gray

Nonchert artifacts
- 1 sandstone nutting stone

Proposed site function and cultural affiliation. Too little data was collected to make an accurate assessment of site function and cultural affiliation, due to extensive ground cover.

Evaluation. This site is located within the fee acquisition area for the spillway. It is our understanding that during periods of overflow the site may be subjected to adverse impact in the form of erosion. Since the majority of the site should remain unaffected, no further work is recommended. However, in the event that future erosion proves to cause greater damage than anticipated, this recommendation must be reevaluated.

The Cotton Plot Site (3CN111)

Description. This site is located along the terrace edge and terrace surface west of the Cypress Creek floodplain. It extends approximately 292 m (north-south) by 195 m (east-west). The heaviest concentration of material appears to be up on the terrace surface. Half of the site is forested and the other half is in pasture. Old roads cut across the site.

Method of examination. Pedestrian survey was conducted along road cuts and erosional areas. Shovel tests were placed at 30 m intervals in the pasture. The entire site had been cultivated for cotton in the past, and all artifacts appeared to have been confined to the plow zone.

Ground surface artifacts.

Nonutilized flake with cortex
- 3 Boone chert, blue

Retouched flake with cortex
- 1 Boone chert, mottled pink and white

Nonutilized flake without cortex
- 3 Boone chert, blue
- 6 Boone chert, white
- 1 Boone chert, purple
- 20 Pitkin chert
- 1 novaculite, white

Retouched flake without cortex
- 1 Boone chert, blue
- 6 Pitkin chert

Bifaces
- 1 Boone chert biface, blue
- 1 Boone chert biface, mottled green
- 1 Pitkin chert, biface

Nonchert artifacts
- 1 sandstone mano
- 1 sandstone nutting stone

Proposed site function and cultural affiliation. Too little data was retrieved to make an accurate determination of site function and cultural affiliation due to extensive ground cover.

Evaluation. This site is located within the fee acquisition area for the spillway and will be adversely affected by the Highway 92 relocation. Due to the relatively limited impact of the project and the general sparsity of cultural materials, it is recommended that no further work be conducted at this site.

The Nutting Stone Site (3CN113)

Description. This site is located on top of a knoll along the terrace of 3CN111. The site is currently in pasture, but was once plowed for cotton. It extends at least 50 m (north-south) by 100 m (east-west), but pasture cover prevented an accurate assessment of site size from being made.

Method of examination. Pedestrian survey was employed to inspect erosional areas. Shovel tests were placed at 20 to 30 m intervals throughout the pasture, but no artifacts were recovered from these tests.

Ground surface artifacts.

Nonchert artifacts
1 sandstone nutting stone

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. This site is located within the fee acquisition area for the spillway and will be adversely affected by the Highway 92 relocation. Due to the relatively limited impact of the project and the general sparsity of cultural materials, it is recommended that no further work be conducted at this site.

The Pasture Site (3CN114)

Description. This site is located along the terrace edge overlooking the Prairie Creek floodplain. It is situated 100 m south of 3CN113 and immediately east of a cattle pond. The area is covered with pasture, but was once plowed for cotton. It is roughly 25 m by 25 m in extent.

Method of examination. Shovel tests were placed at 10 to 20 m intervals surrounding an erosional area in which two flakes were found. Flakes were also found in some of these shovel tests. These flakes were not collected.

Ground surface artifacts.

Nonchert artifacts
1 sandstone metate
1 sandstone nutting stone

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. Although this site is situated within the fee acquisition area for the spillway, no adverse impacts are expected in this particular area. Therefore, no further work is recommended.

The Kellar Site (3CN115)

Description. This site is located on the terrace surface west of 3CN96 in a pasture. It extends approximately 354 m (north-south) by 91 m (east-west).

Method of examination. Pedestrian survey was employed to investigate erosional areas near the terrace edge. Historic artifacts (possibly associated with 3CN96) were found in these areas. The northern portion of the site yielded prehistoric artifacts in both erosional areas and in shovel tests.

Ground surface artifacts.

Nonutilized flake without cortex
2 Boone chert, white
2 Pitkin chert

Nonchert artifacts
2 sandstone manos/hammerstone
1 sandstone unmodified fragment

Historic artifacts
1 horseshoe
2 plow blade

Proposed site function and cultural affiliation. Unknown prehistoric.

The historic artifacts are all related to agricultural activities and may be considered as a historic specialized site, with the purpose of storing, or simply discarding, farm equipment.

Evaluation. Although the eastern portion of the site will be destroyed by construction of the spillway, the shallow nature of the soil and paucity of cultural materials indicate that further work would be unlikely to yield important scientific information. Therefore, no further work is recommended.

The Kellar Mano Site (3CN116)

Description. This site is located on the point of terrace edge that extends onto the floodplain of Prairie Creek west of 3CN115. It is covered with weeds, but several large erosional areas are present.

Method of examination. This site was not examined as thoroughly as others because it was situated just outside of the spillway acquisition area. Pedestrian survey was conducted along erosional areas.

Ground surface artifacts.

Retouched flake without cortex
1 Pitkin chert

Nonchert artifacts
1 sandstone mano

Proposed site function and cultural affiliation. Unknown prehistoric.

Evaluation. The fact that the site yielded a small amount of cultural material along with the fact that projected impacts to the site will be minimal, indicated that further work is not warranted. Therefore, no further work is recommended.

HISTORIC SITES

The Palmer Dump Site (3CN87)

Description. This site is located along the terrace surface adjacent to the west side of the road leading north to Springfield which is to be improved as part of the Highway 92 relocation.

Method of examination. Pedestrian survey was employed to examine this site because it occurred in an erosional area.

Ground surface artifacts.

16 glass sherds
8 ceramic sherds
3 metal fragments

Proposed site function and cultural affiliation. This appears to be a dump site of relatively recent origin, probably associated with Ralph Palmer's house.

Evaluation. This site was recorded and collected simply to document patterns of refuse disposal along roads. This information may prove useful in the investigation of older historic roads during future research. There are no subsurface deposits present. Therefore, no further work is recommended.

The Dirt Road Site (3CN88)

Description. This site is located along the hillslope on the east side of the road which is to be improved as part of the Highway 92 relocation.

Method of examination. Pedestrian survey was sufficient to delimit site boundaries because the site occurred in an erosional area.

Ground surface artifacts.

29 glass sherds
44 ceramic sherds
5 metal fragments

Proposed site function and cultural affiliation. Recent historic refuse scatter.

Evaluation. Although this site may be impacted by Highway 92 relocation construction, it is of very recent origin and has no subsurface deposits. It was recorded for the same reasons as those discussed for 3CN87.

The Erosion Slope Site (3CN89)

Description. This site is located on the terrace surface along the western edge of the road which is to be improved as part of the Highway 92 relocation.

Method of examination. Pedestrian survey was sufficient to assess site dimensions because the site occurred in an erosional area.

Ground surface artifacts.

17 glass sherds
6 ceramic sherds

Proposed site function and cultural affiliation. Recent historic road refuse scatter.

Evaluation. There were no subsurface deposits on the site, and all material found was of recent origin. Therefore, no further work is recommended. The site was recorded for the same reasons as those discussed for 3CN87.

The Minnie Ball Site (3CN90)

Description. This site is located on the terrace surface west of the road which is to be improved as part of the Highway 92 relocation.

Method of examination. Pedestrian survey was used to investigate this site because it was located in an erosional area.

Ground surface artifacts.

37 glass sherds
32 ceramic sherds
6 metal fragments
1 shoe sole
1 plastic fragment

Proposed site function and cultural affiliation. Recent historic road refuse scatter.

Evaluation. There were no subsurface deposits found at this site, and all material was of recent origin. Therefore no additional work is recommended. The site was recorded for the same reasons as those discussed for 3CN87.

The Soda Bottle Site (3CN91)

Description. This site is located in the middle of the road which is to be improved as part of the Highway 92 relocation.

Method of examination. Pedestrian survey was employed to investigate this site.

Ground surface artifacts.

Prehistoric
1 novaculite projectile point, white

Historic
1 ceramic sherd

Proposed site function and cultural affiliation. The prehistoric component may be the result of secondary deposition in the road bed, or it may simply be eroding out of the road bed. At any rate, its function cannot be assessed, but its cultural affiliation appears to be late Woodland, Mississippian, or historic based on the characteristics of the projectile point. This point has been identified as:

1 Scallorn (late Woodland-Historic)(novaculite)(Plate 3g)

The historic component appears to be road refuse.

Evaluation. There were no subsurface deposits found at the site, and all material was of recent origin. Therefore, no additional work is recommended. The site was recorded for the same reasons as those discussed for 3CN87.

The Flake Cabin Site (3CN94)

Description. This site is located along the ridge top approximately 100 m southwest of the proposed dam site. It is located in a pasture with a farm road cutting across it. An old well is present adjacent to this road on its south side. The well is filled in, with only a slight circular depression visible. An artifact concentration was found in erosional areas 30 m south of the well. The house structure may have stood in this area. Total areal extent is 30 m (east-west) by 40 m (north-south).

Method of examination. Pedestrian survey was employed to investigate farm roads and erosional areas. Shovel tests were placed at 20 to 30 m intervals throughout the pasture, but materials were recovered only from shovel tests in a 20 m by 20 m area of concentration.

Ground surface artifacts.

29 glass sherds
42 ceramic sherds
1 cast iron handle
1 metal bar
1 metal hook fastener

Historic documentation. An 1826 ad for land being sold for taxes identifies Abraham Pane as the original owner and patentee of this property, with John W. Benninger listed as owing the taxes (Arkansas Gazette 22 August 1826). Benninger may have only been an agent, however. Taxes were paid in 1858 by J. W. Willbanks (Conway County Tax Records), who had apparently entered the land in the name of his daughter California because confirmation of title dated 26 October 1858 is in her name. California Willbanks was a child when she became the owner of this property for she was just 16 when she married John N. Bolton on 19 December 1869 (Conway County Marriage Record 2:428). The Boltons sold this property to Emma Clark in 1875 for $500. Emma Clark and her husband Samuel split the property into two parcels --the 90 acre western portion which includes the sites being sold to John N. Bolton and R. L. Cargile on 10 January 1876 for $350 (Conway County Deed Record T:336; O:13). Bolton was a merchant, one of the partners of Stell & Bolton, who gave mortgages on crops. The splitting of the property and resale to Bolton may have been either to repay a debt or to get money to finance the new crop. The Clarks sold the eastern parcel to Alice Wood on 18 November 1878 for $400 (Conway County Deed Record T:337). By 1913 the western parcel was owned by M. E. Thomas, and in 1929 it was owned by M. L. Jones (Conway County Real Estate Tax Records). This site might be more properly called the Willbanks-Bolton place, but it has been named after the most recent landowner, J. D. Flake.

Proposed site function and cultural affiliation. Local informants state that a house was built on this site just prior to the Civil War.

Evaluation. This site will be adversely affected by construction of the spillway and access roads to the dam. However, the Wilder House (3CN92) represents a rural house site dating from the same period which is in a better state of preservation. The additional work planned for the Wilder House is expected to yield better information about the economic patterns of the area during this period than any of the similar sites found during the survey. Therefore, no additional work is recommended for 3CN94.

The White Ware Site (3CN98)

Description. This site is located along the terrace surface on a knoll surrounded by a low marshy area.

Method of Examination. The knoll was shovel tested extensively with tests being placed 10 m apart. However, only one ceramic sherd was recovered.

Ground surface artifacts.

1 ceramic sherd

Proposed site function and cultural affiliation. Unknown historic.

Evaluation. No further work is recommended because, according to maps supplied by the Corps of Engineers, the site will not be impacted by the pipeline construction. The site is located 40 m north of the pipeline route.

The Purple Glass Site (3CN102)

Description. This site is located on a knoll along the terrace edge overlooking the Cypress Creek floodplain. The site is covered with pasture. Only two artifacts were found, so no areal extent could be assessed.

Method of Examination. Shovel tests were placed along the terrace at 20 to 30 m intervals. Artifacts were found on the surface in small erosional areas.

Ground surface artifacts.

1 glass sherd
1 ceramic sherd

Proposed site function and cultural affiliation. This site is located on the same parcel of land described under historic documentation for site 3CN94.

Evaluation. According to maps supplied by the Corps of Engineers, this site lies approximately 80 m south of the proposed pipeline, and will not be affected by construction. Therefore, no further work is warranted.

The Twin Point Site #1 (3CN103)

Description. This site is located in a pasture on the terrace edge overlooking the Cypress Creek floodplain. Its areal extent is roughly 20 m by 20 m. There is a circular depression present which may be a filled in well.

Method of examination. Pedestrian survey was conducted in erosional areas where artifacts were found. Shovel tests were placed at 10 to 20 m intervals in the vicinity of surface finds, but no additional artifacts were found.

Ground surface artifacts.

1 glass sherd
2 ceramic sherds

Historic documentation. An 1826 ad announcing land being sold for taxes lists James Ray as the original owner of this land, with William E. Woodruff as his agent (Arkansas Gazette 22 August 1826). Sixteen years later, Woodruff was still the agent, but the taxes were owed by Samuel Miller (Woodruff n.d.). Apparently the taxes were not paid and the land was forfeited to the state. It was offered at auction but not sold so it became donation land, and as such, was patented to James T. Stell on 16 February 1850 (Conway County Deed Record D:204). Following the deaths of James T. Stell and Dennis Stell, his father, the land went to Edward Henry Stell, James's brother, who was a minor heir. It was not until the January 1870 term that the Probate Court gave him the power to transact business as an adult. He then sold this piece of property to Nancy E. Stell Russell, his sister, on 29 January 1870 (Conway County Deed Record K:363). She and her family lived there until at least 1900--there were still three children at home although her husband, John F. had died (U.S. Census 1900: Union Township). Nancy Russell died between 1900 and 1903 because in the latter year the property was surveyed for the J. F. Russell heirs (Conway County Surveyors Record I). In 1913 the taxes were paid by Bud Hoyle, A. C. Hicks, and Thomas Payne. In 1929 the tax was paid by Bud Hoyle, H. L. Hicks, and Thomas Payne (Conway County Real Estate Tax Records). The only information available on these men is that Thomas Payne was a black tenant farmer who came to Arkansas from Tennessee before 1892 (U.S. Census 1900: Union Township).

Proposed site function and cultural affiliation. This site was was a historic dwelling probably dating to the latter half of the nineteenth century.

Evaluation. The shallow nature of the deposit indicates that little data of scientific importance can be expected to be recovered from further work. Since the Wilder House (3CN92) can provide better information about the transition from early white occupation to black tenant farmers occupation than can this site, no further work seems warranted.

The Twin Point Site #2 (3CN104)

Description. This site is located on a knoll on the terrace across from 3CN103. A gap of roughly 30 m separates the two sites. Beverly Watkins believes that both 3CN103 and 3CN104 should be considered part of the same site.

Method of examination. Shovel tests were placed at 10 to 20 m intervals to search for site boundaries.

Ground surface artifacts.

3 glass sherds
4 ceramic sherds

Proposed site function and cultural affiliation. Same as for 3CN103.

Evaluation. No further work is recommended for the same reasons as those listed for 3CN103.

The Flake House (3CN110)

Description. This site is located on the ridgetop near the dam and spillway. The structure is still standing. It has a front porch, side porch, back porch, living room, kitchen, dining room, and three bedrooms. A smokehouse is standing 5 m east of the house and a caved-in root cellar is present 5 m south of the house. The house is currently occupied by Mr. J. D. Flake.

Method of examination. The exteriors of the house, root cellar, and smoke house were photographed. No collections were made.

Proposed site function and cultural affilation. This house, along with 3CN94, is located on land once owned by California Wilbanks. The age of the structure is difficult to assess on the basis of architectural features because it has been remodeled extensively. The present owner believes that the house is over 100 years old, but the actual date of construction is unknown.

Evaluation. Although this site will be destroyed by construction of the spillway, it appears to have little potential for aiding in our understanding of local history. Therefore, no further work is recommended.

The Harrison-Nisler Log House Site (3CN112)

Description. This structure is located on the hillslope roughly 150 m west of 3CN115. This is a standing single room log cabin with a chimney made of natural stone on its east side and a plank addition of a kitchen and back porch (Figures B-1 and B-2).It has been well preserved by its owners who have used it as a guest house until recently. It is perhaps the best example of the architecture typical of this region in the 1850-1870s still standing.

Method of examination. Photographs were taken of the exterior and interior of the structure. No collections were made.

Historic documentation. An Auditor's Deed for this property was issued to Asbury Baxter Stell on 13 February 1855. Stell apparently failed to pay his taxes, because on 26 November 1856 an Auditor's Deed was issued to William P. Lacefield. Stell, however, was able to reclaim his land on 27 March 1857 by paying $109.38 in back taxes. This last deed included the "rights to the premises and estates of the former owner," implying

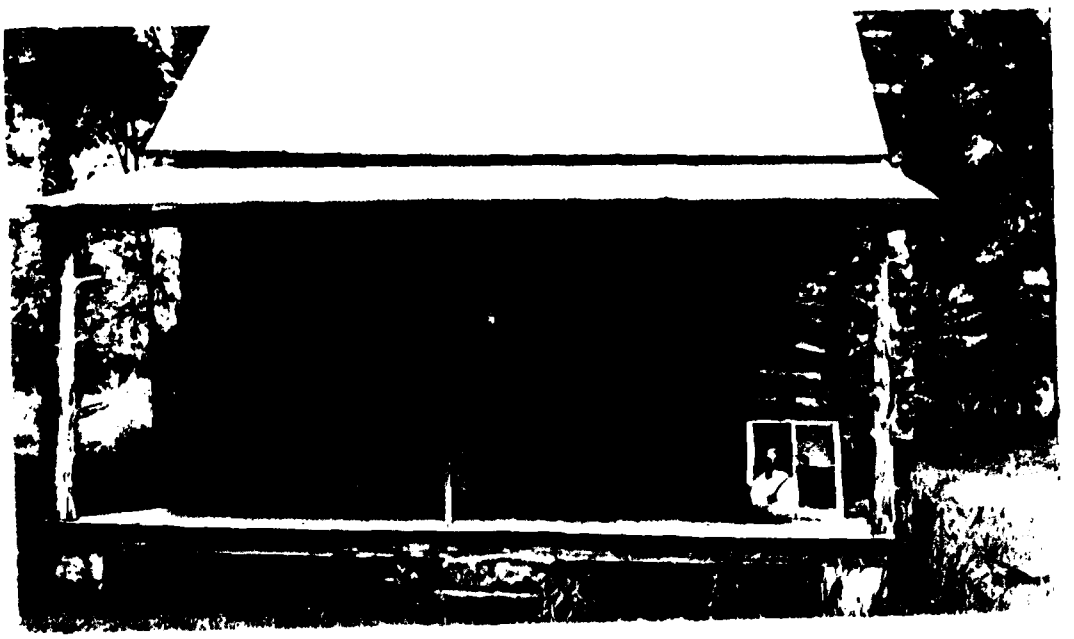

Figure B-1. South elevation of the Harrison-Nisler house, 3CN112 (PR795946)

Figure B-2. East elevation of the Harrison-Nisler house, 3CN112 (PR795933)

that there were already buildings on the property (Conway County Deed Record F:179; G:6, 92). The legal situation was so confusing that both men were listed as owning the taxes on the property for 1858 (Conway County Tax Records). The confusion was resolved and Stell lived there until his death. On 7 December 1891 the heirs of A. B. Stell all deeded their interest in the property to A. B. Stell, Jr.

A. B. Stell, Jr. had apparently sold some of the land before he owned it for the deed specifically includes the land "that was sold to R. W. Harrison" (Conway County Deed Record 7:590). Harrison was Stell's next door neighbor, and the land sold to him includes the 40 acres where the site is located (U.S. Census 1900: Union Township). Harrison remained the owner until at least 1929 (Conway County Real Estate Tax Record 1913, 1929).

Proposed site function and cultural affiliation. This historic dwelling was built during the summer of 1875 by Robert Weaver Harrison. According to an article entitled "The Little Log House Down at the Spring" by Paul H. Harrison (on file at the Arkansas Archeological Survey), 14 persons were born in this structure between 1877 and 1917. The structure was occupied by the Andy Underwood and Frank Thomas families, tenant farmers, in the 1920s. It fell into disrepair in the early 1930s, and was repaired in March of 1937. It is still used as a guest house by the Nisler family.

Evaluation. Due to the fact that this site is located away from areas to be impacted by construction, no further work is recommended.

The Salamander House (3CN118)

Description. This site is located on a ridge top approximately 100 m north of 3CN110 and 50 m west of 3CN94. It is situated immediately north of the present road in a forested area. Portions of the site have been destroyed by dozer cuts. A pile of stones which may represent chimney fall is all that stands at the site. Area extent is approximately 20 m (north-south) by 30 m (east-west).

Method of examination. Shovel tests were placed in the forest at 5 to 10 m intervals to delimit site boundaries. The deposits and soil were very shallow.

Ground surface artifacts.

Prehistoric
1 Pitkin Gary point

Historic
25 glass sherds
28 ceramic sherds
3 metal lids
1 leather strap

Historic documentation. The 160 acres which includes this site was originally patented to the heirs of Casper Rennels, but when they failed to pay taxes for 1836 and 1837, the property was sold at auction on 6 November 1837. It was bought by James Burd for $5.15, and a Sheriff's Deed confirming the sale was issued 26 July 1839 (Conway County Deed Record A:494). Burd was probably a land agent who did not settle on the land. In any event, the land was sold at auction again on 1 November 1852 because the heirs of Casher Nimbell failed to pay the taxes for 1849 through 1852. The land was bought by Joshua Moses, the county clerk, for $16.02 and a second Sheriff's Deed was issued on 22 November 1854 (Conway County Deed Record F:108). Sometime between 1854 and 1858 this land became the property of Ware Harrison, who was probably the first actual settler. This was the only land owned by Harrison in 1858 (Conway County Tax Records). The property stayed in the Harrison family, going to Robert W. when Ware died some time before 1900 (Conway County Real Estate Tax Records 1913, 1929; U.S. Census 1900: Union Township).

Proposed site function and cultural affiliation. The prehistoric projectile point was found in the sand south of the historic concentration. It has been classified as:

1 Gary (early Woodland-Historic)(Pitkin)(Plate 3u).

The site's prehistoric function cannot be determined.

The historic component was a dwelling. Records research indicates that the property was sold and resold several times between 1836 and 1854. Sometime between 1854 and 1858, Ware Harrison purchased the land. Harrison was probably the first person to actually settle the land. The property stayed in the Harrison family until at least the 1930s. Dates of construction and abandonment of the structure are unknown.

Evaluation. Due to the shallow nature of this site and the fact that it probably could not provide as much information as the Wilder House (3CN92), no further work is recommended.

The Alberta Alexander House (3CN119)

Description. This site is located on a small knoll along the terrace edge overlooking the floodplain of Cypress Creek. It is forested and has undergone much disturbance from recent logging activity. Its maximum extent is estimated to be 26 m (north-south) by 21 m (east-west).

Method of examination. The knoll was shovel tested with tests spaced 5 to 10 m apart. Pedestrian survey was conducted along disturbed areas.

Ground surface artifacts.

Prehistoric
2 Boone chert projectile points

Historic
25 glass sherds
4 nails
1 knife
1 spoon
several metal fragments

Proposed site function and cultural affiliation. Only one prehistoric projectile point was identified as to type. It is a Standlee contracted stem (middle Archaic to late Woodland). The prehistoric site function could not be determined.

The historic component appears to have been a dwelling. W. S. Alexander, the landowner, believes this site represents the remains of a structure built about the same time as the Wilder House (3CN92). The land was once owned by the Stell family, so it is possible that the house was built by one of the Stells.

Evaluation. Due to the greatly disturbed nature of the site, no further work is recommended.

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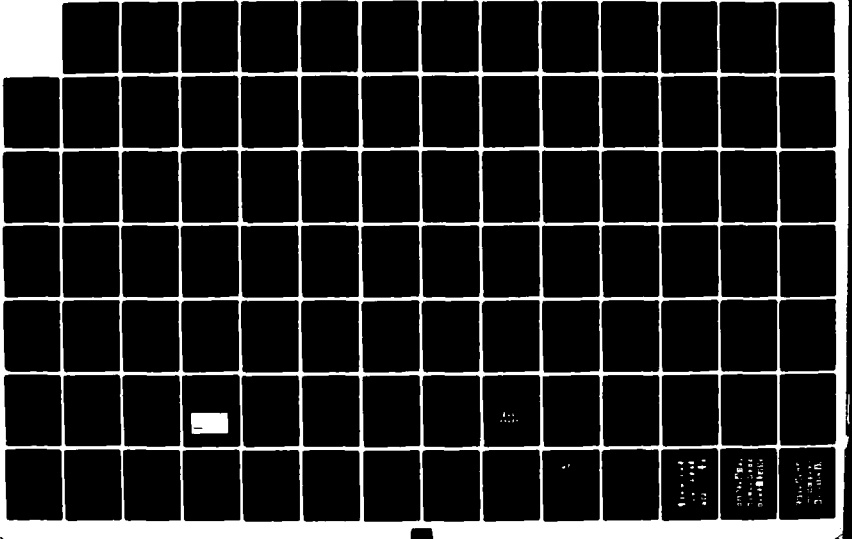

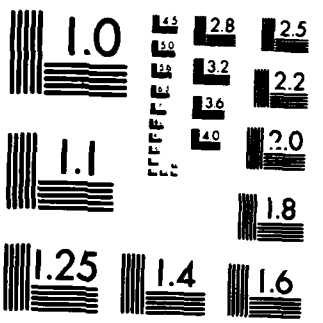

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Appendix C

Prehistoric Sites Tested in 1979

by

Lawrence Gene Santeford

and

David C. Quin

NONCERAMIC SITES

The Mazurek Site (3CN33)

Description. The site is in a cleared area approximately 365 m (north-south) by 121 m (east-west) on the alluvial flat of Cypress Creek. The creek is east of the site and appears to be eroding the eastern limits of cultural materials. The site is approximately 98 m above sea level with native vegetation of mixed hardwoods and shortleaf pines (Townsend and Wilson n.d.:248). The soil association is Spadra fine sandy loam (see Appendix E) that is generally medium acid to very strongly acid suggesting minimal preservation of organic remains.

Preliminary surveys. Toney first recorded this site in 1974 and described its location as an overgrown field surrounded by a deciduous forest and small stands of conifers. He made a surface collection of one scraper and 18 finishing flakes and noted that the site was in poor drainage (Toney 1974).

Martin and Jones revisited the site in 1978 and made another surface collection. They found artifacts eroding out of the creek bank. Artifacts collected included a sandstone slab, sandstone cobbles, two bifacial fragments, 215 chert flakes, two point fragments and three points (Martin and Jones 1978).

Methods of testing. During the November 1979 testing phase, the ground surface was examined but only five to eight flakes were observed and collected. The creek bank had no cultural materials present. More than 100 shovel tests were dug randomly over the entire site area but no cultural materials were found in any of these tests. Two 1 m^2 test units were excavated at the south end of the site where surface material appeared somewhat more abundant.

Ground surface materials.

Nonutilized flake with cortex
1 Boone chert, pink

Nonutilized flake without cortex
2 Boone chert, blue
2 Boone chert, white
2 Boone chert, tan
8 novaculite, white
1 novaculite, translucent white
4 novaculite, cream

Retouched flake without cortex
1 Pitkin chert

Cores
1 Pitkin chert

Unmodified lithic
1 quartz crystal

Test Unit A. This unit was excavated 144 m north of the south edge of the clear area and 14 m west of the creek bank. Arbitrary 10 cm levels were employed since the soil demonstrated little variation. From 0-20 cm the soil was brown and sandy with a few stones throughout the levels. At 20 cm the soil appeared as a reddish sand with fewer stones. The unit was shovel scraped and troweled. All soil was screened through ¼ inch mesh. Excavation was terminated at 40 cm when levels appeared sterile of cultural materials.

Nonutilized flake without cortex
0-10 cm
1 Boone chert, blue
1 Boone chert, gray
7 Pitkin chert
4 novaculite, translucent white
10-20 cm
1 Boone chert, blue
1 Boone chert, white
13 Pitkin chert
2 novaculite, translucent white
1 novaculite, reddish
20-30 cm
1 Boone chert, green
6 Pitkin chert
4 novaculite, translucent white
2 Crowley's Ridge chert
30-40 cm
1 Boone chert
3 Pitkin chert
2 novaculite, translucent white

Nonutilized flake with cortex
10-20 cm
2 Boone chert, pink
2 Pitkin chert
20-30 cm
1 novaculite, translucent white
1 Crowley's Ridge chert
30-40 cm
1 Crowley's Ridge chert

Test Unit B. This unit was excavated 28 m northwest of Test Unit A and 17 m west of the Cypress Creek bank. From 0-20 cm the soil was orange and sandy. Below this level it was darker red with some mottling. Excavation was terminated at 40 cm when levels appeared sterile of cultural materials. All levels were shovel scraped and troweled. Soil was screened through ¼ inch mesh.

Nonutilized flake without cortex
0-10 cm
1 Boone chert, white
1 Boone chert, cream
6 Pitkin chert
3 novaculite, translucent white
10-20 cm
1 Boone chert, white
2 Boone chert, yellow
9 Pitkin chert
5 novaculite, translucent white
4 novaculite, pink
20-30 cm
3 Boone chert, white
6 Pitkin chert
8 novaculite, translucent white
2 novaculite, reddish
30-40 cm
2 Boone chert, white
1 Boone chert, tan
5 Pitkin chert

Nonutilized flake with cortex
20-30 cm
1 Boone chert, white
2 Pitkin chert

Proposed site function and period of occupation. During the 1978 field season, three points were recovered at the Mazurek site. In 1980 these artifacts were reexamined in order to gain insight into the site occupation period. One additional point was identified during this reexamination. Points from the site include:
1 Sequoyah (Mississippian) (Pitkin chert)
1 Scallorn (late Woodland to Mississippian) (novaculite)

1 Dallas (early Woodland to middle Woodland) (Boone chert)
1 unidentified straight stem (Pitkin chert)

It would appear, therefore, that this site was occupied during the Woodland period, perhaps the latter part, as well as during the Mississippian period. Due to seasonal inundation of the site by waters of Cypress Creek, it would appear that the site was a seasonally occupied camp. The lithics recovered from the site were from sources located north, southwest, and northeast. Due to the acid conditions of the soil, no floral or faunal evidence for what resources were exploited remains.

Evaluation. Based on the quantity of material recovered from the site, the apparent lack of preservation of floral or faunal materials, and the homogeneous soil matrix suggesting seasonal inundation by Cypress Creek, it is recommended that no further work be conducted on the Mazurek site (3CN33). The possibility of cultural features like houses, hearths, or burials being preserved at the site appears extremely remote.

The Rotten Melon Site (3CN36)

Description. The site is located on a small, cleared hillock near an intermittent stream west of Cypress Creek. The site is approximately 550 m (east-west) by 91 m (north-south). The Rotten Melon site is approximately 91.4 m above sea level. Soil association is Leadvale silt loam (see Appendix E). Such soils are on slightly concave toeslopes, benches and terraces. Native vegetation was mixed hardwoods. The soil is generally strongly to very strongly acid suggesting little preservation of organic materials.

Preliminary surveys. Brooks and Brooks (1975) conducted an initial survey when five areas were being considered for the location of the Conway Water Supply project. The landowners did not allow subsurface testing at that time so only surface collections were made. Artifacts included 15 flakes, 2 projectile points (Barry square-stemmed, Lander corner-notched), point fragment, 5 bifaces, 16 unworked flakes, and 2 hammerstones.

In 1978 Martin and Jones discovered that the site was larger than initially determined. Surface collections were made recovering 3 projectile points (Big Sandy, Carrollton, and Afton), 34 flakes, point fragment, 11 sandstone cobbles, abrader, nutting stone, 2 crystal quartz fragments, and a sandstone fragment. The site was revisited during the June-August 1979 survey and testing phase, but the landowner again refused permission for subsurface testing until the fall.

Methods of testing. During the November testing phase, an intensive ground surface survey of the entire site area was performed. Then more than 50 individual shovel tests were dug randomly over the entire site

area, but little material was found. Examination of the shovel test units showed that the artifacts were deposited close to the ground surface and prolonged plowing had probably destroyed any cultural features which may have been preserved into the Historic period. One test unit was excavated in order to confirm the shallow nature of the site.

Ground surface materials.

Retouched flake with cortex
- 1 Pitkin chert
- 1 novaculite, reddish

Retouched flake without cortex
- 4 Pitkin chert
- 1 novaculite, gray
- 5 novaculite, tan

Shovel test materials. (0-30 cm)

Retouched flake without cortex
- 4 Pitkin chert
- 1 quartz crystal fragment

Test Unit A. This 1 m^2 test unit was excavated by shovel scraping. All soil removed was screened through ¼ inch mesh. Since the soil appeared to be homogeneous, arbitrary 10 cm levels were excavated. This soil appeared to be a light brown, sandy loam. Excavation was terminated at 30 cm when the unit appeared sterile of cultural materials.

Retouched flake without cortex
0-10 cm
- 4 Boone chert, white
- 15 Pitkin chert
- 1 novaculite, reddish

10-20 cm
- 1 Boone chert, white
- 2 Pitkin chert
- 2 novaculite, translucent white
- 1 novaculite, reddish

Unmodified lithic
0-10 cm
- 18 sandstone

10-20 cm
- 7 sandstone

Retouched flake with cortex
10-20 cm
- 1 Boone chert, white

Biface
10-20 cm
1 Pitkin chert

Proposed site function and period of occupation. Diagnostic lithics were recovered during the Brooks and Brooks (1975) and the Martin and Jones (1978) surveys. The former of these were not readily available for analysis since these are stored at the Russellville Station. The 1978 points were reexamined.

Brooks and Brooks survey
1 Barry square-stemmed (middle to late Archaic)
1 Lander corner-notched (late Archaic to Mississippian)

Martin and Jones survey
1 Big Sandy (early Archaic)
1 Carrollton (late Archaic to early Woodland)
1 Afton (middle Archaic) (Boone chert)

These diagnostic artifacts suggest that the site was occupied during the Archaic period. It was perhaps a seasonal camp established for the exploitation of resources on the terrace and floodplain environs of Cypress Creek located east of the site. Acid conditions of the soil appear to have destroyed all floral and faunal remains. The lithics suggest an emphasis on hunting. The double-pitted nutting stone recovered at the site suggests possible exploitation of nut resources in the mixed hardwood forest.

Evaluation. This site was examined on three separate occasions and each time surface collections were made. Shovel testing in 1979 indicated that all artifacts lie within the plowzone (0-30 cm) and any features that were preserved into the historic period were destroyed by plowing. Because of the homogeneity of the soil matrix that suggests low potential for preservation of cultural features as a result of plowing, the overall sparsity of artifacts in subsurface levels, and the conditions which suggest poor preservation of organic remains, it is recommended that no additional work be conducted at the Rotten Melon site (3CN36).

The Hensley Site (3CN38)

Description. The site is located on the floodplain approximately 22 m east of Cypress Creek. The area is presently covered with short grass and is used for pasture for horses. The only significant overgrowth is close to the edge of the creek. The areal extent of the site remained undefined in 1978. During the 1979 testing phase, the entire site was shovel tested. The distribution of artifacts suggests that the occupation area may have been at least 213 m by 40 m.

Preliminary surveys. This site was first located in 1978 by Martin and Jones. At that time a surface collection of a biface fragment.

two flakes and five sandstone fragments was made. James Stell stated that he had found numerous projectile points and pottery on the site when he was young (Martin and Jones 1978).

Methods of testing. Since the site will be inundated if the proposed reservoir is constructed, it was recommended that this site be tested for determination of significance. Following extensive shovel testing, four 1 m^2 test units were excavated where shovel testing suggested that subsurface densities of artifacts were higher.

Shovel tests. Five lines were established at the site approximately 10 m apart. These were oriented northeast to southwest. Each test was assigned a number and each of the five base points were assigned a letter. Only 10 of the 114 shovel tests contained flakes. All were dug to a minimum of 30 cm.

Nonutilized flake without cortex
- 1 Boone chert, blue (B10)
- 1 Pitkin chert (C12)

Nonutilized flake with cortex
- 1 Boone chert, red (B8)
- 1 Pitkin chert (A7, C7, C22, D2, D23, E8)
- 1 novaculite, translucent white (B9)
- 1 novaculite, tan (A7)

Test Unit A. This unit was excavated by 10 cm levels. The soil appeared to be homogeneous and sandy, although it appeared somewhat darker below 30 cm. Excavation was terminated at 70 cm when the levels were sterile of cultural materials.

Nonutilized flake without cortex

0-20 cm
- 1 Boone chert, white
- 4 Pitkin chert
- 3 novaculite, white
- 3 novaculite, red

20-30 cm
- 1 Boone chert, white
- 1 Boone chert, gray
- 5 Pitkin chert

30-40 cm
- 1 Boone chert, white
- 1 Boone chert, gray-tan
- 6 Pitkin chert
- 3 novaculite, red

40-50 cm
- 1 Boone chert, blue
- 2 Boone chert, gray
- 1 Boone chert, tan
- 5 Pitkin chert

60-70
1 Boone chert, blue-green
3 Pitkin chert

Nonutilized flake with cortex
0-20 cm
1 Boone chert, tan
50-60 cm
1 Boone chert, blue

Bifaces
0-20 cm
1 Afton (Boone chert, blue) (Plate 1d)
1 Pitkin chert
40-50 cm
1 Steuben (Crowley's Ridge) (Plate 1b)

Test Unit B. Due to the apparent homogeneous nature of the soil, this unit was excavated by 20 cm levels. Excavations were terminated at 60 cm when levels appeared sterile of cultural materials.

Nonutilized flake without cortex
0-20 cm
1 Boone chert, blue
1 Boone chert, white
3 Boone chert, gray
6 Pitkin chert
20-40 cm
1 Boone chert, white
1 Boone chert, gray
7 Pitkin chert
40-60 cm
1 Boone chert, white
4 Pitkin chert
4 novaculite, gray

Nonutilized flake with cortex
40-60 cm
1 Boone chert, gray
2 Pitkin chert

Bifaces
0-20 cm
1 Pitkin chert
20-40 cm
1 Boone chert, tan
40-60 cm
1 Bulverde point (Boone chert, blue)
1 Boone chert, gray

Test Unit C. This unit was excavated in 20 cm levels. The soil was homogeneous sand with no stratigraphic levels. Excavation was

terminated at 60 cm when the levels appeared sterile of cultural materials.

Nonutilized flake without cortex
0-20 cm
1 Boone chert, blue
1 Boone chert, white
4 Boone chert, gray
7 Pitkin chert
20-40 cm
1 Boone chert, blue
2 Boone chert, tan
1 Boone chert, gray
10 Pitkin chert
3 novaculite, gray
1 novaculite, translucent white
3 novaculite, red
40-60 cm
1 Boone chert, blue
1 Boone chert, gray
1 Boone chert, tan
10 Pitkin chert
1 novaculite, black
4 novaculite, translucent white

Bifaces
0-20 cm
1 Ellis point (Crowley's Ridge)

Test Unit D. This unit was excavated by 10 cm levels to 30 cm below ground surface. The soil conditions were consistent with those observed in the other units. The unit was excavated south of an intermittent stream which intercepted the south end of the site.

Nonutilized flake without cortex
0-10 cm
1 Boone chert, gray
20-30 cm
1 Pitkin chert

Historic artifact
1 ceramic fragment

Proposed site function and period of occupation. Four diagnostic points were recovered from the Hensley site during the 1979 testing phase.
1 Afton (middle Archaic (Boone chert) (Plate 1d)
1 Bulverde (middle to late Archaic) (Boone chert) (Plate 1a)
1 Steuben (middle to late Woodland) (Boone chert) (Plate 1b)
1 Ellis (late Archaic to early Woodland) (Boone chert) (Plate 1c)

It would appear that this site was occupied primarily during the late Archaic or early Woodland periods, although earlier and later

occupations cannot be dismissed. Because of its location on the floodplain of Cypress Creek, an area which is seasonally inundated, it is suggested that this site was a seasonal camp. No floral or faunal remains are preserved which can be used to determine the nature of exploitation employed at the site. No site features have been preserved.

Evaluation. This site has been extensively shovel tested and four 1 m^2 test units were excavated in the area of highest artifact concentrations. Because of the homogeneity of the soil which suggests seasonal inundation by Cypress Creek, the overall sparsity of lithic materials in most subsurface units, and the conditions which suggest minimal preservation of floral and faunal remains, it is recommended that this site warrants no further work.

The Dam Site (3CN42)

Description. This site is located on the terrace immediately east of the proposed dam which is approximately 106.7 m above sea level. Part of the site is covered in dense deciduous forest with undergrowth. The rest is covered with dense grasses and other underbrush. A dirt roadway has been constructed through the site and artifacts occurred in eroded sections of this roadbed.

Cypress Creek is the only permanent water source in the area and is located approximately 88 m to the west at the base of the terrace. The soil association is Spadra fine sandy loam (see Appendix E). Approximate area of the site is 152 m by 134 m.

Preliminary surveys. During the Martin and Jones survey in 1978, surface collections included 2 projectile points, 3 projectile point bases, 10 sandstone fragments, 1 large sandstone celt preform, 1 possible mano, 128 chert flakes and 1 biface fragment (Martin and Jone 1978). Material was collected primarily in an area where two bulldozer cuts had been made.

Methods of testing. On July 13 and 14, 1979, an intensive ground surface survey, shovel testing, and excavation of six units were performed. Artifacts were visible only in a few eroded areas and most of the surface material was collected on the roadway. An east-west transect with eight shovel tests dug at 15 m apart and a north-south transect with 10 shovel tests dug at 15 m apart were established. Six 1 m^2 test units were excavated in various parts of the site.

Ground surface materials

Nonutilized flake without cortex
- 9 Boone chert, blue
- 1 Boone chert, green
- 38 Boone chert, white
- 2 Boone chert, pink

16 Boone chert, gray
61 Pitkin chert
4 novaculite, white
12 novaculite, translucent white
5 novaculite, reddish
19 Crowley's Ridge
2 St. Joe chert
8 Penters chert

Nonutilized flake with cortex
2 Boone chert, white
3 Pitkin chert
1 Crowley's Ridge chert
1 Penters chert

Retouched flake without cortex
5 Boone chert, blue
2 Boone chert, white
15 Pitkin chert (1 core)
3 novaculite

Retouched flake with cortex
1 Boone chert, white

Bifaces
1 Jack's Reef (Boone chert, blue) (Plate 1e)
2 Rice point (novaculite) (Plate 1f)
1 Boone chert, gray (point)
1 Pitkin chert (drill)
1 Pitkin chert (drill)
1 unidentified expanded stem (Pitkin chert)
1 Rice corner-notched (Pitkin chert)
3 novaculite, translucent white

End scrapers
1 Boone chert
1 Pitkin chert

Groundstone
1 sandstone
1 miscellaneous

Shovel test materials.

Nonutilized flake without cortex
1 novaculite, translucent white (shovel test 6, 10-20 cm)
1 Boone chert, gray (shovel test 9, 0-20 cm)
1 Pitkin chert (shovel test 9, 0-20 cm)

Bifaces
1 Rice point (Boone chert, gray) (shovel test 8, 0-10 cm) (Plate 1g)

Test Unit A. This unit was excavated just north of the dirt roadway that had been constructed through the site. Arbitrary 10 cm levels were dug since no cultural or natural stratigraphy was evident. Excavation was terminated at 20 cm since the unit was sterile of cultural materials. The soil was a homogeneous, sandy brown. No features were observed.

Nonutilized flake without cortex
0-10 cm
2 Boone chert, white
1 Boone chert, gray
22 Pitkin chert
1 novaculite, translucent white
1 novaculite, tannish
1 Crowley's Ridge chert
1 St. Joe chert
10-20 cm
1 Pitkin chert
1 Crowley's Ridge chert

Nonutilized flake with cortex
0-10 cm
2 Crowley's Ridge chert
1 St. Joe chert

Retouched flake without cortex
0-10 cm
1 Boone chert, blue

Unmodified lithic
1 quartz crystal

Test Unit B. This unit was excavated approximately 106 m northeast of Test Unit A. Arbitrary 10 cm levels were employed although only half of the unit was excavated to a depth of 20 cm. The unit was sterile of cultural materials below this level. The soil was a sandy brown with sandstone inclusions to the 10 cm depth and below this a reddish sand.

Nonutilized flake without cortex
0-10 cm
3 Pitkin chert
1 novaculite, black
1 novaculite, gray
1 Crowley's Ridge
1 Penters chert
10-20 cm
1 Boone chert, blue
3 Boone chert, white
2 Boone chert, gray
17 Pitkin chert
1 novaculite, gray
1 novaculite, translucent white
1 novaculite, reddish

3 Crowley's Ridge chert
5 Bigfork chert

Nonutilized flake with cortex
10-20 cm
1 Pitkin chert

Retouched flake with cortex
10-20 cm
1 Pitkin chert

Biface
0-10 cm
1 Boone chert, white
10-20 cm
1 Pitkin chert

Test Unit C. This test unit was excavated 45.7 m northeast of Test Unit A along the north side of the dirt road. It was excavated by arbitrary 10 cm levels to a depth of 20 cm. The soil was a brown sand to a depth of 10 cm and below this was reddish and sandy. No cultural materials were found below 15 cm and no features were found.

Nonutilized flake without cortex
0-10 cm
1 Boone chert, white
7 Pitkin chert
4 novaculite, translucent white
1 novaculite, reddish
10-15 cm
1 Boone chert, white
1 Pitkin chert
1 novaculite, translucent white

Nonutilized flake with cortex
0-10 cm
2 St. Joe chert

Test Unit D. This unit was excavated approximately 30.5 m southeast of Test Unit B to a depth of 20 cm using arbitrary 10 cm levels. No materials were recovered below 10 cm. Soil was of a homogeneous red, sandy type.

Nonutilized flake without cortex
0-10 cm
1 Boone chert, white
4 Pitkin chert
1 novaculite, reddish
2 Crowley's Ridge chert

Test Unit E. This unit was excavated approximately 30.5 m south of Test Unit A on a terrace slope. Due to the quantity of gravel and sandstone, the soil was difficult to dig. The unit was excavated to a depth of 10 cm.

Nonutilized flake without cortex
2 Pitkin chert

Test Unit F. This 1 m^2 test unit was excavated approximatley 30.5 m northwest of Test Unit A. From ground surface to 10 cm, the soil was a light brown, sandy silt. Below this level the soil changed to a reddish sandy type. Excavation was terminated at 15 cm due to the paucity of cultural materials.

Nonutilized flake without cortex
0-10 cm
2 Boone chert, blue
1 Boone chert, green
2 Boone chert, white
1 Boone chert, pink
36 Pitkin chert
1 novaculite, gray
3 novaculite, translucent white
3 Crowley's Ridge chert
2 Everton chert breccia
10-15 cm
2 Boone chert, blue
1 Boone chert, white
1 Boone chert, red
20 Pitkin chert
2 Crowley's Ridge chert

Nonutilized flake with cortex
0-10 cm
2 Boone chert, blue
1 Pitkin chert
1 Crowley's Ridge

Bifaces
0-10 cm
2 Pitkin chert
10-15 cm
1 Pitkin chert

Modified lithic
0-10 cm
1 sandstone metate

Unmodified lithic
1 quartz crystal
1 miscellaneous rock

Proposed site function and period of occupation. Diagnostic lithics were recovered from this site during the Martin and Jones survey and during the testing phase in 1979.

2 Cache River (early Archaic) (1 Pitkin, 1 Boone) (1978 survey)
2 Rice (early Archaic) (novaculite) (Plate 1f,g)
1 Rice corner-notched (early Archaic) (Pitkin chert)
1 Jack's Reef (middle to late Woodland) (Boone chert) (Plate 1e)
2 unidentifiable side-notched points (Pitkin chert) (1978 survey)
2 unidentifiable expanded stem points (Pitkin chert) (1978 survey)

Most of the points from the site suggest an early Archaic occupation, although there may have been reoccupation during a later period. Due to the nature of the artifacts and the location of the site, it would appear that the primary function of the site was hunting and gathering. Acid conditions of the soil have apparently destroyed all floral and faunal remains if they were present. The metate suggests processing of plant materials although the nature of the plants used remains undefined.

Evaluation. Subsurface testing carried out at the Dam site revealed that the occupation level is extremely shallow. There appears to be no preservation of features or organic materials and there appears to be major disturbance to the area. It is recommended that no further work be done at the site at this time. However, an archeologist should be notified when construction occurs in order to monitor clearing of the site. It is anticipated that such a disturbance would provide archeologists with a more representative sample of lithic artifacts.

The Quartz site (3CN43)

Description. The site is located on a terrace approximately 22 m east of Cypress Creek. It is approximately 88-91 m above sea level. An intermittent stream flows east of the site. Present ground cover includes tall grass, weeds, and trees. The soil association is Mountainburg gravelly fine sandy loam (see Appendix E). The native vegetation consisted of mixed hardwoods. The soil is strongly acid or very strongly acid throughout. Major limitations to cultivation of this area are the shallow nature of the soil above bedrock and the low water capacity. Maximum areal extent of the site is 150 m by 50 m.

Preliminary surveys. The site was first recorded during the Martin and Jones survey in 1978. A surface collection made at that time included 71 flakes, 1 thumbnail scraper, 1 nutting stone, 2 cobbles, 1 abrader, and 5 point fragments (Martin and Jones 1978:63).

Methods of testing. Shovel tests were dug at 10 m intervals across the site in July 1979. The soil was found to be extremely shallow and very eroded. Many of the shovel tests penetrated to only 5 cm before clay and gravel were visible.

Ground surface materials.

Nonutilized flake without cortex
1 Boone chert, gray
1 Pitkin chert

Nonutilized flake with cortex
1 Boone chert, white
1 Boone chert, red

Retouched flake without cortex
1 Boone chert, gray

Bifaces
1 Boone chert, blue
1 Boone chert, tan

Unmodified lithics
1 quartz crystal

Groundstone/slightly modified
1 sandstone metate

Shovel test materials.

Bifaces
1 Boone chert, white (shovel test 7)

Groundstone/slightly modified
1 sandstone (shovel test 7)

Proposed site function and period of occupation. The bifacial fragments collected during the 1979 testing phase were examined and the 1978 fragments were reexamined. These fragments were in extremely poor condition and the identification of the points and the cultural affiliation of the site are problematic.

1 possible Gary (could be middle Archaic or middle to late Woodland period) (1978 survey)
1 possible Marshall (Archaic) (1978 survey)

On the basis of this tenuous identification, it would appear that this site was occupied during the Archaic period as observed by Martin and Jones (1978:43). No features were present. If would appear, based on our current knowledge of the Archaic period and the types of artifacts recovered from this site, that the site was perhaps a seasonally occupied site.

Evaluation. Based on the subsurface examination, the Quartz site (3CN43) exhibits low potential for providing additional information. Because of the shallow nature of the soil precluding preservation of subsurface features, the extreme erosional conditions at the site, and the general sparsity of cultural materials, it is recommended that no further work be conducted at this site.

The Prickly Site (3CN45)

Description. The site is located in pasture, and its limits were impossible to define, due primarily to the paucity of cultural materials. This site is located in the same area as the Pear site (3CN46).

This site is approximately 94.5 m above sea level. Soil association is Taft silt loam (see Appendix E). Native vegetation was mixed hardwoods. Taft soils are strongly acid or very strongly acid throughout suggesting minimal preservation of organic remains.

Preliminary surveys. Martin and Jones located the site during a 1978 survey in the project area. A surface collection was made at that time. Materials included one core and one point base. The latter was identified as a possible Standlee contracting stemmed (Martin and Jones 1978:63).

Methods of testing. Extensive shovel testing was conducted throughout the area which includes this site and the Pear site (3CN46). Since it is believed that this site and the Pear site represent a continuous occupation area, testing procedures are discussed in the section on the Pear site.

Proposed site function and period of occupation. In the earlier report, Martin and Jones (1978:43) identified this site as one occupied during the Archaic period, based primarily on the presence of the possible Standlee contracting stemmed point.

Evaluation. Intensive shovel testing conducted on July 13, 1979 recovered cultural materials. Based on the extreme sparsity of cultural materials, the extremely shallow nature of the soil which suggests minimal potential for preservation of features, and the acidity of the soil which suggests minimal preservation of floral and faunal remains, it is recommended that no additional work be done at the Prickly site.

The Pear Site (3CN46)

Description. This site is located on a small knoll approximately 264 m east of Cypress Creek. There is an intermittent stream approximately 109 m to the east of the site. The area is presently in pasture, with small stands of deciduous forest to the north. The lower areas to the north, south, and west of the site exhibit grasses commonly associated with wetter areas. The approximate areal extent of the site is 140 m by 50 m.

The Pear site is approximately 91.4 m above sea level. The soil associations are Taft silt loam, Leadvale silt loam, and Linker fine sandy loam (see Appendix E).

Preliminary surveys. Martin and Jones located the site during their earlier survey in the project area. A surface collection was made at that time. Artifacts included: 3 metates, 1 double-bladed stone ax, 1 quartz crystal, 14 biface fragments, 2 projectile points, 7 point tips, 13 point bases, 1 scraper, 310 flakes, 1 core, 1 cobble, 1 sandstone fragment, 25 unmodified cobbles, 10 nutting stones, 4 hammerstones, 2 manos, and 8 abraders.

Methods of testing. Due to the quantity of cultural materials recovered from the Pear site during the 1978 survey, the decision was made to conduct additional testing. An intensive surface collection was first made over the entire site area on July 4, 1979. Two lines were then laid out to transect the site north-south and east-west. Shovel tesing was done every 5 m along each line. A total of 14 shovel tests were dug on the east-west line, and 10 shovel tests were dug on the north-south line. Since this site appeared to relate to the Prickly site (3CN45) and the Raspberry site (3CN107), 25 shovel tests were dug in the areas between the three sites. All shovel tests were dug to a minimum of 30 cm. Four 1 m^2 units were excavated at the Pear site. Excavation techniques were consistent with those discussed previously.

Ground surface materials.

Nonutilized flake without cortex
- 34 Boone chert, white
- 48 Pitkin chert
- 2 novaculite, black
- 17 novaculite, gray
- 28 novaculite, tan
- 2 novaculite, reddish
- 1 Everton breccia

Nonutilized flake with cortex
- 2 Boone chert, white
- 6 Boone chert, blue

Retouched flake without cortex
- 2 Boone chert, blue
- 3 Boone chert, white
- 39 Pitkin chert
- 2 novaculite, gray
- 7 novaculite, translucent white
- 1 novaculite, reddish

Retouched flake with cortex
- 3 Pitkin chert
- 1 novaculite, translucent white
- 1 novaculite, reddish
- 2 unidentified expanded stem (blue Boone)
- 2 unidentified expanded stem (Pitkin)
- 1 unidentified expanded stem (white Boone)

Bifaces

1 Williams (Boone chert, blue)(Plate 1k)
1 McIntire (Boone chert, white)(Plate 10)
1 Standlee contracted (Boone chert, white)(Plate 1 1)
1 Williams (Pitkin chert)(Plate 1h)
1 Cache River (Pitkin)(Plate 1i)
1 Rice corner notched (Pitkin)(Plate 1j)
1 Gary (novaculite)(Plate 1m)
1 Dallas (Pitkin)(Plate 1n)
8 Pitkin chert
1 unidentified tapered stem (Boone)
1 unidentified tapered stem (Pitkin)
1 novaculite, tan
3 novaculite, reddish
1 novaculite, green

Groundstone/slightly modified

4 sandstone mano
3 sandstone nutting stone
1 sandstone miscellaneous

Unmodified lithics

2 quartz crystal

Shovel tests.

Nonutilized flake without cortex

1 Boone chert, white (East-West line test #3)
3 Pitkin chert (East-West line test #3)
1 novaculite, tan (East-West line test #3)
1 novaculite, reddish (East-West line test #3)
1 Pitkin (East-West line test #4)
3 Pitkin (East-West line test #5)
1 novaculite, translucent white (East-West line test #5)
1 Boone chert, white (East-West line test #6)
4 Pitkin chert, white (East-West line test #6)
1 Boone chert, white (East-West line test #7)
1 Boone chert, white (North-South line test #1)
1 Boone chert, gray (North-South line test #1)
2 Pitkin chert (North-South line test #1)
3 Pitkin chert (North-South line test #2)
1 novaculite, gray (North-South line test #2)
1 Pitkin chert (North-South line test #3)
1 novaculite, gray (North-South line test #3)
1 Pitkin chert (North-South line test #4)
3 Pitkin chert (North-South line test #6)
2 Boone chert, green (North-South line test #7)
3 Boone chert, white (North-South line test #7)
1 Boone chert, gray (North-South line test #7)
10 Pitkin chert (North-South line test #7)
2 novaculite, gray (North-South line test #7)

1 novaculite, red (North-South line test #7)
2 Boone chert, blue (North-South line test #8)
2 Pitkin chert (North-South line test #8)
1 Boone chert, tan (North-South line test #9)
2 Pitkin chert (North-South line test #9)
2 novaculite, gray (North-South line test #9)
1 novaculite, reddish (North-South line test #9)

Nonutilized flake with cortex
3 Pitkin chert (East-West line test #6)

Retouched flake without cortex
1 Pitkin chert (East-West line test #6)
2 Pitkin chert (East-West line test #8)
1 Pitkin chert (North-South line test #6)
1 Boone chert, green (North-South line test #7)

Bifaces
1 Pitkin chert (East-West line test #5)

Groundstone/slightly modified
1 sandstone metate

Test Unit A. This unit was excavated on the west part of the Pear site. Arbitrary 10 cm excavation levels were employed since the soil appeared homogeneous. From ground surface to 30 cm, the soil was light brown. There was a thin gravel layer at approximately 30 cm which was underlaid by shale. The shale level was sterile of cultural materials, although the unit was examined to a depth of 45 cm. Materials from this unit include:

Nonutilized flake without cortex
0-10 cm
24 Boone chert, white
9 Boone chert, gray
88 Pitkin chert
5 novaculite, translucent white
2 novaculite, reddish
17 Crowley's Ridge chert
6 Boone chert, tan

10-20 cm
2 Boone chert, blue
5 Boone chert, white
2 Boone chert, gray
1 Boone chert, pink
23 Pitkin chert
2 novaculite, gray
1 novaculite, translucent white

20-30 cm
2 Boone chert, blue
3 Boone chert, white
8 Pitkin chert
1 novaculite, gray
30-40 cm
1 Pitkin chert

Nonutilized flake with cortex
0-10 cm
4 Boone chert, white
3 Boone chert, gray
1 novaculite, green
6 Crowley's Ridge
10-20 cm
1 Boone chert, gray
2 Pitkin chert

Retouched flake without cortex
0-10 cm
2 Pitkin chert
10-20 cm
1 Boone chert, gray-red

Bifaces
0-10 cm
3 Pitkin chert
10-20 cm
1 Pitkin chert

Unmodified lithics
0-10 cm
1 quartz crystals
4 miscellaneous

Test Unit B. This unit was excavated 15 m east and 7 m north of Test Unit A. Five levels were excavated (ground surface to 14 cm, 14-24 cm, 24-34 cm, and 34-44 cm). The first four levels revealed a homogeneous brown, sandy loam extending to 50 cm. Below this level the soil was a light brown, clayey sand. Excavation was terminated at 55 cm since the unit was sterile of cultural materials below 44 cm.

Nonutilized flake without cortex
0-14 cm
2 Boone chert, green
1 Boone chert, red
49 Pitkin chert
13 novaculite, gray
3 novaculite, translucent white
2 novaculite, tan
1 novaculite, reddish

14-24 cm
1 Boone chert, blue
10 Boone chert, white
24 Pitkin chert
2 novaculite, translucent white
2 novaculite, reddish
2 Crowley's Ridge chert
24-34 cm
1 Boone chert, white
1 Boone chert, gray
7 Pitkin chert
5 novaculite, tan
34-44 cm
6 Pitkin chert

Nonutilized flake with cortex
0-14 cm
1 novaculite, tan
14-24 cm
1 Boone chert, gray
24-34 cm
1 Crowley's Ridge chert
34-44 cm
1 Boone chert, gray

Retouched flake without cortex
0-14 cm
1 Pitkin chert
14-24 cm
1 Pitkin chert

Bifaces
0-14 cm
1 novaculite, gray

Unmodified lithics
0-14 cm
1 sandstone concretion

Groundstone/slightly modified
14-24 cm
1 sandstone nutting stone

Test Unit C. This unit was excavated approximately 29 m east of Test Unit B. Arbitrary excavation levels of 10 cm were employed, since the soil was uniformly a yellow, sandy loam. Although the unit was excavated to 30 cm, all of the cultural materials were in the first 20 cm.

Nonutilized flake without cortex
0-10 cm
3 Boone chert, white
2 Boone chert, gray
3 Pitkin chert
1 novaculite, tan
10-20 cm
1 Boone chert, white
1 Boone chert, pinkish
8 Pitkin chert

Nonutilized flake with cortex
10-20 cm
1 Pitkin chert

Retouched flake without cortex
10-20 cm
1 Boone chert, pink

Retouched flake with cortex
10-20 cm
1 Pitkin chert

Bifaces
0-10 cm
1 Pitkin chert

Groundstone/slightly modified
0-10 cm
1 sandstone hammerstone/mano

Unmodified lithics
0-10 cm
3 sandstone fragments
10-20 cm
1 concretion

Test Unit D. This unit was excavated approximately 28 m west of Test Unit A and 3 m south of that unit. It was located at the base of the knoll in a wet area. Excavation levels were 10 cm each. The soil was a brown clay mottled with gray clay. Cultural materials were still recovered at 40 cm, but the decision was made to terminate shovel scraping and troweling. Minute bone fragments were found in the first and last two levels but were very poorly presented. A post hole digger was used to test the unit to 75 cm. At that level there was water and the soil changed to a solid gray clay.

Nonutilized flake without cortex
0-10 cm
3 Boone chert, white
2 Boone chert, gray
9 Pitkin chert
1 novaculite, translucent white

10-20 cm
- 4 Boone chert, blue
- 1 Boone chert, green
- 4 Boone chert, white
- 1 Boone chert, red
- 2 Boone chert, gray
- 22 Pitkin chert
- 3 novaculite, translucent white
- 1 novaculite, tan
- 1 novaculite, reddish

20-30 cm
- 3 Boone chert, blue
- 3 Boone chert, white
- 2 Boone chert, tan
- 24 Pitkin chert
- 2 novaculite, gray
- 1 novaculite, translucent white

30-40 cm
- 4 Boone chert, blue
- 3 Boone chert, white
- 2 Boone chert, red
- 2 Boone chert, gray
- 1 Boone chert, tan
- 24 Pitkin chert
- 3 novaculite, translucent white
- 1 novaculite, reddish

Nonutilized flake with cortex

10-20 cm
- 1 Boone chert, blue

20-30 cm
- 2 Pitkin chert

Retouched flake with cortex

30-40 cm
- 1 Pitkin chert

Unmodified lithics

10-20 cm
- 3 concretions

Proposed site function and period of occupation. Based on examination of points recovered from the site during the 1979 season and reexamination of points found in 1978, the following types of points are present:

1 Cache River (early Archaic)(Pitkin chert)(Plate 1i)
1 Rice corner notched (early Archaic)(Pitkin chert)(Plate 1j)
3 Williams (middle Archaic to late Archaic)(1 Pitkin; 2 Boone) (Plate 1h,k)
1 Morhiss (late Archaic)(Pitkin chert)(1978 survey)

1 Big Creek (late Archaic to early Woodland)(Pitkin chert)(1978 survey)
1 Dallas (early Woodland to middle Woodland)(Pitkin chert)(Plate 1n)
1 Gary (early Woodland to Historic)(novaculite)(Plate 1m)
1 Standlee contracted (middle Archaic to late Woodland)(Boone chert) (Plate 1l)
1 McIntire (late Archaic)(Boone chert)(Plate 1o)
4 Unidentified tapered stem (1 Pitkin; 3 Boone)(2=1978 survey)
7 Unidentified expanded stem (3 Pitkin; 4 Boone)(2=1978 survey)
2 Unidentified corner notch (Pitkin chert)(1978 survey)
1 Unidentified straight stem (Boone chert, blue)(1978 survey)
1 Unidentified straight stem (Crowley's Ridge)(1978 survey)
1 Unidentified basal notch (Boone chert)(1978 survey)

In 1978, Martin and Jones (1978:43) identified this as an Archaic base camp. Based on the points collected from this site, it does appear that the primary occupation was during the Archaic period. Due to problems with point typologies, it may be that the points currently associated with the Woodland period were actually introduced during the late Archaic and reveal a longer period of use than recognized at this time.

Evaluation. Most of the cultural material is located in the plow zone (0-26 cm) at the site and there is minimal potential for preservation of floral and faunal remains. Given the nature of the soil and the shallow nature of the site, any features that were present would have been destroyed during repeated plowing of the site. It is therefore recommended that no further work be done at the Pear site.

The Terrace Edge Site (3CN79)

Description. This site is located on a knoll approximately 50 m south of Cypress Creek. It covers an area of 80 m by 50 m, although the highest density of artifacts is on a knoll 20 m by 30 m. To the north, west and east of the site area the land is forested. There is overgrown pasture to the south. An intermittent stream flows west of the site, and to the north the land is low and wet. Approximate elevation of the site is 82-85 m above sea level.

The soil type associated with the Terrace Edge site is Leadvale silt loam (see Appendix E).

Preliminary surveys. The site was first located on June 18, 1979. Due to the nature of the site, the decision was made to return at a later time and carry out testing. The site is located on the proposed pipeline transmission corridor and will apparently be adversely affected by construction of the pipeline. During the survey shovel testing was conducted. Flakes were recovered at approximately 15 cm deep throughout the area, although these tests were routinely dug to 40-60 cm. One metate was found on the site surface.

Methods of testing. Since there appeared to be little surface material, and the nature of the site was determined during the survey, six m^2 test units were excavated. Three of these (Test Units A, B, and C) were located in the core area of the site, while three units (D, E, and F) were excavated on the northeast edge of the knoll. Excavation procedures followed those discussed previously in this report.

Ground surface materials.

Nonutilized flake without cortex
- 1 Boone chert, blue
- 1 Boone chert, gray
- 9 Pitkin chert

Nonutilized flake with cortex
- 1 Boone chert, blue

Retouched flake without cortex
- 1 Boone chert, blue
- 1 Pitkin chert

Retouched flake with cortex
- 1 Pitkin chert

Bifaces
- 1 Scallorn (Boone chert, white)(Plate 2q)
- 1 unidentified (Pitkin chert)(Plate 2r)

Groundstone/slightly modified
- 1 sandstone mano/hammerstone
- 3 sandstone metate
- 1 nutting stone/hammerstone

Test Unit A. This unit was excavated on the southeast side of the core area of surface artifacts. It was excavated by 10 cm levels. At the bottom of the first level, half of the unit was excavated to 20 cm and the other half to 30 cm. At 30 cm a posthole digger was used to test the unit to 60 cm in order to insure that there were no cultural levels below. To a depth of 10 cm the soil was a dark brown sand. Below this it was an orange-brown clayey sand.

Nonutilized flake without cortex

0-10 cm
- 5 Boone chert, blue
- 1 Boone chert, white
- 1 Boone chert, gray
- 3 Boone chert, red
- 10 Pitkin chert

10-20 cm
2 Boone chert, gray
1 Boone chert, red
7 Pitkin chert
1 novaculite, gray
20-30 cm
1 Boone chert, blue
1 Boone chert, gray

Nonutilized flake with cortex
0-10 cm
1 boone chert, gray
1 Boone chert, red
10-20 cm
1 Boone chert, blue
1 Boone chert, red
2 Pitkin chert

Bifaces
0-10 cm
1 Pitkin chert

Test Unit B. This unit was excavated west of Test Unit A. From ground surface to 10 cm the soil was dark brown. This graded into a yellowish sandy clay. Excavation was terminated at 20 cm since the base of the unit was full of sandstone chunks.

Nonutilized flake without cortex
0-10 cm
5 Boone chert, blue
3 Boone chert, white
1 Boone chert, pink
5 Pitkin chert
1 novaculite, translucent white
10-20 cm
3 Pitkinchert
2 Penters chert

Nonutilized flake with cortex
0-10 cm
1 Boone chert, white
3 Boone chert, gray
1 Pitkin chert
10-20 cm
1 Boone chert, red
1 Pitkin chert

Retouched flake without cortex
0-10 cm
2 Pitkin chert
1 novaculite, translucent white

Bifaces
0-10 cm
2 Pitkin chert

Scrapers
0-10 cm
1 Boone chert, red
1 Pitkin chert

Test Unit C. This unit was excavated north of Test Unit B. Levels were 10 cm each. From ground surface to 10 cm, the soil was brown silt with sandstone. From 10 cm to 25 cm it was a mottled brown silt. Below this was a red clay, sterile of cultural materials. Materials from the unit are recorded below.

Nonutilized flake without cortex
0-10 cm
1 Boone chert, blue
2 Boone chert, pink
20 Pitkin chert
1 novaculite, translucent white
1 Penters chert
10-20 cm
3 Boone chert, blue
1 Boone chert, white
1 Boone chert, gray
11 Pitkin chert
10-25 cm
1 Boone chert, white
3 Pitkin chert

Nonutilized flake with cortex
0-10 cm
2 Boone chert, blue
4 Boone chert, red
3 Pitkin chert

Retouched flake with cortex
0-10 cm
1 Boone chert, gray

Bifaces
0-10 cm
2 Boone chert, white
1 Pitkin chert
10-20 cm
1 Pitkin chert

Groundstone/slightly modified
1 possible sandstone mano

Test Unit D. This unit was excavated northeast of Test Unit C. It is away from the area where the highest density of artifacts was recorded. Excavation levels were 10 cm each to a depth of 30 cm. Due to time, the unit was not excavated to sterile levels.

Nonutilized flake without cortex
0-10 cm
6 Boone chert, blue
2 Boone chert, white
4 Boone chert, gray
1 Boone chert, pink
13 Pitkin chert
1 novaculite, translucent white
1 novaculite, red
10-20 cm
1 Boone chert, white
2 Boone chert, gray
24 Pitkin chert
1 novaculite, reddish
20-30 cm
3 Boone chert, blue
2 Pitkin chert
1 novaculite, tan

Nonutilized flake with cortex
0-10 cm
1 Boone chert, gray
2 Pitkin chert
10-20 cm
1 Boone chert, blue
20-30 cm
1 Pitkin chert

Bifaces
0-10 cm
1 Pitkin chert
20-30 cm
1 Pitkin chert

Test Unit E. This unit was excavated east of Test Unit D. From ground surface to 10 cm, the soil was a dark brown sand. Below this, there was an orange-brown mottled sand. Excavation was terminated at 20 cm, although a posthole digger was used to test the unit to 60 cm. No cultural materials were observed below 20 cm.

Nonutilized flake without cortex
0-10 cm
3 Boone chert, blue
4 Boone chert, white
1 Boone chert, tan
2 Boone chert, gray
1 novaculite, translucent white

10-20 cm
1 Boone chert, blue
5 Boone chert, white
2 Boone chert, gray
6 Pitkin chert

Nonutilized flake with cortex
0-10 cm
1 Boone chert, white
1 Pitkin chert
10-20 cm
2 Boone chert, blue
1 Boone chert, pink

Retouched flake without cortex
0-10 cm
24 Pitkin chert
10-20 cm
1 Boone chert, blue
2 novaculite, gray
1 novaculite, translucent white

Bifaces
0-10 cm
4 Pitkin chert
10-20 cm
1 Boone chert, gray
1 Pitkin chert

Groundstone/slightly modified
1 sandstone mano
1 possible sandstone hammerstone

Unmodified lithics
0-10
1 milky quartz
10-20
2 quartz crystals

Test Unit F. This unit was excavated just south of Test Unit E on the east side of the knoll. From ground surface to 10 cm the soil was brown silt; below this it was mottled brown and finally an orange soil with much gravel. Excavation was terminated at 20 cm and a posthole digger was used to test the unit to 45-50 cm deep. Some cultural materials were found to a depth of 30 cm in the posthole test.

Nonutilized flake without cortex
0-10 cm
4 Boone chert, blue
2 Boone chert, white
5 Boone chert, red

1 Boone chert, gray
66 Pitkin chert
2 novaculite, black
3 novaculite, translucent white
2 novaculite, reddish

10-20 cm
8 Boone chert, blue
6 Boone chert, white
2 Boone chert, gray
2 Boone chert, orange
84 Pitkin chert
4 novaculite, gray
1 novaculite, tan

20-30 cm post hole test
2 Boone chert, gray
1 Pitkin chert
1 novaculite, tan

Nonutilized flake with cortex
0-10 cm
7 Pitkin chert
10-20 cm
1 Boone chert, white
3 Boone chert, red
1 Pitkin chert

Retouched flake without cortex
10-20 cm
2 Pitkin chert

Proposed site function and period of occupation. Two points were recovered from the Terrace Edge site (3CN79), but only one of these was complete enough to be diagnostic.

1 Scallorn(late Woodland to Historic)(Boone chert)(Plate 2q)
1 Unidentifiable point (Pitkin chert)(Plate 2r)

The quantity of lithics suggests extended occupation.

Evaluation. When the initial survey and excavations were done at this site, the proposed pipeline would have intersected the middle of the site. The proposed pipeline is now to be constructed further south of the site, will either miss the site completely, or will only damage the southernmost part of the site. If the pipeline is built on the new route, it is recommended that no further work be done at this site. However, if the pipeline is rerouted to the old route, further work on this site will be necessary because the site is one of few late Woodland period sites located in the project area, the depth of the cultural materials is considerable, and preservation appears to be relatively good at the site.

The Brinkley Site (3CN80)

Description. This site is located on the edge of a terrace approximately 30 m west of Cypress Creek. It is about 250 m southeast of the Terrace Edge site (3CN79) and northwest of the Wet Foot site (3CN81). The area is now in deep pasture, with woods in the area. Based on shovel testing and other work at the site, it appears that the site area is at least 200 m by 50 m. The Brinkley site is 85.3 m above sea level. The soil is Leadvale silt loam (see Appendix E).

Preliminary surveys. The site was first located on June 18, 1979 during the survey of the proposed pipeline corridor. Shovel testing was done. Material was found to depths of 10-20 cm. Some other artifacts were found in erosional areas, suggesting that the site continued into the woods. The decision was made to return at a later time to test the site more thoroughly.

Methods of testing. Testing was carried out on July 29, 1979. Four lines were established to transect the site with numerous shovel tests. Approximately a 5 m distance was maintained between tests. The first line was run north-south with 15 shovel tests. Only two of these, in the central part of the site, contained flakes. The second line was run east-west, and consisted of 14 tests, none of which contained cultural materials. The third line was run northwest-southeast with 14 shovel tests, two of which contained flakes. The last line was run northeast-southwest with 14 shovel tests, two of which contained flakes. The soil in all of these units was a sandy brown.

Ground surface materials.

Nonutilized flake without cortex
- 1 Pitkin chert

Groundstone/slightly modified
- 2 sandstone metates

Shovel test materials.

Nonutilized flake without cortex
- 1 Boone chert, blue (shovel test 35, 0-10 cm)
- 4 Pitkin chert (shovel test 10, shovel test 30, shovel test 40, shovel test 50)
- 1 novaculite, gray (shovel test 17, 0-10 cm)

Proposed site function and period of occupation. Only one diagnostic point was recovered from this site. This point was identified as a Talco point (Mississippian to Historic)(Boone chert)(Plate 2s). Based on the paucity of lithic materials, and the apparent absence of ceramics, it appears that this site may have been a specialized activity site used by Mississippian period peoples.

The Brinkley Site (3CN80)

Description. This site is located on the edge of a terrace approximately 30 m west of Cypress Creek. It is about 250 m southeast of the Terrace Edge site (3CN79) and northwest of the Wet Foot site (3CN81). The area is now in deep pasture, with woods in the area. Based on shovel testing and other work at the site, it appears that the site area is at least 200 m by 50 m. The Brinkley site is 85.3 m above sea level. The soil is Leadvale silt loam (see Appendix E).

Preliminary surveys. The site was first located on June 18, 1979 during the survey of the proposed pipeline corridor. Shovel testing was done. Material was found to depths of 10-20 cm. Some other artifacts were found in erosional areas, suggesting that the site continued into the woods. The decision was made to return at a later time to test the site more thoroughly.

Methods of testing. Testing was carried out on July 29, 1979. Four lines were established to transect the site with numerous shovel tests. Approximately a 5 m distance was maintained between tests. The first line was run north-south with 15 shovel tests. Only two of these, in the central part of the site, contained flakes. The second line was run east-west, and consisted of 14 tests, none of which contained cultural materials. The third line was run northwest-southeast with 14 shovel tests, two of which contained flakes. The last line was run northeast-southwest with 14 shovel tests, two of which contained flakes. The soil in all of these units was a sandy brown.

Ground surface materials.

Nonutilized flake without cortex
- 1 Pitkin chert

Groundstone/slightly modified
- 2 sandstone metates

Shovel test materials.

Nonutilized flake without cortex
- 1 Boone chert, blue (shovel test 35, 0-10 cm)
- 4 Pitkin chert (shovel test 10, shovel test 30, shovel test 40, shovel test 50)
- 1 novaculite, gray (shovel test 17, 0-10 cm)

Proposed site function and period of occupation. Only one diagnostic point was recovered from this site. This point was identified as a Talco point (Mississippian to Historic)(Boone chert)(Plate 2s). Based on the paucity of lithic materials, and the apparent absence of ceramics, it appears that this site may have been a specialized activity site used by Mississippian period peoples.

1 Boone chert, gray
66 Pitkin chert
2 novaculite, black
3 novaculite, translucent white
2 novaculite, reddish

10-20 cm
8 Boone chert, blue
6 Boone chert, white
2 Boone chert, gray
2 Boone chert, orange
84 Pitkin chert
4 novaculite, gray
1 novaculite, tan

20-30 cm post hole test
2 Boone chert, gray
1 Pitkin chert
1 novaculite, tan

Nonutilized flake with cortex
0-10 cm
7 Pitkin chert
10-20 cm
1 Boone chert, white
3 Boone chert, red
1 Pitkin chert

Retouched flake without cortex
10-20 cm
2 Pitkin chert

Proposed site function and period of occupation. Two points were recovered from the Terrace Edge site (3CN79), but only one of these was complete enough to be diagnostic.

1 Scallorn(late Woodland to Historic)(Boone chert)(Plate 2q)
1 Unidentifiable point (Pitkin chert)(Plate 2r)

The quantity of lithics suggests extended occupation.

Evaluation. When the initial survey and excavations were done at this site, the proposed pipeline would have intersected the middle of the site. The proposed pipeline is now to be constructed further south of the site, will either miss the site completely, or will only damage the southernmost part of the site. If the pipeline is built on the new route, it is recommended that no further work be done at this site. However, if the pipeline is rerouted to the old route, further work on this site will be necessary because the site is one of few late Woodland period sites located in the project area, the depth of the cultural materials is considerable, and preservation appears to be relatively good at the site.

Evaluation. This site was intensively shovel tested in order to determine the nature of the subsurface distributions of artifacts. Because of the paucity of cultural materials suggesting a very temporary occupation of the site, poor preservation conditions which would have destroyed any floral and faunal remains, and the homogeneous nature of the soil which suggests that the area was cultivated and any subsurface features, if present, were destroyed, it is recommended that no further work be done at the Brinkley site. In addition, the proposed pipeline route has been moved, so construction will no longer have an impact on the site.

The Trafford Site (3CN82)

Description. This site is located on the floodplain approximately 50 m south of Cypress Creek. Until recently the site was covered with forest, but during the time of survey and testing it was freshly plowed. It is still separated from the creek by a thickly wooded zone. Approximate elevation of the site is 85.3 m above sea level. Based on surface materials, the site area is judged to be about 70 m by 45 m. The heaviest density of material covers an area approximately 25 m by 20 m.

The soil type associated with the site is Spadra fine sandy loam (see Appendix E). Native vegetation consisted of mixed hardwoods and shortleaf pine (Townsend and Wilson n.d.:248). Reaction of the soil is medium acid to very strongly acid throughout, suggesting minimal potential for the preservation of organic remains.

Preliminary surveys. This site was first located during the survey conducted on June 19, 1979. Material was collected from the ground surface. Based on the quantity of material, the decision was made to test the site area more thoroughly.

Method of testing. The Trafford site was tested on July 30, 1979. Since much cultural material had been collected from the surface, the decision was made to restrict testing to a complete surface pickup and the excavation of three 1 m^2 test units. The excavation procedures followed those described earlier in this report.

Ground surface materials

Nonutilized flake without cortex
- 2 Boone chert, blue
- 3 Pitkin chert

Nonutilized flake with cortex
- 1 Boone chert, blue
- 2 Boone chert, tan
- 1 Boone chert, pink

Retouched flake without cortex
15-30 cm
1 novaculite, gray

Retouched flake with cortex
0-15 cm
1 Boone chert, pinkish-gray

Bifaces
15-30 cm
1 Pitkin chert (Plate 2t)

Unmodified lithics
0-15 cm
2 quartz crystals

Test Unit B. This test unit was located at the south end of the site area. The first level included the entire plowzone (ground surface to 23 cm). The soil was a brown sand. The second level of excavation was 23 to 33 cm. Soil composition was a yellowish-brown clayey sand. A posthole digger was used to test the unit to a depth of 60 cm. At that depth the soil was yellow clay. Three flakes were found in the plowzone, with no additional cultural materials below this level.

Nonutilized flake without cortex
0-23 cm
1 Boone chert, pink
1 Boone chert, tan

Nonutilized flake with cortex
1 Boone chert, blue

Test Unit C. This test unit was excavated in the approximate center of the site. The plowzone was excavated as a single level from ground surface to 26 cm. This consisted of a dark to medium brown sandy clay. The next level was 26 to 46 cm and revealed a yellowish tan sandy clay. No artifacts were found below 26 cm.

Nonutilized flake without cortex
0-26 cm
2 Boone chert, white
1 Boone chert, tan
6 Pitkin chert
2 novaculite, translucent white

Nonutilized flake with cortex
0-26 cm
1 Boone chert, gray

Bifaces
0-26 cm
1 Pitkin chert (Plate 2v)

Retouched flake without cortex
4 Pitkin chert
2 novaculite, translucent white

Retouched flake with cortex
1 Boone chert, gray

Bifaces
1 Boone chert, white (Plate 2y)
1 Boone chert
7 Pitkin chert (Plate 2u, 2w, 2aa)
2 novaculite, gray
1 novaculite, translucent white (Plate 2z)

Groundstone/slightly modified
4 sandstone manos
4 sandstone hammerstones

Unmodified lithics
1 quartz crystal

Test Unit A. This unit was excavated in the area of the highest density of ground surface materials at the north end of the site. Excavation levels were 15 cm each. From ground surface to 15 cm, the plow-zone, the soil was dark brown sand. From 15 cm to 30 cm the soil was a mottled dark brown to reddish-brown clayey sand. The unit was excavated to 40 cm. Below 30 cm, the soil was a reddish-brown sandy clay. Most of the artifacts were in the top two excavation levels.

Nonutilized flake without cortex
0-15 cm
2 Boone chert, white
1 Boone chert, pink
12 Pitkin chert
1 novaculite, gray
15-30 cm
1 Boone chert, tan
6 Pitkin chert
1 novaculite, gray
1 novaculite, translucent white
30-40 cm
3 Pitkin chert

Nonutilized flake with cortex
0-15 cm
1 Boone chert, blue
1 Boone chert, red
2 Boone chert, gray
1 Pitkin chert
2 Crowley's Ridge chert

Proposed site function and period of occupation. Eight points were recovered from the site, although only seven of these were diagnostic. These points include:

2 Cache River (early Archaic)(Pitkin chert)(Plate 2u,w)
1 Rice (early Archaic)(Pitkin chert)(Plate 2x)
1 Ellis (early Woodland to middle Woodland) (Pitkin chert)(Plate 2aa)
1 Gary (early Woodland to Historic)(Pitkin chert)(Plate 2v)
1 Wells (late Archaic to early Woodland)(novaculite)(Plage 2z)
1 Stone square stem (middle Archaic)(Boone chert)(Plate 2y)
1 Unidentified straight stem (Pitkin chert)(Plate 2t)

Based on the points that were present, it appears that primary occupation of the site occurred during the Archaic period, although the possibility of later occupation also exists. The nature of the artifacts, and current information about settlement patterns which prevailed during the Archaic period, suggest that this site was occupied seasonally.

Evaluation. All visible surface material was collected and three test units were excavated at the Trafford site. Due to the shallow deposition of the artifacts which were largely located within the disturbed plowzone, the absence of floral and faunal remains due to the acidity of the soil, and the overall disturbance of the site and destruction of any features that could have been preserved by agricultural practices, it is recommended that no additional work be conducted at this site.

The Plow Zone Site (3CN83)

This site is located on the floodplain of Cypress Creek approximately 60 m west of the Trafford site (3CN82). A spring flowed in the area east of the site when the area was in forest. The trees were cut down a few years ago. The area of the site is approximately 35 m by 35 m, although the northern part of the site appears to extend into the wood bordering the south edge of Cypress Creek. The site is approximately 85.3 m above sea level. The soil association is Spadra fine sandy loam (see Appendix E).

Preliminary surveys. This site was first located on June 19, 1979 by personnel of the Arkansas Archeological Survey. The area was freshly plowed, so a surface collection was made of the entire site area. Based on the quantity of material collected, the decision was made to test the site more thoroughly.

Methods of testing. The site was tested on July 30, 1979. Material was collected from the ground surface and four 1 m^2 test units were excavated. Excavation procedures followed those described previously in this report.

Ground surface materials.

Nonutilized flake without cortex
- 21 Boone chert, blue
- 44 Boone chert, white
- 11 Boone chert, tan
- 16 Boone chert, gray
- 10 Boone chert, red
- 105 Pitkin chert
- 1 novaculite, black
- 2 novaculite, gray
- 12 novaculite, translucent white
- 1 Crowley's Ridge chert

Nonutilized flake with cortex
- 12 Boone chert, blue
- 5 Boone chert, white
- 2 Boone chert, tan
- 1 Boone chert, gray
- 8 Pitkin chert
- 1 Crowley's Ridge chert

Retouched flake without cortex
- 13 Boone chert, white
- 1 Boone chert, tan
- 6 Pitkin chert
- 1 novaculite, black
- 3 novaculite, gray
- 1 novaculite, tan
- 1 novaculite, reddish
- 1 Crowley's Ridge chert

Retouched flake with cortex
- 1 Boone chert, tan
- 1 Pitkin chert
- 1 novaculite, tan

Bifaces
- 1 Boone chert, white
- 1 Boone chert, tan
- 14 Pitkin chert
- 1 unidentified straight stem (Pitkin chert)(Plate 3d)
- 2 novaculite, black
- 1 Morhiss (novaculite, gray)(Plate 3c)
- 1 Jakie stemmed (novaculite, translucent white)(Plate 3a)
- 1 unidentified tapered stem (novaculite)(Plate 3b)

Cores
- 1 Boone chert, blue
- 1 Boone chert, tan

Groundstone/slightly modified
6 Hammerstone/mano
1 Nutting stone

Unmodified lithics
2 sandstone
1 quartz crystal

Test Unit A. This test unit was excavated on the northeast portion of the site. The unit was first excavated to a depth of 15 cm. The soil was a light brown. From 15 cm to 25 cm the soil was a yellow sandy clay. Shovel scraping and troweling was terminated at 25 cm, the depth of the plowzone. A posthole digger was used to test the unit to 50 cm. Yellow clay was present to that depth.

Nonutilized flake without cortex
0-15 cm
2 Boone chert, white
7 Boone chert, gray
15-25 cm
4 Boone chert, blue
5 Boone chert, white
1 Pitkin chert

Nonutilized flake with cortex
0-15 cm
1 Boone chert, blue
1 Pitkin chert

Bifaces
0-15 cm
1 Boone chert, black
1 Pitkin chert
2 novaculite, black

Groundstone/slightly modified
1 sandstone mano

Test Unit B. This unit was excavated south of Test Unit A and east of Test Unit C. The first level consisted of the plowzone material (ground surface to 23 cm). This was brown sand. The next level, 23-33 cm, was marked by a yellowish-brown clayey sand. No cultural materials were found in this unit.

Test Unit C. This unit was excavated on the west side of the site. The first level, ground surface to 29 cm, the plowzone was marked by brown sandy clay with heavy sand concentrations. The second excavation level, 29 cm to 42 cm, consisted of a lighter brown sandy clay. All cultural materials were recovered from the first level.

Nonutilized flake without cortex
0-29 cm
2 Boone chert, gray
4 Boone chert, pink
4 Pitkin chert

Nonutilized flake with cortex
0-29 cm
1 Pitkin chert

Test Unit D. This unit was excavated in the northwest portion of the site. It was first excavated to the base of the plowzone (28 cm). Soil consisted of a brown silt. The unit was then excavated by 10 cm levels to a depth of 68 cm. At that depth, a posthole digger was used to test the unit to 79 cm. From 38 cm to 48 cm the soil was a mottled brown silt. Below this level the soil became increasingly more red and sandy.

Nonutilized flake without cortex
0-28 cm
9 Boone chert, blue
11 Boone chert, white
2 Boone chert, red
41 Pitkin chert
1 novaculite, black
1 novaculite, translucent white
28-38 cm
3 Boone chert, white
6 Boone chert, gray
8 Pitkin chert
38-48 cm
1 Boone chert, blue
1 Boone chert, white
2 Boone chert, gray
2 Boone chert, reddish-brown
16 Pitkin chert
1 novaculite, translucent white
48-58 cm
1 Boone chert, blue
2 Boone chert, white
4 Boone chert, reddish-brown
4 Pitkin chert
58-68 cm
1 Boone chert, white
1 Pitkin chert

Nonutilized flake with cortex
0-28 cm
3 Boone chert, blue
1 Boone chert, white
1 Boone chert, tan

28-38 cm
1 Boone chert, gray
3 Pitkin chert
38-48 cm
1 Boone chert, white
1 Pitkin chert
48-58 cm
1 Boone chert, blue

Retouched flake without cortex
0-28 cm
1 Pitkin chert

Bifaces
0-28 cm
1 Pitkin chert

Unmodified lithics
1 quartz crystal

Proposed site function and period of occupation. Four points were recovered from the Plow Zone site which could yield information on the period of occupation, but only two of the points conformed to recognized types.

1 Jakie stemmed (middle Archaic)(novaculite)(Plate 3a)
1 Morhiss (late Archaic)(novaculite)(Plate 3c)
1 Unidentified straight stem (Pitkin chert)(Plate 3d)
1 Unidentified tapered stem (novaculite)(Plate 3b)

Based on the nature of the points recovered, and the proximity of this site to the Trafford site (3CN82), it is proposed that this site was occupied during the Archaic period. Considering the quantity of lithic debitage and broken bifaces, this was a base camp. The site was probably occupied seasonally as bands exploited floral and faunal recources in the forests close to Cypress Creek.

Evaluation. All visible surface material was collected and four 1 m^2 test units were excavated at the Plow Zone site. Due to the minimal potential for the preservation of floral and faunal remains suggested by the acid condition of the soil, and extreme disturbance of the site through agricultural practices which have displaced artifacts and probably destroyed any features that may have been preserved, it is recommended that no further work be done at this site.

The Roadcut Site (3CN84)

Description. This site is located in the same plowed field as the Trafford site (3CN82) and the Plow Zone site (3CN83). It is on a small rise on the floodplain approximately 10 m south of Cypress Creek. At the north end of the site, the area is still in brush and woods. At one time

a dirt field cut across the field north to south through a portion of the site. The area is still disturbed by a road that runs around the edge of the field in this area. Approximate size of the site is 35 m by 35 m.

The Roadcut site is approximately 85 m above sea level. The soil associated with the site is Spadra fine sandy loam (see Appendix E).

Preliminary surveys. This site was first located on June 19, 1979 by personnel of the Arkansas Archeological Survey as they surveyed the proposed water pipeline transmission corridor. The area was plowed very recently, so surface material was visible and could be collected. Due to the amount of material that appeared to be in the site area, the decision was made to return at a later time and test the site.

Methods of testing. This site was tested on July 30, 1979. Earlier in the day, archeologists tested two other sites in the same field and discovered that agricultural practices greatly disturbed these sites. The decision was therefore made to excavate at least one 1 m^2 test unit at the Roadcut site in order to determine if the same degree of subsurface disturbance had occurred in this part of the field. All cultural materials on the ground surface were collected, and one 1 m^2 unit was dug. Excavation procedures followed those described previously in this report.

Ground surface materials.

Nonutilized flake without cortex
- 8 Boone chert, blue
- 1 Boone chert, green
- 8 Boone chert, white
- 6 Boone chert, red
- 39 Pitkin chert
- 1 novaculite, gray
- 2 novaculite, translucent white
- 1 novaculite, reddish

Nonutilized flake with cortex
- 4 Boone chert, blue
- 5 Boone chert, red
- 2 Boone chert, tan
- 3 Boone chert, pink
- 1 Pitkin chert
- 1 ortho-quartzite

Retouched flake without cortex
- 2 Boone chert, gray
- 1 Boone chert, white
- 3 Boone chert, reddish
- 4 Pitkin chert
- 1 novaculite, translucent white

Retouched flake with cortex
1 Boone chert, red
1 Pitkin chert

Bifaces
1 Delhi (Pitkin chert)(Plate 3f)
1 Jakie stemmed (Boone chert)(Plate 3e)

Scrapers
1 Pitkin chert

Cores
1 Pitkin chert

Groundstone/slightly modified
2 mano/hammerstones
1 nutting stone

Unmodified lithics
1 quartz crystal

Test Unit A. This unit was excavated at the north end of the site close to the field road. Two 10 cm excavation levels were dug. The soil was a brown, sandy homogeneous sandy clay. Very little cultural material was recovered.

Nonutilized flake without cortex
0-10 cm
1 Boone chert, green
1 Boone chert, reddish
5 Pitkin chert
10-20 cm
1 Boone chert, blue
2 Boone chert, white
1 Boone chert, red
7 Pitkin chert

Nonutilized flake with cortex
0-10 cm
3 Boone chert, white
10-20 cm
2 Boone chert, blue
3 Boone chert, red

Proposed site function and period of occupation. During the 1979 season only two points were recovered. These were:

1 Jakie stemmed (middle Archaic)(Boone chert)(Plate 3e)
1 Delhi (late Archaic to early Woodland)(Pitkin chert)(Plate 3f)

Based on the proximity of two other Archaic period sites, it would appear that this one was also occupied during the Archaic period. In light of current information about the settlement patterns of peoples of the Archaic period, it can be proposed that this site was one from which small groups were able to exploit local floral and faunal resources. It was probably occupied seasonally.

Evaluation. Although this field was reportedly covered with trees up to a few years ago, it appears that agricultural practices have succeeded in destroying any stratigraphic levels that existed and could provide information on prehistoric settlement in the area. Therefore, after evaluating the information gathered from the site through testing, it is recommended that no further work be done here because of the overall sparsity of cultural materials and the shallow nature of the site, the poor preservation potential for floral and faunal remains due to the acidity of the soil and periodic inundation by waters of Cypress Creek, and the damage done not only by agricultural practices to the site but also by the road which ran through the site area at one point and still runs north of it.

The Gregory Dump Site (3CN97)

This site is located on a knoll on a point of the terrace edge which extends into the Cypress Creek floodplain. Its areal extent is approximately 50 m (north-south), and 50 m (east-west). Most of the ground surface material is on the top of the terrace, although t ere is a thin scatter extending down the dirt road toward the floodplain.

The site is approximately 90 m above sea level. The soil type associated with the site is Leadvale silt loam (see Appendix E).

Preliminary surveys. This site was first located during field survey of the proposed highway relocation route in 1979. The site is also within the proposed spillway area. During the survey, the dirt roadway which circles the top of the knoll was examined. Shovel testing was also carried out in order to define the limits of the site within forested areas. Due to the amount of material that was collected, the decision was made to return to the site at a later time in order to carry out more extensive testing.

Methods of testing. Since the site had been shovel tested during the survey, it was decided to excavate five 1 m^2 test units on the site. The excavation procedures followed those discussed previously in this report. The site was tested on July 25, 1979.

Ground surface materials.

Nonutilized flake without cortex
- 6 Boone chert, blue
- 30 Boone chert, white

4 Boone chert, tan
9 Boone chert, gray
30 Pitkin chert
2 novaculite, white
1 novaculite, yellow
2 novaculite, purple

Nonutilized flake with cortex
1 Boone chert, blue
1 Boone chert, pink

Retouched flake without cortex
4 Boone chert, white
5 Boone chert, gray
1 Boone chert, tan
6 Pitkin chert

Bifaces
1 Boone chert, green
5 Boone chert, white
2 Williams (Boone chert, white)(Plate 3j, l)
1 unidentified straight stem (Boone chert, white)
2 unidentified expanded stem (Boone chert, gray)(Plate 3 n, o)
2 Pitkin chert
1 Cache River (Pitkin)(Plate 3k)
1 Delhi (Pitkin)(Plate 3p)
1 Gary (Pitkin)(Plate 39)
1 Williams (Pitkin)
1 drill (Pitkin)
1 Big Creek (novaculite, gray) (Plate 3m)
1 novaculite, pink

Scrapers
1 Boone chert, white
2 Pitkin chert

Groundstone/slightly modified
1 Mano/hammerstone
1 metate
2 nutting stones

Historic materials
2 bottle glass

Shovel test materials.

Nonutilized flake without cortex
1 Boone chert, white (shovel test A5)
1 Pitkin chert (shovel test A5)
1 Boone chert, reddish (shovel test 1)
1 Boone chert, white (shovel test B2)

1 Pitkin chert (shovel test B2)
1 Boone chert, white (shovel test B7)
1 Pitkin chert (shovel test B8)
2 Pitkin chert (shovel test C3)

Nonutilized flake with cortex

1 Boone chert, blue (shovel test B2)
1 Pitkin chert (shovel test B4)

Retouched flake without cortex

1 Pitkin chert (shovel test B10)

Test Unit A. This unit was excavated by shovel scraping. The first level, ground surface to 10 cm, was marked by a light brown sandy silt. The second level, 10 to 20 cm, consisted of a mottled, reddish sandy clay. Excavation was terminated at 20 cm, due to paucity of cultural materials.

Nonutilized flake without cortex

0-10 cm
1 Boone chert, white
4 Pitkin chert

10-20 cm
1 Boone chert, blue
5 Boone chert, white
19 Pitkin chert

Nonutilized flake with cortex

0-10 cm
1 Boone chert, red
1 Pitkin chert

10-20 cm
1 Boone chert, blue
1 Pitkin chert

Bifaces

0-10 cm
1 Pitkin chert

Test Unit B. This test unit was only excavated to a depth of 8 cm by shovel scraping. Examination of lower levels indicated that the unit was sterile of artifacts below 8 cm. The soil was a homogeneous, tannish orange compact clay.

Nonutilized flake without cortex

5 Boone chert, white
1 Boone chert, tan
13 Pitkin chert
1 novaculite, gray

Nonutilized flake with cortex
1 Boone chert, tan

Historic materials
1 22 caliber short slug

Test Unit C. This unit was excavated by 10 cm levels. Half of the square was dug to 20 cm, while the other half was dug to 30 cm. A posthole digger was employed to test the half of the unit another 20 cm below ground surface. From ground surface to approximately 10 cm, the soil was a grayish brown sandy silt. From that level to 30 cm, it was a tannish orange clayey silt. Below that level, the soil was a reddish orange clay.

Nonutilized flake without cortex
0-10 cm
1 Boone chert, white
2 Boone chert, tan
1 Boone chert, gray
11 Pitkin chert
10-20 cm
3 Boone chert, blue
4 Boone chert, white
1 Boone chert, pink
1 Boone chert, brownish green
10 Pitkin chert
20-30 cm (east one-half)
1 Boone chert, blue
1 Boone chert, white
2 Pitkin chert
30-50 cm (east one-half)
1 Pitkin chert

Test Unit D. From approximately ground surface to 10 cm, the soil was a light brown sand. Below this, to approximately 40 cm, it was a hard, brownish orange clayey sand. At the lower level, orange clay was observed in the unit. The unit was shovel scraped to a depth of approximately 20 cm. A posthole digger was then employed to test the unit to greater depths, but only one flake was recovered between 30 and 40 cm.

Nonutilized flake without cortex
0-10 cm
4 Boone chert, blue
7 Boone chert, white
2 Boone chert, gray
22 Pitkin chert
10-20 cm
5 Boone chert, blue
5 Boone chert, white
13 Pitkin chert

1 novaculite, white
1 novaculite, red

Nonutilized flake with cortex
0-10 cm
1 Boone chert, blue
1 Boone chert, tan
1 Pitkin chert

Retouched flake without cortex
10-20 cm
1 Boone chert, white
1 Pitkin chert

Bifaces
0-10 cm
1 Pitkin chert

Test Unit E. This unit was shovel scraped by 10 cm levels, although all material between ground surface and 20 cm was bagged together. The unit was excavated to a depth of 30 cm. A posthole digger was used to test the unit to 80 cm, but no other cultural materials were observed. Soil characteristics were consistent with those described previously.

Nonutilized flake without cortex
0-20 cm
2 Boone chert, blue
2 Boone chert, white
7 Pitkin chert
20-30 cm
2 Boone chert, white
3 Pitkin chert

Nonutilized flake with cortex
0-20 cm
2 Pitkin chert
20-30 cm
1 Pitkin chert

Bifaces
20-30 cm
1 Pitkin chert

Historic materials
0-20 cm
1 clear bottle glass fragment

Proposed site function and period of occupation. There were 11 complete or fragmentary pieces of biface collected from the Gregory Dump site which were examined to determine if they were diagnostic enough to approximate a period of occupation for the site.

1 Cache River (early Archaic)(Pitkin chert)(Plate 3k)
3 Williams (middle to late Archaic)(1 Pitkin chert; 2 Boone chert) (Plate 3j,l)
1 Delhi (late Archaic to early Woodland)(Pitkin chert)(Plate 3p)
1 Gary (early Woodland to Historic)(Pitkin chert)(Plate 3q)
1 Big Creek (late Archaic to early Woodland)(novaculite)(Plate 3m)
1 unidentified straight stem (Boone chert)
2 unidentified expanded stem (Boone chert)(Plate 3 n,o)
1 possible drill (Pitkin chert)

Based on these points, it appears that the site was occupied primarily during the late Archaic period, although it may have been used somewhat earlier and later.

This site was perhaps occupied seasonally by a small Archaic period band of people. The quantity of lithic debitage reveals that there was stone working done at the site, suggesting that hunters were sharpening points. The strongly acid nature of the soil appears to have destroyed any floral or faunal remains.

Evaluation. Considerable testing was carried out at the Gregory Dump site since the original proposed pipeline transmission corridor was to cross the site. Since that time, the pipeline route has been realigned and the pipeline will no longer have an adverse effect on the site. It is therefore recommended that no further work be carried out at this site.

The Raspberry Site (3CN107)

Description. This site is located on the terrace edge north of the proposed dam site. It is relatively close to the Pear site (3CN46) and the Temper site (3CN57). Visibility is very limited since the site is covered in mixed hardwood and cedars with underbrush. There appears to be little development of soil, with the area full of rock and extremely eroded. The site is about 88 m above sea level. There is an intermittent stream about 90 m west of the site, but the nearest permanent water source is Cypress Creek which is 180 m to the west. The soil type associated with the site is Leadvale silt loam (see Appendix E).

Preliminary surveys. This site was first located while personnel of the Arkansas Archeological Survey were carrying out testing at the Pear site (3CN46). A decision was made to devote time to testing of this site.

Methods of testing. This area was extensively shovel tested on July 6, 1979. Twenty-six shovel tests were dug. In addition, three 1 m^2 test units were excavated on the site, July 11-13, 1979, in order to assess the subsurface disturbance and overall preservation of the site. Excavation procedures were consistent with those defined earlier in this report.

Ground surface materials.

Nonutilized flake without cortex
- 1 Boone chert, tan
- 15 Pitkin chert
- 1 novaculite, gray
- 2 novaculite, translucent white
- 1 novaculite, tan

Nonutilized flake with cortex
- 1 Boone chert, tan
- 1 novaculite, tan

Retouched flake without cortex
- 1 Pitkin chert

Bifaces
- 1 Pitkin chert

Other modified lithic
- 1 crudely flaked sandstone ax/hoe

Shovel test materials.

Nonutilized flake without cortex
- 1 Boone chert, white (shovel test 7)
- 1 Pitkin chert (shovel test 11)
- 1 novaculite, reddish (shovel test 11)
- 1 Boone chert, gray (shovel test 19)
- 2 Pitkin chert (shovel test 19)
- 1 novaculite, gray (shovel test 19)
- 1 novaculite, reddish (shovel test 19)

Test Unit A. This unit was excavated in what appeared to be the approximate center of the site, east to west. It was excavated by 10 cm levels to a depth of 48 cm. The soil was a medium brown loam from ground surface to 16 cm. It turned darker, and below 40 cm was yellow clay.

Nonutilized flake without cortex
0-10 cm
- 39 Boone chert, blue
- 6 Boone chert, green
- 8 Boone chert, red
- 2 Boone chert, tan
- 118 Pitkin chert
- 2 novaculite, gray
- 6 novaculite, translucent white
- 1 novaculite, tan
- 4 novaculite, reddish

10-20 cm
18 Boone chert, blue
19 Boone chert, white
1 Boone chert, gray
3 Boone chert, tan
7 Boone chert, pink
82 Pitkin chert
9 novaculite, gray
16 novaculite, translucent white
20-30 cm
10 Boone chert, blue
3 Boone chert, green
19 Boone chert, white
1 boone chert, tan
58 Pitkin chert
12 novaculite, translucent white
30-40 cm
1 Boone chert, blue
26 Boone chert, white
5 Boone chert, red
40 Pitkin chert
4 novaculite, gray
7 novaculite, translucent white
1 novaculite, tan
1 novaculite, reddish
2 Crowley's Ridge chert
1 Penters chert
40-48 cm
1 Boone chert
5 Pitkin chert
1 novaculite, translucent white

Nonutilized flake with cortex
0-10 cm
2 Boone chert, blue
1 Boone chert, gray
2 novaculite, reddish
10-20 cm
2 Boone chert, gray
6 Boone chert, tan
4 Boone chert, pink
9 Pitkin chert
20-30 cm
1 Boone chert, white
30-40 cm
1 Pitkin chert

Retouched flake without cortex
10-20 cm
1 Boone chert, blue
1 Boone chert, pink
1 Pitkin chert

20-30 cm
1 Pitkin chert

Bifaces
0-10 cm
1 Boone chert, white
1 Boone chert, gray
1 Pitkin chert
10-20 cm
1 Boone chert, tan
1 Pitkin chert
20-30 cm
1 unidentified rounded stem(Boone chert, white)(Plate 3t)
1 S tone square stem (Boone chert, gray)(Plate 3r)
30-40 cm
1 Unidentified expanded stem (Pitkin chert)(Plate 3s)
2 Pitkin chert
40-48 cm
1 Boone chert
1 novaculite

Scrapers
20-30 cm
1 Pitkin chert

Cores
20-30 cm
1 Pitkin chert

Groundstone/slightly modified
1 sandstone mano
1 sandstone nutting stone

Faunal remains
0-40 cm
18 bone fragments (deteriorated)

Test Unit B. This 1 m^2 test unit was excavated north of Test Unit A. It was excavated in two levels, one from ground surface to 10 cm and the other from 10 cm to 23 cm. The soil was similar to that observed in Test Unit A, but at 23 cm the bottom of the unit was gravel and shale. Excavation was terminated at that point.

Nonutilized flake without cortex
0-10 cm
1 Boone chert, blue
1 Boone chert, green
8 Boone chert, white
15 Pitkin chert
2 novaculite, gray
1 novaculite, translucent white
4 novaculite, tan
4 novaculite, reddish

10-23 cm
1 Boone chert, green
15 Boone chert, white
2 Boone chert, gray
55 Pitkin chert
1 novaculite, gray
5 novaculite, translucent white
9 novaculite, reddish

Nonutilized flake with cortex
0-10 cm
5 Pitkin chert
2 novaculite, tan
10-23 cm
1 Pitkin chert

Retouched flake without cortex
10-23 cm
1 novaculite, reddish

Bifaces
10-23 cm
4 Pitkin chert

Unmodified lithics
0-10 cm
1 quartz crystal
10-23 cm
2 quartz crystals

Test Unit C. This unit was excavated east of Test Unit A. Excavation levels were 10 cm. The north half of the unit was excavated to 50 cm, while excavation was terminated at 40 cm for the south half of the square. From ground surface to about 20 cm, the soil was light brown and sandy. It was more mottled between 20 cm and 30 cm, but it remained brown and sandy to 50 cm.

Nonutilized flake without cortex
10-20 cm
2 Boone chert, white
30 Pitkin chert
4 novaculite, gray
9 novaculite, tan
4 novaculite, reddish
20-30 cm
4 Boone chert, white
35 Pitkin chert
1 novaculite, gray
3 novaculite, translucent white
11 novaculite, tan
1 novaculite, reddish

30-40 cm
6 Boone chert, white
23 Pitkin chert
1 novaculite, gray
4 novaculite, translucent white
40-50 cm
10 Pitkin chert
1 novaculite, reddish

Nonutilized flake with cortex
10-20 cm
1 Pitkin chert
20-30 cm
1 novaculite, reddish
30-40 cm
1 Crowley's Ridge chert

Retouched flake without cortex
0-10 cm
1 Pitkin chert

Bifaces
10-20 cm
1 Pitkin chert
20-30 cm
3 Boone chert, white
2 Pitkin chert
30-40 cm
1 Pitkin chert

Proposed site function and period of occupation. Although three biface fragments were available for examination, only one of these could be identified as to type.

1 Stone square stem (middle Archaic)(novaculite)(Plate 3r)
1 unidentified expanded stem (Pitkin chert)(Plate 3s)
1 unidentified rounded stem (Boone chert)(Plate 3t)

Based on the one identified point, it appears that this site was occupied during the Archaic period. The Pear site (3CN46), which is directly south of this site and across a wet area, also reveals points predominantly of the Archaic period.

Evaluation. This site was shovel tested and three 1 m^2 test units were excavated in order to assess if additional work would be warranted. Due to the homogeneity of the soil matrix which suggests that the area has been disturbed in the past and the minimal potential for preservation of any floral or faunal remains that would be adequate for identification and study, it is recommended that the Raspberry site requires no additional work.

CERAMIC SITES

The Temper Site (3CN57)

This site is located on the floodplain, approximately 110 m east of Cypress Creek. Just east of the site is a small intermittent stream which flows from the terrace and into Cypress Creek south of the Temper site. Deciduous forest lies north of the site, with a canebrake at the forest edge. The site is presently used as pasture for cattle and is covered with low grasses. There is a sandy channel on the west edge of the site which shows significant erosion of the banks. The first pottery sherd recovered at the site was found in the erosional areas of this channel.

The site is about 85 m above sea level. The soil type associated with this area is Barling silt loam (see Appendix E). Areas with these soils are occasionally flooded for brief periods during late winter and early spring.

Preliminary surveys. The site was recorded during the 1978 survey of the project area. The surveyors observed that ground visibility was poor, and the area appeared to be an old plowed field. Although little material was discovered during the survey, local collectors displayed a number of artifacts reportedly collected from the site including points of the following types: Standlee contracting stemmed, Lander contracting stemmed, White River corner notched, Stone corner notched, Barry square stemmed, and White River triangular. Survey personnel collected one mano, one chert flake and one quartz crystal fragment (Martin and Jones 1978:65).

Methods of testing. The site was revisited on July 11 and 12, 1979 when ground surface material was collected, six 1 m^2 test units were excavated, and 10 shovel tests were dug (Figure C-1). When a midden was discovered in Test Unit D, more shovel tests were dug in that area to determine the extent of the midden. Additional shovel tests were dug to the south of the sandy channel which ran through the site from north to south.

Ground surface materials.

Nonutilized flake without cortex
- 1 Boone chert, gray
- 1 Boone chert, tan
- 1 Boone chert, pink
- 4 Pitkin chert

Nonutilized flake with cortex
- 1 Boone chert, blue
- 2 Boone chert, gray
- 1 Boone chert, tan
- 2 Pitkin chert

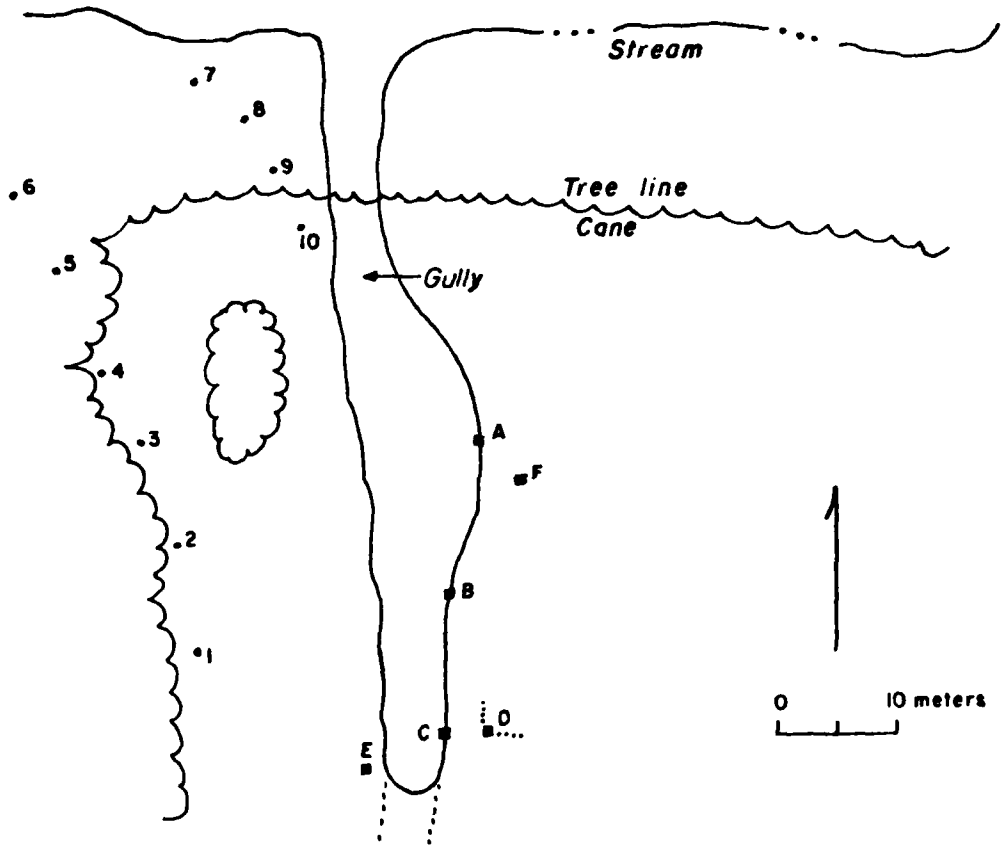

Figure C-1. Locations of the test units at the Temper site, 3CN57

Retouch flake without cortex
1 Boone chert, green

Bifaces
1 Boone chert, green
1 Boone chert, gray
1 (unidentified basal notched, white) (Plate 1q)
1 novaculite, purple

Unmodified lithics
5 quartz crystal

Pottery
4 grog temper body sherds (undecorated)

Test Unit A. This unit was dug along the sandy channel which runs through the site area. An attempt was made to define the stratigraphic composition of the site, since a pottery sherd was recovered here. The top level was the plowzone, a lighter brown sandy silt, which continues to 23 cm. Below this level, the soil appears darker but it is still very sandy (Figure C-2). Test excavations were terminated at 36 cm due to the paucity of cultural material. Due to the homogeneity of the soil, the artifacts from 0 - 36 cm were bagged together. The area is badly eroded.

Nonutilized flake without cortex
1 Boone chert, gray
1 Boone chert, black
1 Boone chert, pink
2 Pitkin chert

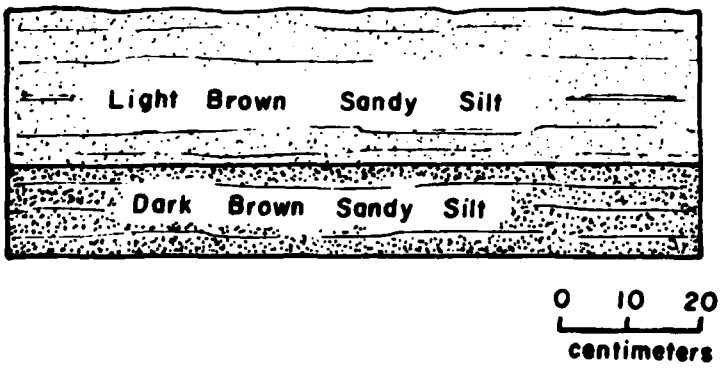

Figure C-2. East wall profile of Test Unit A, Temper Site, 3CN57.

Test Unit B. This unit was also excavated along the sandy channel. Soil characteristics were the same as those observed in Test Unit A. Although the unit was excavated by 10 cm levels, all cultural materials were bagged together due to disturbance caused by erosion. Excavations were terminated at 40 cm, due to paucity of cultural materials.

Nonutilized flake with cortex.
2 Boone chert, blue
1 Boone chert, gray

Nonutilized flake without cortex
4 Boone chert, blue
1 Boone chert, white
2 Boone chert, gray
4 Pitkin chert
2 novaculite, translucent white

Test Unit C. This unit was dug along the edge of the erosional channel where large pottery sherds were found eroding out of the bank. Levels were excavated by 10 cm to a depth of 50 cm. At that depth, a posthole digger was used to test to 93 cm to insure that there were no cultural material below this level. From ground surface to 20 cm, the soil was light brown sandy silt. It was also mottled with small flecks of charcoal. Pottery sherds were found at 20 cm. At the 30 to 40 cm level, the soil appeared a lighter brown. Sand content also increased (Figure C-3). No clear definition of soil stratigraphy could be defined. This may be due to periodic flooding by Cypress Creek.

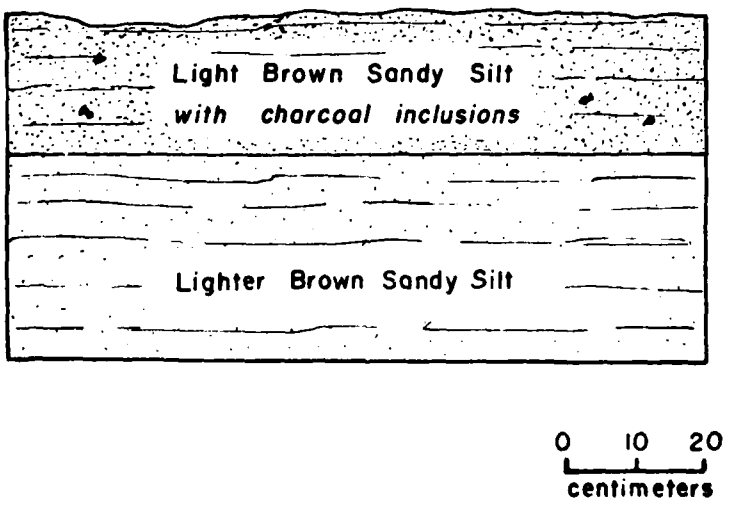

Figure C-3. East wall profile of Test Unit C, Temper site, 3CN57

Nonutilized flake without cortex
0-20 cm
2 Pitkin chert
20-30 cm
2 Boone chert, gray
1 novaculite, black
30-40 cm
1 Pitkin chert
1 Crowley' Ridge

Nonutilized flake with cortex
0-20 cm
1 Boone chert, tan

Bifaces
20-30 cm
1 Johnson (Boone chert, white) (Plate 1p)

Unmodified lithics
30-40 cm
1 quartz crystal

Pottery sherd
0-20 cm
1 grog temper body sherd (undecorated)

Test Unit D. This unit was one of the most productive at the site since evidence of midden deposits was found approximately 10 cm below ground surface. The plowzone is approximately 23-26 cm deep. From ground surface to about 40 cm, the soil was a rather homogeneous light brown sandy silt. Between 40 and 50 cm, there was a sterile sandy wash, suggesting a flooding period. Between approximately 50 and 100 cm, the soil was a dark mottled brown with gray clay inclusions and charcoal flecks. At 100 cm, the soil changed to a lighter, but still dark, brown with charcoal inclusions (Figure C-4). Excavation was terminated at 120 cm, due to paucity of cultural materials and the soil still appeared as described above. A posthole digger was employed to test to 180 cm. The soil appeared similar to that depth, although charcoal was absent below 150 cm.

Nonutilized flake without cortex
0-10 cm
1 Pitkin chert
10-20 cm
2 Boone chert, gray
1 Pitkin chert
20-30 cm
3 Boone chert, green
1 Pitkin chert
37 cm
1 Boone chert, blue
1 Pitkin chert

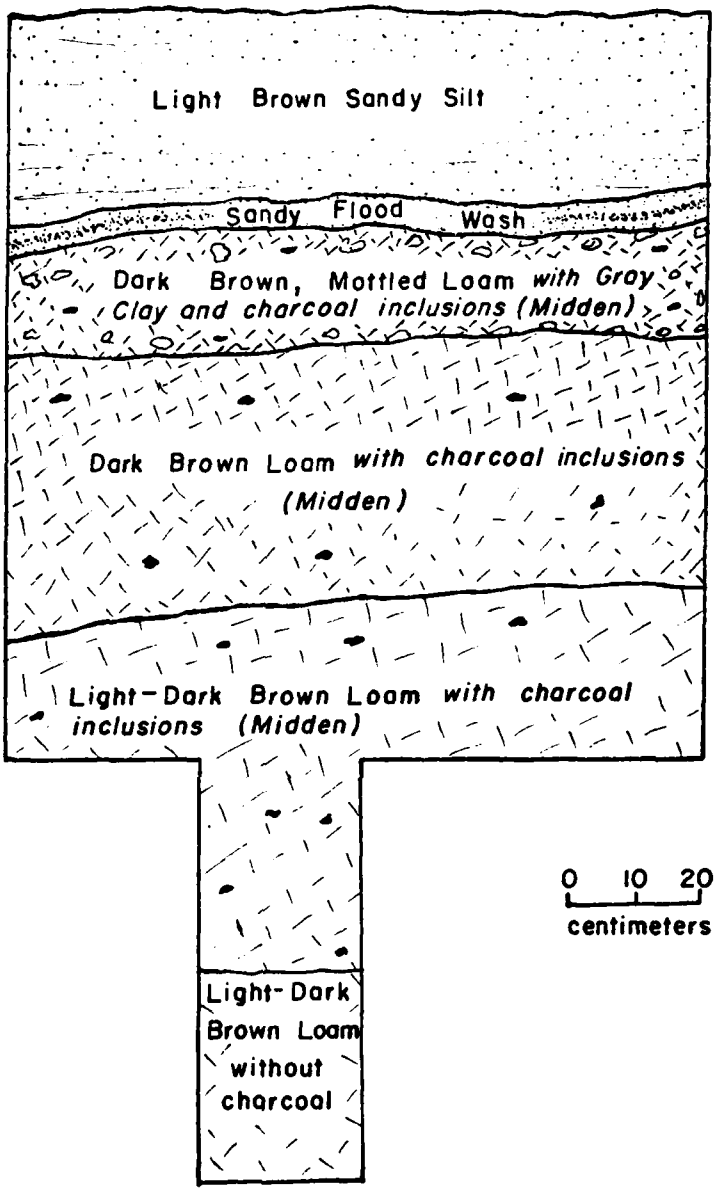

Figure-4. North wall profile of Test Unit D, Temper Site, 3CN57.

60-70 cm
3 Boone chert, gray
5 Pitkin chert
1 novaculite, tan
1 Penters chert
70-80 cm
2 Boone chert, gray
3 Pitkin chert
80-90 cm
2 Boone chert, green
5 Boone chert, tan
7 Pitkin chert
90-100 cm
1 Boone chert, blue
2 Boone chert, gray
1 Pitkin chert
100-110 cm
1 Boone chert, gray
2 Pitkin chert

Nonutilized flake with cortex
60-70 cm
1 Penters chert

Bifaces
80-90 cm
1 Boone chert, white
90-100 cm
1 Pitkin chert

Unmodified lithics
20-30 cm
1 quartz crystal
60-70 cm
2 quartz crystal
80-90 cm
2 quartz crystal
90-100 cm
1 quartz crystal
100-110 cm
1 quartz crystal

Groundstone/slightly modified
110-120 cm
1 possible sandstone mano fragment

Pottery sherds
80-90 cm
4 grog temper body sherd (undecorated)

Floral remains
90-100 cm
2 hickory nut shell fragments
110-120 cm
10 hickory nut shell fragments

Test Unit E. This unit was excavated west of the sandy channel in order to determine site limits. Excavation levels were 10 cm. No material was found in the first and second levels. Excavation was terminated at 40 cm. The character of the soil was extremely different from that observed east of the channel. It was almost totally sand. At the 40 cm level, a posthole digger was used to test the unit to 75 cm. There were charcoal inclusions, but flakes were extremely rare and small and were not collected.

Nonutilized flake without cortex
20-30 cm
1 Pitkin chert
30-40 cm
1 boone chert, gray
1 Pitkin chert

Nonutilized flake with cortex
30-40 cm
1 Boone chert, tan

Unmodified lithics
20-30 cm
1 quartz crystal

Test Unit F. This unit was excavated east of Test Unit A, on the east side of the channel. It was excavated to 50 cm by 10 cm levels. Only two transitions in soil were observed. At approximately 20 cm, the light brown plowzone sandy silt turned to a darker brown sand. A posthole digger was used to test the unit to 106 cm, which indicated that this sand was continuous (Figure C-5).

Nonutilized flake without cortex
0-10 cm
3 Pitkin chert

10-20 cm
3 Pitkin chert
1 novaculite, translucent white
20-30 cm
2 Pitkin chert
1 Penters chert
30-40 cm
1 Boone chert, gray
4 Pitkin chert

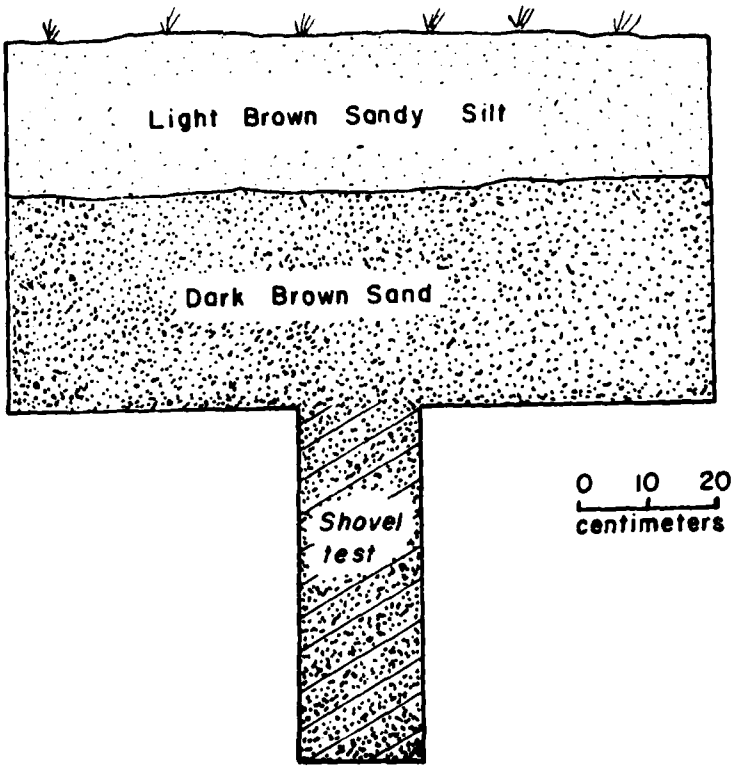

Figure C-5. East wall profile of Test Unit F, Temper Site, 3CN57.

40-50 cm
1 Boone chert, blue
2 Boone chert, tan

Nonutilized flake with cortex
10-20 cm
1 Boone chert, tan
20-30 cm
3 Crowley's Ridge
1 Penters chert
30-40 cm
1 Crowley's Ridge

Bifaces
0-10 cm
1 Boone chert, tan

Unmodified lithics
0-10 cm
1 quartz crystal

Unmodified lithics
10-20 cm
1 quartz crystal
30-40 cm
1 quartz crystal
Pottery
20-30
1 grog temper body sherd (undecorated)
40-50 cm
1 grog temper body sherd (undecorated)

Shovel tests. Upon completion of the excavation of the test units, the site was shovel tested in order to determine the approximate limits. Ten shovel tests were dug west of the sandy channel. No material was found in any of the shovel test units. A total of 12 shovel tests were dug east of the channel in the area of the 1 m^2 test units to determine the limits of the midden. Minimal material recovered during the shovel testing and none of the small flakes were collected.

Proposed site function and period of occupation. When Martin and Jones first located the Temper site, no attempt was made to identify the period of occupation. Even during the testing phase carried out in 1979, only two points adequate for analysis were recovered. These are:

1 Johnson (middle to late Archaic) (Boone chert) (Plate 1p)
1 unidentified basal notched (novaculite) (Plate 1q)

With the recovery of grog-tempered pottery sherds at this site in 1979, it can definitely be stated that the site was occupied during the Woodland period. The absence of shell-tempered sherds suggests that the site was not occupied into a transitional Woodland-Mississippian or Mississippian period but the sample size is insufficient to verify this. The absence of shell-tempered sherds is in marked contrast to the situation at the W. S. Alexander site (3CN117), west of Cypress Creek, where both grog-tempered and shell-tempered sherds have been found.

The nature of the midden deposits at the Temper site suggests that the site was either occupied for a long period of time, or it was reoccupied seasonally for a long period. The only floral remains recovered so far are hickory nut shell fragments suggesting possibly fall expoitation of the nuts growing in the area.

The presence of a point which appears to be from the Archaic period and pottery from the Woodland period makes it difficult to identify the period of occupation and site function.

Evaluation. Considerable attention has been given to the Temper site since it was the first site in the project area at which testing revealed a rich midden (approximately 8 m by 7 m in diameter). Based on the rarity of ceramic sites in the project area, the preservation of nut shell, and perhaps bone, the deep, large midden with floral and

faunal remains, the presence of lithic debitage and tools, this site is highly recommended for additional work. A ceramic site revealing the degree of preservation of organic remains in addition to the quantity of ceramic and lithic artifacts found in testing at the Temper site is a rare resource from which invaluable information can be derived. Construction of the proposed lake would result in destruction of the site. Specific recommendations for mitigation of the adverse impacts from the proposed construction and inundation are presented on the section on mitigation in this report.

Don Scroggins Site (3CN64)

This site is located on top of the terrace edge at approximately 91 m above sea level. It is 175 m west of Cypress Creek and 40 m north of an intermittent stream. Total area of the site is about 250 m (east-west) by 150 m (north-south). The site is in pasture at the present time. The owner observed that the area was first cleared in 1930 by his grandfather. The timber was cut down by hand, large trunks and branches were removed for firewood, and small branches were burned on the spot. Strawberries were then planted there. The area has also been terraced in the past, so that it is impossible to estimate the extent of sub-surface disturbance.

The soil type associated with the site is Enders gravelly fine sandy loam (see Appendix E). Native vegetation was post oak, red oak, white oak, hickory and shortleaf pine. Surface layers and subsoils range from strongly acid to extremely acid (Townsend and Wilson n.d.:60). These areas do not flood.

Preliminary surveys. The site was first located during the 1978 survey conducted by Martin and Jones in the project area. Photographs were made of artifacts collected by the landowner. These included points identified as King's corner-notched, White River corner-notched and Stone corner-notched. A surface collection was made by field personnel at that time and collections included 33 flakes, 1 chert cobble, 1 nutting stone and 5 sandstone cobbles (Martin and Jones 1978:65).

Methods of testing. The site was visited during the June to August, 1979 field survey and testing phase, but Survey personnel were refused permission at that time to carry out testing. Permission was granted for testing to be carried out in the fall of that year. Therefore, personnel returned to carry out testing on November 8 and 9, 1979. At that time all visible material was collected from the ground surface. No shovel testing was done since the site limits had been established previously. Two m^2 test units were excavated (Figure C-6).

Ground surface materials.

Nonutilized flake without cortex
- 4 Boone chert, blue
- 11 Boone chert, white
- 1 Boone chert, red
- 14 Pitkin chert
- 2 novaculite, translucent white

Nonutilized flake with cortex
- 3 Boone chert, blue
- 6 Boone chert, gray
- 3 Pitkin chert

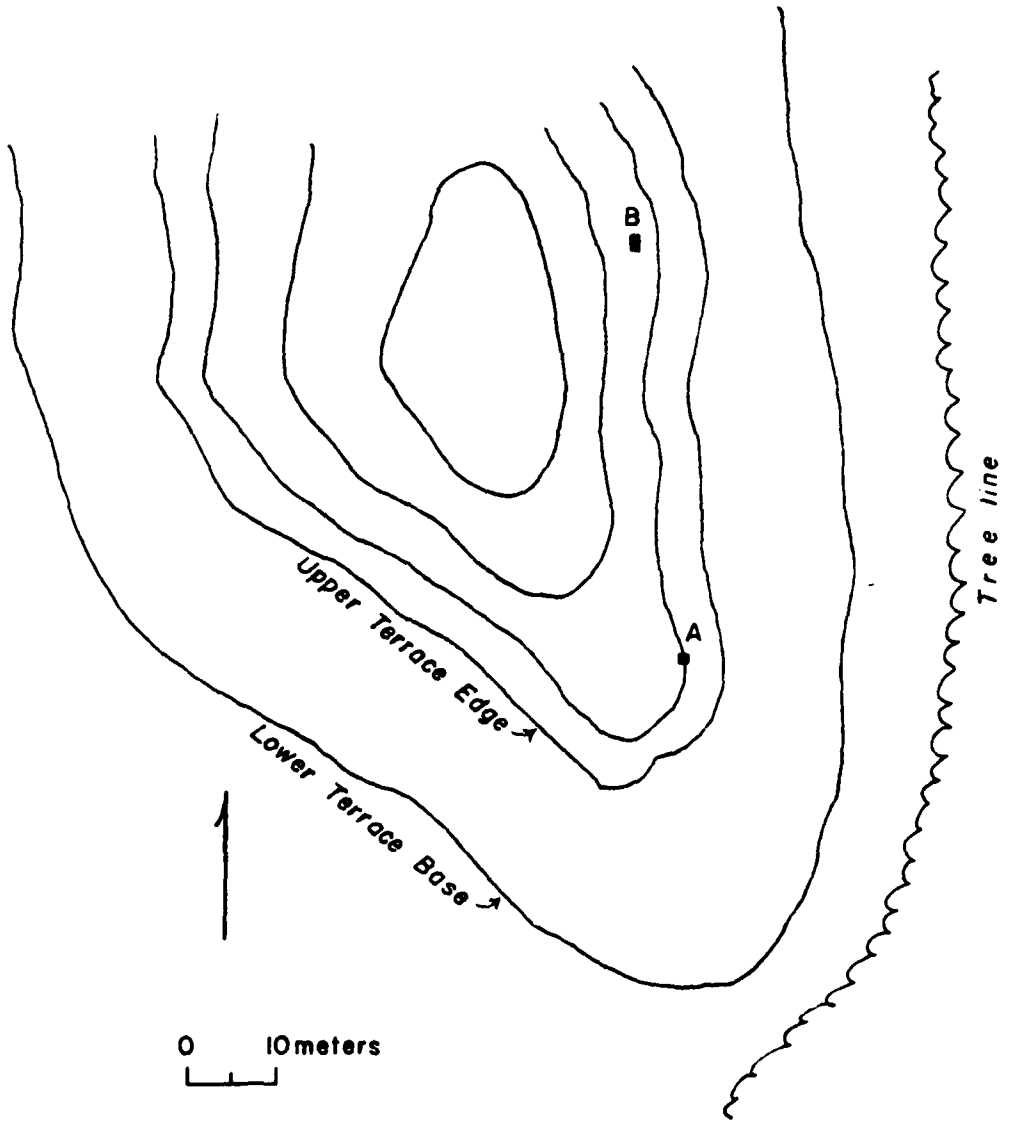

Figure C-6. Locations of test units at the Don Scroggins Site, 3CN64

Retouched flake without cortex
2 Boone chert, blue
4 Boone chert, white
3 Pitkin chert

Retouched flake with cortex
1 Boone chert, blue
1 Boone chert, gray
1 novaculite, gray

Bifaces
2 Pitkin chert

Groundstone/slightly modified
2 sandstone metate
1 sandstone nutting stone

Unmodified lithics
4 quartz crystal

Pottery
1 grog temper (undecorated)

Test Unit A. This unit excavated 7.6 m north of the south edge of the terrace and 7 m west of the east edge of the terrace. It was excavated by combined shovel scraping and troweling. Excavation levels were 10 cm each. The unit was excavated to 50 cm. From ground surface to 10 cm the soil was dark brown and contained charcoal flecks. From 10-30 cm, it was redder and contained bone fragments. The plowzone was approximately 23 to 26 m. Below 30 cm the soil was lighter brown with charcoal flecks, bone fragments and evidence of burned soil. Scraping was terminated at 50 cm because of the paucity of cultural materials. A shovel test was placed in the northwest corner of the unit to a depth of 80 cm where the soil became a yellowish clay and was sterile of cultural materials (Figure C-7).

Nonutilized flake without cortex
0-10 cm
1 Penters chert
30-40 cm
1 Boone chert, white
7 Pitkin chert
1 novaculite, translucent white
40-50 cm
1 Boone chert, white

Nonutilized flake with cortex
0-10 cm
3 Pitkin chert
30-40 cm
1 Boone chert, red

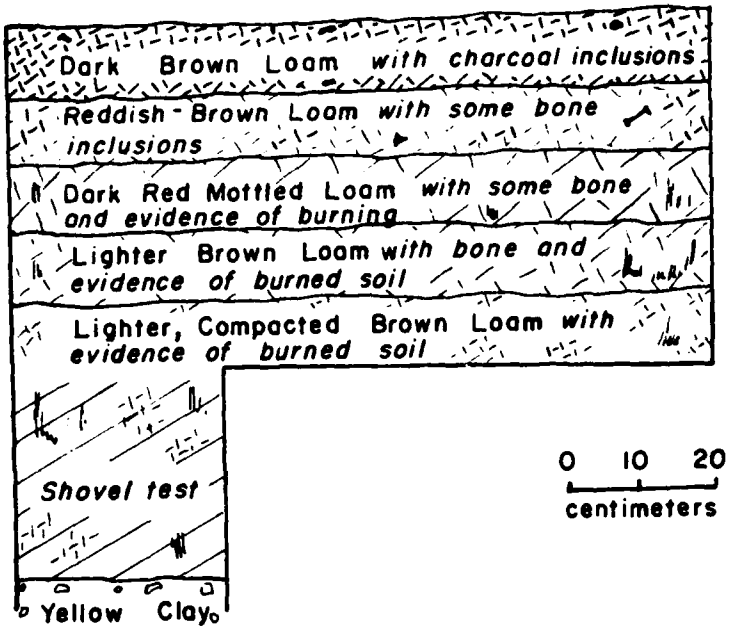

Figure C-7. North wall of Test Unit A, Don Scroggins Site, 3CN64.

Retouched flake without cortex
0-10 cm
2 Boone chert, blue
1 Boone chert, green
16 Pitkin chert
9 novaculite, translucent white
10-20 cm
11 Boone chert, blue
1 Boone chert, white
30 Pitkin chert
10 novaculite, translucent white
2 novaculite, reddish
20-30 cm
1 Boone chert, white
1 St. Joe chert

Retouched flake with cortex
0-10 cm
1 novaculite, reddish
1 Crowley's Ridge

10-20 cm
1 novaculite, reddish

Bifaces
10-20 cm
1 Boone chert, blue
1 Pitkin chert
1 novaculite, gray
1 Bulverde Ortho quartzite (Plate 1r)
30-40 cm
1 Cache River (Pitkin chert) (Plate 1s)

Groundstone/slightly modified
20-30 cm
1 sandstone mano

Unmodified lithics
0-10 cm
2 quartz crystal

Floral/faunal remains
30-40 cm
1 hickory nut shell fragment
1 unidentified bone fragment

Pottery
10-20 cm
9 grog temper (undecorated)
20-30 cm
2 grog temper (undecorated)
30-40 cm
1 grog temper (undecorated)
3 clay daub

Test Unit B. This unit was excavated 27.1 m south of the north edge of the terrace and 9.1 m west of the east edge of the terrace. The terrace drops off sharply on the north, east and south sides. Excavation procedures were consistent with those defined earlier in this report. The soil was a homogeneous reddish clay. There was no evidence of midden deposits, although small charcoal flecks were observed in the soil (Figure C-8). Since no distinct soil changes were observed, levels were excavated by 10 cm. At a depth of 25 cm a heavy concentration of charcoal was observed in the floor of the unit. This was approximately the base of the plowzone level.

Troweling of the square indicated soil staining and the presence of postmold features (Figures C-9 and C-10). Within the stain was the remains of a charred post 10 cm in diameter. The test unit was expanded .5 m to the south to determine if more postmolds were present. A large, white quartzite mano was recovered at 18 cm above the feature. Excavation was terminated at 25 cm when the features were encountered.

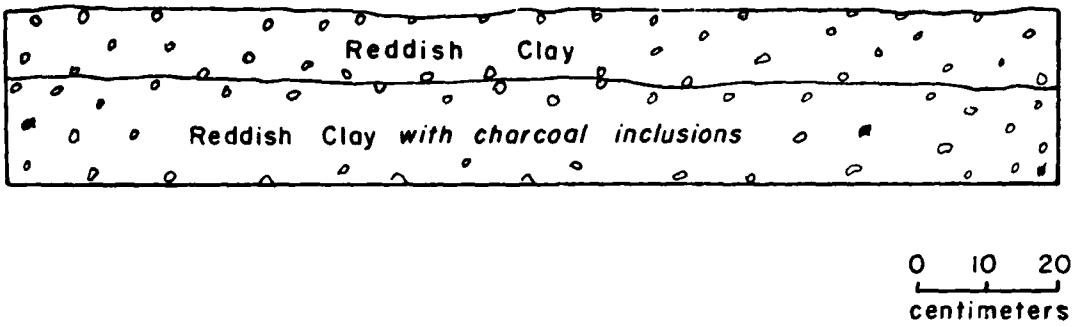

Figure C-8. East wall profile of Test Unit B, Don Scroggins Site, 3CN64.

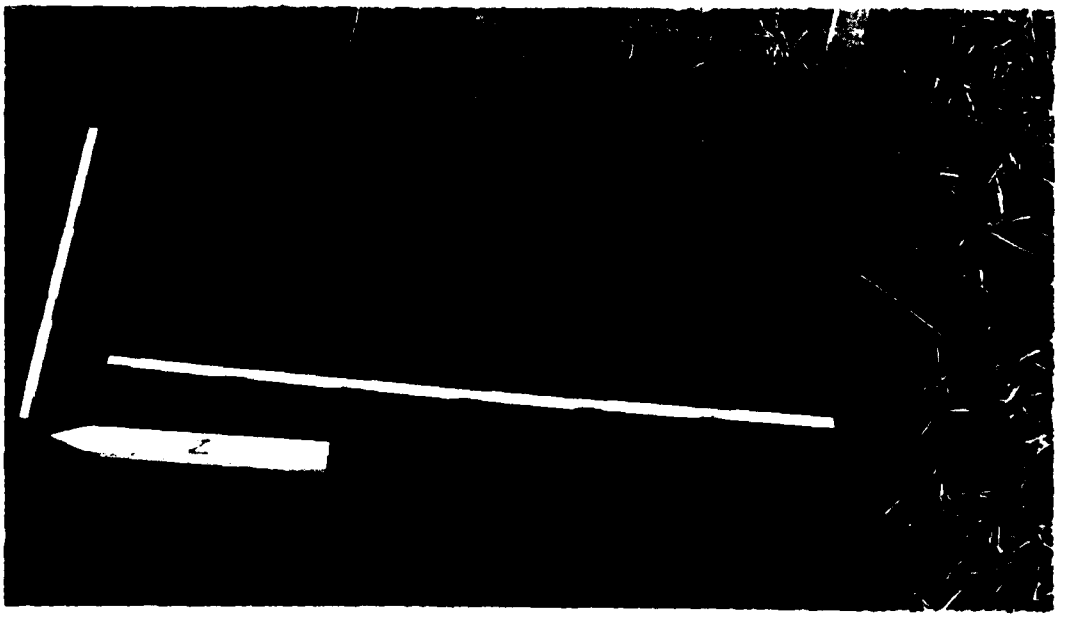

Figure C-9. Postmold features at the Don Scroggins site, 3CN64, looking east (PR796967)

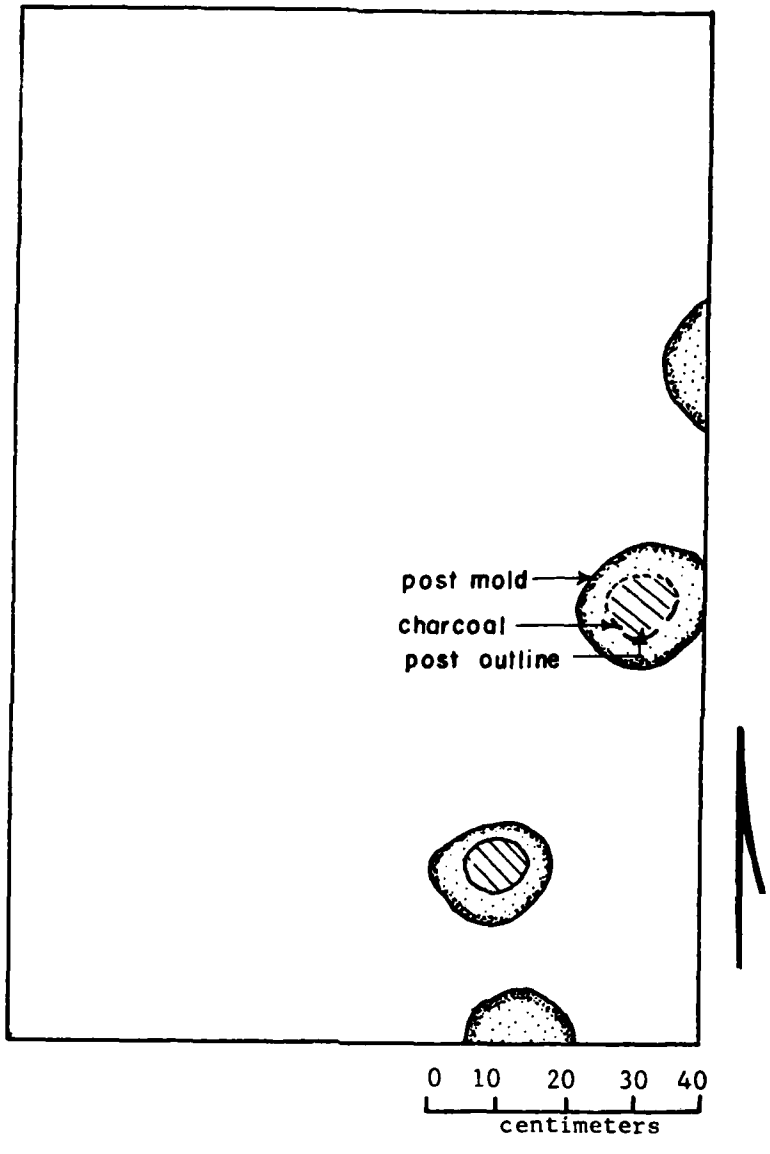

Figure C-10. Test Unit B with possible postmolds, 3CN64

Nonutilized flake without cortex
0-10 cm
9 Boone chert, blue
1 Boone chert, green
7 Boone chert, white
8 Boone chert, gray
10 Boone chert, pink
3 Boone chert, tan
28 Pitkin chert
1 novaculite, gray
3 novaculite, translucent white
10-25 cm
1 Boone chert, blue
5 Boone chert, white
14 Boone chert, gray
1 Boone chert, pink
22 Pitkin chert
8 novaculite, translucent white
1 novaculite, tan

Nonutilized flake with cortex
0-10 cm
4 Boone chert, blue
3 Boone chert, white
5 Boone chert, gray
3 Boone chert, red
4 Boone chert, pink
9 Pitkin chert
10 St. Joe chert
1 Crowley's Ridge
10-25 cm
1 Boone chert, white
2 Boone chert, gray
1 novaculite, gray

Retouched flake with cortex
0-10 cm
4 Boone chert, blue
2 Boone chert, white
1 Boone chert, tan
56 Pitkin chert
13 novaculite, gray
11 novaculite, translucent white
1 novaculite, reddish
6 Penter chert
1 Crowley's Ridge

Bifaces
0-10 cm
2 Pitkin chert
1 novaculite, translucent white

10-25 cm
1 Boone chert, gray

Scrapers
10-25 cm
1 Boone chert, pink

Groundstone/slightly modified
0-10 cm
1 sandstone mano
10-25 cm
1 quartzite mano
6 sandstone mano/hammerstone

Unmodified lithics
0-10 cm
6 quartz crystals
10-25 cm
1 quartz crystal

Floral/faunal remains
0-10 cm
5 hickory nut shell fragments
10-25 cm
4 hickory nut shell fragments
1 unidentified bone fragment

Pottery
0-10 cm
9 grog temper (undecorated)
6 daub fragments
10-25 cm
3 grog temper (undecorated)

Proposed site function and period of occupation. Only two points were recovered from this site which could be identified. These were:
1 Bulverde (middle to late Archaic)(Orthoquartzite)(Plate 1r)
1 Cache River (early Archaic)(Pitkin chert)(Plate 1s)
Although the presence of these points would suggest an Archaic period occupation, the presence of a rich midden in Test Unit A containing pottery sherds suggests that the site was occupied during the Woodland period. The possibility does exist that the site was reoccupied throughout time, but the absence of lithic artifacts of the Woodland period must be considered. Perhaps the bifaces are knives used by Woodland peoples, and archeologists are dealing with a type which reflected little change in form over a long period of time. Presence of the midden in Test Unit A also suggests that the site was occupied for a period of time long enough for trash to accumulate and the postmolds, suggesting the presence of a structure, would reinforce this interpretation. Presence of nut shell fragments indicates that the group was exploiting local plant resources. There were no cultivated, domesticated

plant species found during the testing phase. Although bone fragments were recovered, these were too fragmentary to determine what species of animal were represented.

Radiocarbon dates. On November 9, 1979, a sample of charcoal was removed from a postmold feature in Test Unit B at approximately 25 cm below ground surface. The sample was prepared for submission to Dicarb Radioisotopes Laboratory and sent on December 10, 1979. The results were received by telephone on March 13, 1980. The sample (Dicarb No. 1632) was found to contain many rootlets and insect parts, was cleaned before dating procedures were begun, and was found to date to post-1950 (Irene Stehli, Dicarb, personal communication). There are two possibilities for the modern date, the first of which is the most likely.

1. The recent date may be a result of contamination by rootlets and/or insect parts in the sample.
2. The post was actually a modern feature reflecting disturbance to the site in the twentieth century.

Evaluation. Based on the bone and nut shell fragments which can yield information on prehistoric subsistence patterns, on the presence of ceramic material and lithic debitage and tools, this site is recommended for additional work. The rarity of such sites demonstrating excellent preservation of organic materials has been discussed by Scholtz (1969: 57)

> The archeologist is confronted with many critical questions relating to the ceramic stages in northwest Arkansas. How and when did the innovations of horticulture, pottery-making, and bow technology reach the area and what were the patterns of diffusion? . . .What were the settlement patterns in the area? There are substantial numbers of pottery bearing sites along the Arkansas River Valley and in the larger stream valleys of the eastern Ozarks, but in the interior of the Ozarks nearly all ceramic sites seem to be in bluff shelters rather than on stream terraces. Aside from artifact collections, next to nothing is known about open sites in the area; it should be possible to obtain data on village plan, architectural features, horticultural and burial practices, and other pertinent information.

The Don Scroggins site appears to present many opportunities for the definition of prehistoric settlement patterns, subsistence, technology, and other aspects of behavior. This site will be inundated by the proposed reservoir. A mitigation plan for this site is presented in Chapter 8 of this report.

The W.S. Alexander Site (3CN117)

This site is located on a small rise approximately 50 m west of Cypress Creek. It is 88 m above sea level. North of the site there is a forest along an intermittent stream. There is also forest area to the west of the site. This area has been cleared for agriculture and was planted in milo. The area of the site is approximately 70 m (north-south) and 90 m (east-west). The dimensions conform closely to the rise.

The soil type associated with this site is Barling silt loam. Characteristics of this soil are presented in Appendix E.

Preliminary surveys. Initial information about the site location was given by a local collector during the 1979 survey and testing phase. Since the area was planted in milo at that time, the owner of the property denied permission for subsurface testing. The collector, who informed Survey personnel of the site, did allow them to examine his collection of artifacts from the site (Figure C-11). This included lithic debitage and quartz crystal.

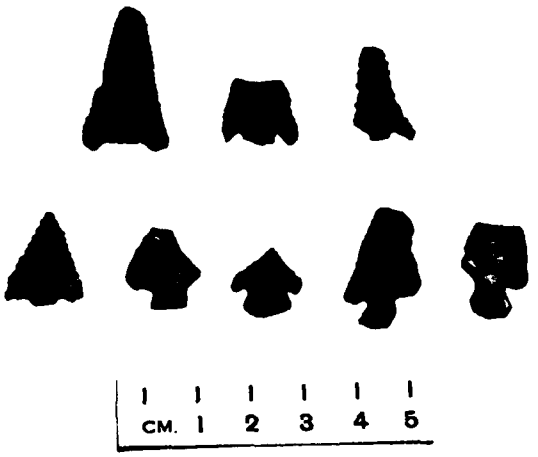

Figure C-11. Projectile points from the W.S Alexander site, 3CN117. (PR796223)

Methods of testing. The property owner allowed Survey personnel to conduct subsurface testing of the site on November 5 and 6, 1979. The exact site location had to be determined and materials were collected from the ground surface. Two m^2 test units were then excavated in what appeared to be the central part of the site (Figure C-12). Upon completion of the excavations, 29 shovel tests were dug in 2 transects. One of these consisting of 16 shovel tests was dug north-south across the site. The other, consisting of 13 shovel tests, was laid east-west across the site area.

Ground surface materials.

Nonutilized flake without cortex
- 15 Boone chert, blue
- 1 Boone chert, white
- 3 Boone chert, red
- 12 Pitkin chert
- 3 novaculite, gray

Nonutilized flake with cortex
- 10 Boone chert, blue
- 6 Boone chert, red

Retouched flake without cortex
- 1 Pitkin chert

Retouched flake with cortex
- 1 Boone chert, gray

Bifaces
- 2 Boone chert, blue
- 1 Pitkin chert

Unmodified lithics
- 2 quartz crystal

Faunal remains
- 7 unidentified post-cranial bone

Pottery
- 5 grog temper body sherds (undecorated)
- 1 grog temper rim sherd (undecorated)
- 2 shell temper body sherds (undecorated)
- 1 shell temper rim sherd (undecorated)

Shovel tests

Nonutilized flake without cortex
- 1 Boone chert, blue (ST-1)
- 3 Boone chert, green (ST-3)
- 1 Boone chert, white (ST-3)

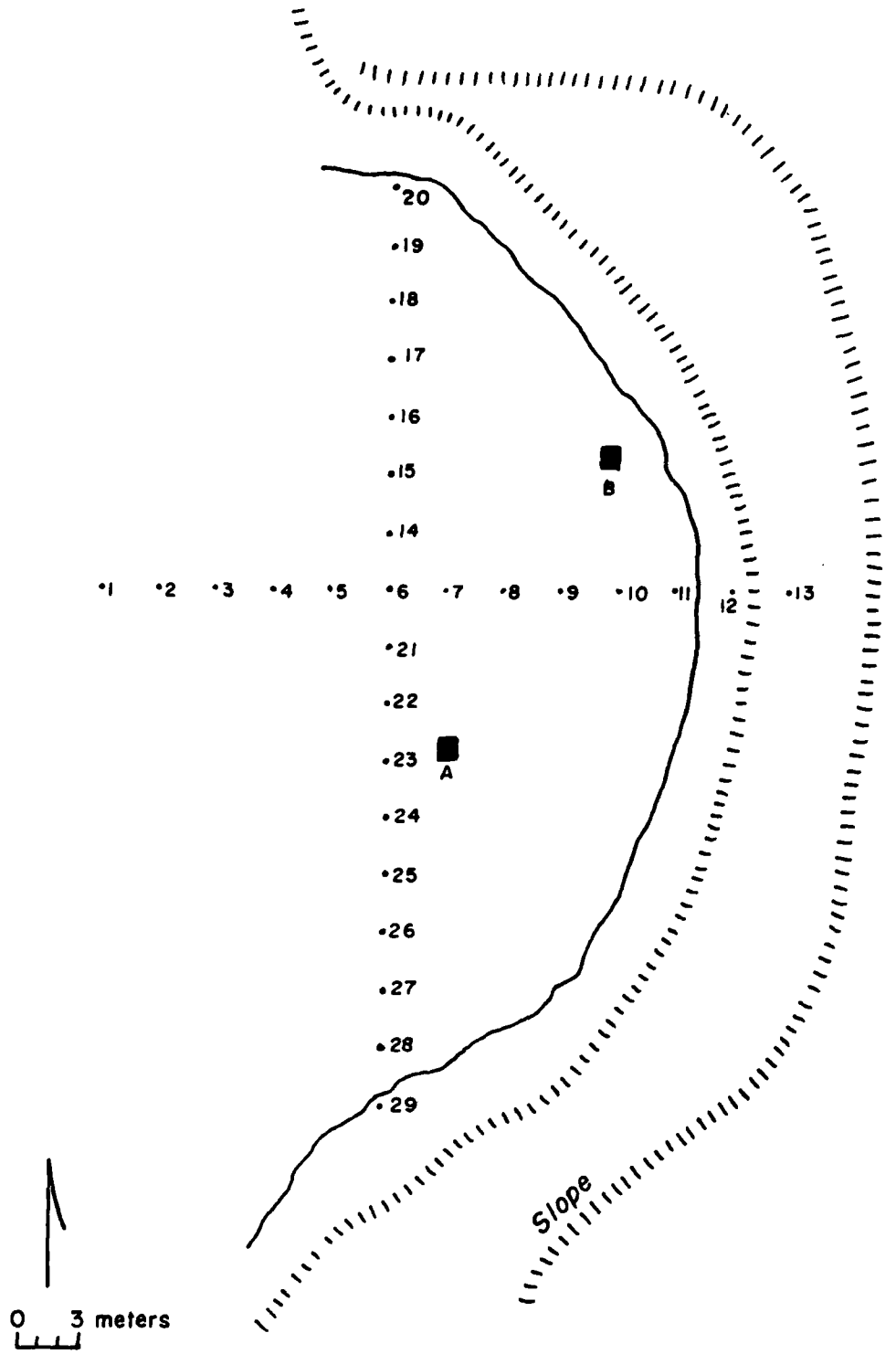

Figure C-12. Shovel tests and test squares at the W.S. Alexander site, 3CN117.

1 Boone chert, pink (ST-3)
1 Boone chert, blue (ST-4)
1 Boone chert, blue (ST-5)
1 Boone chert, white (ST-5)
1 Boone chert, gray (ST-6)
1 Boone chert, blue (ST-7)
1 Pitkin chert (ST-7)
1 Boone chert, blue (ST-8)
2 Boone chert, pink (ST-8)
1 Boone chert, tan (ST-8)
1 novaculite, translucent white (ST-8)
1 Boone chert, white (ST-9)
4 Boone chert, gray (ST-10)
1 Pitkin chert (ST-10)
1 Boone chert, blue (ST-11)
2 novaculite, translucent white (ST-11)
1 Boone chert, blue (ST-12)
1 Boone chert, pink (ST-12)
1 Pitkin chert (ST-12)
1 Pitkin chert (ST-13)
2 Boone chert, gray (ST-14)
1 Boone chert, pink (ST-14)
3 Pitkin chert (ST-14)
2 Boone chert, gray (ST-15)
2 Boone chert, red (ST-16)
1 novaculite, translucent white (ST-16)
1 Pitkin chert (ST-18)
1 Boone chert, white (ST-19)
1 Boone chert, green (ST-21)
2 Boone chert, red (ST-21)
4 Pitkin chert (ST-21)
2 Pitkin chert (ST-23)
6 Boone chert, gray (ST-24)
1 Boone chert, gray (ST-25)
2 Boone chert, blue (ST-26)
1 Boone chert, gray (ST-26)
1 Boone chert, red (ST-26)
1 Pitkin chert (ST-26)
1 Boone chert, gray (ST-28)

Nonutilized flake with cortex
1 Boone chert, red (2)
1 Boone chert, green (ST-3)
1 Boone chert, blue (ST-4)
2 Boone chert, gray (ST-7)
1 St. Joe chert, (ST-8)
1 Boone chert, blue (ST-9)
1 Boone chert, tan (ST-10)
1 Boone chert, pink (ST-13)
3 Boone chert, gray (ST-14)
1 Pitkin chert (ST-15)

1 Boone chert, pink (ST-16)
1 Boone chert, gray (ST-16)
1 Pitkin chert (ST-16)
2 Boone chert, green (ST-22)
1 Boone chert, white (ST-22)
2 Boone chert, red (ST-22)
1 Boone chert, red (ST-23)
1 Boone chert, gray (ST-23)
2 Boone chert, red (ST-24)
1 St. Joe chert (ST-24)
1 Crowley's Ridge (ST-24)
2 Boone chert, red (ST-25)
1 Boone chert, gray (ST-25)
1 Boone chert, gray (ST-26)
1 Boone chert, gray (ST-27)

Retouched flake without cortex
1 Boone chert, green (ST-22)
2 Boone chert, red (ST-22)
2 Pitkin chert (ST-22)
1 novaculite, reddish (ST-22)

Retouched flake with cortex
1 Boone chert, gray (ST-6)
1 Boone chert, gray (ST-7)
1 St. Joe chert (ST-8)

Bifaces
1 Pitkin chert (ST-22)

Cores
1 novaculite, gray (ST-9)

Unmodified lithics
1 quartz crystal (ST-15)

Faunal remains
2 unidentified post cranial bones (ST-7)
3 box turtle carapace (ST-8)
3 unidentified bones (ST-8)
1 box turtle carapace (ST-9)
1 deer cannon bone (ST-10)
1 box turtle carapace (ST-10)
2 box turtle carapace (ST-13)
4 unidentified bones (ST-13)
1 box turtle carapace (ST-14)
2 unidentified bones (ST-14)

Pottery/burned clay
1 grog temper body sherd (undecorated) (ST-2)
3 grog temper body sherds (undecorated) (ST-6)

2 grog temper body sherds (undecorated) (ST-9)
1 grog temper body sherd (undecorated) (ST10)
1 shell temper body sherd (undecorated) (ST-10)
1 grog temper body sherd (undecorated) (ST-12)
1 grog temper body sherd (undecorated) (ST-13)

Test Unit A. This unit was excavated approximately in the central part of the site, based on the sloping of the rise to the north, east and south. Attempts were made to follow natural or cultural stratigraphy during excavation. From ground surface to approximately 17 cm, the soil was a dark brown. At 17 cm it encountered midden. At approximately 40 cm, the soil began turning lighter brown, although cultural materials and organic remains were found to 53 cm. A shovel test was dug in the northwest corner of the unit to 80 cm(Figure C-13). No artifacts were found, and the soil was a sterile, yellowish clay.

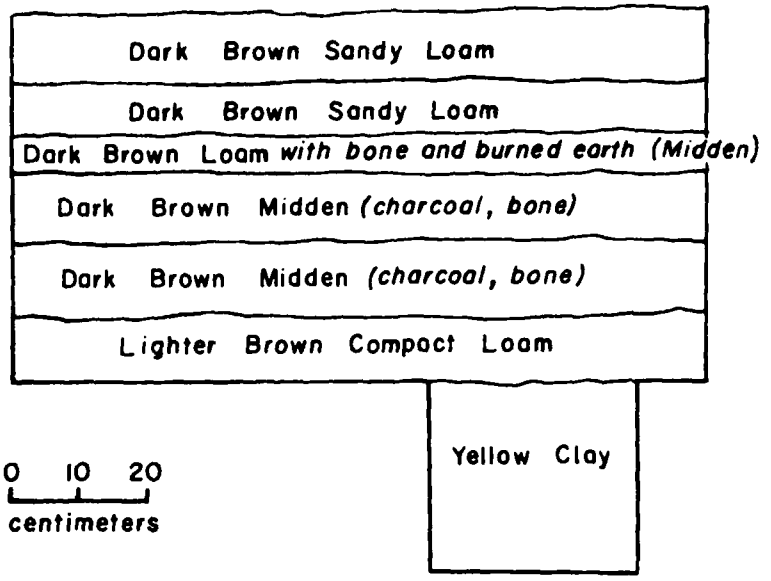

Figure C-13. West wall profile of Test Unit A, W.S. Alexander site, 3CN117.

Nonutilized flake without cortex
0-10 cm
12 Boone chert, blue
3 Boone chert, white
5 Boone chert, red
8 Pitkin chert
10-17 cm
41 Boone chert, gray
18 Boone chert, pink
12 Boone chert, tan
1[illegible] Pitkin chert
4 novaculite, translucent white
1 novaculite, yellow
1 novaculite, red
17-23 cm
18 Boone chert, blue
5 Boone chert, white
8 Boone chert, red
9 Pitkin chert
23-33 cm
6 Boone chert, blue
1 Boone chert, white
2 Boone chert, pink
7 Pitkin chert
33-43cm
4 Boone chert, blue
3 Boone chert, white
7 Pitkin chert
1 novaculite, translucent white
43-53 cm
2 Boone chert, blue
1 Pitkin chert

Nonutilized flake with cortex
0-10 cm
19 Boone chert, blue
15 Boone chert, red
1 Pitkin chert
10-17 cm
3 Boone chert, blue
29 Boone chert, red
14 Boone chert, tan
4 Boone chert, gray
8 Pitkin chert
1 novaculite, translucent white
17-23 cm
15 Boone chert, blue
11 Boone chert, red
2 Pitkin chert

23-33 cm
9 Boone chert, blue
6 Boone chert, pink
6 Boone chert, tan
2 Pitkin chert
33-43 cm
4 Boone chert, blue
3 Boone chert, white
7 Pitkin chert
1 novaculite, translucent white
43-53 cm
2 Boone chert, blue
2 Boone chert, red

Retouched flake without cortex
0-10 cm
3 Boone chert, blue
2 Pitkin chert
10-17 cm
2 Boone chert, blue
1 Boone chert, gray
1 Boone chert, tan
17-23 cm
4 Boone chert, blue
1 Boone chert, red
2 Pitkin chert

Retouched flake with cortex
10-17 cm
1 Pitkin chert
23-33 cm
1 Boone chert, blue

Bifaces
0-10 cm
1 Boone chert, blue
10-17 cm
1 Pitkin chert
17-23 cm
1 Boone chert, blue
1 Boone chert, red
33-43 cm
1 Pitkin chert
43-53 cm
1 Boone chert, gray

Unmodified lithics
10-17 cm
3 quartz crystal

17-23 cm
4 quartz crystal
2 calcite
23-33 cm
2 quartz crystal
43-53 cm
1 milky quartz crystal

Faunal/Floral remains
0-10 cm
3 Unidentified bone
10-17 cm
45 unidentified bone
17-23 cm
2 deer teeth (specific identification not made)
1 deer molar
8 deer post cranial bones
1 deer left tibia
23-33 cm
2 deer teeth
28 unidentified bone fragments
33-43 cm
1 deer tooth
2 deer premolar
1 deer molar
15 deer post cranial bone fragments
47 unidentified bone fragments
1 hickory nut shell fragment
43-53 cm
13 unidentified bone fragments
1 hickory nut shell fragment

Pottery
0-10 cm
1 grog temper body sherd (undecorated)
4 shell temper body sherd (undecorated)
10-17 cm
23 grog temper body sherd (undecorated)
17-23 cm
41 grog temper body sherd (undecorated)
1 grog temper rim sherd (undecorated) (Plate 4i)
1 grog temper rim sherd (single incised line) (Plate 4e)
23-33 cm
32 grog temper body sherd (undecorated) (Plate 4f,m)
1 grog temper rim sherd (undecorated) (Plate 4g)
1 grog temper rim sherd (single incised line) (Plate 4d)
1 shell temper body sherd (undecorated)
33-43 cm
35 grog temper body sherd (undecorated)
1 shell temper body sherd (undecorated)

43-53 cm
3 grog temper body sherd (undecorated)

Test Unit B. This m^2 test unit was excavated northeast of Test Unit A. From ground surface to approximately 21 cm, the soil was dark brown and sandy. This appears to be the plowzone level. It turned lighter brown at about 21 cm, but by 31 cm it was dark brown and compact. At 32 cm a cluster of sandstone rocks was found. At 41 cm it turned lighter brown again (Figure C-14). Excavation was begun employing arbitrary 10 cm levels. Slightly differences in thickness of levels reflect variations in composition of the level.

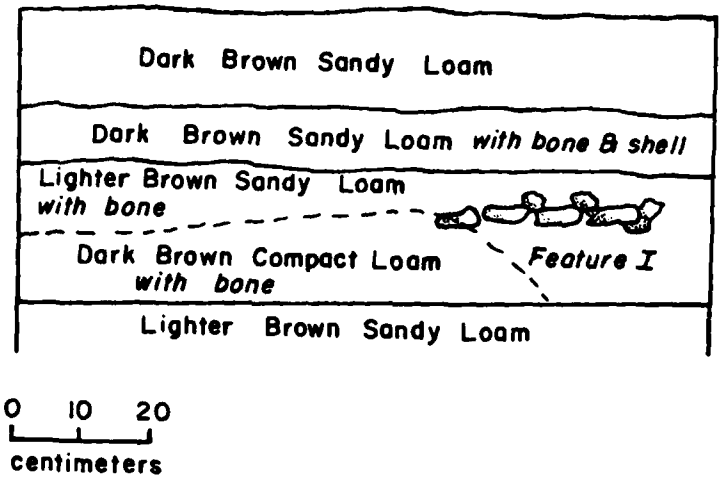

Figure C-14. North wall profile of Test Unit B, W.S. Alexander Site, 3CN117.

Nonutilized flake without cortex
0-10 cm
26 Boone chert, blue
12 Boone chert, green
6 Boone chert, white
12 Boone chert, red
1 novaculite, white
10-21 cm
101 Boone chert, blue
26 Boone chert, green
17 Boone chert, white
72 Boone chert, red
10 Boone chert, tan

118 Pitkin chert
10 novaculite, translucent white
1 novaculite, yellow

21-31 cm
36 Boone chert, blue
6 Boone chert, white
9 Boone chert, red
3 Boone chert, tan
14 Pitkin chert

32 cm (Feature 1, a rock cluster)
1 Boone chert, white
4 Boone chert, red
7 Pitkin chert

31-33 cm
6 Boone chert, green
10 Boone chert, white
6 Boone chert, pink
15 Pitkin chert
2 novaculite, translucent white

33-41 cm
9 Boone chert, green
6 Boone chert, red
10 Pitkin chert

Nonutilized flake with cortex

0-10 cm
20 Boone chert, blue
11 Boone chert, red
2 Pitkin chert

10-21 cm
43 Boone chert, blue
11 Boone chert, green
37 Boone chert, red
7 Boone chert, tan
5 Pitkin chert

21-31 cm
27 Boone chert, blue
10 Boone chert, white
29 Boone chert, red
5 Boone chert, tan
3 Pitkin chert

31-33 cm
1 Boone chert, green
1 Boone chert, white
3 Boone chert, pink
1 Pitkin chert

33-41 cm
1 Boone chert, red
7 Pitkin chert

Retouch flake without cortex
10-21 cm
    2 Boone chert, blue
    1 Boone chert, red
    1 Pitkin chert

Retouch flake with cortex
10-21 cm
    1 Boone chert, blue
    1 Boone chert, tan
    2 Pitkin chert

Bifaces
0-10 cm
    1 Boone chert, blue
    1 Boone chert, gray
10-21 cm
    1 Boone chert, blue
21-31 cm
    1 Boone chert, blue
    1 Pitkin chert
32 cm (Feature 1, a rock cluster)
    1 Boone chert, white
31-33 cm
    1 Boone chert, white
    1 novaculite, translucent white

Groundstone/slightly modified
10-21 cm
    1 sandstone mano fragment
32 cm
    2 sandstone metate fragments

Unmodified lithics
0-10 cm
    1 quartz crystal
10-21 cm
    4 quartz crystal
21-33 cm
    1 manganese fragment
33-41 cm
    1 quartz crystal

Faunal/floral remains
0-10 cm
    1 deer molar
   16 deer post cranial bone
    1 deer right tibia
    4 deer phalange
    1 deer canon bone
    2 deer right astragalus
    1 deer left astragalus
   20 unidentified deer bone
    1 possible box turtle fibula

16 box turtle carapace
2 box turtle plastron
1 wild turkey femur
175 unidentified bone fragments
10-21 cm
1 possible deer skull fragment
4 deer teeth
1 deer molar
2 possible deer ribs
68 unidentified deer bone
1 deer left humerus
2 deer radius
1 deer right tibia
7 deer canon bones
2 deer astragalus
87 box turtle carapace
1 opossum mandible fragment
2 unidentified bird bone
1 unidentified tooth
1 unidentified canon bone
588 unidentified bone
1 clam shell fragment
2 land snail shell fragments
4 hickory nut shell fragments
1 black walnut shell fragments
21-31 cm
2 deer skull fragments
1 deer tooth
1 deer incisor
2 deer premolar
2 deer molar
1 deer thoracic vertebra
1 deer lumbar vertebra
2 deer rib
1 deer radius
2 deer tibia (1 right, 1 left)
2 deer phalanges
1 deer tuber calcis
3 deer canon bone
2 box turtle vertebrae
106 box turtle carapace
4 box turtle plastron
2 cottontail rabbit skull fragments
1 cottontail rabbit mandible fragment
1 fox mandible fragment
1 fox coccygeal
1 possible fox rib
1 possible fox phalange
1 fish vertebrae
42 unidentified bone fragments
1 unidentified tibia
927 unidentified miscellaneous bone fragments

9 clam (1 whole, 8 fragments)
16 land snail (10 whole, 6 fragments)
1 aquatic snail
12 hickory nut shell fragments

32 cm
1 deer skull fragment
3 deer mandible fragments
1 deer incisor
12 unidentified bone fragments
2 land snail (1 whole, 1 fragment)
4 hickory nut shell fragments
2 unidentified wood fragments

31-33 cm
15 box turtle carapace
78 unidentified bone fragments
6 hickory nut shell fragments

33-41 cm
1 possible deer incisor
4 deer molar
16 unidentified deer bone
1 deer cervical vertebrae
1 deer thoracic vertebrae
1 deer left scapula
1 deer humerus
1 deer phalange
2 deer astragalus (1 left, 1 right)
1 box turtle unidentified bone
1 box turtle femur
12 box turtle carapace
1 box turtle plastron
1 possible fish vertebrae
1 unidentified skull fragment
1 unidentified carnivore molar
1 unidentified vertebrae
142 unidentified bone fragments
3 clam shell fragments
2 land snail shells
9 hickory nut shell fragments

Pottery

0-10 cm
24 grog temper body sherd (undecorated) (Plate 4n,o)
2 shell temper body sherd (undecorated)

10-21 cm
87 grog temper body sherd (undecorated)
1 grog temper body sherd (single incised line)
2 grog temper rim sherd (undecorated) (Place 4j)
12 shell temper body sherd (undecorated)
1 shell temper body sherd (single incised line)
10 daub fragments

21-31 cm
51 grog temper body sherd (undecorated)
1 grog temper body sherd (thumbnail incised) (Plate 4a)
1 grog temper body sherd (incised) (Plate 4b)
1 grog temper rim sherd (undecorated) (Plate 4h)
8 shell temper body sherd (undecorated)
32 cm (Feature 1, a rock cluster)
6 grog temper body sherd (undecorated)
2 shell temper body sherd (undecorated)
31-33 cm
6 grog temper body sherd (undecorated)
2 shell temper body sherd (undecorated)
33-41 cm
21 grog temper body sherd (undecorated
2 grog temper rim sherd (undecorated) (Plate 4k,l)
2 shell temper body sherd (undecorated)
7 daub fragments

Proposed site function and period of occupation. The W. S. Alexander site contained an extensive assemblage of diagnostic artifacts which could be used to determine the period of occupation and technology. Lithics recovered from the site include:

1 Gary (early Woodland to Historic)(Boone chert)(Plate 3v)
1 Marshall (middle to late Archaic)(Pitkin chert)(Plate 3x)
2 Rockwall (late Woodland to Mississippian)(Pitkin chert) (Plate 3y)
1 Epps (late Archaic to early Woodland)(Boone chert)(Plate 3w)
1 unidentified tapered stem (Boone chert)(Plate 3w)

In addition, numerous fragments of pottery sherd were recovered. A number of these are identified on the basis of ceramic types recovered from the Toltec site and the Spinach Patch site. Pottery types most similar to those found at the W. S. Alexander site include:

1 Coles Creek Incised, var. Clear Lake (Rolingson 1978a:27)(Plate 4c)
2 Coles Creek Incised, var. Keo (one line)(Rolingson 1978a:32) (Plate 4d,e)
1 Beaker rim mode 8 (Rolingson 1978a:12)(Plate 4f)
1 Beaker rim mode 9 (Rolingson 1978a:12)(Plate 4o)
2 Grog temper expanded flat base (Figure C-15)
1 Gober Complex incised (Hoffman 1977:39)(Plate 4b)
1 unidentified thumbnail incised (Plate 4a)

Pottery vessels exhibiting flat bases are found in the Ozarks (House 1978). These appear very similar to the expanded flat base sherds recovered from the W. S. Alexander site (Figure C-15). Those from the Cypress Creek basin are grog tempered and bone tempered. Rolingson (1978a:

Figure C-15. Grog temper expanded flat ceramic bases from the W. S. Alexander site, 3CN117

19) notes that there is a pottery base form from the Toltec collection which "has the interior rounded off creating a thickened, cornered base on the exterior and a rounded surface on the interior." It has not been determined if the sherds from the W. S. Alexander site conform more to these Coles Creek forms or to the Fourche Maline forms from the Cypress Creek basin.

Based on midden deposits, daub (burned clay fragments), lithic debitage and tools, and extensive amounts of pottery sherds, it appears that the W. S. Alexander site was occupied for a prolonged period of time (that is, more than a few months). Organic remains reveal that there was a focus on exploitation of animals and plants. The presence of fish vertebrae, clam shells and aquatic snail shells also suggest that the creek was being exploited. No cultivated species of plants were found during the testing phase.

Radiocarbon dates. On November 5 and 6, 1979, bone was recovered from Test Unit A at the W. S. Alexander site. A sample of bone (primarily deer) was submitted to Dicarb Radioisotopes Laboratory on December 10, 1979 for dating. This bone was recovered from 23-33 cm below ground surface. Almost one ounce of bone, an amount considered sufficient for current dating procedures, made up the sample. The sample also contained many rootlets. The resulting date was 400 years B.P. $\pm$ 95 (circa A.D. 1455 to 1645). Based on the presence of Coles Creek and possibly Fourche Maline-related pottery at the site, an earlier Woodland period date was expected. There are three possible reasons to explain this later Mississippian period date.

1. Small rootlets may have remained within the sample and resulted in contamination.

2. The site was occupied by cultures of an earlier period and then by subsequent Mississippian period groups. Plowing of the site resulted in the mixture of grit-tempered Coles Creek pottery and shell-tempered Mississippian pottery and other remains.

3. The Coles Creek culture may have been existed in the Cypress Creek basin for 400 to 500 years beyond the currently accepted terminal date of circa A.D. 1000.

At this time, it appears that alternatives 1 and 2 are the most feasible.

Evaluation. The W. S. Alexander site contains a variety of organic and cultural remains which can provide insights into the nature and function of a small site of the Coles Creek, Fourche Maline or a Mississippian period culture. Exact identification of the culture cannot be determined at this time. The site is recommended for further work. The research topics which can be addressed in further study are (1) chronology, (2) intensity and area of occupation, (3) site size, (4) technology based on the functional analysis of use wear on lithics and the analysis of the ceramics, (5) subsistence based on examination of floral and faunal remains, (6) exploitation of resource materials, and (7) functional areas within the site. This site lies within the limits of the proposed lake and will be adversely affected by construction. The recommendations for mitigation of this site are found in Chapter 9 of this report.

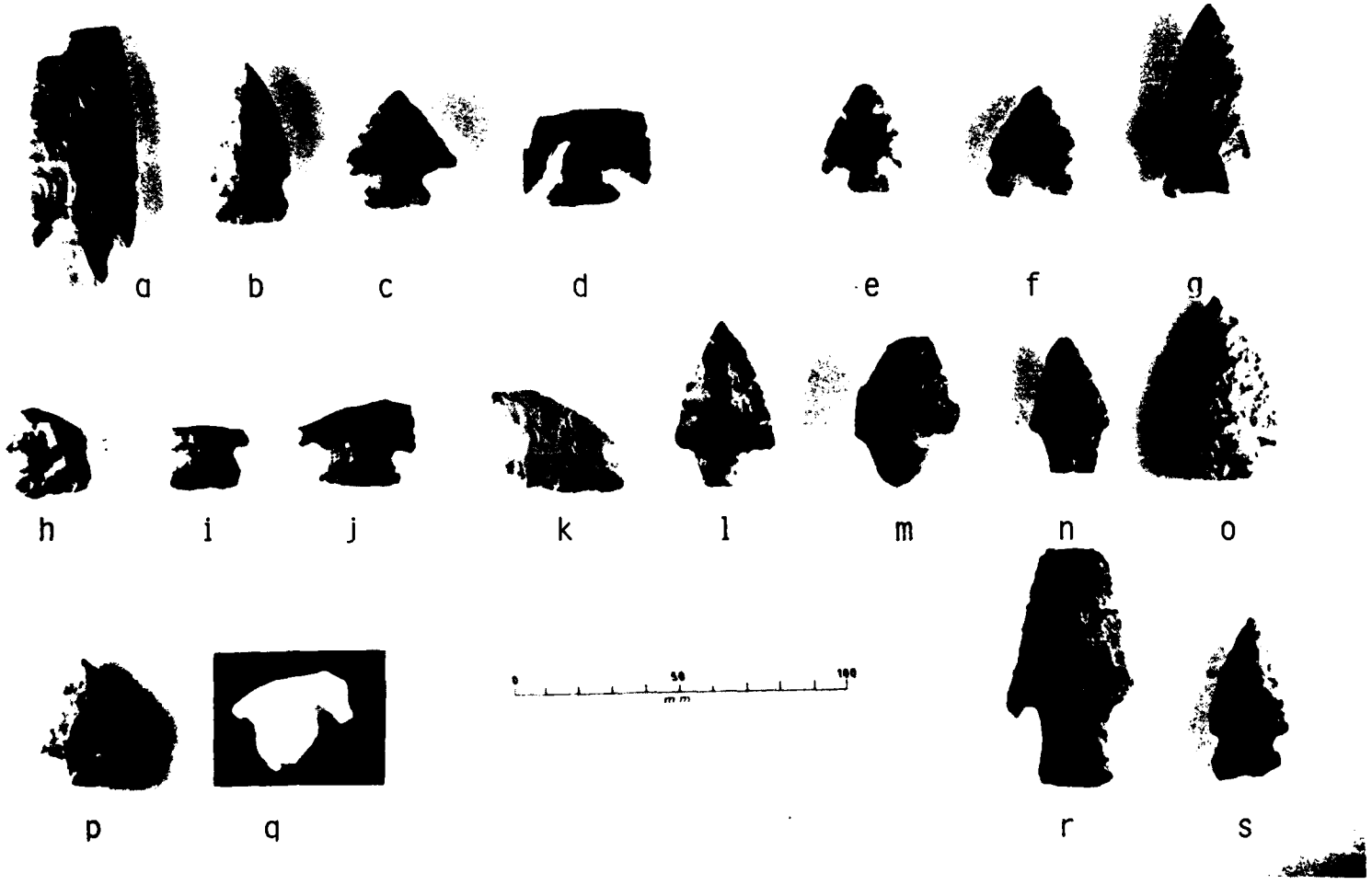

Plate 1. Bifacial points from sites in the Conway Water Supply project area. (a-d) site 3CN38, (e-g) site 3CN42, (h-o) 3CN46, (p-q) 3CN57, (r-s) 3CN64

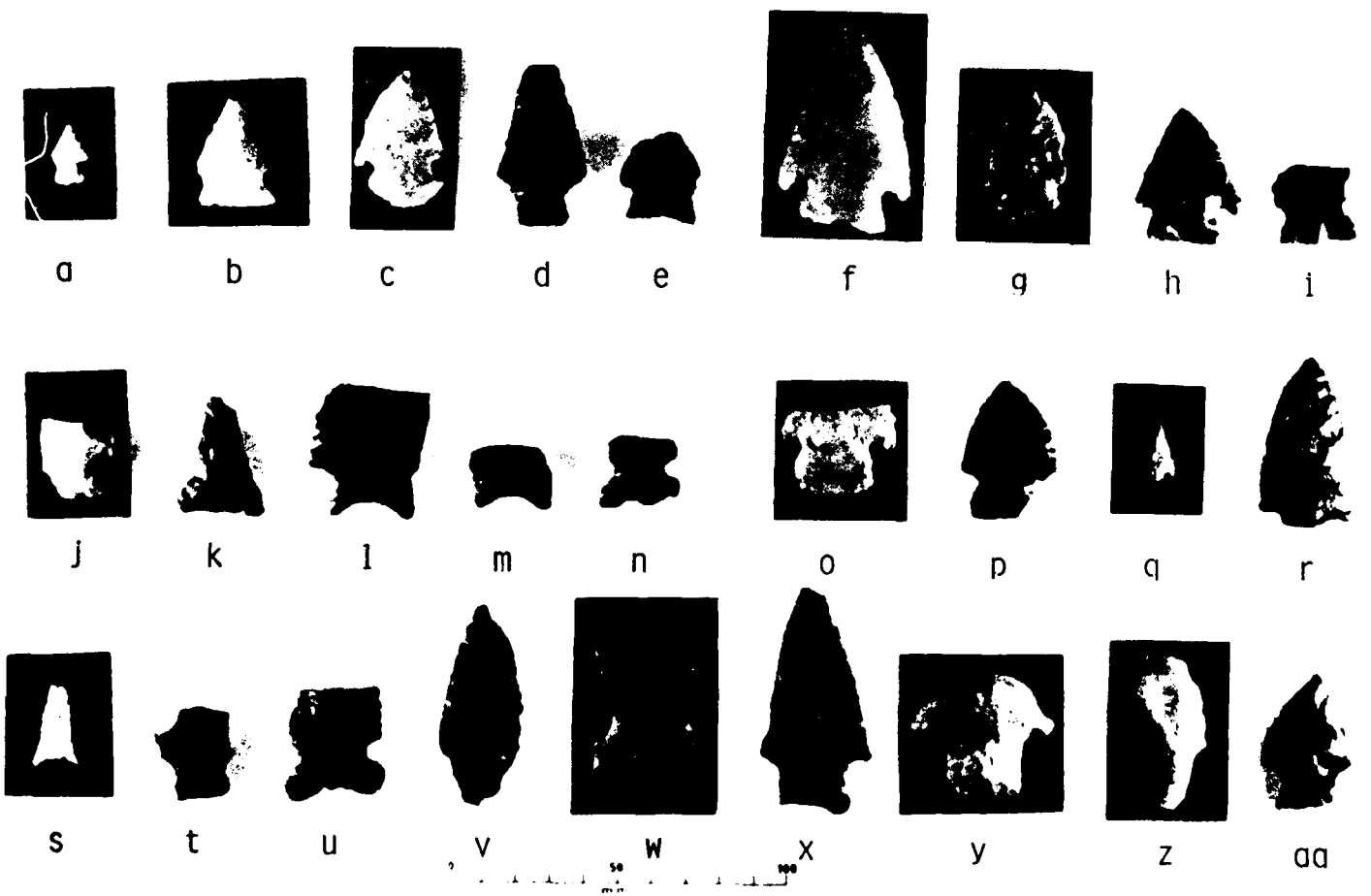

Plate 2. Bifacial points from sites in the Conway Water Supply project area. (a) 3CN67, (b-i) 3CN68, (j-n) 3CN70, (o-p) 3CN74, (q-r) 3CN79, (s) 3CN80, (t-aa) 3CN82

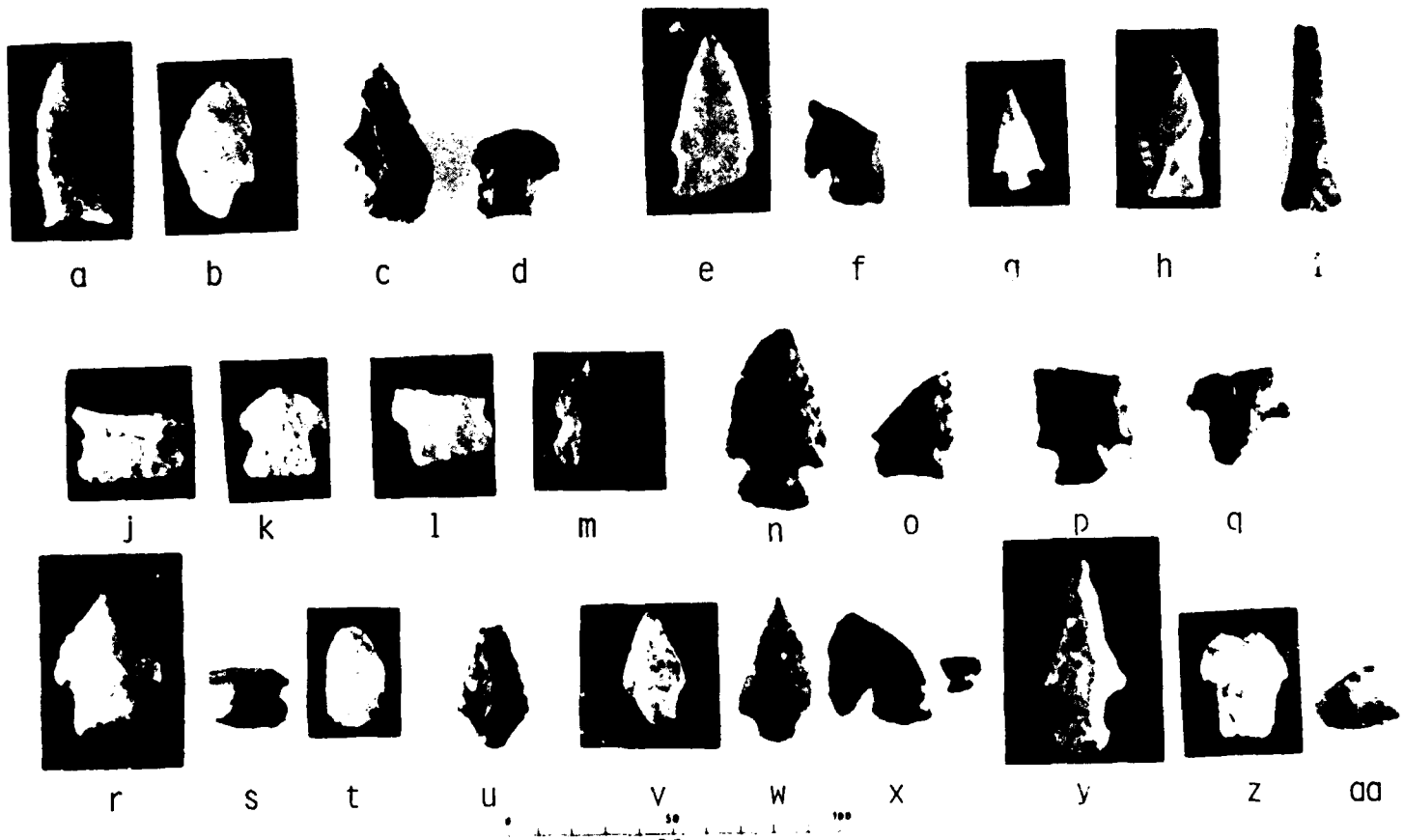

Plate 3. Bifacial points from sites in the Conway Water Supply project area. (a-d) 3CN83, (e-f) 3CN84, (g) 3CN91, (h) 3CN93, (i) 3CN95, (j-p) 3CN97, (r-t) 3CN107, (u) 3CN118 (v-z) 3CN117, (aa) 3CN119

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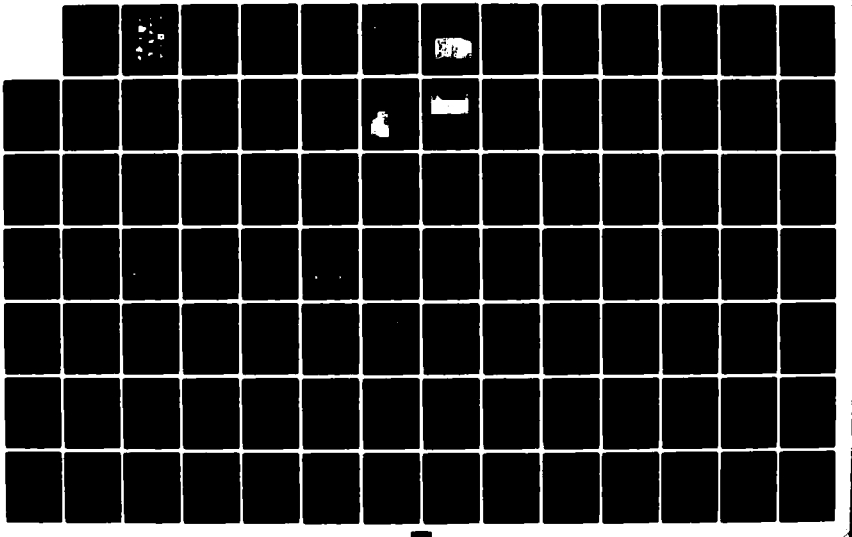

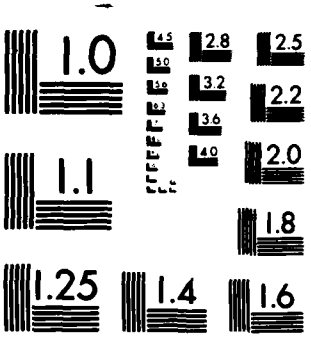

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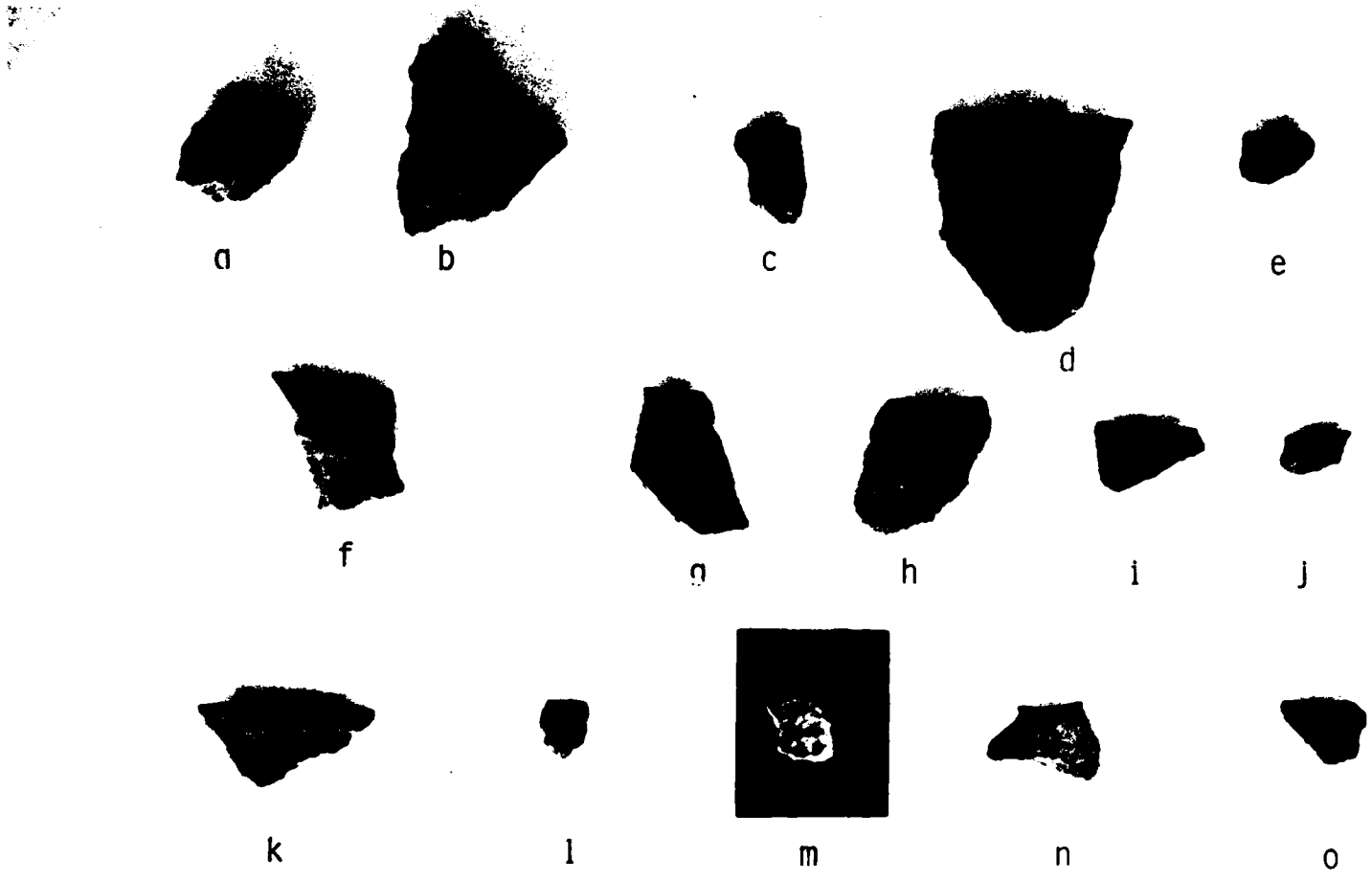


Plate 4. Pottery sherds from the W. S. Alexander site, 3CN117

Appendix D

Historic Sites Tested in 1979

by

Lawrence Gene Santeford

with Historic Documentation by

Beverly J. Watkins

The Bell-Norwood House Site (3CN44)

Description. The site is located on the terrace approximately 104 m above sea level. It is on Linker fine sandy loam soil (see Appendix E). During the 1978 survey of the area, a springhouse was recorded at the site (Martin and Jones 1978). During the 1979 survey, Virgil and Grace Scroggins reported a house structure, the remains of which were located on July 19, 1979. An associated open well and rubble from a chimney are present. Other foundation stones (piers) are still on the site but are no longer indicative of the shape of the former structure.

Methods of Testing. A datum point was established to the west of the structure area and an east-west line was laid out for a regular series of 20 shovel tests. A north-south line was drawn and another 20 shovel tests were dug. In addition, 13 shovel tests were dug randomly around the site area. The soils in these tests were a light brown silt down to 10 cm below the surface and an orange clay from 20-30 cm below the surface. Cultural materials including metal fragments, nails, ceramic, crock and glass fragments were found in the upper level. Four 1 m^2 test units were excavated on July 25, 1979. Test Units A, C, and D were dug within what appeared to be the structure limits and B was placed where Virgil Scroggins described the kitchen area.

Test Unit A. This test unit was excavated in the approximate kitchen or dining room area of the house. The soil appeared to be a brownish silt to a depth of 15 cm. At this level there was evidence of burning. Charred earth was present between 15 to 17-23 cm. Below this the soil appeared to be a yellowish tan mottled clay. A posthole digger was employed to test the unit since no additional cultural materials were observed. A reddish brown sandy clay was observed to a depth of 77 cm. No artifacts were present. Artifacts found in the 0-15 cm level

included bottle fragments, canning jar liner fragments, Vicks bottle fragments, lightbulb fragments, flat glass, wire and cut nails, fence staples, wood screw, single-strand barbed wire, metal work clothes button (Big Smith, with a star), buckle, crown bottle cap, spark plug, washer, nail punch, and ceramics (white undecorated and floral patterned transferware). Between 15 and 17 cm the artifacts included glass bottle fragments, flat glass, cut and wire nails, fence staples, plow blade (62 Chattanooga one-horse turning plow), and white undecorated ceramic fragments.

Test Unit B. This test unit was excavated to the south of the structure area. It appears that the area was immediately behind the kitchen. The unit was excavated in two levels. The first level, 0-12 cm, consisted of a brown, powdery soil. The second level, 12-20 cm, exhibited a soil which appeared as a lighter tan sandy clay. There was evidence of burning. No cultural materials were observed below 20 cm.

Artifacts recovered from the unit included glass bottle fragments, canning jar liners and body glass (Knox), lamp chimney fragment, flat glass, cut and wire nails, fence staples, wood screws, single strand barb wire, metal work clothes button (P-D-S MAKE), shell button with two holes, shoe heel (white), reed board from harmonica, 22 cal. shell casings, keyhole plate, safety pin, brass spigot, stoneware, and ceramic fragments (white undecorated and floral patterned transferware).

Test Unit C. This unit was excavated in the approximate area of the dining room of the house. It was only excavated to a depth of 17 m. A layer of brownish, powdery soil was immediately above a sterile tan clay. The unit was shovel tested to determine if any materials were deposited below 17 cm, but no materials were observed. Artifacts from the unit included bottle glass, wire and cut nails, metal work clothes button (Dickie's Best), and bed springs.

Test Unit D. This unit was dug within what appeared to be the main room area of the structure. It was excavated to 18 cm as a single level. At this level the unit was sterile of artifacts and exhibited a yellowish tan clay. Of particular note was the vast quantity of cut nails recovered from this unit. Other artifacts included glass bottle fragments, flat glass, wire and cut nails, small fragment of rubber, and ceramics (white undecorated).

Temporal identification of artifacts. A number of materials recovered at the site can be assigned at least tentative dates since they could not have been produced earlier than specific years. For example, work clothes buttons were made in quantity in this country beginning in the late nineteenth century (Luscomb 1967:224). The Knox mason jar was manufactured between 1924 and 1951 (Toulouse 1969:178). One clear glass bottle recovered from Test Unit D is marked B.B. Co. on the base and exhibits a mold seam that terminates just below the lip.

It has a cork closure rim. Bottles with this type of mold mark were produced between 1880 and 1910. The stoneware recovered from Test Unit B can also provide some chronological context. Stoneware which is brown inside and out and shows an Albany slip on both surfaces, dates between 1830 and 1900. Stoneware slipped on both surfaces and completely white dates between 1900 and 1940.

Historic Documentation. Robert Stell bought 160 acres including this site from the School Commissioners on 6 January 1858 for $1.25 per acre. The title patent was issued by Governor Conway on 27 January 1858 (Conway County Deed Record X:165). When Stell died intestate in 1860, the property passed in equal shares to his six living children. In a series of deeds in 1860 and 1861 the children deeded their interests in this parcel to their sister Evaline Durham, with the stipulation that at her death it would pass only to her children living at the time the deeds were made: Mary J. Brown, Robert M. Brown, William H. Brown, and Larrissa A. Durham (Conway County Deed Record X:166).

The only other documentary information found for this property is that the taxes were paid in 1913 by Sid Jones, and in 1929 by J. B. Norwood (Conway County Real Estate Tax Records 1913, 1929). John F. Norwood, who was assumed to be the owner of this property, lived 3 miles east of Springfield. No record was found of the Bell family said to have lived here before the Norwoods.

Resident information. Virgil Scroggins related that the structure at the Bell-Norwood site had been torn down about 30 years ago and the logs were used to build a potato house that later burned. According to him, the Bell family occupied the house first, then the Norwoods. Records of those buried in the Wilder Cemetery include Edna J. L. Bell (February 20, 1853-December 17, 1899) and Joseph T. Bell (March 1, 1850) June 9, 1899).

Room arrangement based on informant description. Virgil and Grace Scroggins were able to provide information on the room arrangement and the external characteristics of the house. Grace Scroggins lived in the house until she was about 7 years old. The internal arrangement of the house is shown in Figure D-1. Externally the house was very similar to the Ledbetter House (3CN108). The well was located to the south and behind the structure. A smokehouse was located just north of the chimney.

Evaluation. The log house structure was probably not built before the early to mid-1860s according to the deed records. Most of the artifacts from the site appear to date to the late nineteenth and early twentieth centuries. This period is consistent with the known period of occupation of the structure by the Norwood, and possibly the Bell, families. Based on the apparent late date of construction of the house, the overall disturbance to the site caused by removal of the structure, and the absence of older artifacts pertinent to the study of

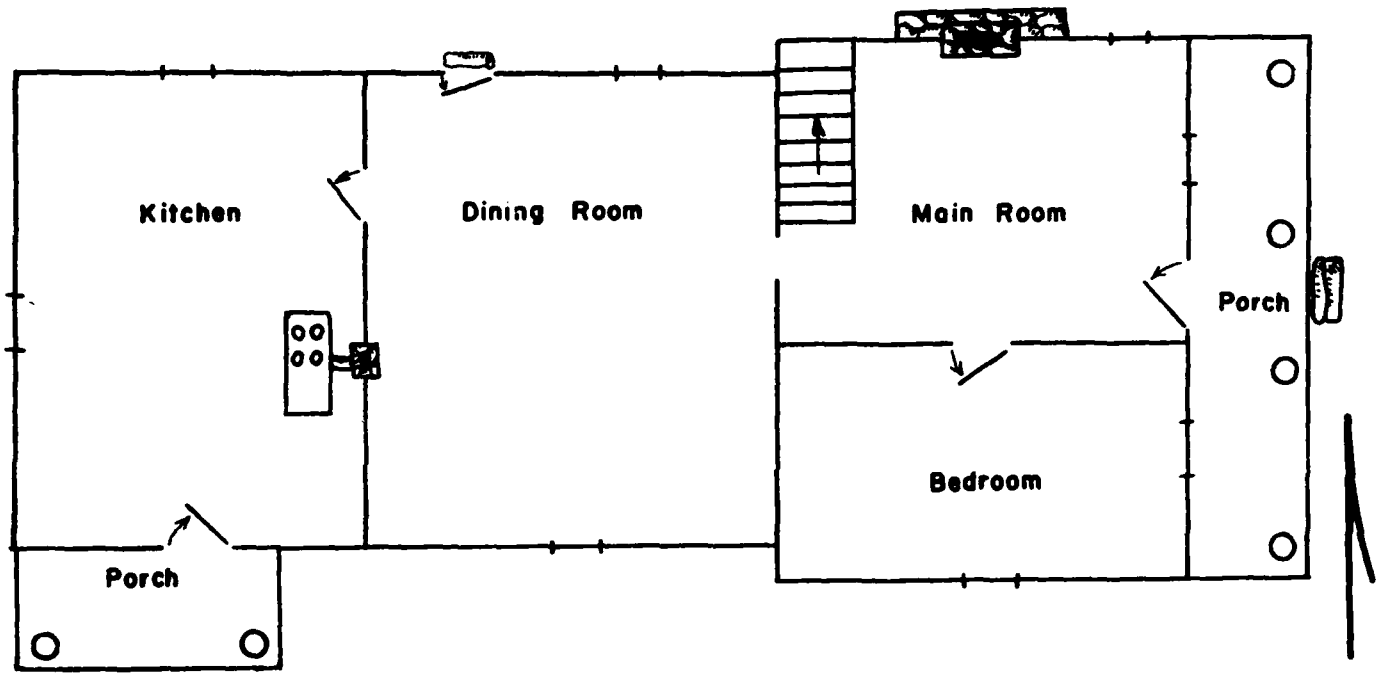


Figure D-1. Room arrangement of the Bell-Norwood house, 3CN44, based on the descriptions of Virgil and Grace Scroggins. Not to scale.

early settlement of Conway County, it is recommended that no additional work be conducted at this site. An adequate sample of artifacts has been collected from the site and the Wilder Log House site (3CN92), which has been recommended for further work, appears to be comparable in artifacts which can be used in studying rural economics and other aspects of behavior. In addition, this latter site is much better preserved.

The McKindra House Site (3CN47)

Description. The McKindra house is located at the hillslope-floodplain junction, approximately 101 m above sea level. The nearest permanent water source is Cypress Creek, about 500 m west of the site. Soil type associated with the house site is Linker fine sandy loam (see Appendix E). The house is a single pen log house (Figure D-2). The interior of the house has been paneled. A fireplace was located in the west wall, but this is gone. Board additions were once present on the north and east sides, but these are completely destroyed. Square notching was employed on the corners.

Figure D-2. The McKindra house, 3CN47 (PR784777)

Methods of testing. This site was tested on July 15, 1979. Rotting timber piled in front of the house was cleared away. These once constituted a porch along the south end of the structure. Cultural material was found on the ground surface and collected. Debris within the house was moved aside and a sample was collected. Someone had dumped parts from an automobile (brake drums, fuel pumps, bumper parts) at the site but these were not collected. Numerous shoes (styles suggest shoes of the 1930s and 1940s) were found within and around the house but were not collected.

Thirty-eight shovel tests were dug around the site in an attempt to identify any dump areas (Figure D-3). These tests were generally dug to a depth of 30 cm. Three 1 m^2 units were excavated. The first unit, A, was dug in the area of the front porch; B was excavated northwest of the house in a possible yard area; and C was dug on a rise northeast of the house. Although all the artifacts were examined, only those recovered are summarized below.

Ground surface materials. Material was collected in front of the house under the porch and within the structure under the floor. Artifacts from outside the house included canning jar fragments, soda bottles, flat glass, red checker, spoons, tobacco tins, pennies, ceramics (yellow decalcomania), cow rib, and numerous other modern objects. Those collected within the house included canning jar fragments, various bottles with threaded necks, lightbulb fragment, flat glass, nails (wire, cut and fence staples), machine bolts, plastic and metal buttons, plastic beads, doll torso and bottle, red checker piece, spark plugs, spoons, ink pen fragment, ceramics, stoneware and other modern objects. All of the items, except for one cork closure bottle found under the porch area, appear to be quite modern.

Shovel test materials. Eleven shovel tests out of 38 contained cultural materials (Nos. 1, 2, 3, 14, 17, 18, 19, 33, 34, 35, and 38 on Figure D-3). The material recovered was quite similar to that recovered in the test units. They included glass jar fragments, stoneware, nails, ceramics, plastic fragments, and other such material. All appeared to be modern. One shovel test dug in the porch area near Test Unit A (ST-1 on Figure D-3) contained glass jar fragments, nails (wire), bolt, plastic doll leg, shell button, glass marbles, pocket knife blade (stainless steel), and a few other materials. This material was modern.

Test Unit A. This 1 m^2 unit was excavated in front of the house. The first level was excavated from ground surface to 20 cm. The second level was 20 cm to 30 cm. Soil throughout was a medium brown gravelly and dusty loam. Excavation was terminated at 30 cm because gravel increased and the unit was sterile of cultural materials. Artifacts included Pepsi Cola bottles, canning jar fragments, nails (wire), machine bolts, shell and plastic buttons, hair curler, penny, buckle, knives, fork, files, hinge, and other materials. These all appeared quite modern.

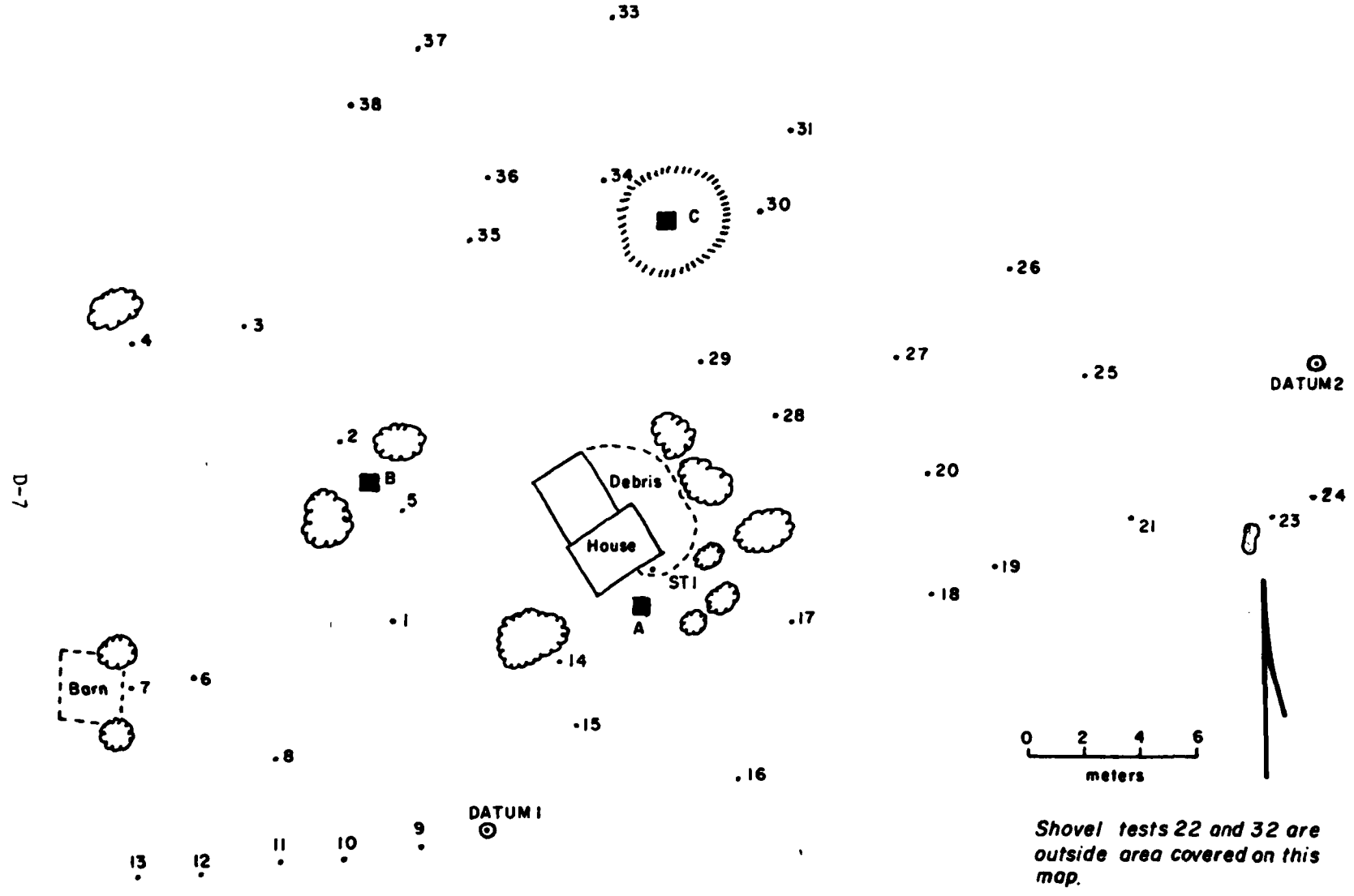


Figure D-3. Test units at the McKindra house site, 3CN47

Test Unit B. This 1 m^2 unit was excavated northwest of the house after shovel testing revealed more subsurface deposits in the area. Three excavation levels, 0-10 cm, 10-20 cm, and 20-30 cm, were dug. The first level soil was a dark brown loam and contained glass jar fragments, flat glass, nails (wire, cut, fence staples), wood screw, fish hooks, child's shoe buckle, 20 gauge shotgun shell (Remington Express), shoe eyelets, ceramics (white undecorated, white with blue line below rim), stoneware, and battery cores. The second level soil was a compact gravelly brown loam and contained glass jar fragments, glass lamp chimney fragments, flat glass, nails (wire, cut, fence staples), wood screw, a single strand barbed wire, metal button, buckles, shoe eyelet, cartridge bases (Winchester 12 Gauge New Rival; Peters 41 L.D.A.), ceramics (white with raised rim pattern, white undecorated, butterfly pattern polychrome decal), stoneware and other artifacts. The third level consisted of gravelly red soil containing glass jar fragments, nails (fence staples, cut), and ceramics (white undecorated). A walnut shell fragment was found in the lowest level.

Test Unit C. This unit was excavated northwest of the structure on a small rise. Two excavation levels were dug. The first, from ground surface to 10 cm, was marked by gravelly and sandy brown clay loam. Artifacts from the level included glass jar fragments, canning jar white glass liner fragment, nail (wire), hinge, and other materials. The second level, from 10 cm to 20 cm, exhibited the same type of soil and contained glass jar fragments, nail, and ceramics (white undecorated).

Temporal identification of artifacts. Only select objects were considered adequate for establishing dates of use or manufacture. Most of the material is post-1920 and these are not often listed in available sources on ceramics, glassware and the like. The material that has been tentatively dated is organized by units to reveal any temporal variations in deposition that may exist. Material from shovel tests was not examined to determine dates.

Ground surface, in front of house under porch

Canning Jars	
canning jar liners	post-1924
metal screw lids	post-1924
Knox mason jar	1924-1951 (Toulouse 1969:178)
Other bottles	
snuff	post-1903 (seam to top) (Adams 1971)
Sun-Crest soda	post-1938 and perhaps post-1956 (Riley 1958:268; Toulouse 1971:403)
extract	1932-1953 or later (Knox Glass Bottle Company) (Toulouse 1971:271)
cork closure	pre-1860 (seam to top of shoulder)(Adams 1971)
Marble	post-1924 (machine made)(Randall 1971:105)
Coins	
Lincoln head penny	1934, 1964D

Ceramics	
Decalcomania	1890-1950
Inside of house, under floor	
Canning jars	
Ball Perfect mason	circa 1935 (Toulouse 1969:38)
Knox mason jar	1924-1951 (Toulouse 1969:178)
Other bottles	
misc. threaded	post-1903 (seam to top)(Adams 1971)
cork closure	1800-1900 (seam to just below lip)(Adams 1971)
crown closure	post-1896 when introduced, post-1903 (seam to top)(Riley 1958:127)
condiment	1937 or 1947 (Owens-Illinois Glass Co.) (Toulouse 1971:403)
Test Unit A, Level 1	
Pepsi Cola bottle	post-1896 when introduced and post-1903 (seam to top)(Riley 1958:127)
Lincoln head penny	1961
Coca Cola caps	post-1909-1920 (Riley 1958:137-138)
Test Unit B, Level 1	
glass bottle	post-1903
glass bottle	1920-1964 (Hazel Glass Company)(Toulouse 1971:239)
Test Unit B, Level 2	
canning jar sealer	post-1864 when first patented (Toulouse 1969:429), but probably associated with post-1900 canning jars at site

Written documentation. Silas Smith filed the original entry on this property using Military Land Warrant #9227, but the date of this entry was not recorded in the State Land Office Tract Book (7N 15W). Smith's name is shown on a copy of the 1819 plat map (General Land Office 1819) but this information could have been added at any time before the new plat was drawn in 1855. It appears that Smith was unable to fulfill the terms of his entry and that the land reverted to the state. The property was then patented to Margaret Lewis on 6 June 1854 (Alexander 1979).

In the 1858 tax records, Lewis is listed as a nonresident landowner --her address being Little Rock--so her interest may have been in speculation rather than farming. Whatever her interest, she sold the land to her son Harvey on 31 May 1877 for $1. Harvey Lewis sold the

property three years later to John R. Morgan for $800 (Conway County Deed Record 9:154-155).

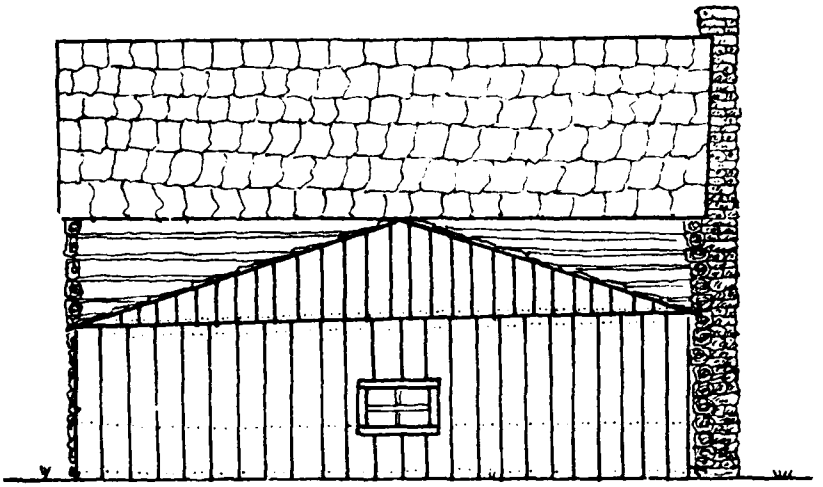
At this point the documented record becomes confused. No record was found transfering the title to Miles L. Stell but Stell mortgaged the property at least twice, in 1890 and 189 , and the latter mortgage was not paid until 12 January 1895 (Conway County Mortgage Record B: 236, 564). Mack McKindra, Sr. owned the property in 1900 (U.S. Census: Union Township.

Mack McKindra, Sr. was the oldest son of Frank McKindra, a freedman who brought his family to from Tennessee to Arkansas in 1887. Frank and Ella McKindra had seven children still at home in 1900 and Mack McKinda, Jr., was their oldest surviving son. His family included his wife Suda, four natural children, and an adopted daughter (U.S. Census: Union Township).

Resident information. W. S. Alexander and Alberta Alexander, present owners of the McKindra site, related that Mack McKindra, Sr. bought the land in 1888. It is possible that he rented the land from Miles Stell and later bought it. Mack McKindra, Sr. was a prosperous farmer, raised mules and owned the land worked by five sharecroppers. Mack McKindra, Jr. was born in 1905 or 1906, was married in the late 1920s and moved into a frame house on a rise west of Cypress Creek along the dirt road leading to Mt. Hebrew Church. In the 1930s, he and his wife separated, and he moved back into the log house which he shared with his mother who died about 1938. He continued to live there until circa 1945. Mr. Barry Marshall, a resident of the area, said that he too had lived in the house sometime in the past.

Room arrangement based on informant description. Mrs. W. S. Alexander was able to provide information on the arrangement of the room and the evolution of the site. The exterior characteristics of the house are shown in Figures D-4 and D-5. In Figure D-6, the internal arrangement of the house is shown. There was a small loft immediately under the roof in the main room where the four sons of Mack McKindra, Sr. slept. This was reached by a series of steps in the corner of the room. Such lofts are common in log houses in all regions. In the early 1900s, the McKindra family modified the house. Three rooms were added to the east side of the house (Figures D-7 and D-8). The internal arrangement of rooms at that time is shown in Figure D-9. The wood from these additions is still on the site, but the additions are destroyed.

Evaluation. Most of the artifacts associated with this structure appear to date to post-1920. Based on the records in the courthouse and informants, the log house was constructed circa 1888 or shortly thereafter. In the early 1900s it was modified. Due to the extensive documentation of the site, the intrusion of late period (probably post-1950) automobile parts which suggests continuous use and disturbance of the site, and the collection of artifacts which appears to be representative of those in use during the occupation of the structure, it is



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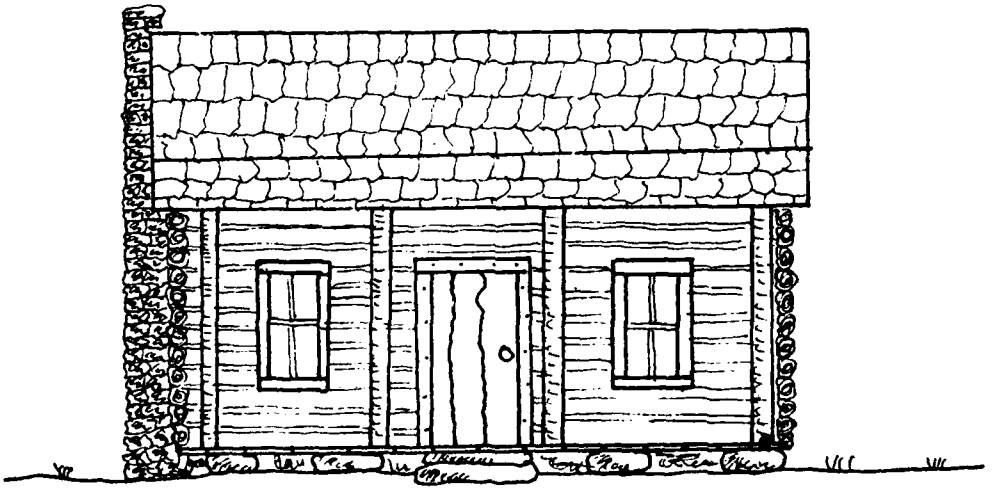
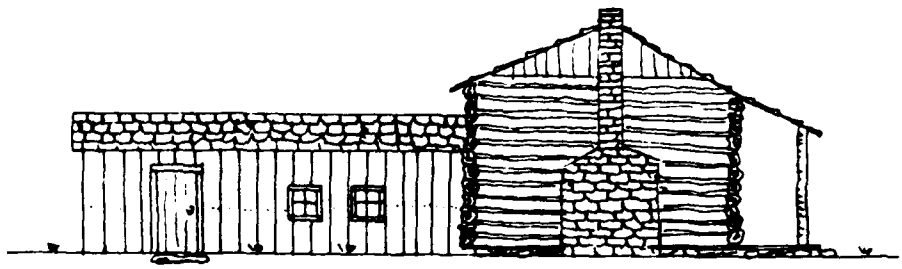


b

Figure D-4. McKindra House, 3CN47, circa 1888 to 1900. (a) north elevation, (b) south elevation. Based on descriptions of W. S. Alexander. Not to scale.



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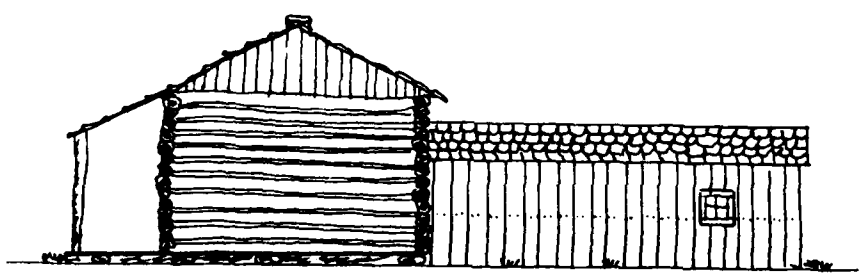

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Figure D-5. McKindra House, 3CN47, circa 1888 to 1900. (a) west elevation, (b) east elevation. Based on the descriptions of W. S. Alexander. Not to scale.

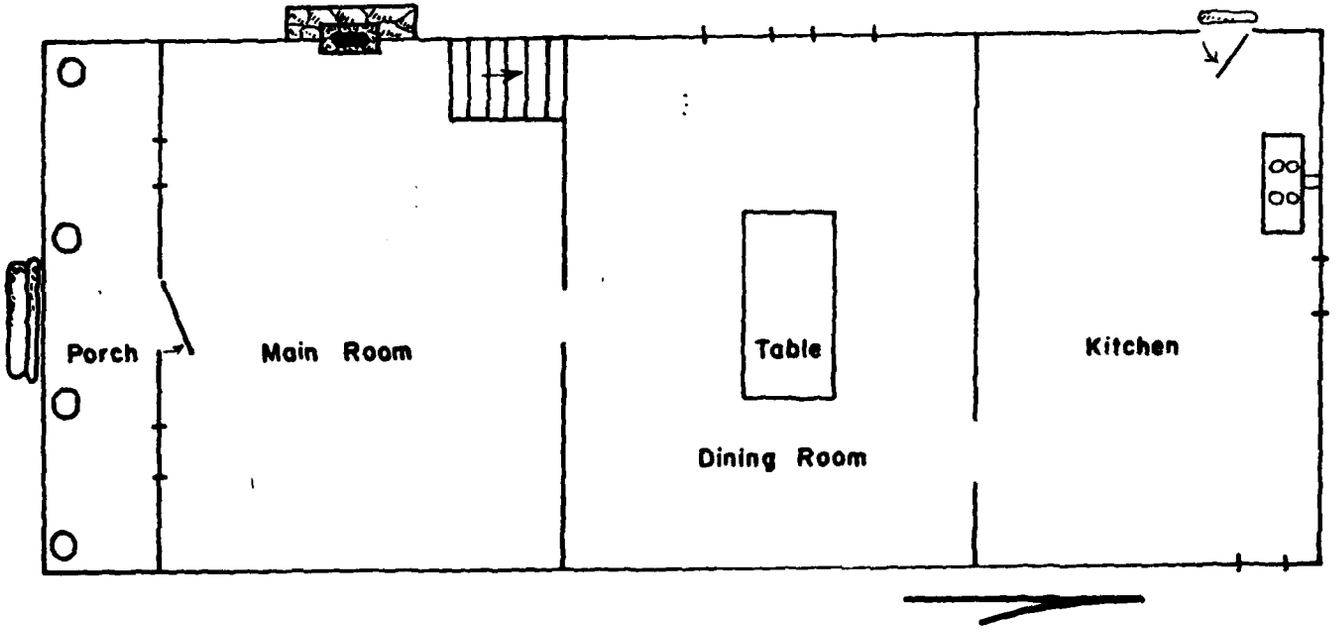

Figure D-6. Room arrangement of the McKindra House, 3CN47, circa 1888 to 1900. Based on the descriptions of W. S. Alexander. Not to scale.

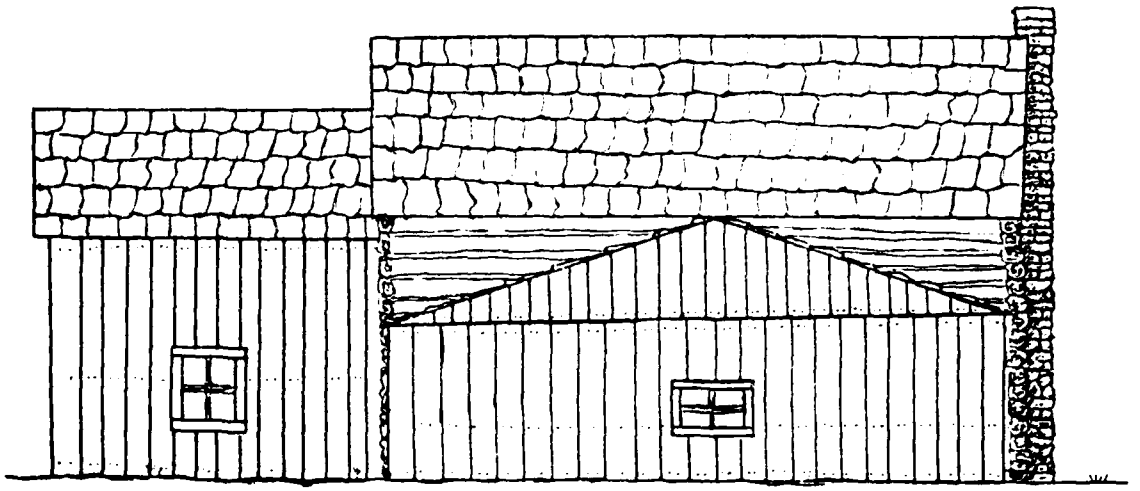

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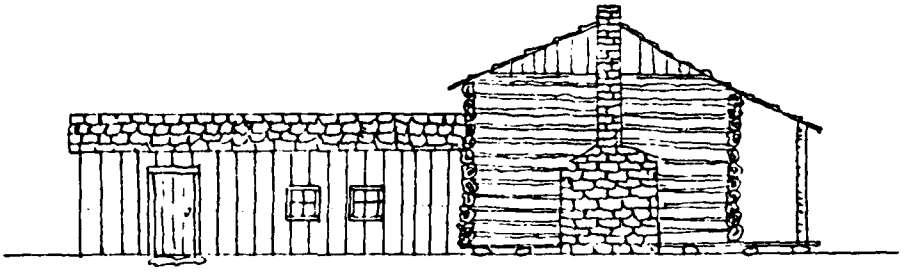
Figure D-7. McKindra House, 3CN47, circa 1900 to mid-1900s. (a) north elevation, (b) south elevation. Based on the descriptions of W. S. Alexander. Not to scale.



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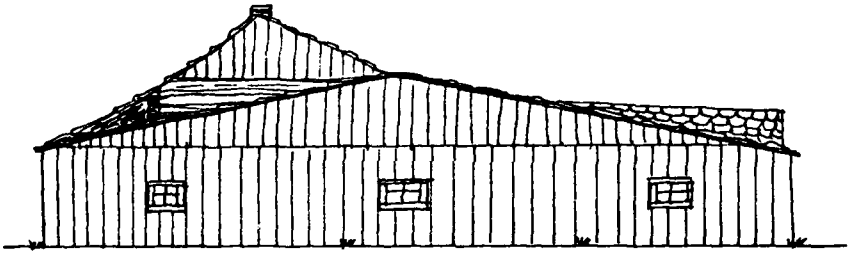

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Figure D-8. McKindra House, 3CN47, circa 1900 to mid-1900s. (a) west elevation, (b) east elevation. Based on the descriptions of W. S. Alexander. Not to scale.

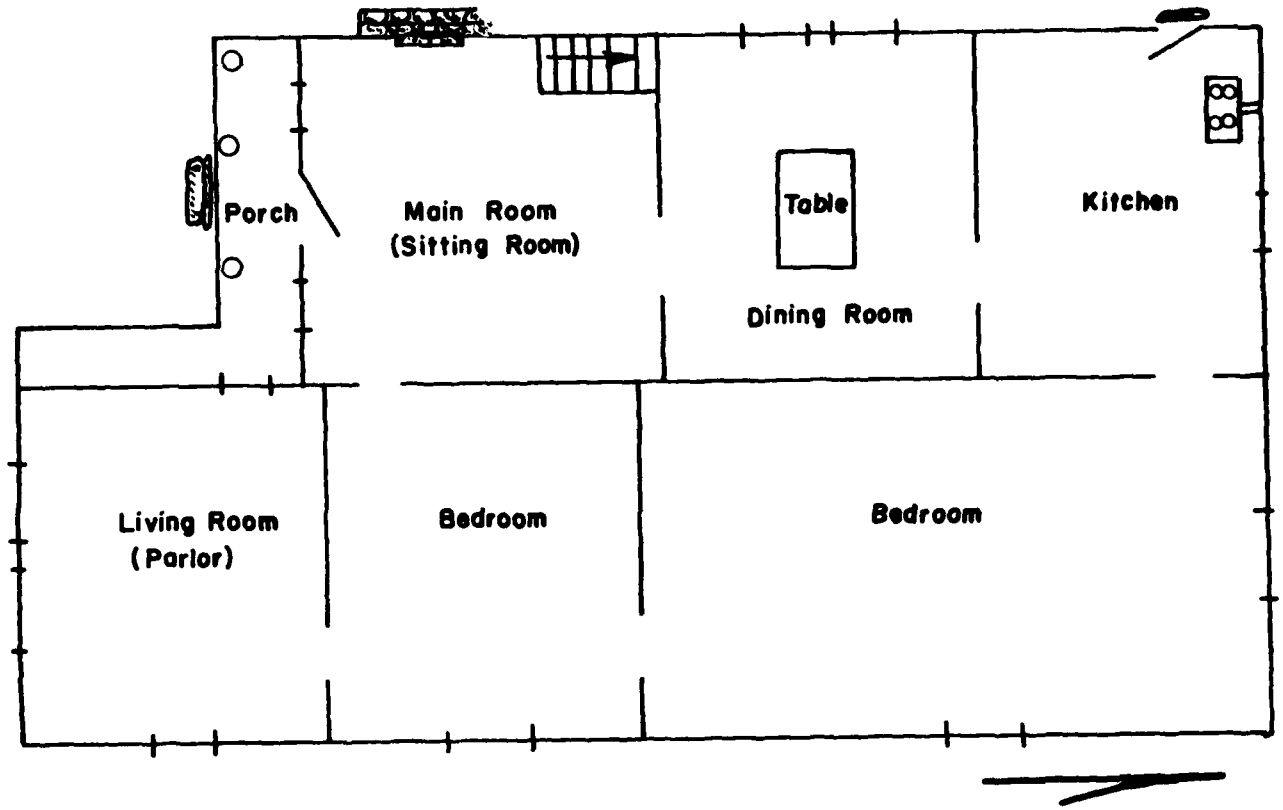


Figure D-9. *Room arrangement of the* McKindra House, 3CN47, circa 1900 to mid-1900s. Based on the descriptions of W. S. Alexander. Not to scale.

not recommended for further work. The Wilder Log House site, 3CN92, can be studied as a site representative of occupation of a log house by a rural Black-American family in Conway County, Arkansas.

The Twentieth Century House Site (3CN51)

Description. This site was recorded during the survey carried out in 1978 (Martin and Jones 1978). It is a house (circa 1920-1930) that had been converted into a hay storage facility. It was recommended earlier that additional attention should be given to the structure in subsequent work in the area.

Evaluation of the site. This site was rexamined during the June to August 1979 survey and testing phase in the project area. The decision was made that since the structure was plotted on permanent records and the structure is modern, no subsequent work would be required at the site.

The Springhouse Site (3CN55)

Description. This site is an abandoned springhouse for a cotton gin (circa 1908-1910) that once existed in the project area. The structure was located during the survey by Martin and Jones (1978). It is built out of field stone with a wood and metal roof. Inside is a concrete trough holding the water from the spring. The site was examined by Survey field personnel during the June to August 1979 survey and testing phase conducted in the project area. The site was photographed and a permanent record was made.

Evaluation of the site. The springhouse is a recent structure associated with a cotton gin. In 1979 the site was visited by Survey personnel. Dr. Stewart-Abernathy (Historical Archeologist) assisted in the examination of the site. It was decided upon the revisit that a photographic record and a record of site information was adequate for preserving information on the site.

The Stell Lodging House sites (3CN58 and 3CN62)

Description. These two sites were recorded during the 1978 project. The first site, 3CN58, is the original location of the Stell lodging house (Figure D-10) and presently contains the chimney and a number of piers. The second site, 3CN62, is the location of the lodging house after it was moved around 1950. The house structure has been modified from a two-story structure to a one-story one. It is a single pen log house with half dovetail corners (Figure D-11).

The original log house site is on the terrace edge at approximately 95 m above sea level. The nearest permanent water source is Cypress Creek about 510 m away. Soil type associated with this site is Enders gravelly fine sandy loam (see Appendix E). The relocated log house is located on the terrace edge at approximately 91 m above sea level. The house is located on Leadvale silt loam (see Appendix E).

Figure D-10. Stell lodging house, 3CN58 original location (PR784823)

Figure D-11. Stell Lodging House, 3CN62, second location (PR794824)

Methods of testing. On June 27 and 28, 1979, Survey personnel conducted subsurface testing at the original house site (3CN58). The standing log house (3CN62) was photographed, but no additional work was carried out there. Personnel walked over the entire site area but none of the recently deposited artifacts were collected from the ground surface. A datum was then established on a tree to the southwest of the chimney and hearth area. This point was designated North 2/East 0. Auger line 1 was run north from this point. Thirteen test holes were dug. Auger line 2 was run east from the North 7/East 0 point. Twenty-six auger tests were made along this line (Figure D-12). Individual points along both lines were placed 1 m apart.

The decision was made here to excavate test units in consultation with Dr. Stewart-Abernathy (Historical Archeologist). Four 1 m by 2 m test units were excavated. Three of these (A, B and C) were in direct association with the structure area. Two of them (A and B) were placed

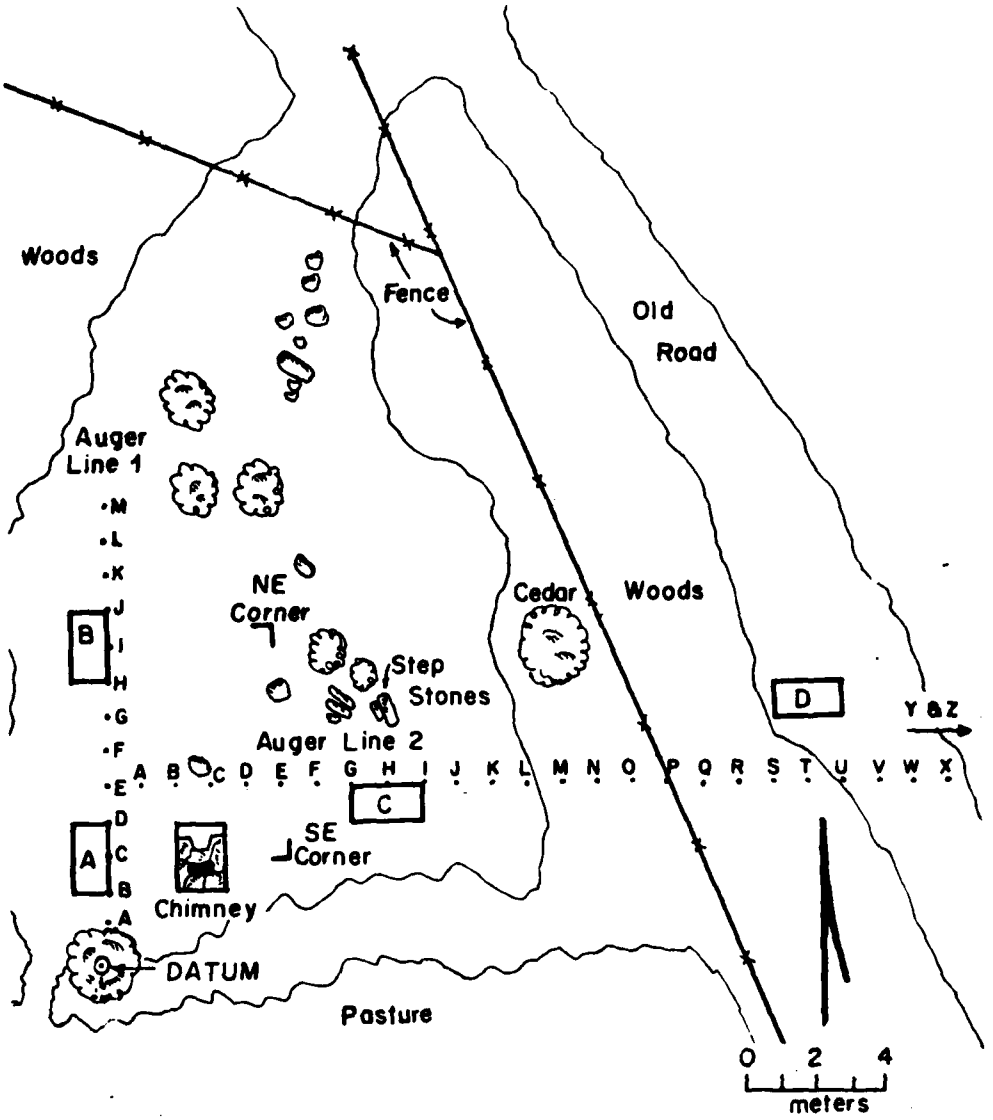


Figure D-12. Test units in relation to features at the Stell Lodging House site, 3CN58

where they would transect the wall area. Test Unit C was dug east of the structure in what appeared to be a porch area. The fourth unit, D, was dug east of the structure along an old dirt road that ran north to Springfield (Figure D-12). Shovel testing was conducted along the roadway and indicated the presence of subsurface materials. It is still a common practice to discard broken ceramics, glass and other materials along rural roadways. It is believed that artifacts found in this area along the roadway were associated with the occupants of the house. Although all artifacts were collected and are curated by the Arkansas Archeological Survey, only a summary of those recovered is provided here.

Test Unit A. This unit was excavated at the southwest corner of the structure area. The unit contained many large sandstone slabs, probably foundation stones (Figure D-13 and D-14). The soil is a medium brown sandy loam from the surface to approximately 21 cm. Pockets of orange sandy clay were found within this level. Artifacts included canning jar fragments, white glass canning jar liners, glass lamp chimney, nails (wire, cut and fence staples), machine bolt, shell and plastic buttons, buckle, ceramics (white with raised pattern, white undecorated), and organic remains. The latter included rabbit, squirrel, and opposum bones and egg shell fragments. Walnut shell fragments and peach pits were also recovered.

Below 21 cm, the soil was an orange sandy clay. Artifacts included glass jar fragments, flat glass, nails (roofing, wire, tacks, cut, fence staples), shell buttons, glass bead, plow blade, shoe eyelet, ceramics (white undecorated handle) and organic remains. The latter included bones of wood rat, squirrel, fish, rabbit, bird, and possible pig.

The third level of excavation between 30 cm and 35 cm contained canning jar liner fragments, flat glass, nails (wire and cut), metal buttons (mark: steam locomotive on front and "U.S.A. Co." on obverse), ceramics (white undecorated), and organic remains. The latter included squirrel, possible opossum, and pig bone.

The final level included material between 35 and 40 cm. Excavation was terminated when a red clay level, sterile of cultural materials, was reached. Artifacts and other materials from the last level included glass jar fragments, shell button, and organic remains. The latter included rabbit, squirrel, and chicken bones and a peach pit.

Test Unit B. This unit was excavated at the northwest corner of the structure area. There were a few rocks in the unit, but these were too small to be related to the structure. The soil was a brownish loam from ground surface to 20 cm. Below this was a reddish clay. Arbitrary levels of 10 cm were employed since there was minimal color change and no features visible in the unit. The whole unit was excavated to 30 cm, but the north end was excavated another 10 cm to assess the quantity of cultural materials at greater depths. Only one nail was recovered. Due

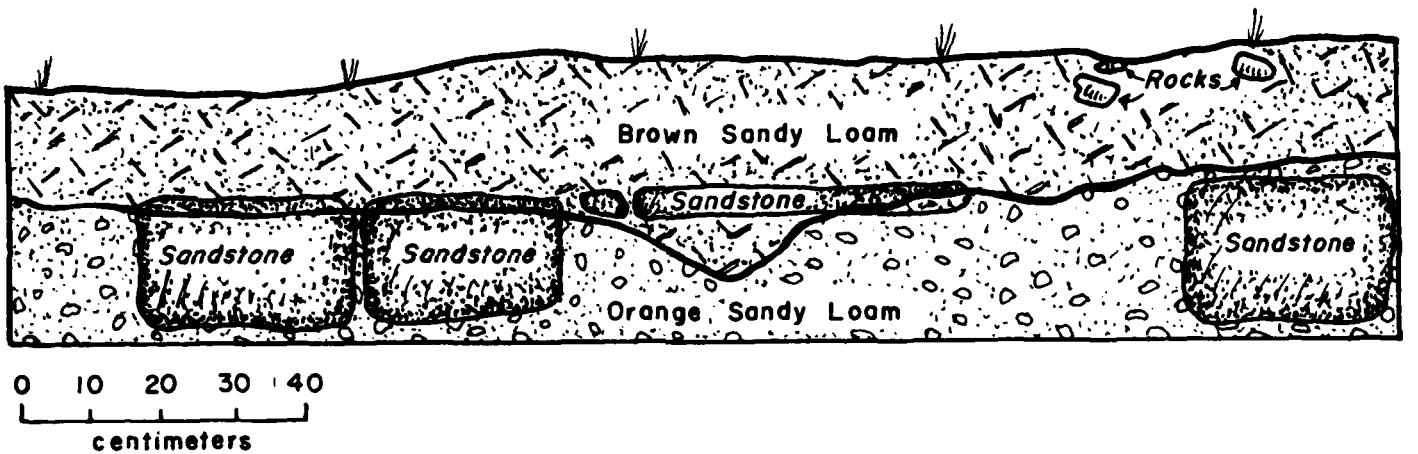


Figure D-13. West wall profile of Test Unit A at the Stell Lodging House site, 3CN58

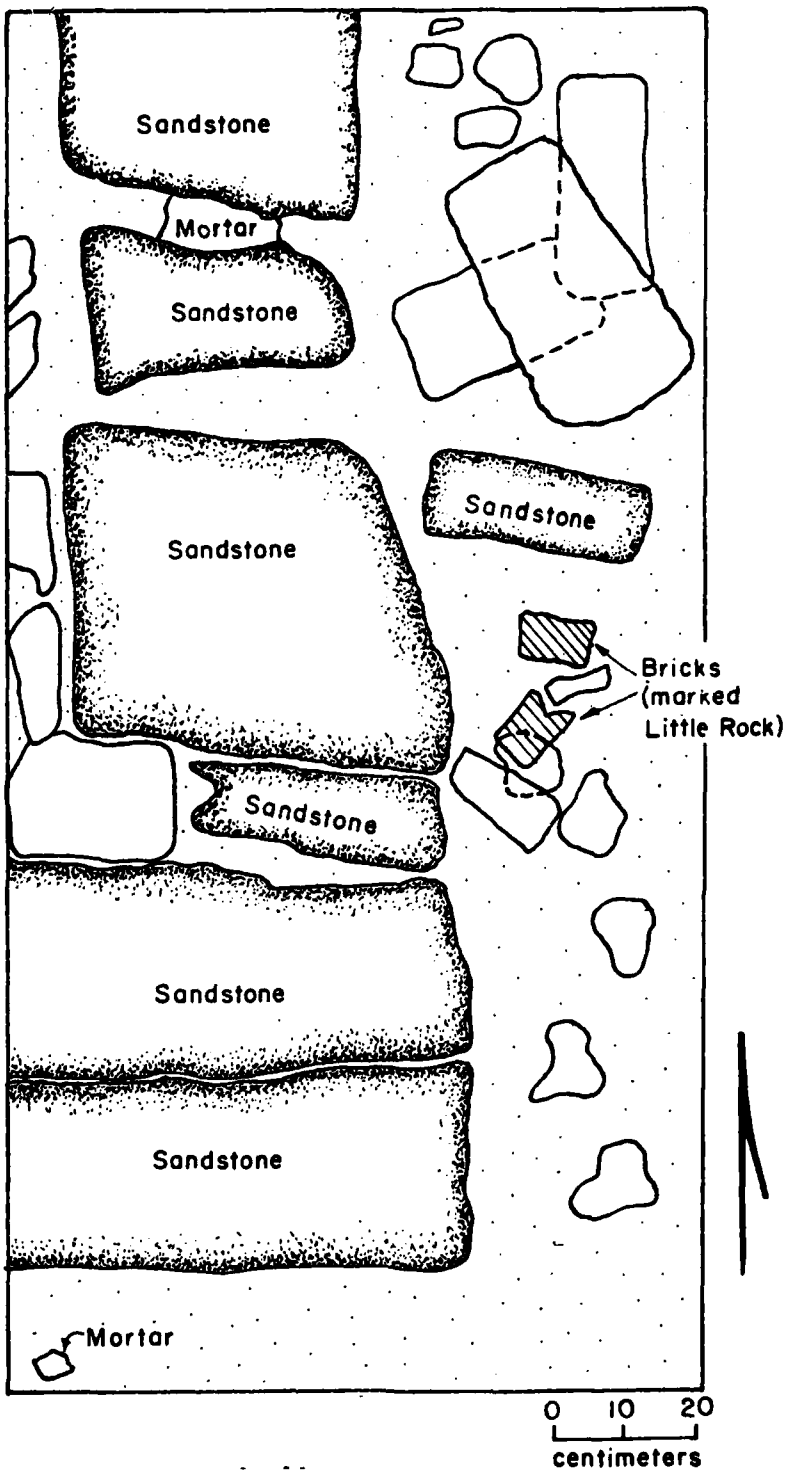


Figure D-14. Map of Test Unit A (21-30 cm) at the Stell Lodging House site, 3CN58

to the paucity of materials testing was terminated on the unit. Artifacts from the levels are summarized.

Between the ground surface and 10 cm, cultural materials included canning jar liner fragments, flat glass, threaded jar rims, nails (roofing, wire, cut, and tacks), bone button with four holes, ivory or bone comb fragments, ceramics (white undecorated, polychrome transferware, painted ware), and organic remains. The latter included a pig incisor and a walnut shell fragment.

From 10 cm to 20 cm, artifacts included canning jar liners, Presto glass caps, threaded rim medicine bottles, flat glass, nails (wire, fence staple, and cut), single strand barbed wire, metal and plastic buttons, glass bead, fork, ceramics (pink transferware, white undecorated), and organic remains. The latter included possible chicken and squirrel bone and peach pit fragments.

From 20-30 cm, the cultural materials were fewer. These included threaded jar rim, flat glass, nails (roofing, cut), ceramics (white undecorated, transferware) and a pig premolar. In the lowest level, 30-40 cm, only one cut nail was recovered.

Test Unit C. This unit was excavated at the east side of the house approximately in the area of the front porch. Four arbitrary 10 cm excavation levels were employed. Soil in the first level, ground surface to 10 cm, was a brownish loam. At the west end of the unit this graded into an orangish brown clay at 5 cm. Artifacts from the first level included modern glass bottle fragments, yellow cat's eye marble, nails (roofing, wire and cut), double strand barbed wire, key, screwdriver, pie tin, stoneware, tar paper, and a walnut shell fragment.

The second level of excavation, 10-20 cm, revealed a reddish soil with gray clay in the northern part of the unit. The northern end also contained ash, charcoal and many small rocks. The reddish clay was almost sterile of artifacts. Materials found in the second level included canning jar white glass line canning jar metal screw lid, flat glass, nails (roofing, wire, and cut), tar paper, large buckle, and ceramics (white undecorated, green transferware).

The third level, 20-30 cm, consisted of an orangish mottled soil with gray clay. There was still much rock in the north part of the unit. Materials from the level included flat glass, jar fragments, one cut nail, tar paper, and some metal fragments. The fourth level, 30-40 cm, was sterile of any artifacts. It exhibited red to orange sandy soil with much gravel.

Test Unit D. Approximately 12 m east of the structure area there are the remains of a roadway. Although the path is still visible, trees have begun to rapidly fill in the route. This was the road to Springfield, Arkansas before Highway 92 was constructed in circa 1919-1920.

Shovel tests along the west side of the road revealed subsurface materials. The decision was made to excavate a 1 m by 2 m test unit to determine if the artifacts deposited here might be associated with earlier occupation of the house.

Three excavation levels were employed. From ground surface to 14 cm the soil was brownish loam. Artifacts found here were very similar to those found in units excavated by the house. Materials found in the unit included canning jar glass liners and metal screw lids, nails (fence staples and cut), metal buttons, shoe eyelet, 12 Gauge shotgun shell base (U.S. Defiance, No. 12, made in USA, REM-UMC New Club, No 12), horse or mule shoe, ceramics (white undecorated, banded annular ware, transferware), stoneware, peach pit fragments, burned bone, and a prehistoric (culturally unidentified), Boone chert bifacial tool.

The second level, 14-19 cm. consisted of orange sandy clay. Artifacts in this level were similar to those found in the first level. In addition, a vacuum can key opener, door lock casing, and white insulator fragment were recovered which indicate fairly recent disturbance.

The final excavation level, 19-30 cm, was composed of orange-yellow mottled clay and gravel. Artifacts were as numerous at this level as those above. Canning jar fragments, nails (wire and cut), wood screw, metal work clothes button (Head Light brand), plastic button, buckles, mop head fragment, fishhooks, and numerous other cultural materials were recovered. At this point a posthole digger was used to test the unit to approximately 62 cm. No cultural levels or artifacts were found below 30 cm.

Temporal identification of artifacts. Only a select sample of artifacts collected from the site were examined in order to assess their dates of use. Based on land records, it is definate that the house could not have been raised previous to 1858. Unfortunately the area is still used as a dump for bottles and other materials, so the sample could conceivably date from the mid 1800s to the present. Since the structure was moved from the site about 1950, any artifacts more recent than that date can be considered intrusive. Cultural materials are organized by unit and level so that variations and similarities in artifact distributions can be observed.

Test Unit A, Level I	
base of clear bottle	dated July 17, 1906
possible fragment of Knox mason jar	1924-1951 (Toulouse 1969:178)
white glass canning jar liner	probably post-1900 (Toulouse 1969:30)
Test Unit A, Level II	
bottle base	1929-1942 (Olean Glass Company) (Toulouse 1971:400)

	possible fragment of Knox Mason jar	1924-1951 (Toulouse 1969:178)
	white glass canning jar liner	post-1888
	Presto glass lid	1925-1946 (Toulouse 1969:247-248; Toulouse 1971:425-426)
Test Unit A, Level 3		
	white glass canning jar liners	probably post-1900
	metal works clothes button	late nineteenth century and later (Luscomp 1967:224)
Test Unit A, Level 4		
	jar with threaded rim	post-1903 (seam to top) (Adams 1971)
Test Unit B, Level I		
	white glass canning jar liner (genuine Boyd cap for Mason jars)	1915-1920, since Boyd's (possessive) used before this date (Toulouse 1969:50)
	white glass canning jar liner (HFJ Co.)	1884-1909 (Hero Fruit Jar Company) (Toulouse 1969:147; 1971:249)
Test Unit B, Level 2		
	canning jar screw lid with white liner (Boyd's genuine porcelain lined cap)	1890-1915 (Toulouse 1969:50-51; Toulouse 1971:92)
	white glass canning jar liner (White Crown Cap Pat 11-22-10)	1910 (Toulouse 1969:327-328)
	Presto glass lid	1925-1946 (Toulouse 1969:247)
	threaded prescription bottle (Owens)	1911-1929 (Toulouse 1971:403)
Test Unit C, Level 1		
	glass bottle base	1932-1953 or later (Know Glass Company) (Toulouse 1971:271)
	medicine bottles	"8" specimen 1938 or 1948; "2" specimen 1932, 1942 or 1952 (Toulouse 1971:403)
	Coca Cola bottle fragments	patented bottle 1915-1916 and later (Dietz 1973:58-59; Riley 1958;138)
	glass cat's eye marble	post-1926 (machine-made) (Randall 1971:105)

Test Unit C, Level 2		
	metal canning jar screw lid (genuine zinc cap for Ball mason jars)	probably post-1900 (Toulouse 1971:37)
Test Unit D, Level 1		
	white glass canning jar liners (Boyd's genuine)	1890-1915 (Toulouse 1969:50-51; Toulouse 1971:92)
	white glass canning jar liner (Boyd cap..)	1915-1920 (Toulouse 1969:50)
	metal canning jar screw lid (Presto)	1925-1946 (Toulouse 1969:248)
Test Unit D, Level 2		
	white glass canning jar liner (Boyd's)	1890-1915 (Toulouse 1969:50-51; Toulouse 1971:92)
	white glass canning jar liner (Boyd)	1915-1920 (Toulouse 1969:50)
	cork closure bottle	post-1903 (seam to top)(Adams 1971)
	ceramic doll foot (high button shoe)	1860-1900
Test Unit D, Level 3		
	white glass canning jar liners	probably post-1900 (Toulouse 1969:30)

Based on the examination of the artifacts, it appears that most of the cultural materials collected date to the post-1880 or 1890 period.

Historic documentation. Miles L. Stell bought 280 acres from the School Commissioners on 6 January 1858. The price was $1.25 per acre as required by law. The title patent was issued 1 March 1858 by Governor Elias N. Conway (Conway County Deed Record G:419). Although part of this land was sold, the parcel which included the house remained in the Stell family. Taxes were paid in 1913 by Claud M. and Miles M. Stell, sons of Miles L., and in 1929 by Miles M. alone (Conway County Real Estate Tax Records).

Resident information. According to local tradition, the Stell lodging house structure was a way station operated by Miles Stell along the stage route on the Military Road. Records of the early stage routes indicated that the Butterfield Stage Line did not run through the area, at least previous to the Civil War. Virgil Scroggins suggested that the Stell house was a private residence where people could stay when passing through the area. He also related that Otis B. Duncan lived in the house for a while before Dorsy Duncan moved it to its present location.

Evaluation. Subsurface testing at the Stell Lodging House site (3CN58) resulted in the collection of a significant number of artifacts from the post-1900 period. Since the structure which originally occupied the site area was moved circa 1950 and is still standing (3CN62), it would seem that the site area was considerably disturbed. At the same time, it appears strange that the lower excavations levels contained no artifacts of any great age, especially if the house was constructed in the late 1850's or 1860's. Therefore based on the shallow nature of the site as revealed by the test units, the apparent absence of artifacts dating to possible earlier phases of occupation, the disturbed nature of the site and the lack of substantial documentation regarding the occupants of the house and dates of occupation, it is recommended that no further work be done at this site. The Wilder Log House site (3CN92) appears contemporaneous, and perhaps earlier than the house at this site, and it yields more in situ and undisturbed information on structure shape and artifacts relevant to Euro-American settlement in the Cypress Creek basin area.

The Wilder Cemetery (3CN59)

Description. Martin and Jones (1978:25,28) described this historic cemetery which is located in the proposed project area. The location will be inundated by waters of the reservoir. The oldest graves in the cemetery are marked by native stone slabs and are in the southeast corner of the cemetery. The earliest visible date is 1842 on the headstone on the E. K. Stell grave.

Historic documentation. Although this cemetery was established much earlier by the Stell and Wilder families, it was given a legal existence when land was donated by Robert B. Stell in 1885 and by James A. Wilder in 1891 to a Cemetery Board. These donations specified that the name would be the Georgia Settlement Cemetery, and that it would be for whites only (Conway County Deed Record 17:606-607).

It was reported by Martin and Jones (1978:28) that there is a slave child grave in the cemetery. Examination of the stone reveals the name W. W. Wilder, the dates 1860-1861, and the epitaph slave child. According to local informants, this is the grave of a slave child owned by Charles Wilder. The nature of this grave is questionable. There is no record that Charles Wilder ever owned slaves. Slaves were recorded as taxable property and would have been noted in county records. Such a note has not been observed. The Wilders did have a son, W. W. Wilder, who was born February 4, 1860 and died August 19, 1861. It is apparent that this is the same name and dates found on the reported slave child grave. It may be that a native stone marker was placed on the Wilder child's grave until a permanent stone could be prepared. The stone on the Wilder child grave is marble. Once the permanent stone was in place, the native marker could have been discarded outside of the cemetery limits. At some point in the past, someone may have marked the stone "slave child." With the beginning of the Civil War, it may be that erection of a permanent marker was postponed for sometime. Unfortunately, due to soil conditions and the age of the child (if one is buried there), there would probably be no remains in either grave to support or negate the statements regarding burial of a child or children.

Evaluation. This site was included in the 1978 survey report as one needing further work to establish significance (Martin and Jones 1978: 55). No excavation was conducted at the site, but information was collected from the headstones. Names, relationships between kindred, and dates of birth and death were recorded.

The Wilder Log House Site (3CN92)

Description. This site is located on the terrace edge approximately 98 m above sea level. Although the nearest permanent water source is Cypress Creek, 650 m east of the site, there is an intermittent stream about 60 m north of the site. The soil type associated with the site is Leadvale silt loam (see Appendix E). The site was pointed out by Mr. W.S. Alexander and the remains of a structure were located on June 21, 1979. There was one chimney partially standing, foundation stones which remain in situ, and stone rubble at the site.

Methods of testing. When the site was first located, surface collections were made of select materials. A base was then established for a series of subsurface testing units across the house area. A posthole digger was employed for 30 tests along two lines which transected the site northwest-southeast and west-east. The latter line cut through the entire house (Figure D-15).

With information on the internal arrangement of the house from local residents the decision was made to excavate six 1 m^2 test units in various parts of the house (Figure D-15). Three test units (B, D and G), were excavated on the slope north of the structure and Test Unit C was excavated in the well depression south of the house area (Figure D-16).

Excavation prcedures were consistent with those described earlier in this report. Once test unit areas were selected, the 1 m^2 unit was defined through the use of wooden stakes placed at the corners. The ground surface was shovel scraped. As long as no features were detected, shovel scraping and troweling methods were used. If the density of cultural materials increased or features appeared to be present, excavation was conducted exclusively by troweling. All soil was screened through 1/4 inch handware cloth so that small artifacts and organic remains could be collected. Units were excavated to levels sterile of artifacts. A posthole digger was employed to test the units to greater depths to confirm these interpretations. One exception was the work done in Test Unit C, located in the well. Historic wells may be extremely dangerous. Some testing was carried out, but excavations were terminated for safety reasons.

Ground surface. Since the site area, especially to the east, is still used for dumping of trash (bottles, cans, etc.), only a select surface collection was made. This included cultural materials that could have been associated with occupation of the house. These artifacts included a stoneware chamber pot, wire nails, fence staples, stove parts, flour sifter, bottle fragments, ceramics and some other materials. Unfortunately, none of these can be definately related to any of the occupations.

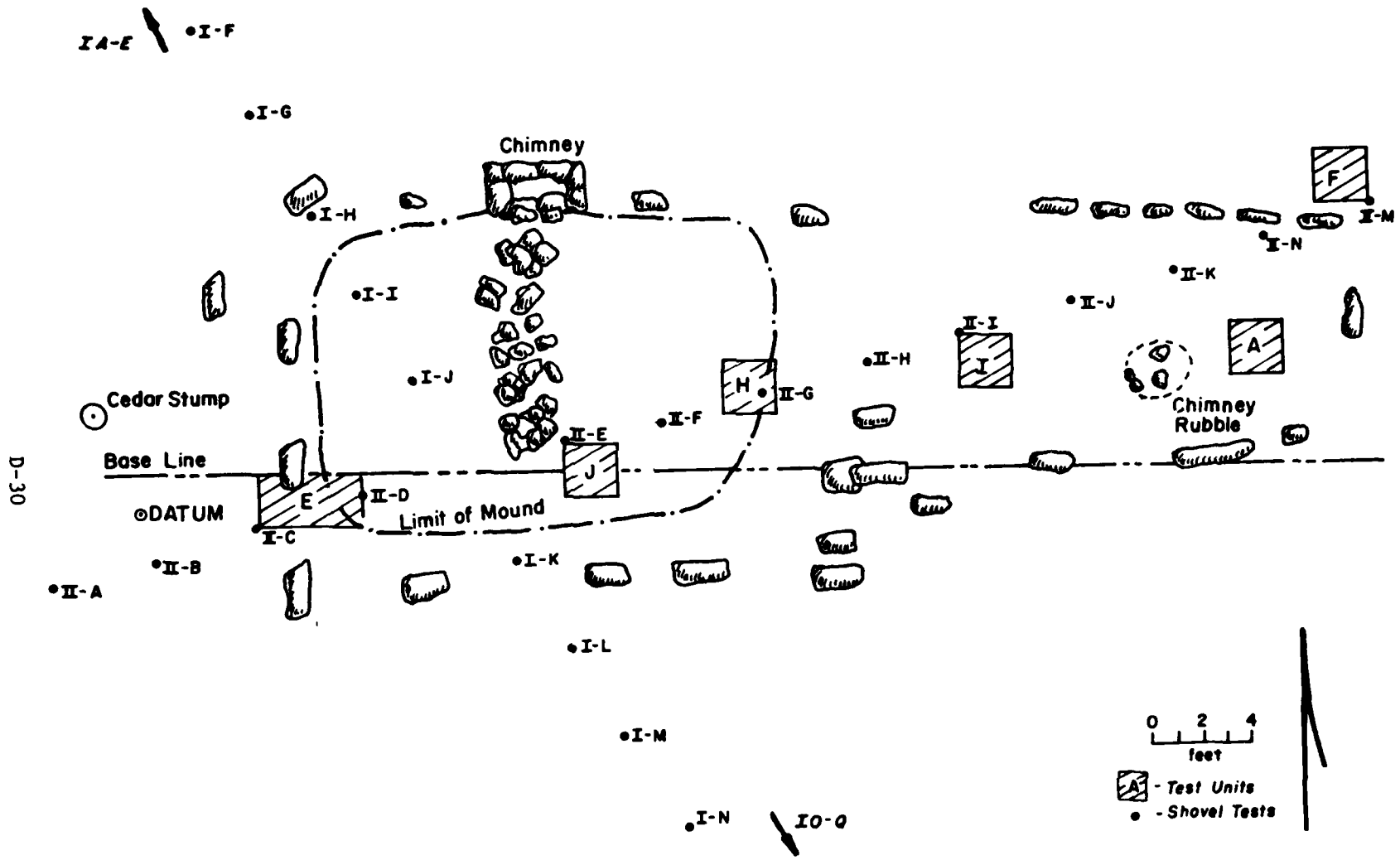


Figure D-15. Foundation stones and test units at the Wilder Log House site, 3CN92

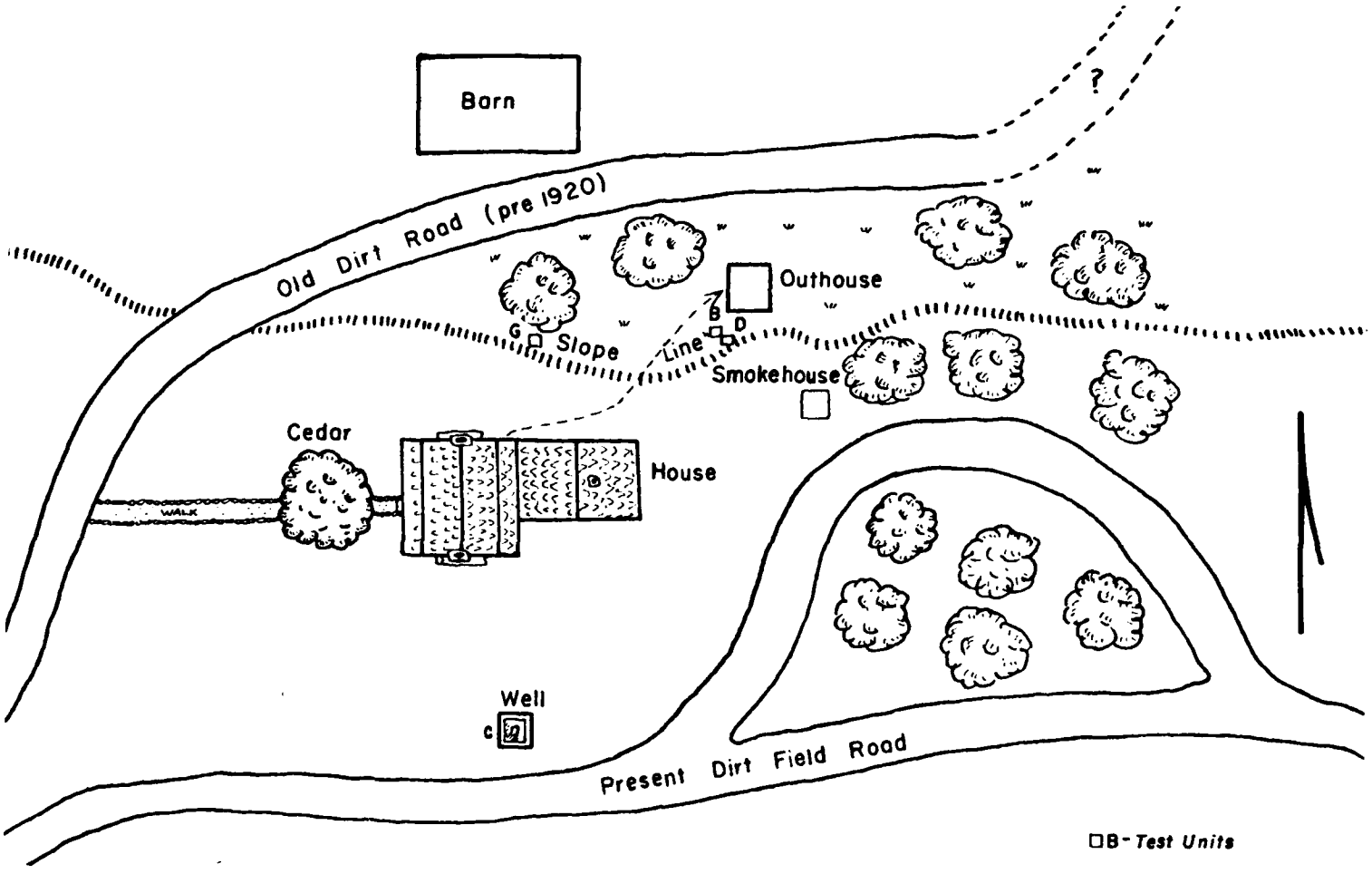


Figure D-16. Test units and approximate locations of the structures at the Wilder Log House site, 3CN92, during the Wattie Griggs occupation (based on the descriptions of W.S. Alexander and Veatrice Henson), not to scale

Shovel test units. Individual units are mapped in Figure D-15. The only units containing material on the Transect I line were B, D, I, J, K, L, M, O, and Q. Materials included glass, nails, and box turtle shell. Units of the Transect II line containing material were C, D, E, F, H, K, L, and M. Materials included nails, glass, rubber, a button, and mortar. Most of the units were excavated from 40 to 60 cm. Bedrock prevented deeper testing in most instances.

Test Unit A. This unit was excavated in the probable kitchen area of the structure. It was located immediately east of the stone rubble from the chimney. The unit was excavated to 60 cm and revealed the most complex stratigraphy of any units dug at the site (Figure D-17). From

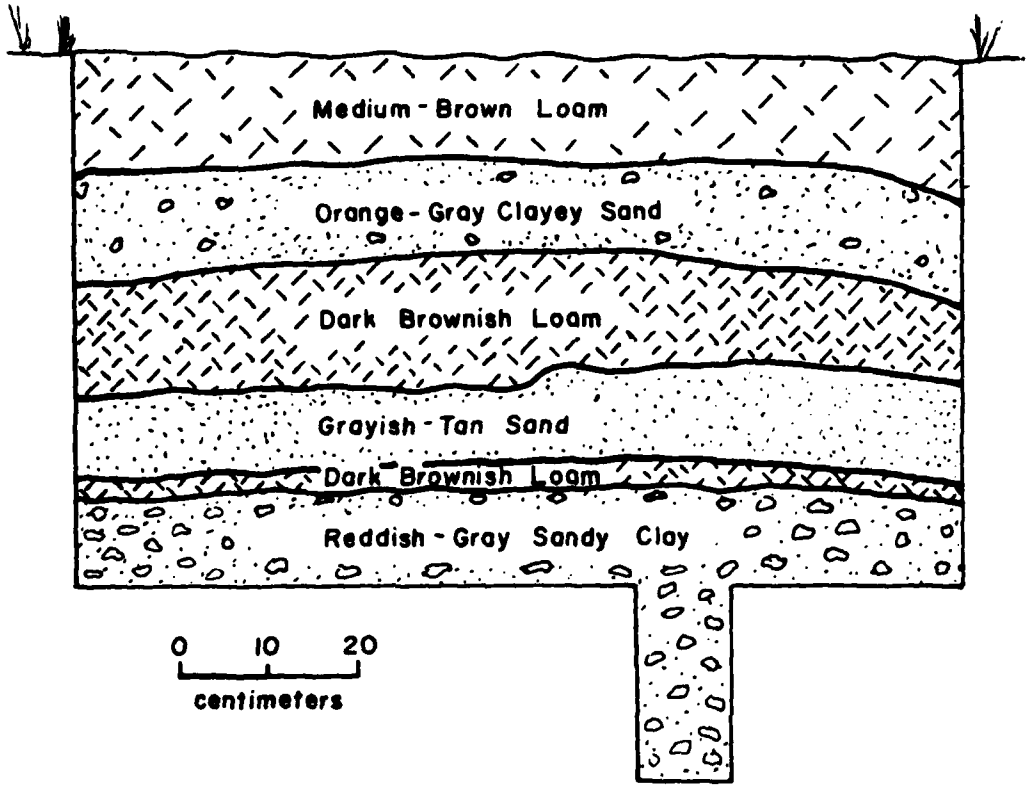


Figure D-17. West wall profile in Test Unit A (0-82 cm) at the Wilder Log House site, 3CN92

ground surface to approximately 13 cm, the soil was a medium brown loam. Artifacts within this level included glass bottle fragments, medicine bottle fragments, canning jar liner and body fragments, flat glass, nails (roofing, wire, fence staples, cut) double strand barbed wire, metal button, saw fragment, buckle, ceramics (white raised pattern), stoneware, and organic remains including rabbit, squirrel, and chicken bone.

The second level, 13 to 28 cm, was marked by an orange gray clayey sand. Cultural materials included a canning jar liner, flat glass, cork closure bottle neck, lamp chimney fragment, nails (wire, fence staples, and cut), ceramics (green floral transferware), pig teeth, and rabbit and squirrel bone. From about 28 cm to 38 cm, the soil was a dark brownish loam. Artifacts included glass fragments, nails (wire, fence staples, and cut), safety pin, skillet handle, and ceramics (flow blue, white undecorated).

In the fourth distinct level of excavation, from approximately 38 cm to 43 cm, the soil was a grayish tan sand. This soil separated easily from a compacted, dark brownish loam underlying it. Artifacts in the level included a possible piece of stove grate, metal can lid, glass fragments, nails (wire and cut), metal button with holes, ceramics (white undecorated, green floral transferware), probable squirrel and rabbit bones, and a pig molar. The final excavation level was marked by a reddish gray sandy clay. The only material recovered from the lowest level included two glass bottle fragments, unidentifiable nail fragments, a glass button, and unidentified bone fragments. A posthole digger was employed to test the unit to 82 cm, but the soil appeared uniform and no other cultural materials were seen below 60 cm.

Test Unit B. The area on the north slope was examined since it was a common practice for families to clean the yards and throw material on the slopes, or at least outside of the yard area (Virgil Scroggins, personal communication). This slope was covered with low brush, vines and trees. Below surface the top level of soil was a medium brown loam varying between 14 and 28 cm. Below this, the soil was orange sand mixed with gravel. All materials were located within the top level. These included glass bottle base and one piece of stoneware.

Shovel test south of Test Unit B. This unit, dug close to Test Unit B, contained significant amounts of material. Artifacts included glass fragments, flat glass, double-strand and single-strand barbed wire, ceramics (white undecorated, brown/green transferware, and green/maroon transferware), and stoneware.

Shovel test north of Test Unit B. This shovel test was dug to 28 cm. Materials from the test included glass fragments, canning jar liners and rubber sealers, cork closure bottle neck and rim, lamp chimney fragments, flat glass, nails (wire, cut), work clothes button, harness buckles, shotgun shell, hoe thimble, large hinge, ceramics (white undecorated,

transferware, white with brown stripe), and stoneware. In addition, a walnut shell and possible mule molar were found.

Shovel test in Test Unit B area. This random shovel test uncovered the door to a wood stove (Boomer IC; Front End Lining).

Test Unit C. According to W.S. Alexander, the well to the south of the structure was a box well. It required cleaning every couple of years due to silting. Virgil Scroggins observed that the well was still in use in 1924-25, and W.S. Alexander stated that it was still in use in the 1940's. The large stones found within the well depression once formed a square curb around the top of the well. A single unit was excavated in the depression. This was Test Unit C. All of the soil was fill that accumulated over the years since the site was abandoned. It is a light brown silty loam. The 1 m^2 test unit was excavated to a depth of 1 m, although additional testing was done with a posthole digger to an additional 1 m.

Test Unit D. This unit was dug southeast of and immediately adjoining Test Unit B. A medium brown loam changed to an orangish sand at 10 cm in the south half of the unit and at 28 cm in the north half. The orange sand level was sterile of cultural materials. Materials from the unit included glass jar fragments, canning jar fragments and white glass liner, cork closure bottle neck, lamp chimney fragment, flat glass, nails (wire and cut), washer, double strand barbed wire, ceramics (white undecorated and white with scalloped rim), stoneware, walnut shell fragment, peach pit fragment, unidentified bone, and a possible pig molar.

Test Unit E. This 1 m by 2 m unit was excavated in the porch and main room area on the west side of the structure. An attempt was made to determine if the slight mound, on which the house was erected, was an artificial or natural rise. The depth of excavation was 50 cm on the east end of the unit and 10 cm at the west end (Figure D-18). There were visible differences in the soil, although the top level exhibited characteristics of disturbed soils. All artifacts were recovered from levels I and II (Figure D-18). A posthole digger was employed to test into the reddish sandy silt, but no other cultural levels were detected. It was definitely confirmed that this was a natural rise, based on the natural stratigraphic levels. Cultural materials from the unit included glass bottle fragments, flat glass, nails (wire and cut), a square nut, can fragments, stoneware, and a walnut shell.

Test Unit F. This 1 m^2 unit was excavated on the northeast corner of the kitchen area just outside of the structure limits. Four excavation levels were employed. These were ground surface to 16 cm; 16-26 cm; 26-36 cm; and 36-46 cm. Soil in the first level was a dark brown

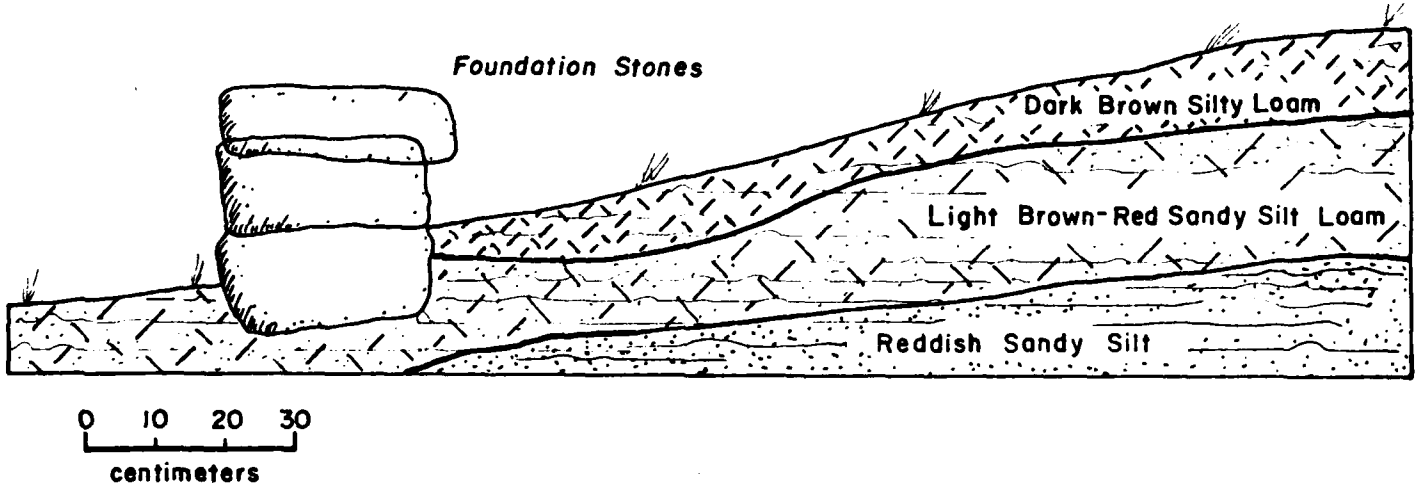


Figure D-18. North wall profile of Test Unit E at the Wilder Log House site, 3CN92

sandy loam. The second level was marked by a mottled orange brown sand with charcoal inclusions. Below this level, the soil was a mottled brown orange sandy clay.

All artifacts were recovered from the first 16 cm. These included glass bottle fragments, pressed glass fragments, nails (wire, fence staples, and cut), screen fragment, ceramics (white undecorated), and organic remains (peach pit fragment and a clam shell fragment).

Test Unit G. This unit was dug west of the previously described units. From ground surface to 18 cm in the north half and to 33 cm in the south half, the soil was a dark brown loam. Below this it was sandy and gravelly. The lower level was sterile of any cultural materials. A possible barrel hoop and part of a chamber pot were found on the ground surface. Within the unit the following materials were found: glass bottle fragments, canning jar white glass liner, flat glass, Vicks Vapo-rub bottle, nails (wire and cut), shoe polish can bottom, spout, scissor blade, knife handle, ceramics (white with scalloped rim and raised pattern, undecorated white), stoneware, walnut shell fragments and peach pit fragments.

Test Unit H. This 1 m^2 unit was excavated on the east side of the house. The first excavation level was 15 cm, while the next two levels were 10 cm each. A posthole digger was used to test below 35 cm, but no cultural materials were found. The soil from ground surface to approximately 10-15 cm was a light brown sandy loam. Artifacts within this level were glass bottle fragments, flat glass, nails (wire and cut), and a coat hanger. Below the first level, the soil was uniformly mottled orange brown sandy clay. Artifacts were found from 15-25 cm. These included canning jar fragments, flat glass, nails (wire and cut), and one Boone chert flake.

Test Unit I. Two distinct soil levels could be observed in this unit (Figure D-19). From ground surface to about 10 cm there was a light brown sandy loam. Below this level, it was an orange brown sand. Artifacts were recovered above 12 cm and included glass bottle fragments, and nails (fence staple and cut nails). Organic remains included walnut shell fragments and peach pit fragments.

Test Unit J. Three levels were excavated in this unit (Figure D-20). These were 10 cm each. Only two changes in soil characteristics were observed. The only materials recovered in the first 10 cm were flat glass, nails (finishing and cut), hook fragment, bed spring, possible carbide chunks and a chert flake. From 10-20 cm, materials included glass jar fragments and a chert flake. Nothing was recovered below this level.

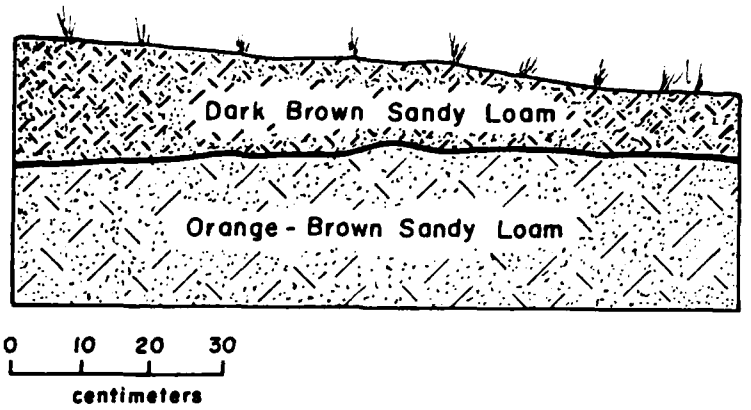


Figure D-19. North wall profile of Test Unit I (0-35 cm) at the Wilder Log House site, 3CN92

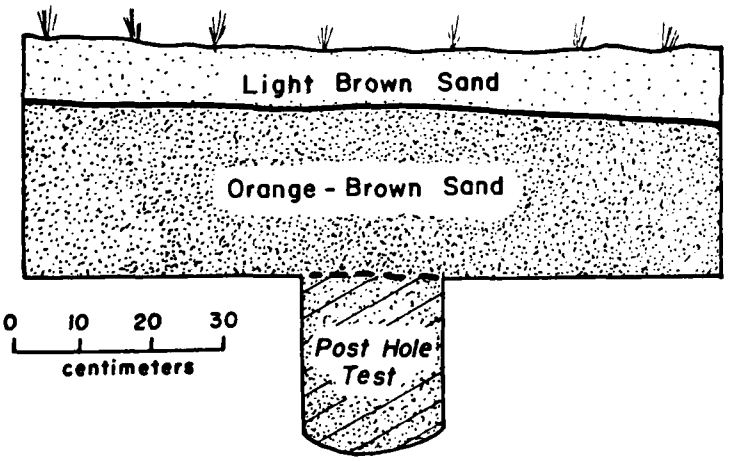


Figure D-20. North wall profile of Test Unit J (0-30 cm) at the Wilder Log House site, 3CN92

Temporal identification of artifacts. Due to sparsity of information on some classes of artifacts, only selected examples were used for dating. Based on the records search and information provided by local informants, it is known that the house was constructed sometime in the 1850's and was occupied by the Wilder family until circa 1899. After that time, it was occupied by tenant families for a short time, but the predominant occupation was the Griggs family from circa 1909 to 1944. The house was dismantled at that time. Therefore, any evidence that artifacts date to pre-1900 suggests that they were property of the Wilder family, and those after 1909 belonged to the Griggs family. This provides an opportunity to assess mixing within archeological test units. Artifacts which do not have citations below were identified by Dr. Stewart-Abernathy.

Test Unit A, Level I	
bottle base	1937, 1947 or 1957 (Owens-Illinois Glass Co.) (Toulouse 1971:403)
cork closure bottle	1860-1880 (seam 3/4 up neck)(Adams 1971)
Ball jar fragment	ca. 1900-1920 (Toulouse 1969:33)
stoneware blue slip out/white slip in	1900-1930
Test Unit A, Level II	
white glass canning liner (genuine Boyd cap for mason jars)	1915-1920 (Toulouse 1969:50)
Test Unit A, Level III	
white undecorated ceramic with maker mark (Mellor and Co.-Vernon)	possibly 1880-1904 (Mellor Taylor and Co.)
Test Unit A, Level VII	
small china button	possible 1860's (Luscomb 1967:183)
Test Unit B	
bottom base	1939, 1949 or 1959 (Owens-Illinois Glass Co.) (Toulouse 1971:403)
stoneware brown in/ white out	1880-1920 or 30
Shovel test north of Test Unit B	
canning jar fragment	circa 1924-1951 (probable Knox mason) (Toulouse 1969:178)
brown on white transferware	circa 1840-1940
white undecorated (Homer Laughlin mark with Made in USA	post-1911

metal work clothes button	late nineteenth century and later (Luscomb 1967: 224)
stoneware brown slip in/white slip out	1880-1920 or 30
Test Unit D	
cork closure bottle	1880-1900 (seam to bottom of lip) (Adams 1971)
stoneware jug brown in/white out	1880-1920 or 30
stoneware blue slip	1900-1930
Test Unit E	
stoneware slipped both surfaces - cream	circa 1900-1940
Test Unit F, Level L	
bottle base	ca. 1929-1966 (possible Owen-Illinois Glass Co.) (Toulouse 1971:403)
cork closure bottle	1860-1880 (seam 3/4 up neck) (Adams 1971)
Test Unit G	
bottle base	1939, 1949 or 1959 (Owens-Illinois Glass Co.) (Toulouse 1971:403)
Test Unit G, ground surface	
chamber pot, blue rim with light blue body	1900-1940's

Historic documentation. Charles S. Wilder came to Conway County in 1849 from Ohio, and in 1852 married Mary Jones who died within a few months (Park 1960:124). On 25 January 1854 Wilder was appointed the administrator of the estate of Willie Nash (Conway County Letters of Administration). Wilder was married for the second time in 1855 or 1856 to Sarah Francis Nash, widow of Willie Nash (Park 1960:124).

The plat map drawn from the 1855 survey (General Land Office 1855:7n 15W) shows a building in a field at the location of this site, and it is possible that Wilder built his house before he had title to the property. Given that possibility, it is reasonable to assume that he built the house in 1850 or 1851, just before his first marriage.

Having bought an adjacent piece of property in 1857, Wilder bought 40 acres including the house site from Miles L. Stell on 30 April 1858 (Conway County Deed Record G:420). This deed is a conveyance of land and premises, implying that there were already buildings on the property.

By 1860 the Wilder family included Charles; Sarah Francis, his wife;

George H. and William W., their sons; and Sarah Elizabeth Nash Wilder, Mrs. Wilder's daughter from her earlier marraige. Wilder owned 200 acres valued at $2,000, and had $1,000 of personal property, mostly livestock (U.S. Census 1860b:Union Township). During the Civil War, Wilder served both in the militia and in the Confederate Army. After his second wife died in 1879, Wilder married Mollie Bolton. His fourth wife was Lizzie Cantrell (Park 1960:124).

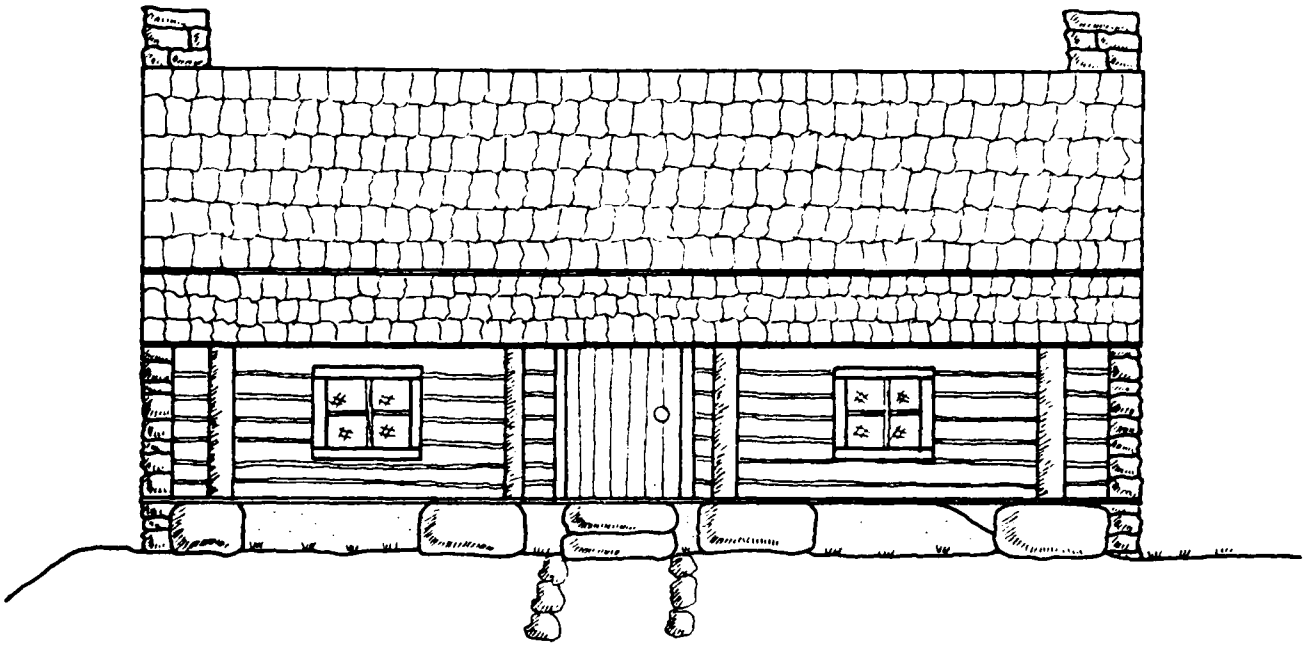
Charles Wilder sold all of his property to his son James A. Wilder on 17 December 1884 for $1,000, although he continued to live in the house until his death in 1893. Hard times forced James A. to mortgage the property several times. In 1890 he sold a half interest in the land to his sister Dovey N., but he was able to buy back her interest in 1891. Beginning in 1892, however, he mortaged the property to Arthur D. Malone of Plumerville (Alexander 1979). Malone finally foreclosed on the property, perhaps as early as 1899, because the 1900 Census (Union Township) shows Wilder as renting a farm rather than owning one.

Malone had a series of tenants on the property, including Joe Duncan who had a portion of the land surveyed in 1908 (Conway County Surveyors Record I). On 9 November 1909, Malone sold all of the property to M.C. and Frank McKindra, Sr. for $2,000 (Conway County Deed Record 21:297). The McKindras (first Frank, Sr., then Mack, and finally Mack, Jr.) rented the land to the Griggs family, black sharecroppers who lived in the house until it was abandoned about 1944.

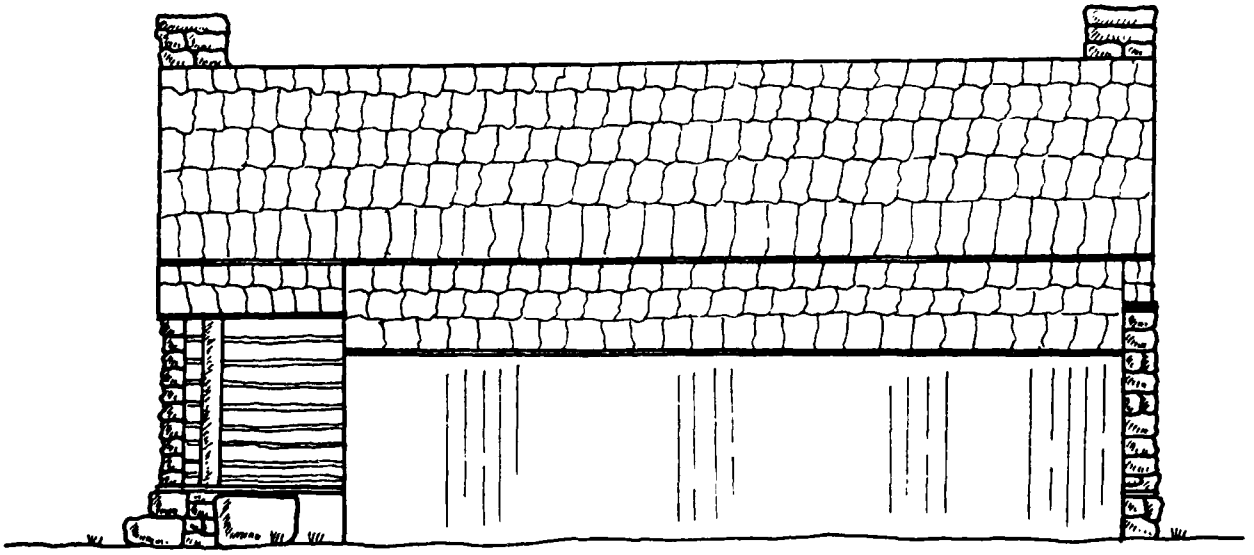
Resident information. Mr. W. S. Alexander, present owner of the site related that the structure was built by Charles Wilder, an early settler and farmer in the area, and was dismantled from the site in 1944 by Mr. Mack McKindra, Jr. The house was occupied continuously from the time it was built in the 1850's until 1944.

Exterior characteristics based on informant description. The exterior characteristics of the structure are shown in Figures D-21, D-22, and D-23. Relationship of the outbuildings to the main house is shown in Figure D-16. Mr. Wattie Griggs, who lived in the house until 1944, is still living in Conway County and could provide information on the house although his health is poor at the age of 92. Most of the information on the structure was provided by Barry and Veatrice Henson, relatives of the Griggs family who lived in the area and spent time at the house during the Grigg's occupation. There were apparently no modifications made on the structure during the Grigg's occupation (circa 1909 to 1944) so the house, as shown, is probably what it was like during the latter part of the Wilder occupation.

According to Mrs. Henson, Argenta Griggs, Wattie Griggs's wife, maintained the yard. A rock-lined pathway led from the front of the house to the roadway and this was kept cleared of all grass. Flower beds were maintained on each side of the path and along the south side of the house. The yard was planted in grass and a large eastern red cedar was planted in front of the porch. The trunk of this tree is still present.



a



b

Figure D-21. Wilder Log House, 3CN92. (a) west elevation, (b) east elevation. Based on the descriptions of Veatrice Henson. Not to scale.

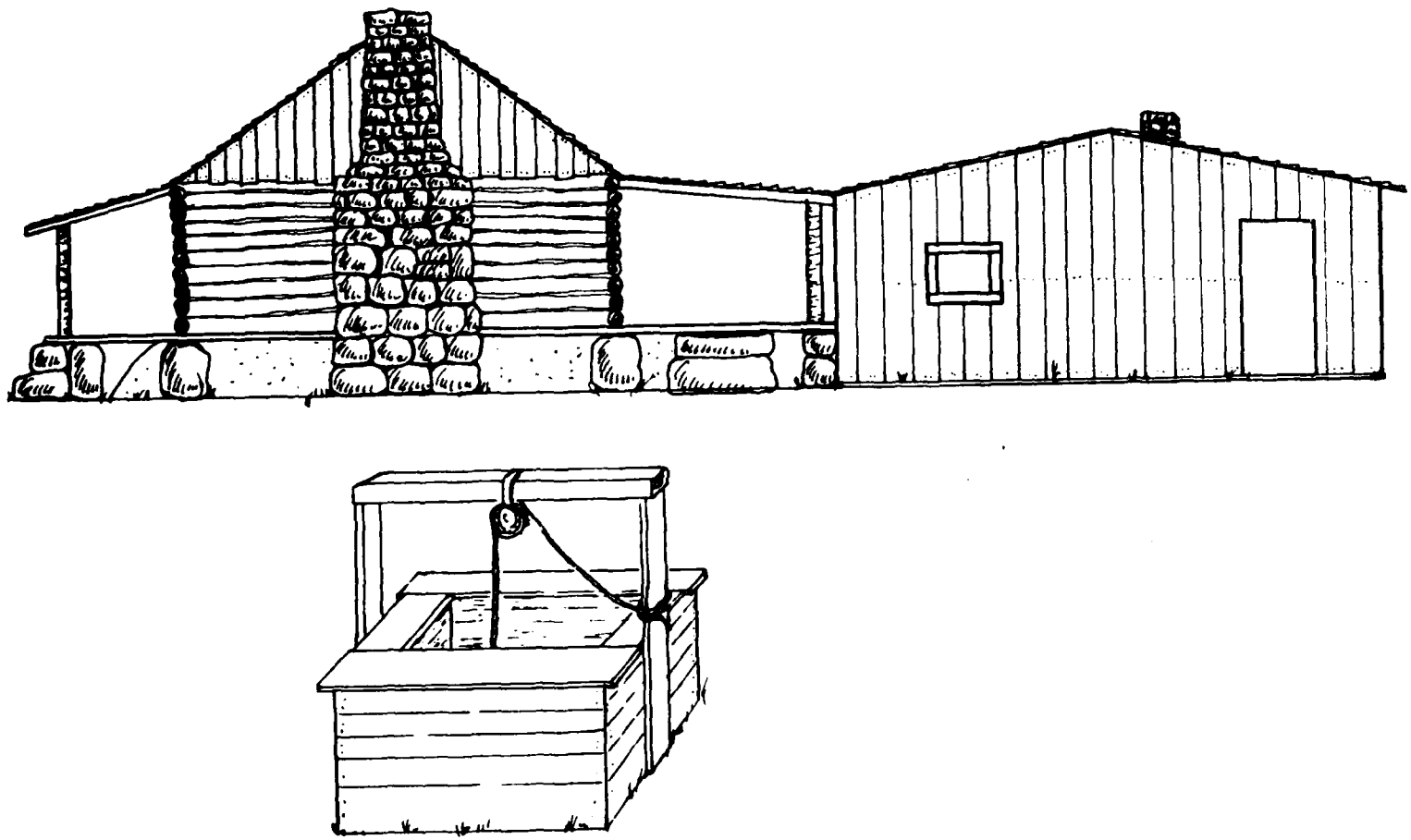


Figure D-22. North elevation of the Wilder Log House, 3CN92, based on the descriptions of Veatrice Henson. Not to scale.

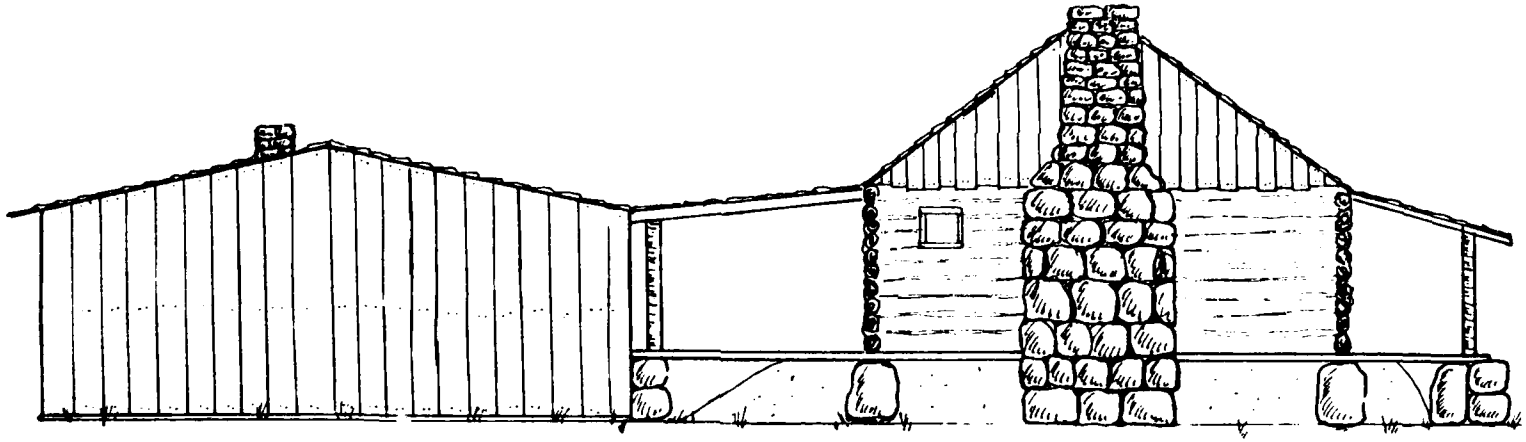


Figure D-23. South elevation of the Wilder Log House, 3CN92, based on the descriptions of Veatrice Henson. Not to scale.

Although Mrs. Henson could not remember the locations of all doors and windows in the board addition, she confirmed the locations of those in the single log pen part of the house. There was a small window (approximately 46 cm by 61 cm) on the north side of the house east of the chimney. Occupants of the house used the small side window to watch people arriving or moving along the Morrilton road to the north of the house. This window also faced the barn which was reportedly north of the road.

Room arrangement based on informant description. According to Veatrice Henson, the log portion of the house was used as a sitting room and bedroom during the Griggs occupation. This pattern probably prevailed at least during part of the Wilder occupation. There is some question regarding the actual residents of the house. According to Mr. Alexander, Wattie Griggs and his wife resided in a small house built southeast of the large house occupied by Griggs's mother. When Wattie Griggs's mother moved to Oklahoma circa 1920, he and his wife moved into the large Wilder house. But according to Mrs. Henson, Wattie Griggs, his wife, and his mother slept in the main room of the large Wilder house, not in separate houses. The interior arrangement of the house during that time is shown in Figure D-24. Both situations described are probably accurate and reveal variations in time. As one entered the addition to the east, there was a bedroom occupied by four boys living with the Griggses. These included three of Wattie Griggs's sister's sons and his wife's nephew. A door at the east end of the bedroom led into the kitchen. According to Mrs. Henson, the floor of the house was plank. She was also able to give some information on furnishings and decorating. A tin safe was located in the kitchen for storage. There were four shelves in the unit. The top shelf contained the dishes, the second shelf held the cups, and pans were stored on the bottom. There was no sink. A pan was filled with water from the well. Canned foods were stored in boxes stacked up in the corners of the room. The inside walls of the kitchen were covered with a cardboard-thin building paper tacked on the logs. This was gray. Light brown paper was used in the rest of the house. There was no electricity in the house during either of the occupations. The Griggs employed coal oil lamps for light and fireplaces for light and heat.

Evaluation of the site. Testing at this site included shovel testing and the excavation of ten 1 m^2 test units. Based on informant descriptions, archeologists were able to reconstruct much of the physical appearance of the house. In addition, there is extensive historic documentation on the occupation of the house. Since the house was constructed by an early settler in the area, and then occupied later by a black sharecropper family, it is believed that this site has the potential to provide valuable information on the economics of white and black families in rural Conway County. The structure was removed in 1944, but the foundation stones were allowed to remain in place, readily outlining the organization of the rooms. Thus, based on: (1) the apparent excellent preservation of the site and its internal arrangement; (2) the sample of artifacts preserved in the site which can provide a representative indication of tools and other utilitarian materials used by occupants of rural sites in Conway County; (3) the excellent

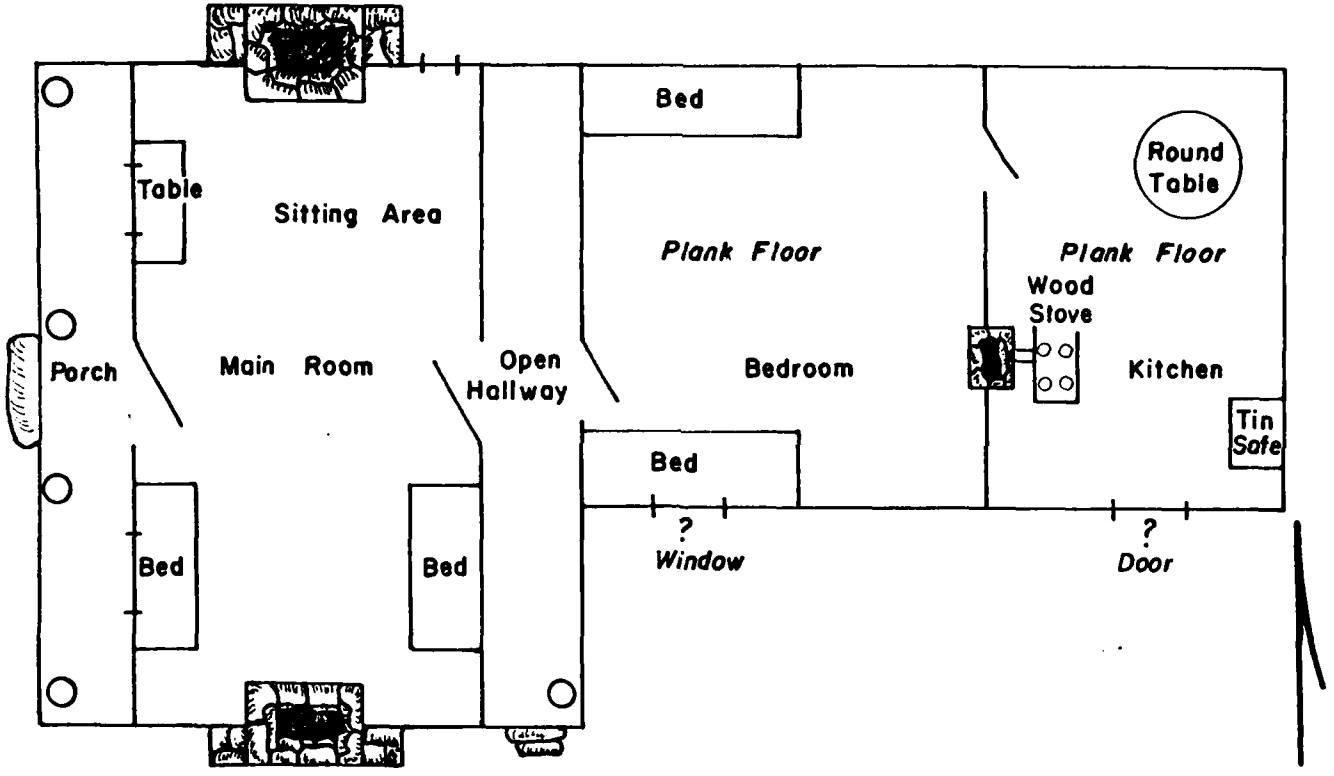


Figure D-24. Floor plan of the Wilder Log House, 3CN92, during the Wattie Griggs occupation, based on the descriptions of Veatrice Henson. Not to scale.

preservation of bone and plant material which can provide insights into diet and site function through a study of their distributions; and, (4) the documentation of the site and its occupants which gives excellent control over the ownership of artifacts, it is highly recommended that additional work be conducted at this site. This site can be designated a type site for many of the other historical nineteenth century sites that were located and tested in the project area. This site will be inundated by the proposed reservoir.

The Weatherly House site (3CN105)

Description. The site is located on the terrace surface about 91 m above sea level. An intermittent stream is about 300 m from the site. Soil type associated with the site is Linker fine sandy loam (see Appendix E).

This site was located during the survey and testing phase conducted in June-August 1979. Three features were found in addition to the house. These included the well west of the house, a barn south of the house, and a root cellar southwest of the house (Figure D-25). The barn is marked by stone piers, while the root cellar is evidenced by the rubble of the roof which has caved in. There is little development of any soil in the site area to have protected subsurface features.

The approximate floor plan of the structure could be determined by the presence of foundation stones (piers) which were still in situ (Figure D-26). Based on the orientation of these stones, and other features at the site, it was possible to determine where a number of the outbuildings were located in relation to the main house (Figure D-25).

Method of testing. A sample of artifacts was collected on July 28, 1979. These included glass bottle fragments, canning jar liners, cork closure bottle, flat glass, single barbed wire, ceramics (white undecorated, yellow with brown band), and stoneware. Two shovel test transects were then established (Figure D-26). Twelve shovel tests were dug on a north-south line, with approximately 5 m between units. Thirteen shovel tests were dug on the west-east line, with 5 m between units. The only units containing artifacts were numbers 3, 4, 7, 8, 9, 12, 14, 15, 16, and 18. Materials from these included glass fragments, metal fragments, ceramics, and nails.

A 1 m^2 test unit was excavated west of the house site (Figure D-25). Due to the shallow nature of the soil the unit was excavated to only 5 cm. This unit was designated Test Unit A. After testing was begun, it became apparent that this was the area where trash was burned. It did provide an excellent sample of artifacts including glass bottle fragments canning jar liners, cork closure bottle, flat glass, nails (wire), orange button, battery core fragments, double strand barbed wire, and ceramics (transferware).

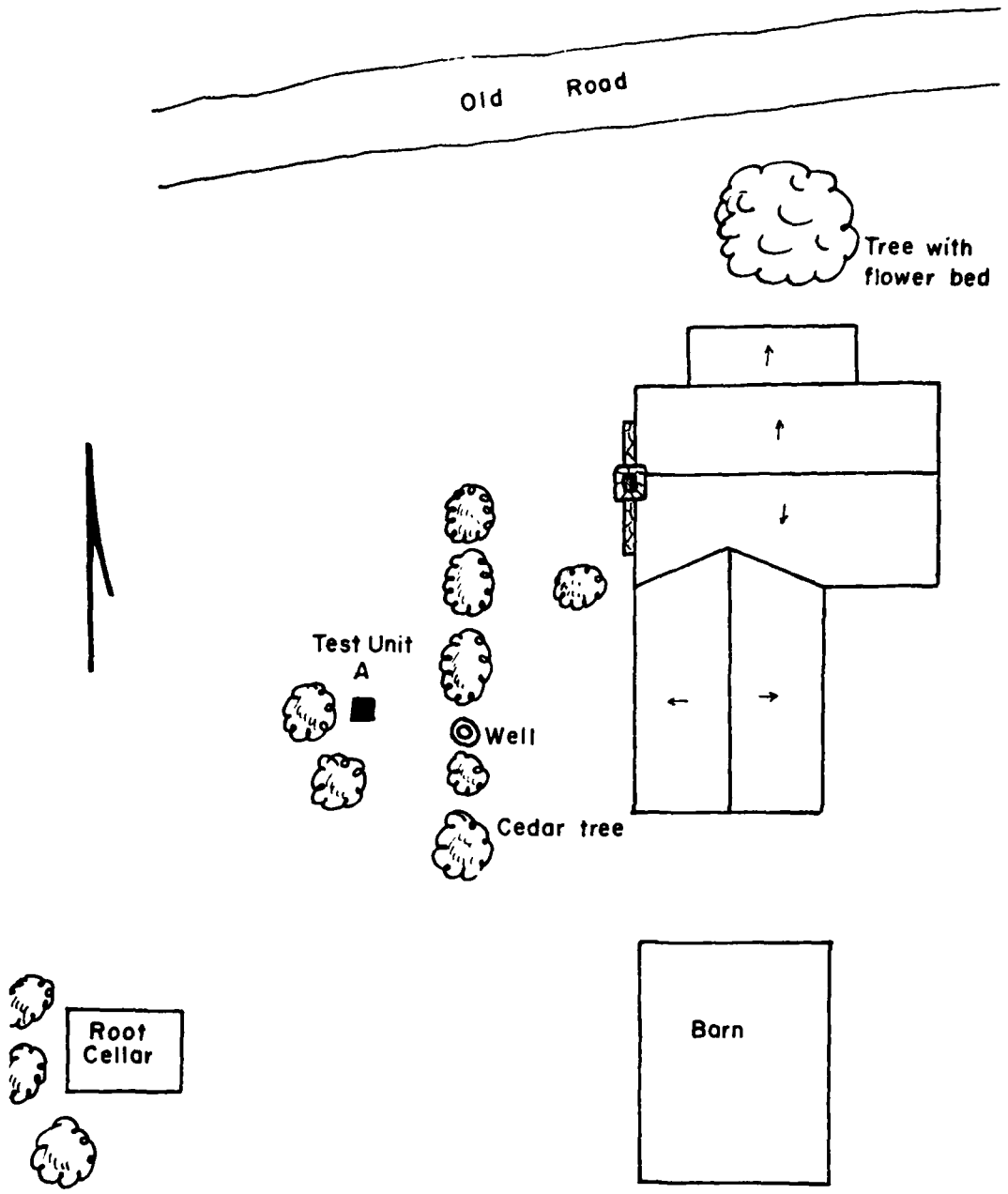


Figure D-25. Relationship of the main house to outbuildings and other features at the Weatherly House site, 3CN105, based on the descriptions of Lizzie Griswell and surface indications. Not to scale.

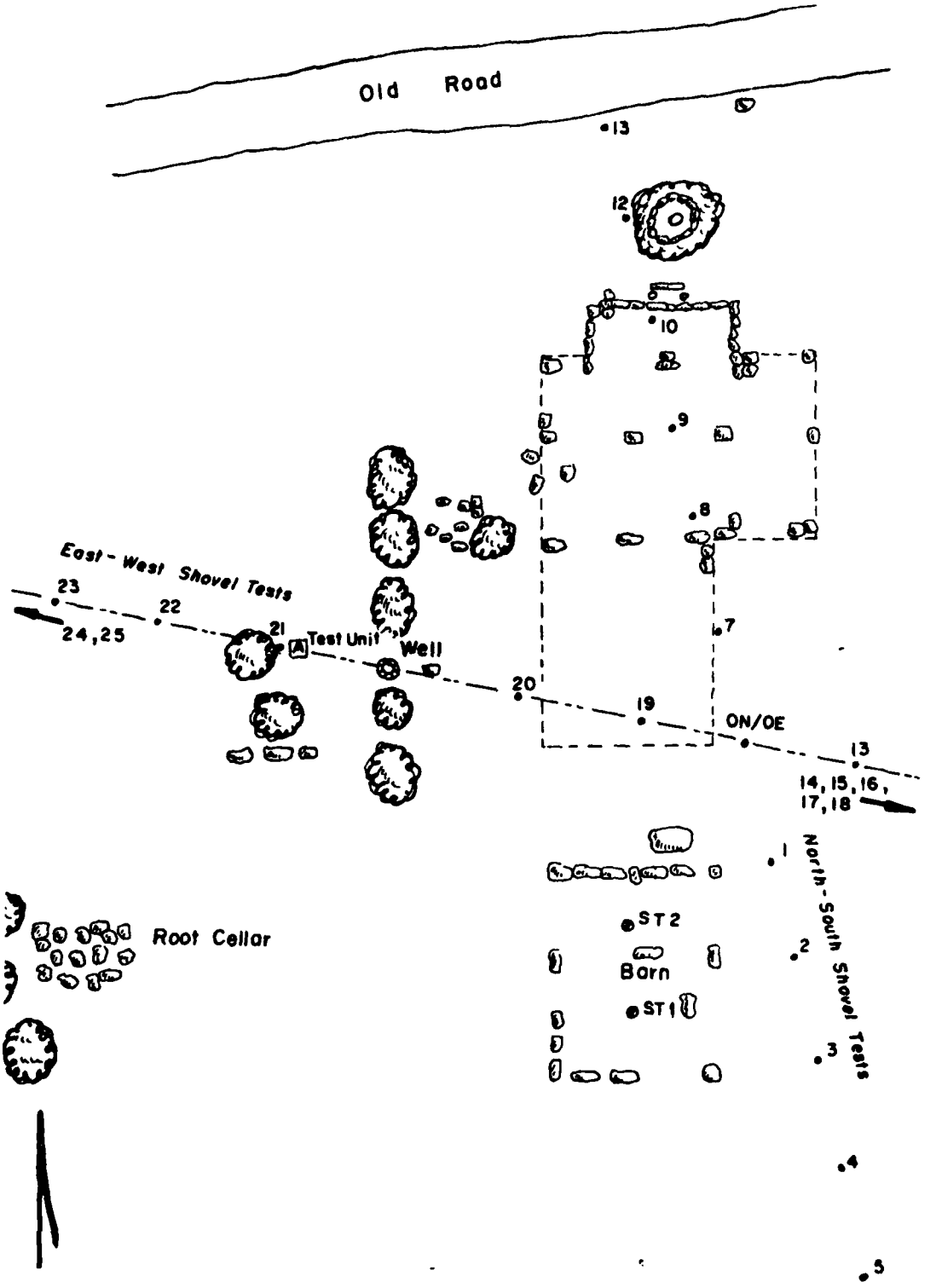


Figure D-26. Test units in relationship to approximate structure limits and other features at the Weatherly House site, 3CN105. Not to scale

Two shovel tests within the area of stones that marked the barn (Figure D-26) were dug. Artifacts from Shovel Test 1 included glass bottle fragments, automobile headlight fragments, and a bolt. Shovel Test 2 contained a bottle glass fragment and a stoneware fragment.

Temporal identification of artifacts.

Ground surface	
glass bottle base (Duraglass)	1940-1963 (Owens-Illinois Glass Co.) (Toulouse 1971:170)
cork closure bottle	post-1903 (seam to top of lip) (Adams 1971)
Test Unit A	
threaded bottle neck	post-1903 (seam to top) (Adams 1971)
Lincoln head penny	1940 D
wine bottle base	1949
stoneware white in/ white out	circa 1900-1940
bottle bases	1950 (Owens-Illinois Glass Co.) (Toulouse 1971: 403)
Shovel Test 2(in barn)	
stoneware blue out/ white in	1900-1930

Historic documentation. The original entry for this property was filed by John Sappington using Military Land Warrant No. 5318. The date of this entry was not recorded in the State Land Office Tract Book (7N 15W). Sappington is shown as the owner of this land on a copy of the 1819 plat map (General Land Office:7N 15W) but this information could have been added any time before 1855 when new plats were drawn. There was a John Sappington in Hardin Township of Conway County in 1860 (U.S Census 1860b: Hardin Township). He was born in Georgia about 1815, suggesting the late 1830's as the earliest he could have claimed land based on military service.

Sappington did not live on this property, neither did he make the necessary inprovements, for the land was forfeited to the state and offered at auction. When the property failed to sell, it reverted to donation land, which was entered by Richard Smith Dillon. Enough improvements were made so that an Auditor's Deed was issued to Dillen on 1 May 1854. Dillen kept the property one more year, selling it to William V. Weatherly on 29 November 1855 (Conway County Deed Record F: 365, 373).

Weatherly came to Arkansas from Tennessee in 1853. In 1860 he owned $750 of real property and $400 personal property. His family included his wife, his mother, and four children, one of whom was a deaf mute (U.S. Census 1860b: Union Township).

The property remained in the Weatherly family until at least 1900, passing to son James A. when William V. died (U.S. Census 1900: Union Township).

Some time after 1900, Alex Watkins became the owner of the property where the site is located. He paid the taxes in 1913 and 1929, and he had his land surveyed in 1918 (Conway County Real Estate Tax Record Book I).

Resident information. According to Mrs. Lizzie Griswell, a resident of of the area, Rev. King Bird lived in the house after the Watkinses. Mrs. Griswell moved into the house in 1936 and remained there until 1940. A storm reportedly blew the house down sometime after 1957.

Room arrangement based on informant description. Mrs. Lizzie Griswell was able to provide a description of the internal arrangement of the house during her occupation (Figure D-27). The house was a log structure, with a board porch and addition. The logs were reportedly boarded over with clapboard siding, as in the case of the McKindra House (3CN47). This suggests that the corner notching of the house was perhaps square or "V", types which readily accommodate clapboard siding. The layout of the rooms is also somewhat different than most structures in the area. It appears to be of the style called dogtrot.

Prehistoric occupation. The nature of the prehistoric occupation remains undefined. During ground surface reconnaissance, one Pitkin nonutilized flake without cortex and one Pitkin biface fragment were recovered. No prehistoric artifacts were recovered in the subsurface testing. Due to the extensive disturbance to the site, it was not considered necessary to conduct additional testing for the prehistoric component.

Evaluation. Intensive shovel testing and the excavation of one 1 m^2 test unit were carried put at the Weatherly site. Based on the testing, it is believed that this site exhibits minimal potential for providing significant information if any subsequent work was to be carried out. Based on (1) the sparsity of cultural materials; (2) the reoccupation by numerous individuals, and the lack of information on these occupations and persons; (3) the lack of development of the humus soil level which could protect features and artifacts; and (4) the ongoing destruction and use of the site marked by discarded containers, it is recommended that no further work be done at this site. The Wilder Log House site (3CN92) appears to be a contemperous, and perhaps older, site in the project area with more potential in a research design directed toward historical archeology.

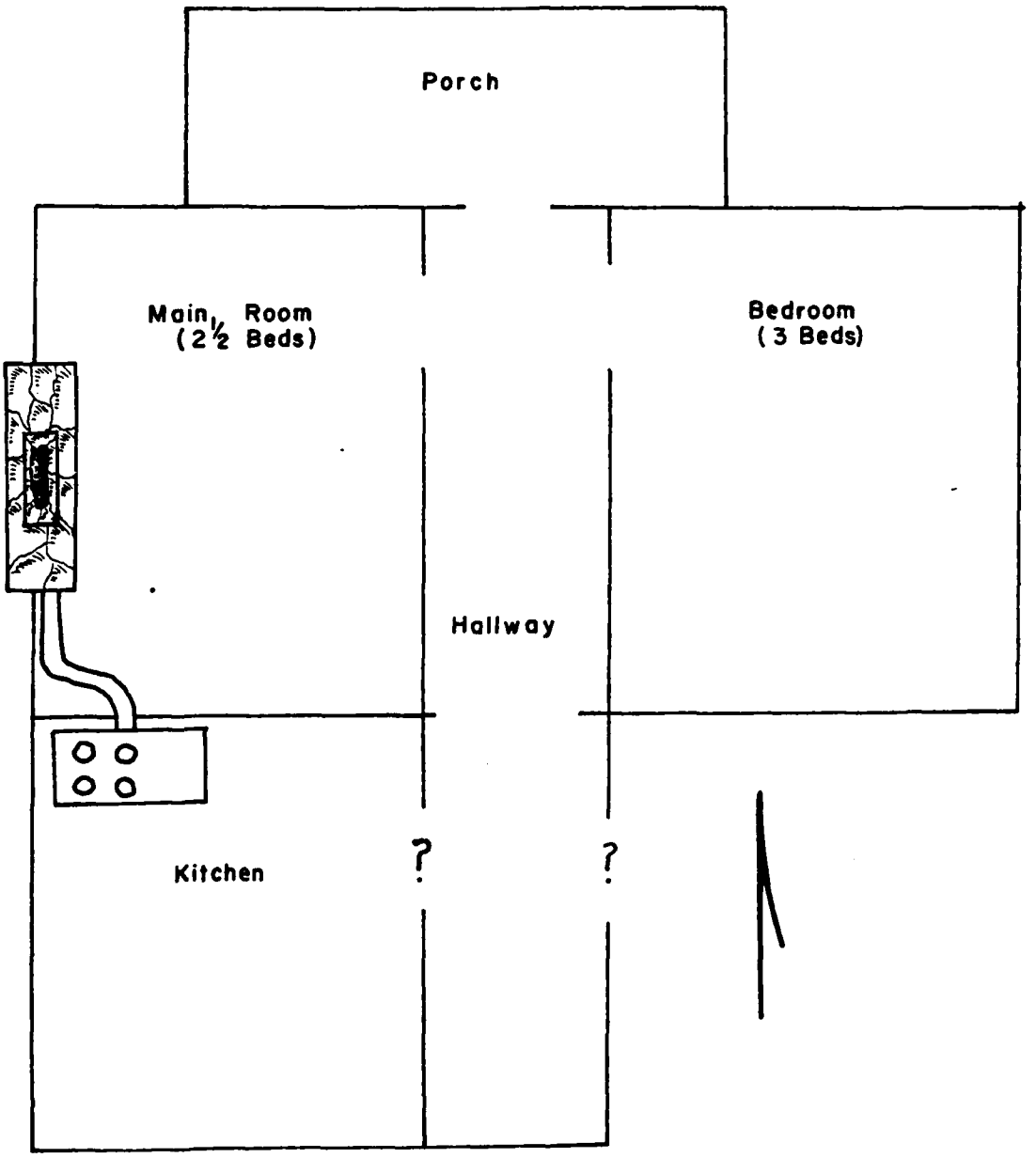


Figure D-27. Room arrangement of the Weatherly House, 3CN105, based on the description of Lizzie Griswell. Not to scale.

The Hammond House site (3CN106)

Description. The site is located on the terrace surface approximate approximately 88 m above sea level. There is an intermittent stream east of the structure about 10 m distance. The site is covered with sumac. Soil type associated with the area is Linker fine sandy loam (see Appendix E).

This site was located on July 4, 1979 when glass jar fragments, wire, a metal button, a brick fragment, ceramics and some stoneware were collected from the surface. There were no surface indications of the structure, but Mrs. Lizzie Griswell, a local resident, said there was a house at this site which was torn down before 1936.

Methods of testing. Survey personnel returned to the site on July 28, 1979 and a number of shovel tests were dug across the entire site area, to define the area of the structure that was once located there. The first line was established north-south with 5 m between each test. A total of 12 shovel tests were dug along this line. The only units containing material were shovel test 1 (metal), shovel test 6 (glass), and shovel test 8 (glass)(Figure D-28). Soil characteristics were consistent through the site. From ground surface to 15 cm, the soil was mottled brown. Below this level it was orange clay. Three east-west shovel tests transects were then established. The one through the central portion of the site consisted of 12 shovel tests. The tests to the west went into the area of an old roadway. The only units containing materials were shovel test 13 (ceramic), shovel test 14 (glass) and shovel test 15 (nail). Another line was established 10 m north of the first east-west line. Twelve shovel tests were dug along this unit (Figure D-28). The only units with material were shovel test 37 (glass) and shovel test 42 (ceramic).

Temporal identification of artifacts. Although most of the artifacts appeared to be fairly recent, only one was diagnostic enough to permit dating. This was a bottle base that appeared to have a date of November 30, 1907. The date on the bottle is broken, but such markings have not been put on the base previous to the late nineteenth century.

Evaluation. After reviewing the information gathered on the site, it is recommended that no further work be done at the Hammond House site. This is due in part to (1) the absence of information on the structure that was located on the site; (2) the shallowness of the deposits of cultural materials; and (3) the apparent sparsity of cultural materials as revealed by intensive shovel testing. The Wilder Log House site (3CN92) is probably contemporaneous with this structure and exhibits significantly less disturbance.

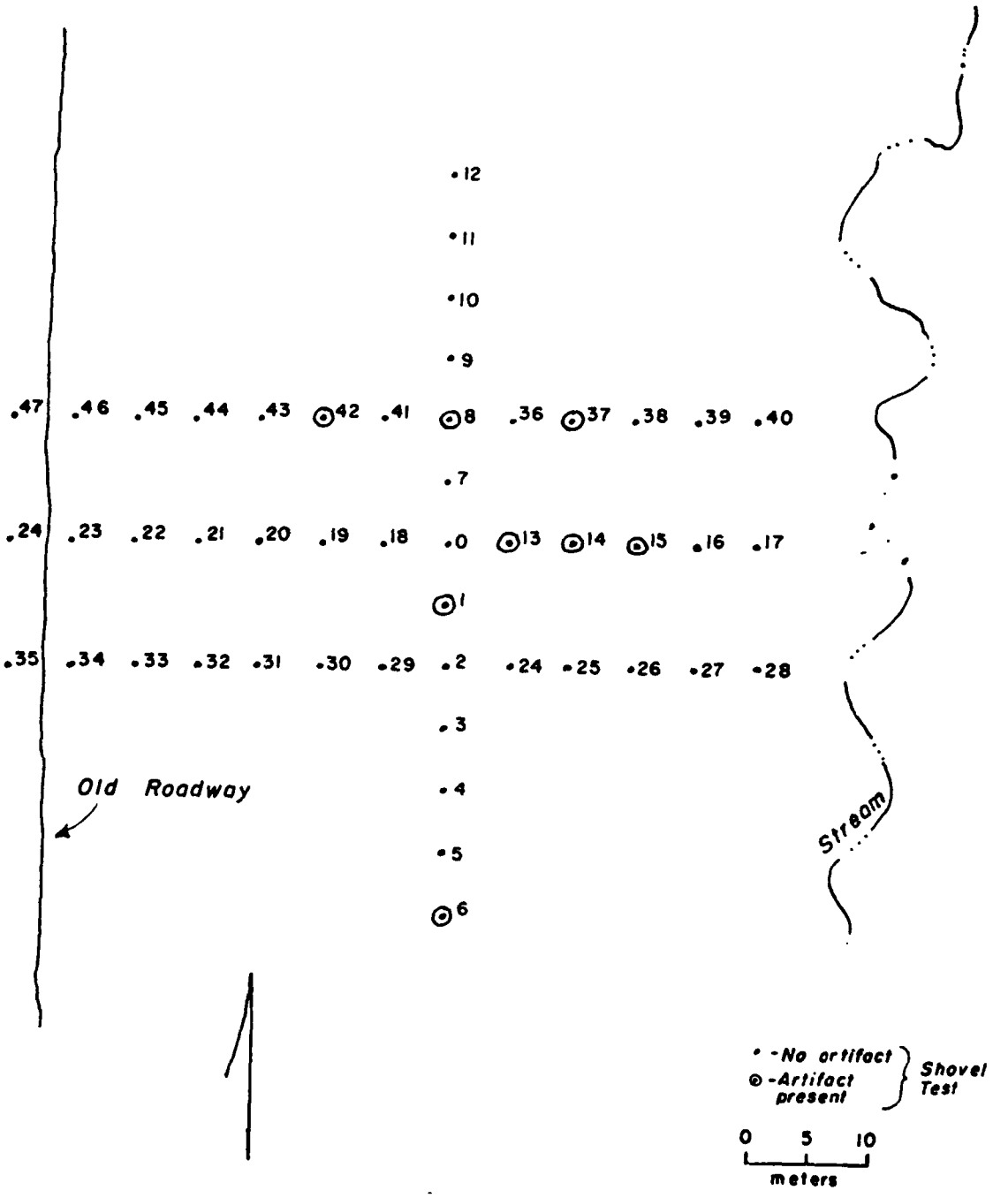


Figure D-28. Shovel tests at the Hammond House site, 3CN106

The Ledbetter House site (3CN108)

Description. The Arkansas Archeological Survey was informed of a log house site in the project area on July 19, 1979 by Virgil Scroggins. This structure was known as the Ledbetter House. The structure is no longer standing. Due to the heavy vegetation cover, it was impossible to determine the arrangement of the rooms or the over-all size of the structure by locating the foundation stones. A pile of stone rubble on the east side of the site area defined the location of the chimney and fireplace (Figure D-29). The site is located on the terrace surface at 95 m above sea level. Area of the site is approximately 100 m by 60 m. Hill Creek is the closest water source, approximately 40 m south of the site. Soil type is Linker fine sandy loam (see Appendix E).

Methods of testing. Survey personnel were taken to the site on July 19, 1979 by Don Scroggins. Collected surface materials were found primarily on the south side of the site on the bank above Hill Creek and included glass body fragments, flat glass, metal ring from a Georgia stock plow, and ceramics (white undecorated with raised pattern on rim). A base line was then established north of the structure. Shovel tests were dug at two meter intervals east and west along the line. The next line was established four meters north of the first line, and a third line was established eight meters north of the first line (Figure D-29). Three shovel test lines were also laid out south of the structure. Units containing material north of the house were 3, 4, 5, 8, 18, 19, 22, 26, and 28. All tests were dug to 30 cm. From ground surface to 15 cm, the soil was a brownish loam. From 15 cm to 30 cm, it was a yellow sandy clay. Cultural materials were found within the first 13 cm. This included wire and cut wires, glass, and ceramics. All of the units south of the structure, except 13S/12E, were sterile of artifacts with the exception of a fence staple.

Five 1 m^2 units were dug (Figure D-29). Excavation techniques were consistent with those defined earlier in this report.

Shovel Test 1. In addition to the controlled shovel tests along the established lines, two additional shovel tests were dug north of the structure, within the yard area (Figure D-29). Materials from the unit included body glass fragments, cork closure bottle neck, ceramics (white undecorated) and stoneware.

Shovel Test 2. This additional shovel test was dug along the edge of the trees, by Test Unit A (Figure D-29). Materials from the unit included a flat metal fragment and stoneware.

Test Unit A. Two arbitrary excavation levels were employed. The first, ground surface to 10 cm, consisted of brownish loam. Artifacts from this level included glass bottle fragments, canning jar liner fragment, flat glass, nails (fence staples and cut), slate fragment, buckle, ceramics (white undecorated), and stoneware. The second level 10-20 cm, was composed of brownish loam on top of a yellow sandy clay.

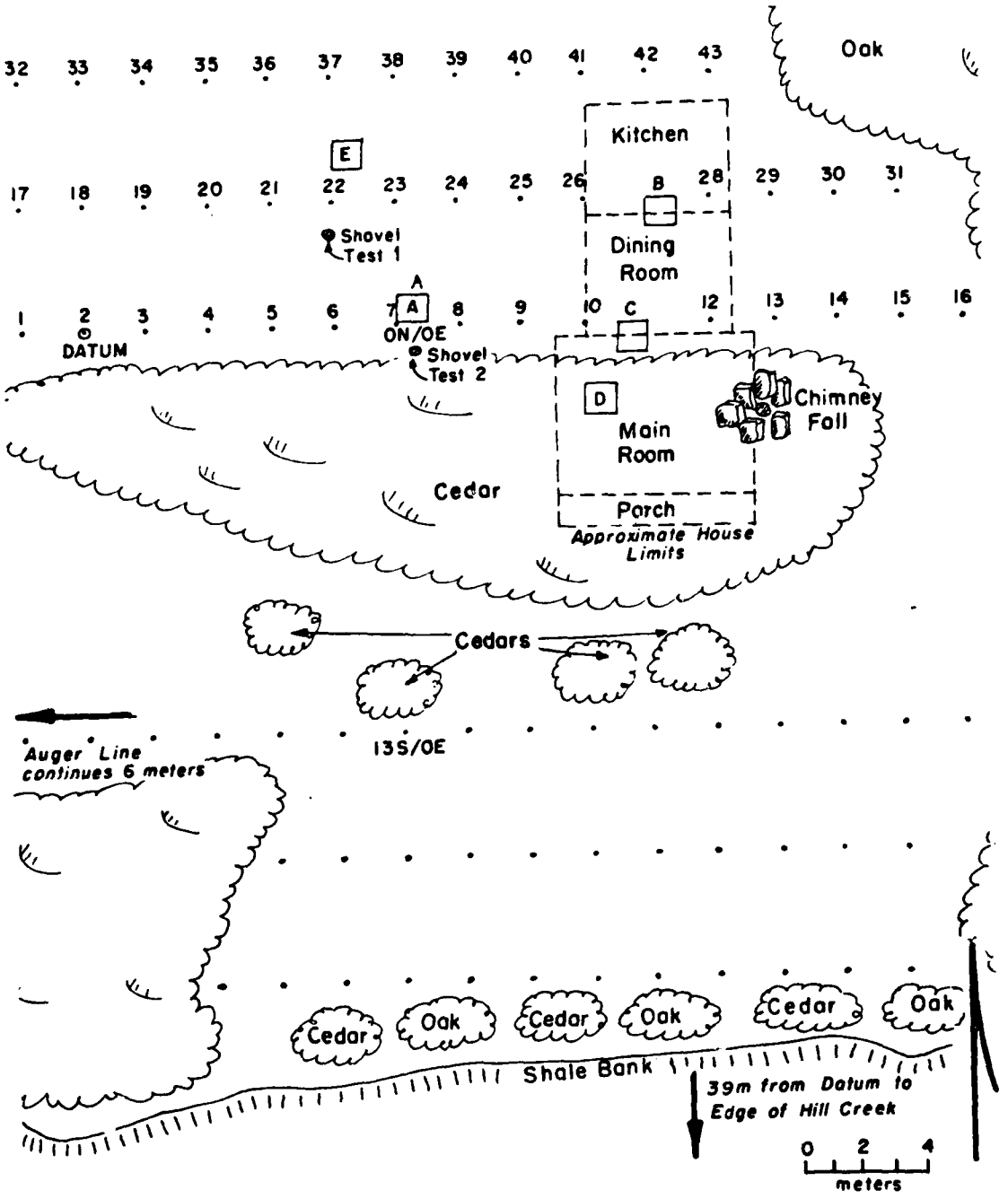


Figure D-29. Test units at the Ledbetter House site, 3CN108, in relation to the approximate structure limits and other features.

Materials found in this level were glass bottle fragments, canning jar liner, flat glass, nails (wire), work clothes button, barb from barbed wire, ceramics (white undecorated), stoneware, and two pig molars.

Test Unit B. Two levels were excavated; the first from ground surface to 10 cm, the second level from 10 cm to 17 cm. Composition of the soil was a homogeneous brownish loam from ground surface to 17 cm. Below this was yellow-orange sandy clay. A posthole digger was employed to test the unit to 33 cm, but there were no material below 17 cm. Artifacts from the first level included glass bottle fragments, flat glass, nails (wire), cutting colter from Georgia stock plow, ceramics (white undecorated), and stoneware. Materials from the second level included glass bottle fragments, a glass stopper, nails (wire), a wagon axle bracket, and ceramics (white undecorated).

Test Unit C. This unit was excavated approximately in the area of the dining room and the main room of the structure (Figure D-29). Two levels were dug. From ground surface to 10 cm, glass bottle fragments and ceramics (painted) were recovered. The second level, 10-20 cm, contained glass bottle fragments, nails (fence staple, wire and cut), metal button, ceramics (transferware and undecorated white), and stoneware. The soil was homogeneous brownish loam from ground surface to 20 cm. Below this was yellowish sandy clay, which was sterile of cultural materials.

Test Unit D. This unit was excavated as a single level from ground surface to 12 cm. There were no cultural materials below this level. Soil characteristics were consistent with those described in the sections on other units. Materials recovered from this unit included nails (wire and cut), muleshoe, ceramics, and a concrete fragment.

Test Unit E. This unit was excavated northwest of Test Unit A and west of the structure. Two arbitrary excavation levels were employed. The first level, ground surface to 10 cm, contained bottle glass, nails (wire), buckle, ceramics (white undecorated), and stoneware. The second level, 10-20 cm, contained bottle glass, cork closure bottle neck, pressed glass, nails (wire and cut), buckle fragment, and ceramics (white undecorated). The soil was homogeneous brownish loam to 20 cm. Below this was a yellowish sandy clay, which was sterile of artifacts.

Temporal identification of artifacts. Only those artifacts from the units excavated at the Ledbetter House site which could provide information for dating are recorded below. Artifacts were identified and assigned dates by Dr. Stewart-Abernathy.

Test Unit A, Level I

stoneware brown	circa 1840-1920
slip in/brown	
slip out	

stoneware cream slip in/cream slip out	circa 1900-1940
stoneware brown interior/cream exterior	circa 1880-1920
Test Unit A, Level II	
work clothes button	late nineteenth century and later
stoneware, brown slip in/ brown slip out	circa 1840-1920
Test Unit B , Level I	
stoneware brown slip in/brown slip out	circa 1840-1920
Test Unit B, Level II	
white undecorated ceramic (Homer Laughlin, made in USA mark)	post-1911
Test Unit C, Level I	
Ceramic (painted floral)	possible 1840- 1860s
Test Unit C, Level III	
white undecorated ceramic with mark (...EAN...;...LEY... ...;...AND...)	post-1891 (if manufactured in England)
Test Unit E, Level I	
stoneware brown slip in/ brown slip out	circa 1840-1920 or 1930
Shovel Test I	
stoneware cream slip exterior/ cream interior	circa 1900-1940
stoneware brown slip interior/ brown exterior	circa 1840-1920 or 1930
Shovel Test 2	
stoneware brown slip interior/ brown exterior	circa 1840-1920 or 1930

Historic documentation. In March 1853 George C. Witt entered 79 acres of land using two military land warrants--one originally issued to a Phillip Mason; the other originally issued to a William Polk. On 24 November 1854 he deeded 1/2 acre of his property to the Methodist Episcopal Church, South. This parcel was 10 rods by 8 rods, located "where the church now stands" (Conway County Deed Record E:184-185; F: 147). Witt was a farmer who owned two horses and eight cattle in 1858. He also owned a slave, presumably a house servant (Conway County Tax Records 1858).

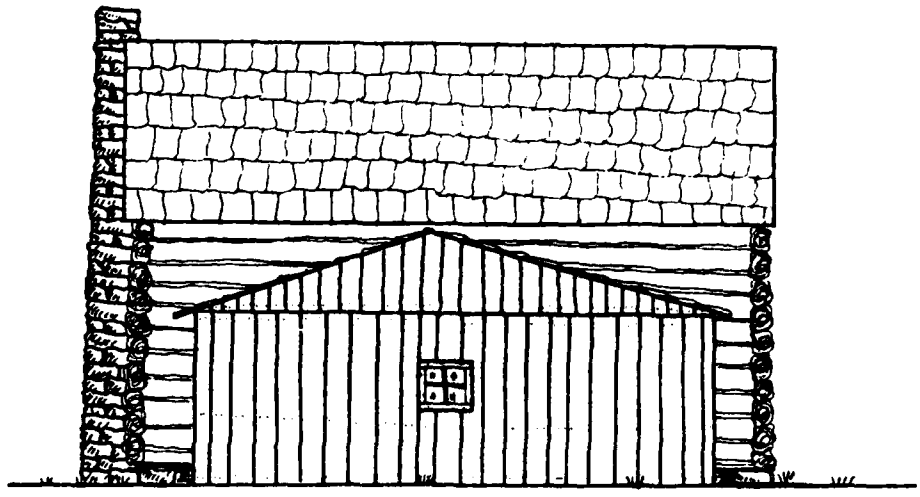
Jonas Reynolds bought this property from Will, and his wife Nancy Ann, on 22 December 1860. Reynolds and his wife Elizabeth lived on the property during the Civil War, then sold it to James B. Ledbetter on 17 October 1868 (Conway County Deed Record I:370; K:365). Ledbetter had bought his family to Conway County in 1865 from Pope County (Park 1960: 82). By 1900 James and Caroline Ledbetter were alone at home, but their son Charles S. and his wife and four children lived next door (U.S Census 1900: Union Township). The property stayed in the Ledbetter family until at least 1928. The Real Estate Tax Record for 1929 has the name of A. F. Williams penciled in, which may indicate a change of ownership.

Resident information. According to Virgil Scroggins, the house was occupied by the James Ledbetter famuly, then Charlie(son of James) Ledbetter, and finally A.F. Williams. The house was torn down about 15 years ago.

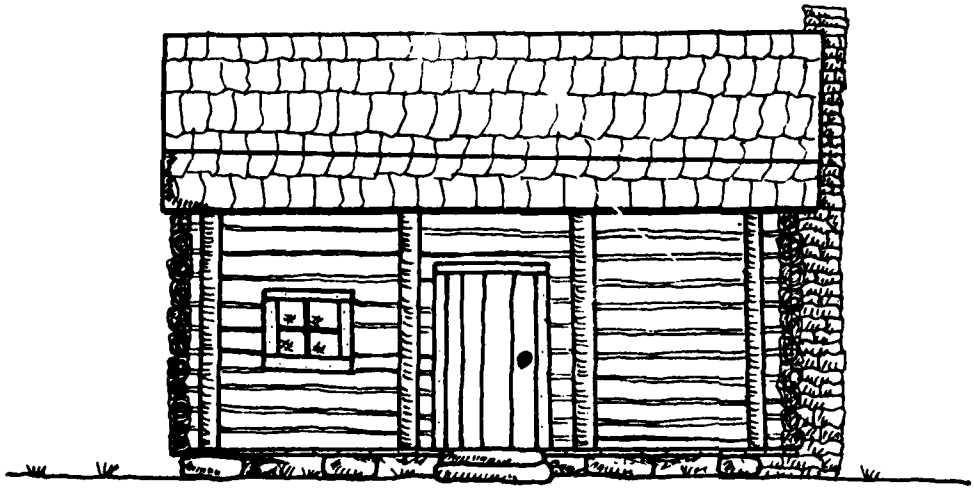
Exterior characteristics based on informant description. Mr. Virgil Scroggins was able to provide information on the external characteristics of the structure (Figures D-30 and D-31). He was able to also provide a description of the locations of outbuildings and the well in relation to the main structure (Figure D-32). There is still evidence of the dirt roadway that ran south of the house. It was impossible to determine where the fence, the barn, and the well were located, as reported by Virgil Scroggins.

Room arrangement based on informant description. Virgil Scroggins was able to provide a description of the room arrangement of the structure (Figure D-33). The room arrangement was very similar to that of the Bell-Norwood House (3CN44), although the main room in the Ledbetter House was not divided.

Evaluation. Shovel testing was conducted across the entire site area and five 1 m^2 test units were excavated in selected parts of the site. Based on (1) the shallow nature of the soil which suggested minimal potential for the protection of any subsurface features; and (2) disturbance of the site as a result of removal of the structure and the foundation stones; it is recommended that no additonal work be conducted at this site. It appears, based on the sample of artifacts from the site, that the Wilder Log House site (3CN92), was occupied contemporaneously, and perhaps earlier than, the Ledbetter house and contains artifacts representative of utilitarian tools and other materials used by rural agricultural families in nineteenth century Conway County, Arkansas.

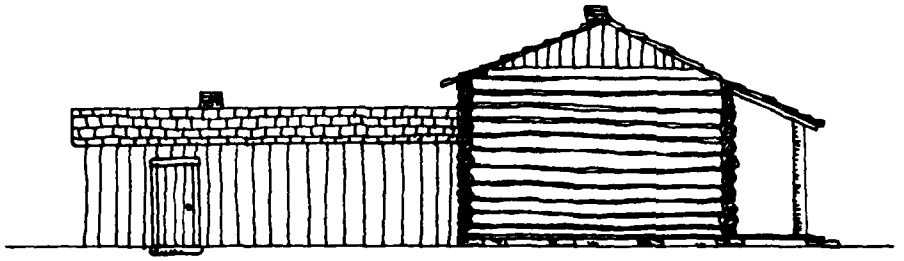


a



b

Figure D-30. Ledbetter House, 3CN108. (a) north elevation, (b) south elevation. Based on the descriptions of Virgil Scroggins. Not to scale.



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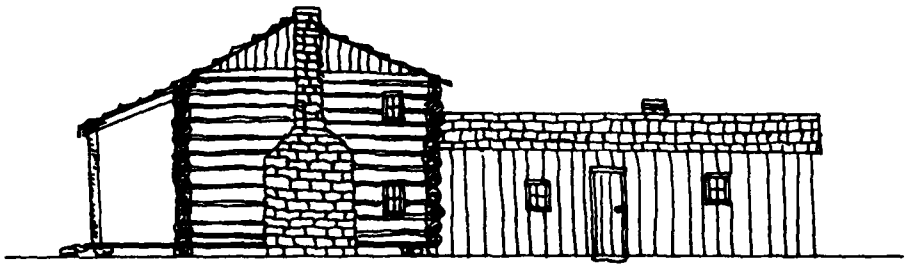

b

Figure D-31. Ledbetter House, 3CN108. (a) west elevation, (b) east elevation. Based on the descriptions of Virgil Scroggins. Not to scale.

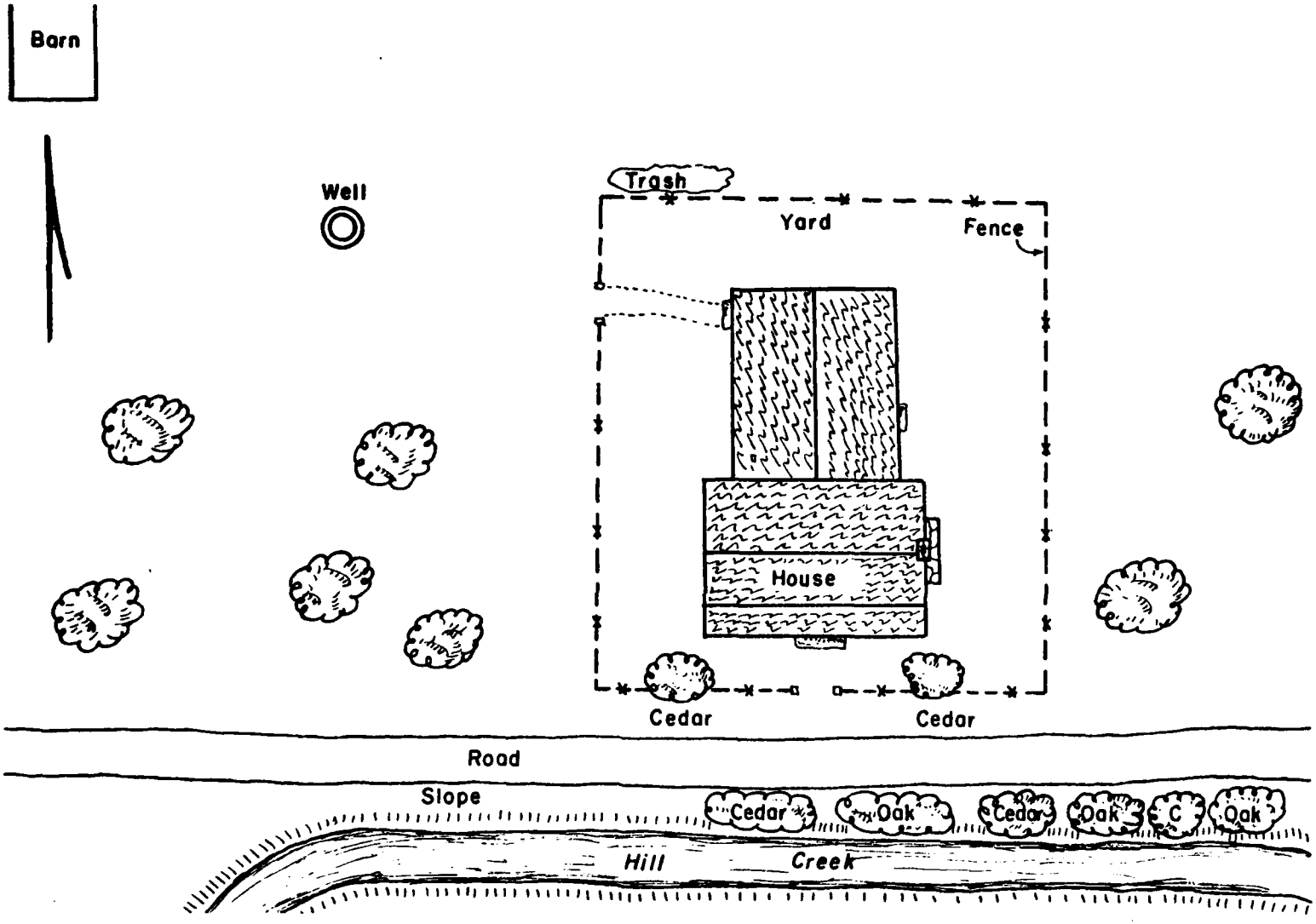

Figure D-32. Approximate locations of structures and other features at the Ledbetter House site, 3CN108, based on the descriptions of Virgil Scroggins. Not to scale

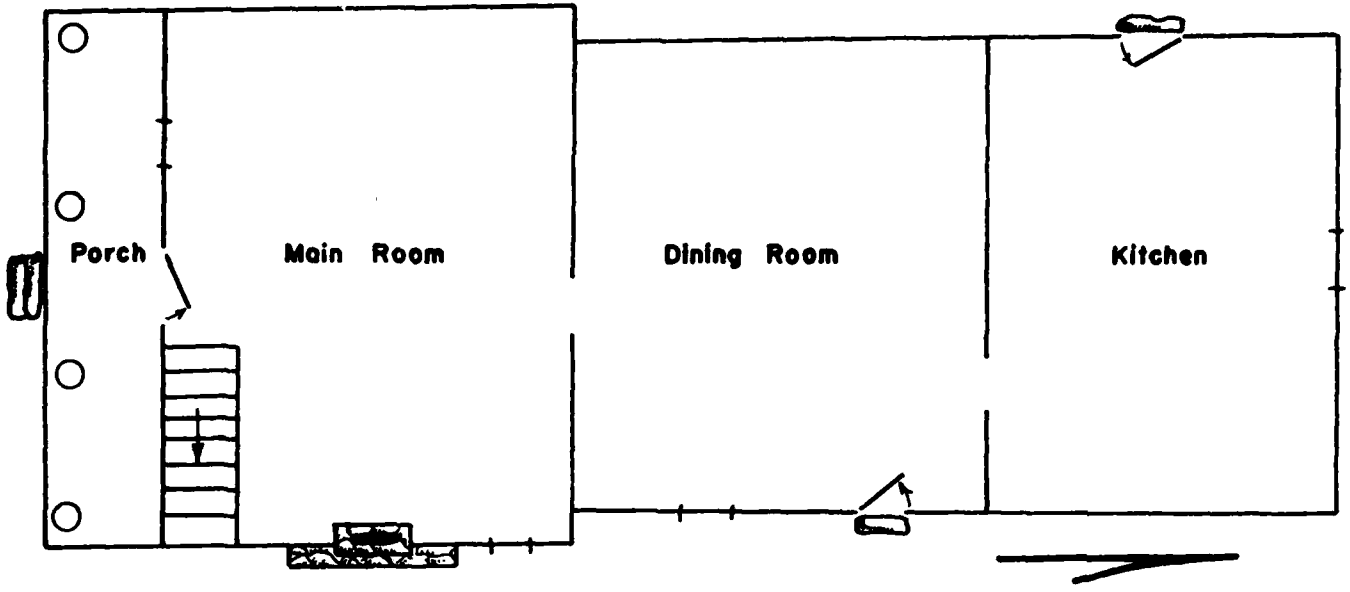

Figure D-33. Room arrangement of the Ledbetter House, 3CN108, based on the descriptions of Virgil Scroggins, not to scale

Appendix E

Soil Associations

SPECIFIC SOIL TYPE

Map Symbol	Soil Type	Slope
127	Roellen	0 to 2%
149	Muskogee	1 to 8%
193	McKamie	1 to 20%
604B	Linker fine sandy loam	1 to 3%
604C	Linker fine sandy loam	3 to 8%
604D	Linker fine sandy loam	8 to 12%
616D	Mountainburg gravelly fine sandy loam	8 to 12%
619EF	Mountainburg stoney fine sandy loam	12 to 40%
626B	Enders gravelly fine sandy loam	1 to 3%
626C	Enders gravelly fine sandy loam	3 to 8%
626D	Enders gravelly fine sandy loam	8 to 12%
653	Taft silt loam (Prime farmland)	0 to 2%
653B	Taft silt loam	0 to 2%
675	Barling silt loam occasionally flooded	0 to 2%
676	Spadra fine sandy loam	0 to 5%
683B	Leadvale silt loam	1 to 3%
683C	Leadvale silt loam	3 to 8%

Roellen Series (127)

The Roellen series consists of poorly drained deep soils. These soils formed in clayey alluvium on floodplains and low terraces. In a representative profile the soil is very dark grayish brown silty clay loam to a depth of 6 inches. It is very dark gray silty clay loam between 6 and 14 inches. Between a depth of 14 and 72 inches the soil is dark gray clay with mottles. Slopes range from 0 to 2%. The native vegetation was mixed hardwoods. The soils are slightly acid to mildly alkaline.

Muskogee Series (149)

This is a deep, nearly level through gently sloping, moderately well drained, slowly permeable soil formed in silty and clayey sediments on stream and marine terraces. The surface and subsurface layers and uppermost part of the subsoil are brown and yellowish brown silt loam about 14 inches thick. The middle part of the subsoil is yellowish brown silty clay loam about 12 inches thick. The lower part is light brownish gray and red, mottled silty clay and clay. Slopes range from 1 to 8%. The native vegetation was mixed hardwoods. The soils are medium acid.

McKamie Series (193)

The McKamie series consists of very gently sloping to moderately steep, well drained, very slowly permeable soils. They have a brown very fine sandy loam surface and a red clay subsoil. These soils formed in clayey sediments. They occur on pleistocene age terraces of the coastal plain. Slopes range from 1 to 20%. The native vegetation was pine forest. The soils are moderately alkaline. There are some calcium carbonate concretions at 33-43 inches.

Linker Series (604)

A moderately deep well drained nearly level through moderately steep moderately permeable soil on broad plateaus, mountain and hilltops, and benches. The surface layer is brown fine sandy loam about 5 inches thick. The upper most part of the subsoil is yellowish fine sandy loam about 5 inches thick. The middle part is yellowish red sandy clay loam about 15 inches thick. The lowermost part is yellowish red gravelly sandy clay loam about 10 inches thick, overlying sandstone bedrock. Slopes range 1 to 20%. The native vegetation was mixed hardwoods. The soil is strongly acid or very strongly acid. There is no occurrence of flooding.

Mountainburg Series (616, 619EF)

The Mountainburg series consists of nearly level to steep, well-drained, moderately rapidly permeable soils. The surface layer is very dark grayish brown stony fine sandy loam, about 1 inch thick. The subsurface layer is brown very gravelly fine sandy loam, about 5 inches thick. The subsoil is stoney brown very gravelly sandy clay loam, about 12 inches thick. Below is sandstone bedrock. Slopes range from 1 to 40%. The native vegetation was mixed hardwoods. The soils are strongly acid or very strongly acid. There is no occurrence of flooding.

Enders Series (626)

Consists of nearly level through steep, well drained, very slowly permeable upland soils. The soils formed in clayey residium weathered from shale or interbedded shale and sandstone. Typically, they have very dark grayish brown and dark brown stoney very fine sandy loam surface layer. The upper subsoil is red or yellowish red silty clay loam. The middle subsoil is red or yellowish red silty clay and clay over mottled gray, red and brown silty clay or stoney silty clay. The underlying materials is weathered shale. Slopes are 1 to 45%. The native vegetation was post oak, red oak, white oak, hickory and shortleaf pine. These soils range from strongly acid to extremely acid. They do not flood.

Taft Series (653)

The Taft series of somewhat poorly drained soils have a fragipan. In a representative profile these soils have a pale brown silt loam surface layer 9 inches thick. The subsoil down to the fragipan at a depth of 24 inches is light yellowish brown mottled friable silt loam. The fragipan between depths of 24 and 64 inches is light yellowish brown mottled firm and brittle silt loam. Below the fragipan is mottled firm silty clay loam. Slopes range from 0 to 2%. The native vegetation was mixed hardwoods. The soil is strongly acid or very strongly acid. These is no occurrence of flooding.

Barling Series (675)

A deep, level, moderately well drained, moderately permeable soil. The surface layer is dark brown silt loam about 5 inches thick. The subsurface layer is dark grayish brown silt loam about 6 inches thick. The upper part of the subsoil is brown silt loam above 15 inches thick. The middle and lower parts are mottled dark yellowish brown and gray silt loam. Slopes are 0 to 2%. The native vegetation was mixed hardwoods. These soils are found on floodplains occasionally flooded for brief periods during late winter and early spring. The soil ranges from strongly acid to slightly acid.

Spadra Series (676)

This is a deep, well drained, level to gently sloping, moderately permeable soil on low terraces and alluvial fans. The surface layer is brown loam about 8 inches thick. The upper part of the subsoil is reddish brown loam about 31 inches thick. The lower part is reddish brown fine sandy loam about 13 inches thick. The underlying material is brown sandy loam. Slopes range from 0 to 5%. The native vegetation was mixed hardwoods and shortleaf pine. These soils are medium acid to very strongly acid. Flooding is extremely rare, if it occurs at all.

Leadvale Series (683)

The Leadvale series consists of moderately well drained soils that have fragipans. These soils most commonly are on slightly concave toe slopes and terraces below uplands underlain by shales. In a typical profile, the surface layer is brown silt loam, 8 inches thick. The subsoil down to the fragipan at 23 inches is yellowish brown silt loam. The fragipan, between depths of 23 and 48 inches is yellowish brown mottled, brittle silty clay loam. Below the fragipan, to 58 inches is light yellowish brown mottled firm silty clay. Slopes range 0 to 15%. The native vegetation was mixed hardwoods. These soils are strongly or very strongly acid. Flooding is rare.

Appendix F

Prehistoric Artifact Definitions

by

William A. Martin

Appendix F contains explicit definitions of the terms used in the report to describe prehistoric artifacts. Most of these definitions have been extracted from authoritative sources.

Ax. A symmetrical chipped or ground stone chopping tool with either a single or double, sharp, transverse bit and a groove to facilitate hafting. The single ax found during the Conway project was a double bitted chipped sandstone ax. Axes are frequently associated with Archaic occupations in eastern Arkansas (House and Schiffer 1975:69).

Biface. A chipped stone specimen exhibiting primary and secondary retouch on both sides, covering each surface partially or totally (Tixier 1974:4). The term is a general one that includes several specialized tools such as drills, knives, and projectile points. It has been used in this report to refer to tools with flakes removed from both sides that could not be assigned to more specific categories.

Blade. Flakes with a length-width ratio of at least two to one, and, on one dorsal side, "two or more scars of previously removed blades with force lines and compression rings indicating that force was applied in the same direction as blade detachment" (Bordes and Crabtree 1969:1).

Burin. A tool with a chisel-like working tip produced by removal on the edges of a flake or biface parallel to the long axis and/or transversely or obliquely to this axis. The tip must exhibit wear, and negative bulbs of percussion must be present below the tip on the burin scars. Burins were presumably used to engrave hard material or to groove bone or antler (House and Schiffer 1975:65).

Core (Flake). A stream cobble or tabular fragment of chert or novaculite from which novaculite flakes have been removed in a more or less random fashion in preparation for tool manufacture.

Drill. A symmetrical chipped stone tool presumably used for drilling holes in wood, bone, or antler. It is a specific functional category of pointed biface with narrow parallel sides.

Flake (Unretouched). A specimen of stone (usually chert or novaculite) that has been intentionally detached from a larger piece of stone (usually a core or tool) (Tixier 1974:14). It has relatively flat ventral and dorsal surfaces and exhibits a bulb of percussion (area where struck off of core) and conchoidal ripples. An unworked flake exhibits no systematic removal of small flakes along its edges (Ray et al. 1976).

Flake (Retouched). A flake which exhibits evidence of the systematic removal of small flakes along one or more of its edges. Retouched flakes are believed to have been used as scraping tools (Ray et al. 1976).

Fire-cracked rock. Fragments of chert, novaculite, quartzite, and sandstone that show evidence of having been fired and broken by heat. Identifying characteristics include: (1) no evidence of having been detached by a blow, (2) jagged irregular fracture, (3) pot-lid fractures, and (4) discoloration, usually toward red or black (House and Schiffer 1975:68).

Ground stone. A general category of stone artifacts (usually sandstone in the Conway area) that have artificially smoothed surfaces resulting from an abrasive element. Specific artifacts include nutting stones, manos, and metates.

Hammerstone. A stone specimen that exhibits well defined zones of battering on one or more of its surfaces. Hammerstones are usually rounded and small enough to be wielded in one hand.

Knife. A specific functional category of biface defined as being elongate in form with parallel lateral edges (Ray et al. 1976).

Preform. Bifacially worked stone specimens without well defined working edges and/or areas of use wear on edges or faces. Preforms tend to be thick and somewhat irregular and frequently have obvious flaws in the material that resulted in their being aborted (House and Schiffer 1975:67).

Projectile point. A specific functional category of pointed biface having an elongate form with symmetrical lateral sides, like a knife, but also having a hafting element represented by notches or a stem in the area of the base. Projectile points include all spear, dart, and arrow points (Ray et al. 1976).

Quartz crystal. A crystal of quartz exhibiting the characteristic polyhedral shape and brilliant transparency of a collector's item. These crystals are usually unmodified. Their specific function is unknown, but they may have been used as ceremonial items (Hudson 1976:168).

Spokeshave. A flake with steep unifacial retouch forming a working edge which is markedly concave and may be considered "suitable for the scraping or shaving of narrow convex surfaces" (Goodyear 1974:50).

Uniface. A chipped stone specimen exhibiting primary and secondary unifacial (one side) flaking (Ray et al. 1976). This is a general category, which includes specialized tools such as end scrapers, side scrapers, and spokeshaves. It has been used in this report to refer to tools with flakes removed from one side that could not be assigned to these more specific categories.

Appendix G

Point Type Descriptions

by

Charles M. Hoffman

Afton. This is a medium-large size point with basal notches. The base is usually straight or slightly convex, and the stem formed from notching is expanded. The shoulders are inversely tapered, and the blade form is convex and frequently angular in outline. This point was described by Bell (1958:6) and is common to northeastern Oklahoma and the surrounding region, where it is associated with the Middle Archaic period.

Big Creek. This is a small-medium size point with corner notches. The base is convex and often has a bulbous appearance from its rounded corners. The shoulders are inversely tapered, and the blade edges are convex or straight. This point was described by Morse (1970:21-23) from examples recovered in northeastern Arkansas. Commonly occurring in Arkansas and the surrounding area, this point is associated with the late Archaic-early Woodland period. (See Perino 1971:10.)

Bulverde. This is a medium size point with a straight or slightly expanding stem. The base is straight and rectangular in appearance. The shoulders are inversely tapered, and the blade edges are usually straight or convex. This point was described by Suhm and Jelks (1962: 169) and is associated with the middle-late Archaic period. It commonly occurs throughout portions of Texas, Oklahoma, and the surrounding areas.

Cache River. This is a small-medium-large size point characterized by distinct side notches. The base is straight or concave and usually exhibits marginal grinding. The shoulders are perpendicular or inversely tapered, and the blade edges are convex or straight. This point was described by Cloud (1969:118-119). from examples recovered along the Cache River in northeastern Arkansas. These are early Archaic points which date to 8000 years B.P. and are commonly associated with Dalton points. (See Perino 1971:14.)

Carrollton. This is a small-medium size point with a relatively long straight stem. The base is straight and occasionally exhibits marginal grinding. The shoulders are usually perpendicular, and the blade edges are straight or convex. This point was described by Suhm and Jelks (1962:171) and is commonly found in Texas and the Red River region, where it is associated with the late Archaic-early Woodland periods.

Dallas. This is a small-medium size point with a relatively straight stem. The base is straight, and the haft frequently exhibits marginal grinding. The shoulders are tapered, and the blade edges may be straight, convex, or concave, forming a roughly pentagonal outline. The Dallas point has been described by Bell (1960:24) and commonly occurs throughout the Red and Arkansas River valleys, where it is associated with the early-middle Woodland period.

Dalton. This is a small-medium size point with an auriculate stem characterized by marginal grinding. The base is usually concave and may be fluted. The blade is triangular in shape, and the blade edges are straight and frequently serrated or steeply beveled. This point was described by Chapman (1948:138), and it commonly occurs in Arkansas and the surrounding areas, where it has an early Archaic period association dating from 8000-10,000 years ago. (See Bell 1958:18.)

Delhi. This is a medium-large size point with a straight stem. The lateral stem edges are parallel, and the base is straight and square. The shoulders are inversely tapered or perpendicular, and the blade edges are convex or straight. This point was described by Ford and Webb (1956: 58-60) from examples recovered at Poverty Point, Louisiana, and commonly occurs in this portion of the Mississippi River Valley. It is associated with the late Archaic-early Woodland period and is dated 1300 B.C.-200 B.C. at Poverty Point. (See Perino 1971:22.)

Ellis. This is a small-medium size point with an expanded stem. The base may be straight or slightly convex. The shoulders are either straight or slightly tapered, and the blade edges are convex or straight. This point was described by Newell and Krieger (1949:166-167) and commonly occurs throughout the Mississippi River Valley and Texas. It is associated with the early and middle Woodland periods. (See Bell 1950:32.)

Ensor. This is a small-medium size point with an expanded stem. The base may be straight, convex, or concave and is broad relative to its length. The shoulders are inversely tapered or perpendicular, and the blade edges are usually straight or excurvate. This point was described by Suhm and Jelks (1962:189) and is commonly distributed throughout Texas and Oklahoma, where it is associated with the late Archaic-early Woodland period. (See Bell 1960:34.)

Epps. This is a small-medium size point with an expanded stem. The lateral stem edges are incurvate and the base is straight. The shoulders are usually perpendicular or tapered, and the blade edges are straight or convex. This point was described by Ford and Webb (1956:58) from examples

at Poverty Point, Louisiana. It is associated with the late Archaic-early Woodland period, and commonly occurs in Louisiana, Arkansas, and Mississippi. (See Perino 1971:32.)

Gary. This is a medium size point with a relatively narrow tapered stem. The base is convex and is frequently pointed or rounded in appearance. The shoulders are tapered, and the blade edges are usually convex or straight. This point was defined by Newell and Krieger (1949:164-165) and is associated with the early Woodland through Historic periods. It commonly occurs in Arkansas and is widespread throughout the southwestern United States. (See Bell 1958:28.)

Jacks' Reef. This is a small-medium size point with corner notches. The base is straight, and the stem produced by notching is expanded. The shoulders are inversely tapered, and the blade edges are convex and occasionally angular in appearance. This point was described by Ritchie (1961:26) from examples in New York, although they are also known to occur in the Ohio River Valley and adjacent areas as well. This point is associated with the middle-late Woodland periods. (See Perino 1968:38.)

Jakie Stemmed. This is a medium-large stemmed point. The stem is expanding and the base is concave. The shoulders are slightly tapered or perpendicular, and the blade is convex or straight. This point was described by Marshall (1958:109) from examples recovered in Table Rock Reservoir in southwestern Missouri. These are associated with the middle Archaic period and frequently occur in the northern and western portions of Arkansas.

Johnson. This is a medium size point with a relatively straight broad stem. The base is concave, and occasionally exhibits marginal grinding. The shoulders are usually perpendicular, and the blade edges are excurvate or straight. This point was described by Bartlett (1963:28-29) and commonly occurs throughout the western Arkansas and the surrounding area. It is generally associated with the middle Archaic period, and some evidence suggests an early Archaic association (Bartlett 1963). (See Perino 1968:40.)

Lange. This is a medium-large size point with a slightly expanding stem. The base may be straight, slightly convex, or concave. The shoulders are perpendicular, and the blade edges are usually straight or convex. This point was described by Suhm and Jelks (1962:203) and is associated with the middle and late Archaic periods. Lange points are distributed throughout Texas, Oklahoma, and the surrounding areas. (See Bell 1958:36.)

McIntire. This is a medium size point with an expanded stem. The lateral stem edges are slightly incurvate, and the base is straight. The shoulders are perpendicular, and the blade edges may be excurvate or recurvate. This point was described by Cambron and Hulse (1975:86) and commonly occurs throughout Alabama, Mississippi, and Tennessee. It is associated with the late Archaic period in these areas.

Marcos. This is a medium size point with corner notches. The stem formed by notching is expanded, and the base may be straight or slightly convex. The shoulders are inversely tapered, and the blade edges are usually straight or convex. This point was described by Suhm and Jelks (1962:209) from examples recovered in Texas. It also occurs in Oklahoma and adjacent areas and is associated with the late Archaic-early Woodland periods.

Marshall. This is a medium-large size point with basal notches. The base is usually straight, and the stem formed by notching is straight or slightly expanded. The shoulders are inversely tapered, and the body edge is convex or straight. This point was described by Suhm and Jelks (1962:211) from examples in Texas. These points have also been found in Oklahoma and the surrounding areas, and are associated with the middle-late Archaic periods. Bell (1958:44) observes that these frequently occur with Pedernales points.

Martindale. This is a medium size point with an expanded stem. The base is slightly concave, which combined with the flare of the expanding stem gives this point a "fishtail" appearance. The shoulders are inversely tapered and the blade edges are usually straight or convex. This point was described by Suhm and Jelks (1962:213) and is distributed throughout portions of Texas and Oklahoma, where it has a middle-late Archaic period association.

Morhiss. This is a medium size point with a broad stem. The bone is excurvate and rounded in appearance. The shoulders are tapered and narrow, and the blade edges are convex. This point was described by Suhm and Jelks (1962:221) and is similar to the Adena point (Bell, 1958:4). It is distributed throughout Oklahoma, Texas, and the Mississippi River Valley, where it is associated with the late Archaic-early Woodland periods. (See Bell 1958:58.)

Pedernales. This is a medium size point with a bifurcate base and a parallel or slightly tapered stem. Marginal grinding of the haft element is occasionally present. The shoulders are perpendicular or inversely tapered, and the blade edges are usually convex or straight. This point was described by Suhm and Jelks (1962:235) and is associated with the middle Archaic period, commonly occurring throughout Texas and Oklahoma. Other similar points are also found in Mississippi, Alabama, and Tennessee (e.g., Buzzard Roost Creek, Cambron and Hulse 1975).

Rice. This is a small-medium size point characterized by corner notches or an expanded stem evidencing marginal grinding. The corners of the base are usually rounded, which produces a "lobed" effect. Shoulders are usually inversely tapered or perpendicular, and the blade edge may be convex, straight, or recurvate. The blade edges are also frequently beveled or serrated on these tools. These points were described by Bray 127-128) from examples recovered in Rice Cave. Commonly occurring throughout the Ozarks, this point is associated with the early Archaic period. (See Perino 1968:76.)

Rice Corner Notched. This is a small-medium size point characterized by distinct corner notches with marginal haft grinding. The base is straight or slightly convex, and the stem is expanded. The shoulders are inversely tapered, and the blade edges are usually convex or straight. This point was defined by Marshall (1958:115) from specimens in Table Rock Reservoir and is associated with the early Archaic period. It is common in Arkansas and the surrounding area.

Rockwall. This is an arrow point characterized by diagonal basal notches. The base is straight or slightly convex, and the stem is expanding. The shoulders are inversely tapered, and the blade edge may be straight, concave or convex. Occasionally these points are serrated. This point was described by Sollberger (1970:3-5) and is associated with late Woodland or Coles Creek sites in Arkansas. (See Perino 1971:84.)

Scallorn. This is a small arrow point with an expanding stem. The base may be straight or convex and occasionally has a somewhat rounded appearance. The shoulders are perpendicular or inversely tapered, and the blade edges are straight or convex. This point was described by Suhm and Jelks (1962:285) and frequently occurs throughout the Mississippi River Valley region, where it is associated with the late Woodland-Historic periods. (See Bell 1960:84.)

Searcy. This is a small-medium size point with a contracted stem. The base is usually straight or concave, and the haft is characterized by heavy marginal grinding. The narrow shoulders of this point are tapered, and the blade edges are usually convex or straight. The points were described by Don Dickson (1968:5-7) from examples he recovered in Calf Creek Cave in Searcy County, Arkansas. This point is common throughout Arkansas and the surrounding area, where it is associated with the early Archaic period. (See Perino 1968:84.)

Sequoyah. This is a small slender arrow point with an expanding stem. The base is excurvate and frequently has a rounded or bulbous appearance. The shoulders are perpendicular, and the blade edges are usually straight and serrated. This point was described by Brown (1976:90-92) from examples recovered from the Spiro site and is associated with the Spiro phase, dating approximately 1000 A.D.-1350 A.D. It frequently occurs throughout the Ozarks and portions of eastern Arkansas. (See Perino 1968:88.)

Standlee Contracted Stem. This is a medium-size point with a contracting stem. The base is straight or slightly concave and relatively broad. The shoulders are slightly tapered or perpendicular, and the blade edges are straight or slightly concave. This point was described by Marshall (1958:120) from examples recovered in Table Rock Reservoir, where it is associated with the middle Archaic-late Woodland periods.

Steuben. This is a small-medium size point with an expanded stem. The base is straight or slightly convex, and the lateral stem edges are

frequently incurvate. The shoulders are tapered or perpendicular, and the blade edges are excurvate. This point was described by Morse (1963:54-58) and commonly occurs in Illinois, Missouri, and the surrounding areas, where it is associated with the middle-late Woodland periods. (See Perino 1968:94.)

Stone Square Stem. This is a medium-large size point with a straight or slightly tapered broad stem. The base is usually straight or lightly concave, and its corners are square. The shoulders are relatively narrow and perpendicular, while the blade edges are straight or convex and occasionally finely serrated. This point was described by Marshall (1958:110) from examples recovered in Table Rock Reservoir and is associated with the middle Archaic period.

Talco. This is a small triangular arrow point characterized by recurvate blade edges and a slightly incurvate base. It was described by Suhm and Jelks (1962:289) and frequently occurs in the Caddoan area of Arkansas, Texas, Louisiana, and Oklahoma. The Talco point is associated with the Fulton Aspect, estimated to date around 1200 A.D.-1500 A.D.

Uvalde. This is a medium size point with an expanded stem. The base is pronouncedly concave, and when the lateral stem edges are also, it gives the appearance of a flared stem. The shoulders may be perpendicular or inversely tapered, and the blade edges are usually straight or convex. This point was described by Suhm and Jelks (1962:255) and commonly occurs in Texas and Oklahoma, where it is associated with the middle-late Archaic periods. (See Bell 1960:92.)

Wells. This is a small-medium size point with a relatively long contracting stem. The base is usually convex and rounded in appearance, with marginal grinding often present. The shoulders are narrow and tapered, while the blade edges are straight or excurvate. This point was described by Newell and Krieger (1949:167) and is associated with the late Archaic-early Woodland period. This point commonly occurs in Texas, Oklahoma, and the surrounding areas. (See Bell 1958:100.)

Williams. This is a medium size point with an expanded stem. The base is convex and sometimes has a slightly bulbous or rounded appearance. The shoulders are inversely tapered, and the blade is convex or straight. This point was described by Suhm and Jelks (1962:259) and is distributed throughout Texas, Oklahoma, and portions of the Mississippi River Valley, where it is associated with the middle-late Archaic periods. (See Bell 1960:96.)

Appendix H

Peer Reviews and Responses to the Conway Water Supply Project

Reviews

Michael P. Hoffman

Gordon D. Morgan

James E. Price

William M. Schneider

Elliott West

Responses

William A. Martin

Lawrence Gene Santeford

PEER REVIEW

By: Michael P. Hoffman, University of Arkansas Museum and Department of Anthropology

The Conway Water Supply monograph by Santeford, Martin, and others is certainly the most intensive and extensive contract study that has been made in the central Arkansas River Valley region and is even more impressive when it is considered that it resulted from limited survey and testing. The report has scored Arkansas River firsts with regard to overt research design, sophisticated quantitative analysis, and literate, interesting historical archeology based on documentary, oral, and archeological information. Speaking from the point of view of an archeologist with a lot of interest in culture history I am also excited by the presence of pottery with Coles Creek Incised decoration at the W. S. Alexander site, 3CN117, because the Woodland period is poorly known in that section of the central Arkansas River Valley.

The rest of the comments that I have to make are mainly ones which question the report and are overtly critical. These questions and criticisms do not mean that I think the work is not adequate; on the contrary. If the reader wishes to think of my role as that of a gadfly to the assumptions, methods, and interpretations made in the report, I would not argue.

The Flood Myth. Central to many interpretations in the publication is the assumption of frequent prehistoric floods in the bottomlands of Cypress Creek which precluded year-round habitation of that area. Since this idea is so important to the interpretations of the report it is strange that so little detail is presented about the floods. The several major floods that have occurred since 1927 are listed (page 25), but none before. The nature of the historic floods is also not discussed; was the Arkansas River in flood stage which in turn backed up into Cypress Creek or did Cypress Creek flood alone on the basis of great amounts of rainfall upstream? What evidence do we have of prehistoric floods? Is it not probable that the intensive clearing of the hills in the latter part of the nineteenth century and the early part of the twentieth century allowed unrestricted runoff to create unusual flood conditions? It is ironic that the authors criticize propinquity theory when they themselves make the assumption that recent river conditions were paralleled in prehistory. What would be evidence of prehistoric floods? To my mind the presence of prehistoric occupation zones with alluvial flood deposits both below and above them would be important. But that would still leave the question of frequency and predictability unsolved. It is also unfortunate that the historian did not include information on historic floods in her chapter on the history of the area.

The "flood myth" builds on itself and evolves during the course of the report. The initial discussion of floods (page 25) indicates flooding of variable magnitude does occur every year, mostly in the spring but not every year in the spring. Later in the report floods have escalated and preclude bottomland occupation (which) "occur annually in the late winter and spring." A few charred nuts and faunal remains are used to suggest a summer/fall seasonal occupation of two Woodland period bottomland sites and it is indicated that terrace edge sites have no evidence indicating seasonality. This latter statement is contradicted by hickory nut shells at 3CN64, a terrace edge site.

Although the authors suggest that flooding discouraged year-round habitation of the bottomland by Indians the possibility of widespread flooding seems to have inhibited historic non-Indians less since both a mill and a church were located on the floodplain. Perhaps the worshippers thought the adage, "never on Sunday" referred to floods.

I suspect that recent research in the Felsenthal Basin by the Arkansas Archeological Survey where pervasive seasonal annual flooding does preclude human occupation influenced our authors. However, Cypress Creek is not the Ouachita River.

It is possible that prehistoric flooding was regular and important for the settlement pattern of Indians in the study area but the data to confirm this have not been presented by Santeford and Martin.

Vapid Hypotheses. Well constructed research designs are fundamental to modern archeology and have been a major development in the last 20 years in the field of American archeology. However, overformalization of such designs causes terminological awkwardness and rigidity. I think that the research design for the Conway project suffers from these defects. The four research "problems" listed on page 92 are not problems at all but categories from which problems can be drawn. Later in the conclusion of the report these are correctly called "problem domains." Much of the information supplied in the early part of Chapter 5 under Problem Orientation and Data Base Limitations and Archeological Models and Theoretical Orientation, is a formula based recitation of noble and profound archeological truths which may have been de rigueur in the decade of the 1970s but seem unnecessary to recite now. Incidentally I would add culture change as one of the problems most commonly addressed in archeological studies (page 86).

I am most distressed with some of the "hypotheses" of the design which seem to be attempting to test truisms or broad generalizations [illegible]. For instance "Problem" I: "Hypothesis" 1 states that "prehistoric site locations were chosen on the basis of proximity to exploitable resources" which at best is not a very scientifically risky hypothesis. Why not consider that statement as a covering law or lawlike generalization and bring the

hypothesis down to something specific like proximity to water was a major determinant of habitation sites? Then test implications could be postulated on a more specific level.

Hypothesis 2 of problem I (page 95) really incorporates several separate hypotheses, some dependent on each other, and should not be considered a single hypothesis. The "dichotomous settlement pattern" term is misleading since if an archeologist categorizes the environment into only two categories (upland and bottomland, terraces and alluvial flat), then the presence of sites in both localities is not too surprising. If there were a variety of possible topographic environments for site locations possible and only two types were chosen then that would be a real "dichotomous settlement pattern." The second hypothesis in hypothesis 2 is that a seasonal round accounts for some sites in the bottomlands and some sites on terraces. The third part of the hypothesis is that seasonal flooding was the culprit responsible for the yo-yo effect. There are just too many variables in hypothesis 2 of problem I to consider the test implications of all of them.

Another hypothesis empty of much significance is hypothesis 1 of problem II, that "the Conway project area was inhabited during all major periods ranging from Paleo-Indian through Historic." Whooeeee!, what a bold, profound statement! The deductive, hypothesis testing approach is most stultifying here. In problem IV, the lithic resource procurement hypotheses are interesting but again the rigid deductive framework is limiting. It could have been observed from the previous surveys in the area that there was indeed an unequal use of Boone chert, Pitkin chert and novaculite and then multiple hypotheses with accompanying test implications drawn up as part of the research design. Different workability of the materials is indeed one of the explanatory hypotheses. Another hypothesis that might account for lesser amounts of novaculite as opposed to Pitkin chert is that the Arkansas River acted as an obstacle for the movement of large amounts of lithic materials northward. The distribution of novaculite in the Ozark Reservoir seems to imply that for novaculite, debitage was much more common on the south side of the river (Hoffman 1977). At times sociopolitical boundaries or hostilities might explain such variation also. An archeologist in the future might be faced with explaining 1979-80 percentages of caviar in the United States (Russian, domestic, and Iranian) and discover that the Iranian amounts are few, less than in the past. Hopefully, one of the working hypotheses to explain the distribution would be political boundaries and warfare.

In this section I am not arguing against research designs or even deductive-nomological approaches. I am arguing for flexibility, and less grandiose but region-specific meaningful hypotheses or goals.

Projectile Point Typology. The procedures and results of the typing of projectile points used in the report bother me. In Ford-Phillips-Griffin-Williams tradition, cultural-historical types are defined on the basis of morphological similarity and limited chronological and spatial distribution, not as is indicated on page 105 by having a morphological category which has no spacial boundaries and a time span which you plug in only after your point type has been defined. The incorrect attitude in this study has apparently resulted in the use of the published point guides like collectors use them--by turning the pages, looking at the illustrations, and matching what you have and then using the usually misleading information on time and space that is contained within them. The most useful study which defines chronological sensitive point types and varieties from an adjacent region, the mid-Ouachita region, is Frank Schambach's dissertation (1970) which is missing from the bibliography and presumably was not used. To some extent working with cultural-historical types like polities is "the art of the possible" and takes a great familiarity with the region and subarea under study, a critical comparative study of the contexts of point (or ceramic) styles in other sites and regions and a knowledge that in spite of morphological similarity some types are just not appropriate outside of the region in which they were defined because they have different time frames. Another good example of a misleading use of typology comes in the classification of certain grog-tempered sherds in the Pine Mountain Reservoir as "Baytown." Baytown and Williams Plain are very similar plain pottery types with quantitative shape frequencies the most important characteristic for differentiating them. Williams Plain was defined in an area less than 100 miles from Pine Mountain, while Baytown Plain was defined much farther away. Calling plain body sherds Baytown in the Pine Mountain context hundreds of miles from other sherds which have been classified as Baytown is naive. To a reader who does not realize the naivete of such classification, trade from the Mississippi Valley may be implied.

Terminological Quicksand. The authors do a fairly successful job of tiptoeing through conflicting perspectives on "archeological culture" terms in the state and region but awkward hyphenated expressions like Coles Creek-Fourche Maline result (page 44). The conflicting perspectives, of course, involve individuals, namely Dr. Frank Schambach of the Arkansas Archeological Survey and Dr. Michael P. Hoffman of the University of Arkansas, Department of Anthropology and Museum in Fayetteville. At issue, besides egos and emotions, is the appropriateness of archeological culture terms first used in the Lower Mississippi Valley such as Marksville and Coles Creek, in the "Trans-Mississippi South" (Schambach 1970). The Fourche Maline culture is a basic long-lasting Woodland period manifestation. Schambach believes that the Fourche Maline continuity is pervasive and the term should be used for sites and phases in the Trans-Mississippi South which have ceramic decorative or other stylistic ties with lower valley cultures. Hoffman, on the other hand, has emphasized

the stylistic ties with lower valley manifestations by using the terms Marksville and Coles Creek cultures in his Arkansas Caddoan area writings. I am ready to say that it is probably more useful to think of Arkansas Gulf Coastal Plain Middle Woodland period mound sites like Shane's Mound as Fourche Maline. On the other hand I am more reluctant to abandon Coles Creek as a meaningful handle to certain occupations at Crenshaw, Spiro, and Toltec. These terms are well established in the literature and I am not sure that it will be more useful to call them something else. Rolingson, interpreting the Toltec site, has waffled between using the term "Coles Creek culture" and naming a new "culture," or better, "culture of the month" since several tentative terms have been used. Personally I believe that such disagreements present false problems and are not worth pursuing very far. In the Willey and Phillips (1958) paradigm for doing culture-history, the building of local and regional sequences is basic and archeological cultures are not. Archeological "cultures" probably had no reality emically to the ancient people involved nor are they very helpful to culture-historians. However arguments between champions of conflicting terminologies do serve to galvanize adrenalin and hate-stares among diehards of that endangered species of archeologists who slavishly follow Willey and Phillips uber alles.

As I indicated I think the authors do a pretty good job of dealing with the conflicts, mainly by hyphens. However, for example, attempting to separate Coles Creek and Fourche Maline characteristics at sites like the W. S. Alexander site is folly since there is no agreement as to what is meant by the terms (page 45).

Some things I liked. Chapter 3, A Summary of Conway County Archeology, is not a bad job. It is somewhat bland, containing more general than specific information. Minor additions could have been the following:

Page 31. Agents for Cyrus Thomas (1894) did the earliest archeological work reported in the Arkansas River Valley rather than Clarence Moore.

Page 33. Archeological contributions in the Arkansas River Valley omitted include an important paper on pottery (Dellinger and Dickinson 1940), an Arkansas Archeological Society dig at the Point Remove site (Davis 1967) and an M.A. thesis by Clell Bond (1977).

Pages 37 and 39. Climatic theories by James Quin have been influential (however wrong) in recent articles and books (Sealander 1979; Foti 1974). These should be discussed.

Page 43. Silicified siltstone is now a more generally accepted term for what Hoffman and Bond had previously called argillite.

Page 45. The Dickinson and Lemley reference in its original form was not published in 1967.

Page 46. McGimsey's 1969 perception of late shell-tempered ceramics north of the Arkansas River and clay or bone-tempered pottery south of the river is dated and incorrect. Also in the late prehistory of the western part of the Arkansas Ozarks the archeology appears to relate to the Caddoan culture, not to classic Mississippian. This fact contradicts the generalization made on page 46.

Except for the first paragraph under Goals of Archeological Survey in Chapter 5, Methodology and Results of the 1979 Conway Survey and Testing Program, I thought the chapter was well done. Apparently the paragraph in question was drawn from King (1978) so perhaps I am criticizing him. In the Southeast and Midwest, at least, late nineteenth and early twentieth century archeological survey was geared to finding burial sites with grave goods rather than deeply stratified sites for the studying of changes in artifacts through time as is indicated in the Conway report. Ask C. B. Moore and Warren King Moorehead! Either King or the authors have their periods mixed up. Beginning with James Ford in the late 1920s and early 1930s, goals and reports documenting culture change became important. Ask Phillips, Ford, and Griffin!

The few other questions I have in the chapter are minor:

Page 68. Did the sampling take into account buried sites on the floodplain by coring? If not, why not? Are generalizations concerning the occupation of the floodplains made without such investigation reliable?

Page 82. Under this discussion of the Don Scroggins site, the following sentence does not follow, "Due to the transitional nature of the Coles Creek culture, bifaces from the site may actually be cutting tools rather than projectile or spear points."

I am a little concerned that the methodology of work during the survey and testing did not have as an explicit goal the seeking out and photographing of amateurs' collections. Using such collections seems to have been done only on a chance basis. I think any survey that does not make an effort to contact amateurs may be missing a lot.

Chapter 6: Interpretative section. I thought this section of Chapter 6 was straightforward and well done but I have to admit to having little expertise in the type of quantitative analysis done.

Chapter 7: Log House Society. I thought that Chapter 7 was the most interesting and innovative one in the report because it successfully combined archeological data, information from documents, scholarly comparative studies of material culture and nineteenth century sociology and economy, and oral information from informants. It was very easy reading and presented data and generalizations with inductive smoothness instead of through jerky deductive formulae. Other peer reviewers are more qualified than I to comment on the substantive content of the chapter.

Miscellanea. These comments are not very important and/or trivial and are aimed at specific pages:

Page 28, Chapter 1. Fish species in the region which may have been of some importance to the Indians and should be mentioned include suckers, grinnel and crappie. Waterfowl such as geese, ducks, herons, egrets, and water turkeys should be included in the faunal resource description. Also (page 29) I bet wildcats are still in the area.

Page 50 in Chapter 4, history of the area. Does the statement that land was undesirable near the Indian land reflect the racism of nineteenth century Arkansans or of twentieth century historians?

Page 87, Chapter 6, Research Design. Gary points began to be manufactured in the late Archaic rather than the early Woodland.

Page 97, Chapter 6. The term "remote" is very easy to apply in an ethnocentric way and if one uses the word remote uncritically. It is an easy thing to fall into the trap of using culture-lag as an explanation.

Conclusions. I repeat my earlier statement that the Conway report is the best cultural resource management report in the Arkansas part of the Arkansas River Valley that has been produced to date. It is an orderly scientific document that fulfills both the requirements of the contract as well as addressing itself to archeological questions of varying significance. I have criticisms but most of them go beyond the report itself and are related to the research mileu in which the authors worked. I object to the confining deductive-nomological approach in this research design (certainly not in all situations or reports) as stultifying, particularly when so little is known of a region (like Cypress Creek) that hypotheses are vapid truisms. Likewise, I believe that if culture-historical artifact typology is to be done it should be done more critically by persons very familiar with the details of the archeology of the area and nearby areas. The authors do a good job of avoiding some of the false problems implied by conflicting terms for archeological cultures in Arkansas.

Finally, and this is a criticism directed specifically at the Conway report, I remain unconvinced by the data presented on the prehistoric importance of flooding for human settlement on the lowlands. Seasonal round proposals which assume flooding should be regarded at best as tentative. Catastrophism as a respectable explanatory mechanism in science may be resurgent but so far I am unconvinced of its importance in Cypress Creek prehistory.

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PEER REVIEW

By: Gordon D. Morgan, Department of Sociology, University of Arkansas

I am very much impressed with the high quality of workmanship and attention to technical detail this report exhibits. It is evident that considerable training is required in various phases to competently carry out such a survey. If a special format is required and that certain questions be answered, I believe the process yields information which will, upon further analysis, become the foundation for more useful reports which will enhance understanding of the impact area.

Throughout the study one becomes more knowledgable about the prehistory and archeology of the area and the state. Such information enables a better location of the site into a larger perspective. It is thus seen as less isolated as a problem.

On the other hand, it is possible that the report is too technical. Failure to reduce it to terms understandable to a larger public may be one of its major drawbacks. Citizens might complain that it is purposely written in an undecipherable language so as to hide the true impact of the proposed change upon their lives. In its present form the report can only be placed in a file or on a shelf and never again referred to. I believe it would be better if such a report were written in less technical language and made available at least within the impact area. Perhaps there could be a period of time during which local people could react to it and suggest appropriate changes. In its present form the appearance is given that the report is written mainly in terms of the needs of the Corps of Engineers.

Although this is obviously a report of great technical competence, there might be the criticism that some material is repetitious. Much of it is not new, such as the general behavior of the Indians which inhabited the area before they were removed. Is not such information already a part of the standard offerings on Indians of the Arkansas, Kansas, Missouri, and Oklahoma area? Also, many scientific names of animals, plants, and minerals make the report unweildly.

I was happy to see the social reports on the proposed impacted area. But it is not clear what the people think about being impacted. Nor is there any suggestion about how they might contest decisions which might go against them for loss of land or livelihoods. There seems to be no statement of alternative site feasibility for the citizens affected or for the project itself.

From the report itself it is difficult to tell the attitudes of the residents toward the proposed project. Are they clearly apprised of their options, losses, and potential gains from the project? One can ask, fairly, can land or resources be appropriated from one group for the benefit of another, even legally, without proper concern for those most adversely affected.

In conclusion, this seems to be a very thorough technical report. My criticisms are mainly regarding its format and language which may limit its usefulness to those in the project impact area for they probably do not have the technical background to understand it.

PEER REVIEW

By: James E. Price, Center for Archaeological Research, Southwest Missouri State University

This peer review is based on an assessment of the report generated by the investigators on the Conway Water Supply project. It is based on two major criteria. First, does the report fulfill the requirements of the scope of work thereby making it a document for informed cultural resources management by the Army Corps of Engineers? Second, is the report of professional quality with a sound theoretical base and an adequate presentation of substantive data?

After a thorough examination of the report I find that in general it adequately addresses all mandates of the scope of work and that it is a report of superior quality. It appears that acceptable survey and testing procedures were rigorously employed and that the project was logistically well structured with clear and consistent goals in mind. Sites are well described and appendices list all data necessary for realistic management decisions.

I am particularly encouraged that historic resources received equal treatment relative to prehistoric resources. This is often lacking in such reports. Chapter 4 on the general history of the region provides an adequate background and Chapter 7 provides a more project specific and detailed description of the historic resources and the role they played in both the natural and socio-economic environments in the historic past. House styles, room arrangements, settlement and subsistence strategies, and other facets of the historic lifeway are important considerations in understanding past culture process in a region. Fortunately, informant interviews played an integral part of the research strategy so that much site specific data were collected that lie beyond the realm of archeological visibility.

I find in general that the report reflects a project executed with a sound theoretical base. Goals were outlined and a problem oriented research design was formulated and executed. The field and laboratory research apparently closely adhered to the research design and a well structured project and report resulted. The data presented in the report well document the sites and I am sure that the report will long serve as the basic background document or data base for the archeology of the Conway area.

I find one inconsistency or at least what I view as an inconsistency. The research design consists of five questions concerning settlement pattern, culture history, site function, procurement of technical raw materials, and procurement of biotic resources. In

the conclusions of the report, relevant to the above questions, it is pointed out that often insufficient data had been collected to adequately answer these questions. Obviously the questions deal with subjects that demand data from a wide range of site sizes, cultural affiliation, content, and location. Therefore I assume that in order to answer these questions a broad range of data is needed from a broad range of sites. The mitigation plan does not reflect this. One would anticipate that to fully develop the data producing potential of both the prehistoric and historic cultural resources and adequately mitigate the adverse effect of the proposed undertaking on these resources that a representative sample of sites would be excavated and studied in detail. On page 11 it is stated that three major criteria were used to determine National Register eligibility, these being degree of disturbance to a site, preservation of features, and a site's potential to provide important information on prehistoric and historic cultures in the area. While these are acceptable criteria it appears that a very biased sample of sites were selected for National Register eligibility, hence mitigation, out of a wide range of site types available. For example, 3CN107 appears to be a single component Archaic site that yielded a substantial amount of cultural material. If it is an isolated single component site would it not be worthy of further investigation? Single component sites are generally the exception rather than the rule as reflected in Table 6, page 106, and certainly have the potential to produce additional data relevant to several of the research questions. The same applies to many of the historic resources out of which one was selected for mitigation. It appears that the mitigation plan does not reflect fully the research questions. Admirable questions have been asked and the needed data categories defined to answer them and it is determined that the Phase II testing did not generate adequate data to answer these. One would assume that these would be answered in the mitigation stage but an apparent biased selection of sites to receive mitigation will preclude ever answering most of these questions adequately in the Conway area.

PEER REVIEW

By: William M. Schneider, Department of Anthropology, University of Arkansas

This report is quite impressive both with respect to its stated objective or providing the Corps of Engineers with required data and analysis and also as a professional anthropological presentation and analysis of the data.

The stated objectives of the report (page xiii) are clearly met and, for the most part, lucidly presented. The cultural resource base of the project area (objective 1) and the methods employed to determine it are described and detailed in the eight chapters which are the essential core, as well as the bulk, of the report. Chapter 7, "Initial perspectives on 'log house society' in the Cypress Creek basin, Conway County, Arkansas" deserves special comment. This is a most interesting example of the use of archeological data (with the aid of historical sources) to construct a picture of a sociocultural system which has long since disappeared. Of particular importance is the use of the archeological data to correct some mistaken impressions many of us might have held about the relative social and economic position of Blacks in a rural area of upland Arkansas in the late nineteenth and early twentieth centuries. The relatively affluent position of the McKindra family, owners of a "fragmented plantation," certainly adds a dimension to our understanding of this society.

Other aspects of the data from the historical period also merit brief comment. The presentation of data on house form and other material remains is well done. However, the report might have benefited from further effort to extrapolate from the material remains, particularly house form, to the nature of social interactions that took place on the sites, which were presumably reflected in the material remains on the sites, and were perhaps determined, to some extent, by the material remains on the site. This criticism probably reflects my own sociocultural, rather than archeological, orientation. Chapter 4 on the "History of the Cypress Creek basin area, central Arkansas" is some help in this regard.

The prehistoric archeology of the area is clearly presented in the context of what is known about the prehistory of the eastern United States. Chapter 3 summarizes the prehistory of the eastern United States and discusses previously excavated sites in Arkansas and neighboring states that illuminate sites found in the Conway project area. Sites found in the project area are described in some detail. The only substantial criticism I would make of the presentation on the prehistoric materials is that this section is written too much for the professional anthropologist and too little for the lay audience. With very little more effort this could make fascinating reading for all audiences.

Chapter 2, "Environmental perspectives of the Conway Water Supply project area," provides a useful backdrop against which to evaluate and understand the cultures, prehistoric and historic, of the project area. Chapter 6, "Research design, analytical methodology and interpretation of prehistoric data," struck this reviewer as unnecessarily precise, almost precious in some of its formulations of hypotheses and test implications. Hypothesis 1 under "settlement patterns," "Prehistoric site locations were chosen on the basis of proximity to exploitable resources" and test implication 3 under this hypothesis, "Specialized activity sites should occur in areas which are situated both near and far from water" are cases in point.

But these are all minor quibbles. The monograph is a fine piece of work.

PEER REVIEW

By: Elliott West, Department of History, University of Arkansas

From the point of view of an historian, two sections of this archeological survey--the history of the Cypress Creek basin area in Chapter 4 and the comments on log cabin society made in Chapter 7--are especially interesting and significant. Although each of these sections has its limitations, in general they achieve their objectives. Together they make an important contribution to the report as a whole.

Chapter 4 seeks to provide an historical survey of the Cypress Creek basin area of central Arkansas. Such a summary should provide a context for the descriptions and comments on excavations of the cabin sites found later in the survey. With some exceptions, this chapter succeeds in this task. The author, Beverly J. Watkins, consults reliable secondary sources in sketching the advance of the American frontier into Arkansas and the effects of the Civil War and Reconstruction on this area. She also has made an admirable effort to exploit public records, such as those of the Post Office, Bureau of the Census, county tax office, and Department of the Interior, in filling in the local history of the region. Her work is factually accurate, with a couple of minor exceptions; the cotton gin was invented in 1793, not in 1783 as stated on page 50, for instance.

If this chapter can be criticized, it is not for what it says, but for what it does not say. The region under consideration remained overwhelmingly rural, a land of small farmers. Watkins does indicate the kinds of crops grown and the extent of their production. Farmers concentrated upon the cultivation of corn, wheat, oats, and sweet potatoes; throughout the period, cotton remained a relatively minor part of the economy. However, the author would have done well to relate this agricultural profile to the information on soil, geography, and climate in Chapter 2, and to landholding patterns and the size of farms. These points are not as minor and peripheral as they might seem, for other studies of the southern frontier show that such information can reveal much about a region's social makeup and life style. A brief discussion along those lines, therefore, probably would help introduce the material in Chapter 7. In the light of one of the more interesting findings of Chapter 7, furthermore, some information on race relations in Conway County also would have improved the introductory section. If the main influx of free blacks into the area came between 1880 amd 1900, what was the apparent attitude of local whites to this immigration? Evidence of racial tension, or the lack of it, would throw additional light upon the success of the McKindra family of freedmen discussed in Chapter 7. Admittedly, this kind of information often is difficult to obtain, but Watkins

might have exploited oral history sources more completely for any memories of the nature and tone of race relations. At least one Conway County newspaper, the Pilot, has survived for part of the time under study (1890-1894); a survey of its issues might have uncovered something on this important topic.

Aside from these relatively minor criticisms, I believe this section provides a good general introduction to the history of the Conway County area. It allows the reader to put in a better perspective the discoveries and conclusions later in the report.

In the more extensive and ambitious Chapter 7, the historian can find much of interest. The interdisciplinary techniques of the author, Lawrence Gene Santeford, are particularly noteworthy. He has combined archeological investigation, a survey of the most pertinent secondary historical sources, and a study of oral traditions to provide a view of log house society that is remarkably complete, given the difficulty in researching such a topic. His approach can serve as a model for other similar investigations.

Santeford's section on "Material Objects of Rural Cultures in Central Arkansas" (page 158ff) also illustrates productive methods of research in social history. Perhaps because many historians consider the study of material cultures antiquarian, this type of investigation has been among the most neglected in the profession. However, the study of artifacts, especially when combined with other evidence and put into the context of larger historical developments, can add much to our understanding of social history. A good example here is provided by the discussion of the lack of artifacts found dating from the period before 1880. The author argues convincingly that the coming of the railroad introduced a greater quantity and variety of goods. Although local residents continued to occupy log houses, the railroad reduced their isolation and contributed to a rising standard of living. As more and more items were discarded and replaced rather than being repaired and recycled, a more complete archeological record was left for future investigators. This sort of analysis gives specific and concrete meaning to the common generalization of the positive impact of improved transportation on the pioneer.

On the basis of his innovative research techniques, Santeford has provided some intriguing conclusions regarding the local history of the Conway area. Through his examination of various notching types and the use of pier construction of houses, for example, he both demonstrates the survival of eastern methods of home building and also shows the pattern of migration of pioneers into this part of central Arkansas. This sort of evidence, furthermore, coincides nicely with data from informants. For the student of

frontier migration, these findings provide a clear example of the importance of Pennsylvania and the western Carolinas as a source of settlement of the Gulf Coast and lower Mississippi Valley.

Based on the same combination of archeological evidence and oral history, Santeford concludes that a family of black freedmen, the McKindras, were able to purchase land and establish a "fragmented plantation system," which included five black sharecroppers. This accomplishment placed the McKindras an economic notch above the white families studied in the region. This discovery challenges some of the easy generalizations of this era and raises some intriguing questions. Most scholarly attention to black migration after the Civil War has focused upon the "exodusters" who fled the South for the farmlands of the Great Plains. What of those freedmen who moved to new lands and opportunities within the South? The telling of their story might well add important dimensions to the history of black Americans and of the southern frontier.

The conclusions put forward on pages 194-195 of this report are clearly stated and seem amply justified by the evidence presented. To the extent that they suggest new perspectives on the southern frontier as a whole--for instance, revision of the effect of transportation on log cabin society and a new view of the freedman on the frontier--these conclusions must, of course, remain speculations until they are tested further. Certainly, however, the work done in the Conway area should encourage other similar investigations. The techniques employed here can be applied productively elsewhere. The results of Santeford's efforts argue strongly for the excavation of the Wilder House site recommended in Chapter 9.

In short, the historical investigations described in this report are commendable for their imaginative techniques, for the specific information they contain, and for their encouragement of future research and excavation.

RESPONSE TO PEER REVIEWS

By: William A. Martin, Arkansas Archeological Survey

This response is directed toward those reviews which dealt with various aspects of the prehistoric research, since most of my input was restricted to the formulation of the research design, methodology, analyses, and results for the prehistoric investigations. Specifically, the reviews submitted by Drs. Hoffman and Schneider are addressed.

First of all, I was pleased by the overall appraisal of the report as a valuable contribution to the understanding of Arkansas River Valley history and prehistory. Both reviews were presented in an objective manner, and I appreciated the thoughtful comments and forthright critiques of the major issues. The criticisms leveled against the report are valid in some cases, but are totally invalid in others. The report was not specific enough with respect to some aspects of the methodology, which caused the reviewers to assume that some inadequacies existed. Each criticism is addressed below.

Dr. Hoffman believed that the methodology overlooked the examination of the collections owned by amateur archeologists. Little mention was made of the aspect of research in the report, but in fact several amateurs were consulted and their collections were photographed. In fact, amateurs provided invaluable information regarding the locations of sites, the presence of springs, and the kinds of material collected from sites. Many of these same informants also provided information about the dimensions and construction of the historic structures discussed by Santeford.

Dr. Hoffman also criticized the procedures used to type projectile points. This criticism was based on the belief that morphological characteristics of points were the sole means of classification, without regard for spatial and temporal boundaries. This belief was created by my omission of reference to spatial and temporal boundaries. The Arkansas Archeological Survey laboratory staff does not use published point studies in the way implied by Dr. Hoffman. Several published studies are examined for comparison of morphological traits, but areal distribution and time frame are always considered before any attempt is made to classify a point.

Both Dr. Hoffman and Dr. Schneider were critical of the style in which the research design was written. Dr. Schneider thought that it was "unnecessarily precise" and too difficult for the lay audience to follow. I agree that it is somewhat difficult for a nonprofessional to comprehend the issues discussed in this section. I attempted to write the report in a manner that could be understood by a general audience, but it was important to communicate with a professional audience by means of

technical terms as well. It was not possible to simplify every concept discussed. To do so I would have had to include an introduction to anthropology and archeology at the beginning of the chapter. As for being unnecessarily precise, it seems only appropriate that a technical report should contain information that is as precise as possible. If the methodology and reasons behind that methodology are not clearly stated in a report of this nature, they will not be stated anywhere.

Dr. Hoffman thought that the chapter suffered by following a rigid nomological-deductive framework. Why try to state specific hypotheses and test implications when there isn't enough known about the area to do so? He criticized the hypotheses as being formal statements of general laws and not specific enough to have significance. This criticism seems valid for the most part. When I wrote that "the Conway project area was inhabited during all major periods ranging from Paleo-Indian through Historic," my own comment was much the same as Hoffman's "Whooee!" For the sake of consistency I felt compelled to place every concept discussed in the results section into a hypothesis/test implication framework in the research design. The result, as Hoffman stated, was stultifying in this case.

The framework of the report was designed so that one could read a set of hypotheses relating to a problem domain in the research design section and easily find a reference to the same problem domain in the results section. An attempt was made to relate the results directly to the hypotheses. I believe that even though some of the hypotheses could have been more carefully thought out, the basic concept of this organizational strategy is useful. I've read many technical reports in which the research design loosely states some problems to be addressed and the results section rambles on without clearly stating the relationship between the two. It is difficult to review such reports because the goals were never explicitly stated in an organized framework. I believe that the organization of the Conway report is preferable, even though it has some shortcomings.

Finally, I would like to address the "Flood Myth". Hoffman states that the authors have overstated the case for flooding and seasonal round occupation based on the limited evidence collected during the survey and testing program. This would be a valid criticism if the authors had stated that they had conclusively figured out the prehistoric settlement system of the Cypress Creek basin. However, they only suggest that the limited evidence permits this interpretation as a hypothesis which can be tested by more thorough excavation. Floodplain sites (one with evidence of floodwash between successive occupations) were found as were terrace edge sites. The evidence for seasonality is meager, but the possibility of seasonal occupation exists and it should be tested during subsequent investigations.

In conclusion, the Conway Water Supply has its share of faults. These faults have been clearly stated by Hoffman and Schneider, and their comments are appreciated. Hopefully, my future reports will avoid the pitfalls of overformalization and rigidity, thanks to their suggestions.

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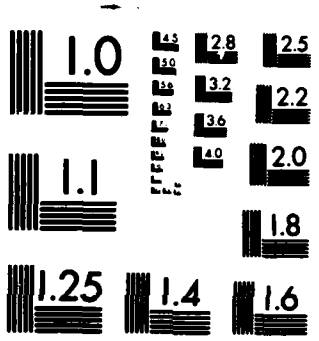

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RESPONSE TO PEER REVIEWS

By: Lawrence Gene Santeford, Arkansas Archeological Survey

The statements presented here are directed toward peer comments on both prehistoric and historic archeological research in the Conway Water Supply project area. The comments were particularly instructive and valuable since a sociologist, historian, and cultural anthropologist were approached for their views in addition to two archeologists (one with particular emphasis on prehistoric sites and the other with focus on historic sites). More than 30 years ago, Taylor (1948) devoted considerable discussion to assessing whether archeology was anthropology or history, concluding that it was a methodology applicable to many fields. The research that was conducted in Conway County, as well as the opportunity to solicit comments from colleagues in various fields, provided an opportunity to determine how adequately this archeological research was fulfilling the needs of professionals in fields other than anthropology. In other words, have archeologists made strides toward meeting the proposals made by Taylor, or have we continued to ignore the needs of our colleagues? If the latter is the case, what sorts of information do they require and how can subsequent research be designed to remedy our current failures?

I would first express my gratitude to the reviewers for their positive opinions of the report as a valuable contribution to the understanding of Arkansas River Valley prehistory and history. Since a number of the reviewers have worked in that area they are well versed with the inadequacies of previous research in that region. Because their responses are individually unique, attention is given separately to each peer review in this commentary.

Comments on the Gordon D. Morgan commentary

Dr. Morgan states that "it is possible that the report is too technical." I would concur that much of the data contained within the Conway report is not understandable to the larger public. Dr. Morgan has touched upon a problem that has been addressed by such archeologists as Dr. Brian Fagan, Dr. James Deetz, and others. That is, what is the responsibility of the archeologist in terms of dissemination of archeological information to the public? Archeologists often find themselves in a position from which they must attempt to provide information for many needs. The primary objective of the Conway report was to summarize information on survey and testing in which selected sites would be tested for significance. Based on this testing, a plan of mitigation was developed for cultural resources deemed eligible for nomination to the National Register of Historic Places. Since federal

agencies would review the summary of the testing that was conducted, it was necessary to insure that the report was thorough. In this regard, Dr. Morgan is correct in stating, "In its present form the appearance is given that the report is written mainly in terms of the needs of the Corps of Engineers."

As a result of the work that was conducted, it was recommended that four sites should be excavated more completely in order to collect information. The information contained in the Conway report will be utilized in subsequent research to analyze data from these sites. Since archeological sites are nonrenewable resources (i.e., once they are destroyed by the archeologist or a machine they can never be studied again), the archeologist is obligated to preserve information on excavation techniques, distribution of artifacts, and other aspects for those professionals using the report for subsequent research. As stressed above, since the archeologist is attempting to provide information for diverse needs, a report can appear too technical. The public is unfortunately overlooked in the process. The Arkansas Archeological Survey has attempted to remedy part of the problem by providing information on television and radio and in newspapers. In addition, public lectures have been presented to local groups and we have attempted to work closely with the Arkansas Archeological Society, a group of amateur archeologists, in giving presentations and contributing to the newsletter of the society.

Dr. Morgan also gives attention to the social impacts of the project. Such work would require extensive time and assessment of much data and would generally be beyond the expertise of most archeologists. An evaluation of the social, economic, and other impacts of the Conway project is part of the larger impact assessment studies conducted by the U.S. Army Corps of Engineers for the project.

Comments on the Elliott West commentary

Dr. West has commented favorably on our proposal that the coming of the railroad introduced a greater quantity and variety of goods. As a result there was reduced isolation of the rural population and a rise in the standard of living. I would stress that these comments still remain as hypotheses. Subsequent archeological and archival research will be necessary. In this regard, the sites in the project area cannot be treated as isolated cultural resources. It is necessary to fit individual sites into the economic environment of their time in order to develop broad patterns of socio-economic interrelationships. The Conway report demonstrates this attempt at an elementary level. It is hoped that this report can be used as a model for collecting information on other historic sites in order to deal with broad patterns. For example, the town of Lewisburg, outside of the project on the Arkansas River, was the commercial center of the area previous to the construction of the railroad. With the coming of rail service, Morrilton (much nearer the project area) developed after the 1870s.

As Dr. West points out, archeological evidence and oral history focusing on black freedmen in the region provides new perspectives for future research. Oftentimes the information derived through excavations not only supplements the written documents but also challenges statements that have been accepted in the past. Due to the scope of the project it was not possible to explore the many problems that could have been dealt with through examination of newspapers and other published documents. Dr. West suggests that newspapers from the period may have been examined to survey issues on the nature and tone of race relations. He also recommends additional use of oral history sources. I concur with Dr. West's comments, maintaining that an unbiased examination of many sources of information will perhaps provide an accurate interpretation of actual behavioral patterns. While archeological remains provide perhaps one of the most unbiased resources, interpretation of the data remains sterile unless the archeologist directs his research toward viable problems.

Comments on the William Schneider commentary

I agree with Dr. Schneider that the report would have benefited from "further effort to extrapolate from the material remains...to the nature of social interactions that took place on the sites..." Due to the nature of the level of work conducted at this phase of the project (i.e., testing), it is believed that not enough sites were thoroughly examined in order to make such comments valid. Even general comments regarding economic relationships were presented as propositions, based on the opinion that subsequent research should be structured to address these sorts of problems. The opinions stressed by Dr. Schneider should be heeded by archeologists. I have maintained earlier in this commentary that if archeologists are to function as anthropologists, our orientation should be sociocultural.

William Martin addressed Dr. Schneider's comments regarding the "unnecessarily precise" nature of the formulations of hypotheses and test implications. I have addressed this problem in my comments on the Gordon D. Morgan commentary. I believe that Dr. Schneider's comments that the report was written for the professional audience with lack of attention to the lay audience also relate to this problem. I would stress again that I concur with both reviewers. Archeologists must structure their reports so that they do disseminate interesting, as well as informative, data to the lay audience. The objectives of the present Conway report restricted this opportunity.

Comments on the James Price commentary

Dr. Price introduced an important issue in his commentary, the significance of archeological sites. This was a primary objective of the testing conducted in Conway County. With the nationwide rapid

destruction of cultural resources through needed construction, archeologists increasingly must preserve information from sites that can provide significant insights on anthropological, sociological, historical, and other problems. In this regard, archeologists have become cognizant that historic sites are as important as prehistoric ones.

Dr. Price states that more sites should have been included as part of the mitigation plan in order to fully deal with problems of socio-cultural organization, chronology, subsistence patterns, etc. I concur. As I have pointed out earlier in this commentary, archeological sites should be studied in relation to their local environment (i.e., neighborhood or community) as well as with respect to their regional placement. Unfortunately the limited areal scope of many small contract projects prevents the archeologist from studying regional patterns. It is generally anticipated that preservation of data from these sites can be synthesized at some point in studies of regional patterns. While regional problems are often beyond the scope of smaller projects it is often times possible to deal with problems at the local level. This still requires an area large enough to include a number of contemporaneous sites and sufficient resources to insure that the work conducted is extensive enough to provide reliable data.

In regard to prehistoric sites in the Conway project area, many of these were multicomponent. The shallow nature of the deposits, and disturbance as a result of agricultural practices, suggested that the artifacts from different components could not be reliably separated. Three prehistoric sites did reveal middens and artifacts that suggested that undisturbed cultural deposits could be excavated to gain significant information on past cultures. These three sites were included in the mitigation plan. Dr. Price states that 3CN107 appears to be a single component Archaic site that yielded substantial cultural material. This is true. It was decided, however, that additional work at the site would provide little information supplemental to that already gained through testing since in situ subsurface deposits were not present.

Dr. Price pointed out that more than one historical site should be included in subsequent archeological work conducted in the Conway project area. I agree with his comments. A number of essentially contemporaneous historic sites were tested to evaluate their potential to provide further information on many historic problems. The decision had to be made concerning which site(s) to excavate more completely. Many questions raised by the testing phase cannot be adequately addressed as a result of archeological work that will be conducted. In view of these problems, the Conway project demonstrates the problems that arise when numerous sites are found during survey within the limits of large scale project boundaries. The level of work that should be conducted on such sites must be more rigorously defined as archeologists address problems applicable to many fields of study.

Comments on the Michael Hoffman commentary

Dr. Hoffman provided extensive comment on many facets of the Conway report. William Martin has addressed many of these comments; therefore only minimal comment is required on my part. Since Dr. Hoffman organized his comments on the basis of subsections, response will be organized in similar fashion.

The Flood Myth. I agree that further data on floods in the Cypress Creek basin will provide significant insights on prehistoric and historic settlement patterns. The geomorphological investigation proposed as part of the mitigation efforts can be expected to provide this additional information. Cypress Creek floods on the basis of rainfall upstream; a number of sites within the floodplain did evidence artifacts intermixed with sand and flood wash. These include 3CN38 and 3CN57. The latter site will be excavated more completely during subsequent phases of work.

Projectile point typology. Dr. Hoffman's statements on lithic tools recognize the major problems that the authors faced in analysis of artifacts from the sites. He discussed problems with projectile point typology, which Martin addressed. I would like to briefly expand on Hoffman's statements. Since the translation of Semenov's book on lithic analysis in 1964, numerous attempts have been made to refine use-wear analysis. Such studies have sometimes indicated that bifacial artifacts, functionally and typologically identified as projectile points, were utilized as multifunctional cutting tools. Such studies have also provided debate regarding the competency of use-wear studies. Although such studies would provide valuable information on tool and site function, these demand extensive time and adequate equipment for research. As an alternative, many archeologists depend on traditional projectile point typologies for chronology and site function. Such identifications tend to perpetuate problems. First, archeologists have only minimally addressed the problem of artifact retuilization through time. Does the presence of an assumed Archaic biface in a site containing artifacts of a later period show that an earlier component exists, that the earlier artifact was retrieved by a later culture from another site and redeposited in a foreign context, or that the type continued with little modification for a long period? As Dr. Hoffman pointed out, involvement of Arkansas Archeological Survey station archeologists in the analysis of artifacts from sites in their area would assist in remedying some of the problems. This procedure is followed as much as possible at this time.

Terminological quicksand. I agree with Dr. Hoffman that the terminology for various cultural periods, cultures, etc. has created extensive problems for the archeologist attempting to define their sites and proposed cultural developments. It is anticipated that as terms are more rigorously defined and conflicting perspectives of individuals are lessened, more attention can be given to adequately addressing prehistoric cultures and development in the Arkansas River Valley region.

Conclusion

Based on review of the five peer comments, I believe that the Conway report has provided information of value to sociologists, historians, and anthropologists interested in cultural development in the Arkansas River Valley. In addition, it has outlined some perspectives and introduced some problems that can be refined through subsequent research. Attempts were made to make the archeological work carried out a methodological procedure applicable to many fields. This approach was stressed by Taylor. I believe that the results of the Conway project and the comments of the reviewers indicate that such a perspective by the archeologist is a viable one and provides significant information for sociocultural studies.

Appendix I

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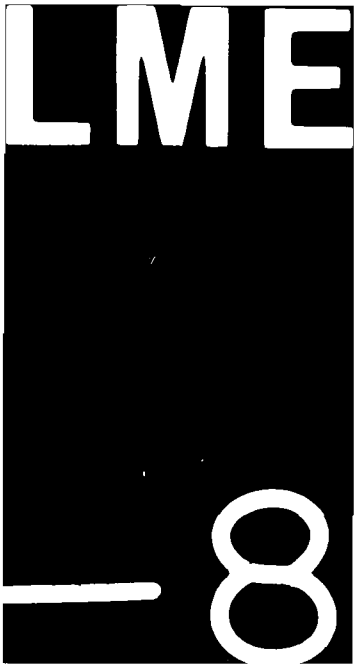
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