
CULTURAL RESOURCES SURVEY OF 1,342 HECTARES (3,317 ACRES) WITHIN THE RED RIVER ARMY DEPOT AND LONE STAR ARMY AMMUNITION PLANT, BOWIE COUNTY, TEXAS

by

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for

**U.S. Army Corps of Engineers,
Ft. Worth District**

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**RRAD/LSAAP ARCHEOLOGICAL TECHNICAL SERIES
REPORT OF INVESTIGATIONS
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Fort Worth District

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RRAD/LSAAP ARCHEOLOGICAL TECHNICAL SERIES
REPORT OF INVESTIGATIONS
NUMBER 5

Geo-Marine, Inc.
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EXECUTIVE SUMMARY

This report is concerned with the 1993 cultural resources survey of portions of the Red River Army Depot and Lone Star Army Ammunition Plant (RRAD/LSAAP) in Bowie County, Texas. This work was undertaken in order to identify cultural resources properties contained in an area of approximately 1,342 hectares (3,317 acres) within the boundaries of the RRAD/LSAAP, and evaluate their potential for inclusion in the National Register of Historic Places (NRHP).

The present survey resulted in the identification and recording of 44 cultural resources sites and 50 nonsite localities. Of the 44 cultural resources sites, 22 are located on the RRAD and 22 are within the LSAAP. Thirty-one of these properties presently are identified as being prehistoric sites, while 13 are historic period sites.

Eighteen of the cultural resources sites are recommended to be currently ineligible for inclusion in the NRHP. The other 26 sites are at the present time recommended to be of unknown status in regard to their NRHP eligibility. Two of the sites (41BW559 and 41BW560) are cemeteries on the RRAD which require archival research to evaluate their potential for yielding "important information . . . not available in extant documentary evidence" (U.S. Department of the Interior, National Park Service 1991:35). The remaining 24 sites, six of which are located on the RRAD (i.e., 41BW529, 41BW533, 41BW536, 41BW538, 41BW547, and 41BW562) and 18 of which are on the LSAAP (i.e., 41BW417, 41BW418, 41BW419, 41BW420, 41BW481, 41BW483, 41BW484, 41BW492, 41BW495, 41BW496, 41BW497, 41BW498, 41BW499, 41BW500, 41BW530, 41BW531, 41BW532, and 41BW546) require additional archeological investigation in the form of more intensive subsurface testing in order to determine their NRHP-eligibility status. The nonsite localities, which represent largely isolated prehistoric or historical finds, are recommended to be ineligible for inclusion in the NRHP.

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ABSTRACT

In August of 1993, Geo-Marine, Inc., was contracted by the U.S. Army Corps of Engineers, Fort Worth District, to conduct cultural resources investigations within an area of approximately 1,342 hectares (3,317 acres) within the Red River Army Depot (RRAD) and Lone Star Army Ammunition Plant (LSAAP) in Bowie County, Texas, as part of an ongoing program to identify and evaluate all of the cultural resources properties within the two facilities, in accordance with, and in partial fulfillment of, the Army's obligations as defined in Section 110 and elsewhere of the National Historic Preservation Act of 1966, as amended through 1992 (PL 89-665); the Archeological and Historical Preservation Act of 1974, as amended (PL 93-291); and Army Regulation 420-40, "Historic Preservation." The intensive pedestrian survey of the 1,342 hectares (3,317 acres) of the RRAD/LSAAP was carried out in September and October of 1993, with a small amount of supplemental fieldwork during December. The intensive archeological survey involved a systematic on-the-ground pedestrian survey and selective shovel testing of high probability site areas and areas with dense ground cover.

As a result of this intensive survey within portions of the RRAD/LSAAP, 44 archeological sites (42 of which were unrecorded previously) and 50 nonsite localities were identified. Of the 44 cultural resources sites which were identified, 22 were located on the RRAD and 22 were found on the LSAAP. Thirty-one of these properties presently are identified as being prehistoric sites, and 13 are historical sites. This sample of prehistoric sites from the RRAD/LSAAP area ranges in age from the Late Archaic to the Caddoan periods, although the majority of them cannot be accurately dated. The sample of historical sites ranges from as early as 1885 up until the time the government acquired the land for the two facilities in the 1940s. Most, however, appear to fall within the period from 1900 to 1941, which has previously been identified as the time of greatest occupation in the area.

Analysis of the survey data and collections has resulted in 18 sites being recommended as ineligible for inclusion in the National Register of Historic Places (NRHP). At the present time, the other 26 sites are considered to be of unknown status in regard to their NRHP eligibility. Two sites on the RRAD (41BW559 and 41BW560) are cemeteries requiring archival research to evaluate their potential for yielding "important information not available in extant documentary evidence" (U.S. Department of the Interior, National Park Service 1991:35). The remaining 24 sites, including six on the RRAD (i.e., 41BW529, 41BW533, 41BW536, 41BW538, 41BW547, and 41BW562) and 18 on the LSAAP (i.e., 41BW417, 41BW418, 41BW419, 41BW420, 41BW481, 41BW483, 41BW484, 41BW492, 41BW495, 41BW496, 41BW497, 41BW498, 41BW499, 41BW500, 41BW530, 41BW531, 41BW532, and 41BW546) require additional archeological investigation in the form of more intensive subsurface testing in order to determine their status. The nonsite localities, which represent largely isolated prehistoric or historical finds, are believed to have no research potential and are recommended to be ineligible for inclusion in the NRHP.

ACKNOWLEDGMENTS

The authors would like to express their appreciation to the many individuals and organizations who contributed to the successful completion of this report. The personnel of the U.S. Army Corps of Engineers, Fort Worth District were particularly supportive of our efforts and provided both administrative support and guidance. Paramount among these was Mr. Tim Dalbey, who we would like to thank for his constructive direction and useful suggestions. Also, we would like to thank the personnel of the RRAD/LSAAP who helped make our period of fieldwork as easy as possible. We would especially like to thank Mr. Benny Murray and Mr. Terry Ruth of the Land Management Office of the RRAD; Mr. Mark Reese of the Environmental Division of the RRAD; and finally, Major Triplett, Security Provost Marshall for the RRAD.

In the field, the diligence and dedication of the able crew members, including George Brown, George Price, Jessica Helfrecht, Shelly Sullo, Mike Lewis, Mark Couvillion, and Johanna Hunziker, were essential to the successful completion of the fieldwork. Mr. Gary Shaw acted as Field Supervisor and Mr. Floyd Kent acted as second crew chief.

Artifact analysis and data input were undertaken by the staff of Geo-Marine, Inc., under the direction of Dr. Cliff and Ms. Marianne Marek, Laboratory Director. The prehistoric lithic materials were analyzed by Mr. Bob Vance; Ms. Melissa Green analyzed the historic artifacts; and the prehistoric ceramics were analyzed by Dr. Cliff. Computer aided drafting of the project area and site maps was done by Ms. Sandy Carr. The final manuscript was copy edited and formatted by Ms. Sharlene Allday and her staff.

CHAPTER 1

INTRODUCTION

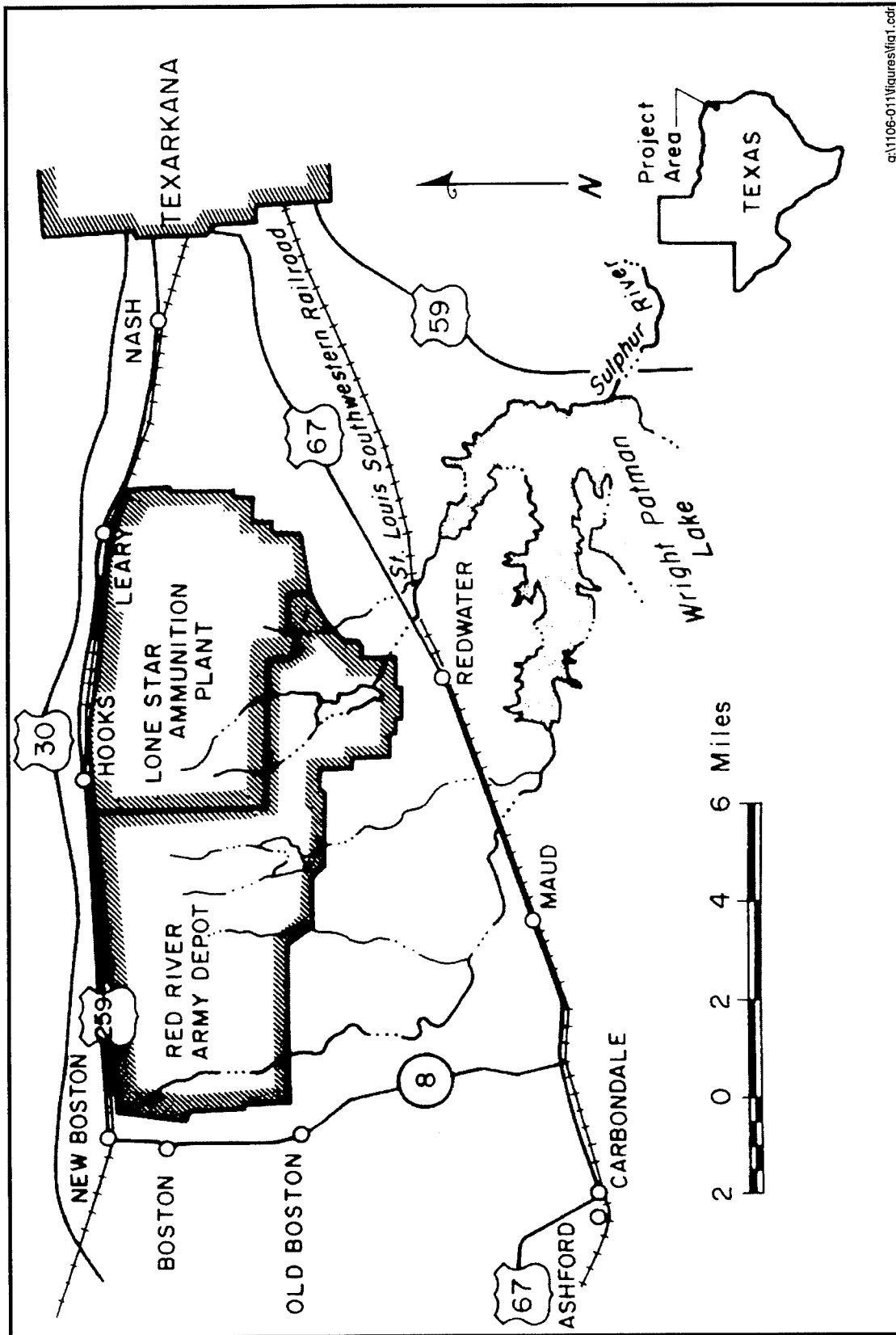
by
Maynard B. Cliff and Duane E. Peter

This report presents the results of an intensive cultural resources survey of approximately 1,342 hectares (3,317 acres) on the Red River Army Depot (RRAD) and the Lone Star Army Ammunition Plant (LSAAP) near New Boston, Bowie County, Texas (Figure 1). The work was performed under Delivery Order No. 0011, Contract DACA63-90-D-0006.

The RRAD and LSAAP, as federally owned or controlled installations, have a responsibility for an area of approximately 14,013 hectares (34,626 acres) within Northeast Texas. The cultural resources assessments presented here comprise one phase of the efforts of the RRAD/LSAAP to meet their responsibilities for the identification, evaluation, and treatment of cultural resources properties under their jurisdiction. These responsibilities are defined in Section 110 and elsewhere in the National Historic Preservation Act of 1966, as amended through 1992 (PL 89-665); the Archaeological and Historic Preservation Act of 1974, as amended (PL 93-291); and Army Regulation 420-40, "Historic Preservation."

In August of 1993, Geo-Marine, Inc. (GMI), was contracted by the U.S. Army Corps of Engineers (CE) to conduct a survey of 1,342 hectares (3,317 acres) at the two installations. The fieldwork was begun in September of 1993 and completed in October. Personnel of GMI conducted this work under the direction of Dr. Maynard Cliff and Mr. Duane Peter. The majority of the fieldwork was conducted between September 14 and October 15, 1993. Additional fieldwork was conducted on December 1, 1993. A total of 163 person-days of effort was expended on the survey of the 1,342 hectares (3,317 acres) covered by this delivery order.

A total of 44 cultural resources sites was identified during the survey. Twenty-two of these were located on the RRAD and 22 were on the LSAAP. These sites contained 13 historical components and 31 prehistoric components. Among the historical sites on the RRAD were the McAdams Cemetery and the Elliott Cemetery. All of the properties identified during the survey appear to be single component sites. An additional 50 nonsite localities (24 on the RRAD and 26 on the LSAAP) were encountered during the survey, of which 33 contained prehistoric remains and 17 had material of historic date. These nonsite localities consisted of one or more artifacts recovered from individual shovel tests, isolated surface finds with no subsurface remains, or unique nonsite features, such as dams or rock scatters. They contain no substantial archeological deposits and no cultural features, and all are recommended to be considered ineligible for inclusion in the National Register of Historic Places (NRHP).



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Figure 1. Location of Red River Army Depot and Lone Star Army Ammunition Plant (RRAD/LSAAP) within Northeast Texas.

Of the 44 cultural resources sites recorded, 18 are recommended to be ineligible for inclusion in the NRHP. The remaining 26 sites (including the McAdams and Elliott cemeteries) are recommended to be of unknown status in regard to their eligibility for inclusion in the NRHP. The sites deemed to be of unknown NRHP status include three historic period sites (including the two cemeteries mentioned above) and 23 prehistoric sites which can be further subdivided into two groups. Seven of the prehistoric sites appear to be small to medium-sized, low density lithic scatters with good contextual integrity, a site type well represented on the RRAD/LSAAP. This type of site may contribute to our understanding of upland resource procurement during the prehistoric period and therefore these should be protected until a sample can be investigated. The other 16 prehistoric sites are larger and appear to have higher densities of subsurface remains, and may indicate either more substantial or intensive occupation or more frequent reoccupation. All of these archeological sites, both historical and prehistoric, are felt to have the potential for containing significant data and require further investigation in the form of subsurface testing before a final determination of NRHP eligibility can be made. The McAdams and Elliott cemeteries require archival research to evaluate their potential for yielding important information.

REPORT FORMAT

This report is organized into seven chapters. Chapter 2 presents the environmental setting for the study area, including the modern setting, a reconstruction of the 1850s vegetation zones as derived from the General Land Office (GLO) records, and a brief summary of the present reconstruction of the Holocene environmental history of the area. The cultural setting for the Sulphur River basin and the surrounding region is presented in Chapter 3, which includes an overview of previous archeological research conducted in the region and a summary of the cultural historical framework. Chapter 4 presents the conceptual framework that guided these research efforts, as well as research methodologies for the intensive survey and the artifact analyses. The results of the survey are presented in Chapters 5 and 6, including the descriptions of the prehistoric and historical sites and localities, respectively. The sites on the RRAD are described in Chapter 5; those on the LSAAP are presented in Chapter 6. A summary of the findings, site assessments, and recommendations are presented in Chapter 7. References cited and appendices follow. Definitions of prehistoric artifact classes are included as Appendix A, while a discussion of the framework for historic artifact analysis is presented in Appendix B. Artifact provenience tables for the prehistoric and historical sites are presented in Appendices C and D, respectively. Appendix E contains a list of material generated by this project.

CHAPTER 2

ENVIRONMENTAL SETTING

by
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MODERN SETTING

Geology and Geomorphology

The Red River Army Depot and Lone Star Army Ammunition Plant (RRAD/LSAAP) are located in central Bowie County within the Gulf Coastal Plains physiographic province (Fenneman 1938), a segment of the Mesozoic-Cenozoic coastal geosyncline (Murray 1960). This geosyncline forms a gradually sloping basin that dips toward the Gulf of Mexico and contains formations of limestone and sandstone deposited along the margins of an ancient receding coastline. The geologic strata underlying Bowie County were deposited during the Upper Cretaceous, Eocene, Pleistocene, and Holocene periods (Fox 1980:70). However, within the boundaries of the RRAD/LSAAP itself, most of the exposed sediments are of Eocene age, with some recent alluvium present along the narrow flood plains of the creeks in the southern portion of the installations (Heartfield and Dieste 1984a:2-1).

The Eocene-age formations which are present within the RRAD/LSAAP are (1) the Midway Group, in the north; and (2) the Wilcox Group, in the south and southeast (Bureau of Economic Geology [BEG] 1966; Heartfield and Dieste 1984a, 1984b). The Midway Group is composed of gray to yellowish gray silty clays, whereas the Wilcox Group consists of buff to gray carbonaceous sands, silts, and clays which contain concretions, petrified wood, and lignite.

Lithic materials suitable for the production of stone tools are present in both formations, but the Wilcox Group contains a greater variety. Both formations contain sandstone concretions and ferruginous sandstones suitable for use as small manos, nutting stones, anvil stones, various types of stone abraders, or heavy choppers. Large pieces of petrified wood and chert gravels are reportedly present within the Wilcox Group (Fisher 1965:197), although it is doubtful that the material could be used consistently. Banks (1990:52) refers to the use of petrified wood (particularly, petrified palmwood) from the Wilcox Group by prehistoric Native American peoples in East Texas as "obviously important, although probably fortuitous" since "there are few discrete concentrations of individual types that were used as primary sources of raw materials." Banks makes no mention of any other usable chert gravels in the Wilcox Group, although he does describe a dense, gray quartzite, which "could easily be confused with varieties of Ogallala Quartzite" (see below) from Buzzard Bluff, Arkansas, whose origin is "probably a remnant of the Wilcox on top of Midway deposits" (Banks 1990:52).

One of the more important sources of lithic raw material in this area is upland lag gravel deposits, of western origin commonly referred to as the Uvalde Gravels (Banks 1990:56-57). These upland gravels have been identified in Central and South Texas (Byrd 1971; Hill 1891), North Central Texas (Menzer and Slaughter 1971), and East Texas (Banks 1990). Banks specifically refers to having seen such gravels "along the divide between the Red and Sulphur Rivers in Northeast Texas and along the divide between the Sulphur and its principal southern tributary, White Oak Bayou" (Banks 1990:57). Their immediate origin is believed to be the Ogallala Formation on the High Plains, which consists of redeposited gravels whose ultimate source is New Mexico and the Rocky Mountains. Along the edge of the Llano Estacado, in and south of the Texas Panhandle, materials found within various members of the Ogallala Formation include light colored, dark gray to black, and purple medium to coarse-grained quartzites; Potter Chert (a dense, gray to brown, silica cemented, very fine-grained siltstone); red to brown to yellow jaspers; medium to dark gray and dark blue chert; flint; and petrified (silicified) wood (Holliday and Welty 1981:208-209). Within the Uvalde Gravels, many of these materials are repeated; in Central Texas, Byrd (1971:5) identifies chert, quartz, jasper, quartzite, limestone, and silicified wood, in sizes ranging from pebbles to boulders.

In contrast to the Uvalde Gravels, another source of lithic raw material for this area is an unnamed upland lag gravel, present in central Bowie County and in the RRAD/LSAAP itself (Cliff, ed. 1994). Upland gravel deposits containing pebbles and cobbles of usable raw material were identified in 1989 along the divide between the Red and Sulphur rivers and along the headwaters of Elliott Creek in Bowie County (Peter and Cliff, eds. 1990a). When a number of these cobbles were identified as novaculite by Larry Banks in 1993 and 1994, it suggested an origin different from that of the Uvalde Gravels. These Bowie Gravels (for want of a better term at the present time) contain brownish yellow to pale brown, brownish yellow to yellowish brown, and brownish yellow to red chert (possibly novaculite); olive gray chert from the Arkansas Novaculite outcrops along the headwaters of the Kiamichi River in Oklahoma; black chert that weathers to a yellowish brown; coarse-grained white quartzite; a medium-grained, gray quartzite which is very similar to Potter Chert; and Battiest Chert from the Ouachita Mountains in Oklahoma (all identifications by Larry Banks in 1993 and 1994). In addition, it appears that this gravel also includes weak red to reddish brown, pinkish gray to very pale brown, pale brown to dusky red, and very pale brown chert (possibly novaculite); gray to dark gray chert that weathers to yellowish brown; and a weak red, coarse-grained quartzitic sandstone that weathers to yellowish brown. This lithology is radically different from that usually ascribed to the Uvalde Gravels (see above) and strongly suggests an origin to the north, in southeastern Oklahoma and southwestern Arkansas; although the occurrence of the Bowie Gravels on surfaces of the Midway and Wilcox groups suggests an age comparable to that of the Uvalde Gravels (BEG 1966).

Finally, reworked lithic materials from both the Uvalde and Bowie gravels, including possibly novaculite, chert, jasper, flint, and quartzite, presumably are present within the Pleistocene terraces and more recent gravel bar deposits along both the Sulphur and Red rivers, while the Red River would probably carry additional material from the Panhandle area of Texas, southwestern and southeastern Oklahoma, and southwestern Arkansas. Among the more notable of this material would be Tecovas jasper, Big Fork chert, and Woodford chert (Banks 1990; Holliday and Welty 1981; Perttula 1984).

The landscape within and surrounding the RRAD/LSAAP consists of dissected uplands and is characterized by gently rolling ridges and marshy bottomlands along streams. Elevations range from approximately 82 to 137 m (270-450 feet [ft]) above mean sea level (amsl) with the highest elevations occurring in the north central portion of the RRAD/LSAAP, and the lowest elevations in the southern and southeastern areas along the East Fork of Elliott Creek.

Large numbers of small, low mounds occur within the boundaries of the facilities, in both upland and bottomland settings, singly or in groups. These features, often termed "pimple" or "prairie" mounds,

generally range in height from 60 to 90 cm and are often 10 to 20 m in diameter. Testing in these mounds has concluded that most, if not all, are composed of sand or silt. Similar mounds are widespread in southwestern Arkansas, eastern Texas, southeastern Oklahoma, and northwestern Louisiana, and the only agreement among geologists and geomorphologists regarding their origins is that they are natural features (Aten and Bollich 1981:1375; Bousman et al. 1988). Occasionally prehistoric artifacts and/or historic properties are found on top of these mounds.

Soils

The majority of the RRAD/LSAAP area consists of uplands which are covered with ancient soils, most of which are loamy with argillaceous B horizons. Soils of the Sawyer-Eylau-Woodtell and Ruston-McKamie complexes are predominately found on gently sloping uplands, with Annona-Alusa complex soils on nearly level uplands (Fox 1980:general soil map).

Sawyer-Eylau-Woodtell soils are found throughout the facilities on gently sloping uplands (note: for a general distribution of soil types on the RRAD/LSAAP, refer to Figure 2 and Table 1, below). These are loamy soils with varying amounts of partially acidic silt and sand; they are moderately well drained and moderately slowly permeable to very slowly permeable. Sawyer silt loam formed in loamy and clayey sediments and is the dominant soil found on broad plains with slopes of less than 3 percent. Eylau soils are found in the southern portion of the facilities, on broad expanses between streams. These are very fine sandy loams formed in loamy sediments and are moderately well drained. Woodtell soils are deep, moderately well drained and loamy, formed in clayey and shaley upland sediments, and are found on upland slopes in the southern area of the RRAD/LSAAP. Pockets of Woodtell very fine sandy loam are found along currently forested drainage slopes of 5 to 12 percent, with long narrow ridges of Woodtell gravelly sand loam present in both the northern and southern portions of the facilities, on slopes of 3 to 8 percent along drainages. Sawyer and Eylau soils are moderately suited to farming but may have been used for pasture in historic times. Woodtell soils are not suited to farming and may have been used for forest and/or pasture (Fox 1980:20, 28, 34, 56, 64, 67).

Ruston-McKamie soils are present in the southeastern portion of the two installations. These are well-drained, moderately permeable to very slowly permeable loamy soils on gently sloping uplands. Ruston fine sandy loams can be found in small to medium-sized pockets throughout the installations, but are primarily situated close to drainages. These soils are well drained and located on crests and side slopes of upland terraces, and occur as small rises on top of the terraces. They formed in the loamy sediments of the uplands and consist of fine sandy loams overlying sandy clay loams. Ruston soils are well suited for farming and may have been used for this purpose in historic times. McKamie loam is located on gently sloping ridges and old terraces along streams. These soils formed in stratified loamy and clayey sediments on uplands and are mostly suited for woodland (Fox 1980:21, 24-26, 58-59, 62-63).

Annona-Alusa soils are found only in the northwestern portion of the installations and consist of somewhat poorly to poorly drained, very slowly permeable sandy soils on nearly level uplands. Annona loam is formed in loamy and clayey sediments on 1 to 3 percent upland slopes. It is found in broad upland expanses and along the headwaters of small drainages. Alusa loam is a prairie and savannah soil, found on level (less than 1 percent slope) expanses. It is deep and poorly drained. Annona-Alusa soils may have been used for farming in historic times although their poorly drained condition would have required water control (Fox 1980:14-15, 52-53).

Although the Sawyer-Eylau-Woodtell, Ruston-McKamie, and Annona-Alusa soil complexes are the predominant upland soils found in the RRAD/LSAAP area, small pockets of other upland soils are also present. A small pocket of Wrightsville silt loam is found in the northeastern section of the installations. This soil is a deep, poorly drained loam formed in clayey sediments. Although this soil can be farmed, its characteristics of poor drainage and slow permeability would require water control. Adaton-Muskogee soils are found in small nearly level areas in the northern portion of the RRAD/LSAAP. Like Ruston soils, they formed in loamy sediments on uplands. The Adaton complex soils however are found in upland areas with mounds. Adaton-Muskogee soils are silt loams and are moderately well drained. This soil is suited to farming, however, water control is required. Blevins silt loam appears in small pockets in the southern portion of the RRAD/LSAAP and was formed in loamy sediments in the uplands. Finally, areas of Udorthents, which are gently sloping to moderately steep loamy clayey soils on uplands for which no original soil profile exists, are located in the western and south central portions of the RRAD and the west central, central, and northeastern portions of the LSAAP (Fox 1980:13-14, 18, 32, 34-35, 51-52, 55, 68).

The remaining upland soils are found primarily in the southern area of the RRAD/LSAAP, associated with ancient or current stream terraces. Darden loamy fine sand is an excessively drained soil found in upland knolls and divides between streams. This soil formed in sandy sediments and the excessive draining and low fertility of the sand make it suited for some farming with fertilizers. Like Darden soils, Rosalie loamy fine sand is found on upland interstream divides. It is a well-drained soil consisting of brown loamy fine sand overlying a sandy clay loam, and is suited to some crops. Saffell gravelly sandy loam is a well-drained soil located in high terraces and consists of a brown sandy loam overlying a sandy clay loam. It is closely associated with Ruston, Woodtell, and Eylau soils and is most suited for woodland (Fox 1980:19, 24, 27-28, 56, 62-63).

The characteristics of these upland and terrace soils provide data to reconstruct the RRAD/LSAAP area in historic and prehistoric times. Soils in the northern portion of the RRAD/LSAAP (Sawyer silt loam, Annona-Alusa loams) are moderately well drained, suitable for crops, and well suited for pasture. Before historic settlement, these soils were probably alternately in prairie grass and water tolerant woodland species. The southern portion of the RRAD/LSAAP is dissected by numerous small streams and tributaries. The numerous upland and terrace soils of loams and fine sands suggest several episodes of stream meandering and channel cutting with subsequent refilling. Most of the soils in this area are poorly or excessively drained and most suited to water tolerant pasture or woodland species. Pockets of well-drained soils suited to farm crops require some water control which may have been difficult in early historic times since the soils in surrounding areas are poorly drained and would not carry the excess water. Prehistoric activity in this area would have consisted primarily of small campsites on high, well-drained areas, placed to take advantage of the rich resource base of upland, stream bottom, and seasonal marsh. Early historic settlement probably would have consisted of small, self-sufficient family farms, with cropping on the well and moderately drained soils, and pasturing of animals on the rest.

Bottomland soils found within the RRAD/LSAAP are Amy silt loam, Sardis silt loam, and Thenas fine sandy loam. These three soils are found frequently in flood plains of the major creeks and their tributaries (i.e., Big Creek, Caney Creek, Nettles Creek, Elliott Creek, East Fork of Elliott Creek, Jones Creek, and Rock Creek). These soils are not suited for farming because flooding occurs two to four times a year (Fox 1980:14-15, 28, 32, 52-53, 64, 66).

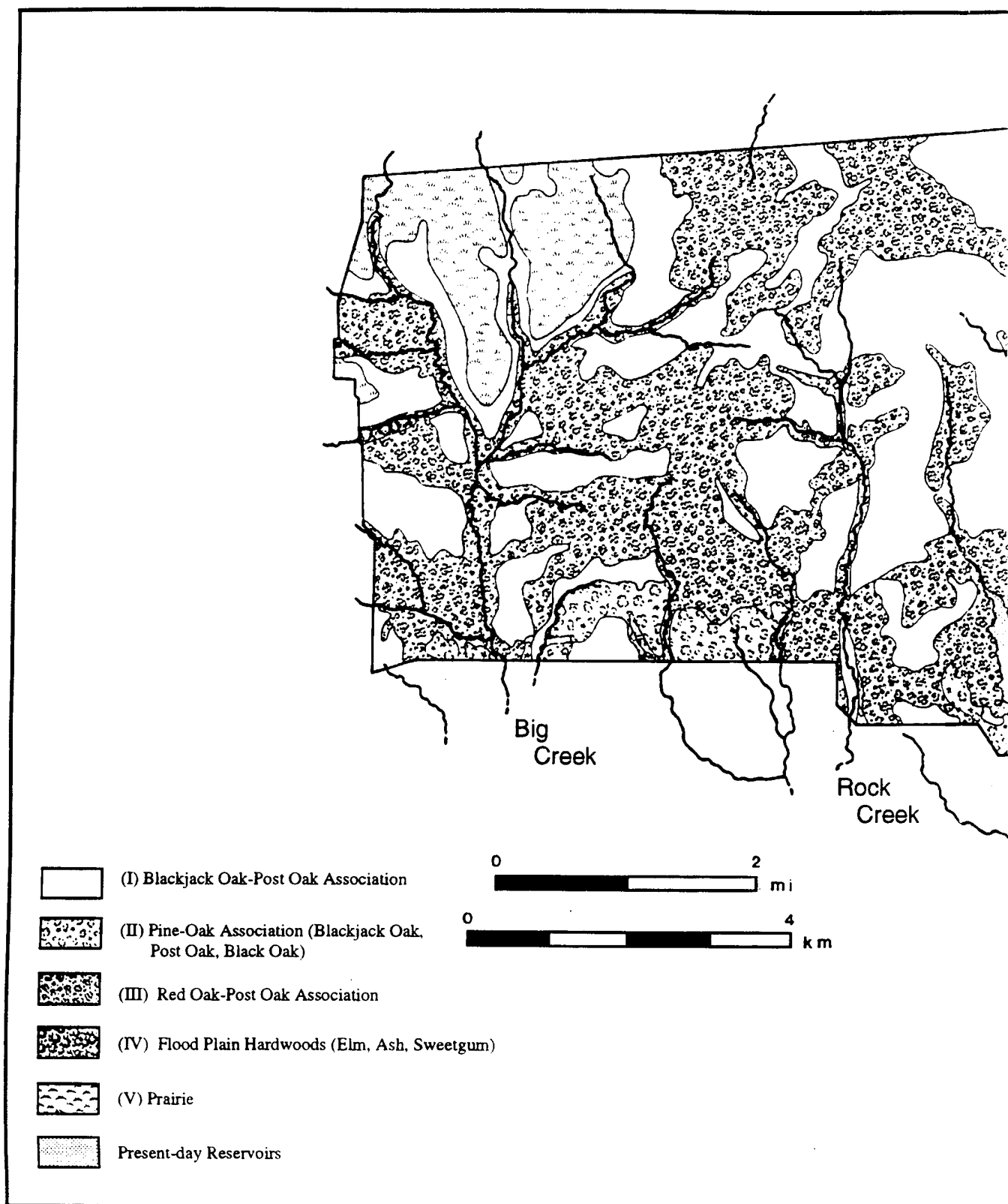
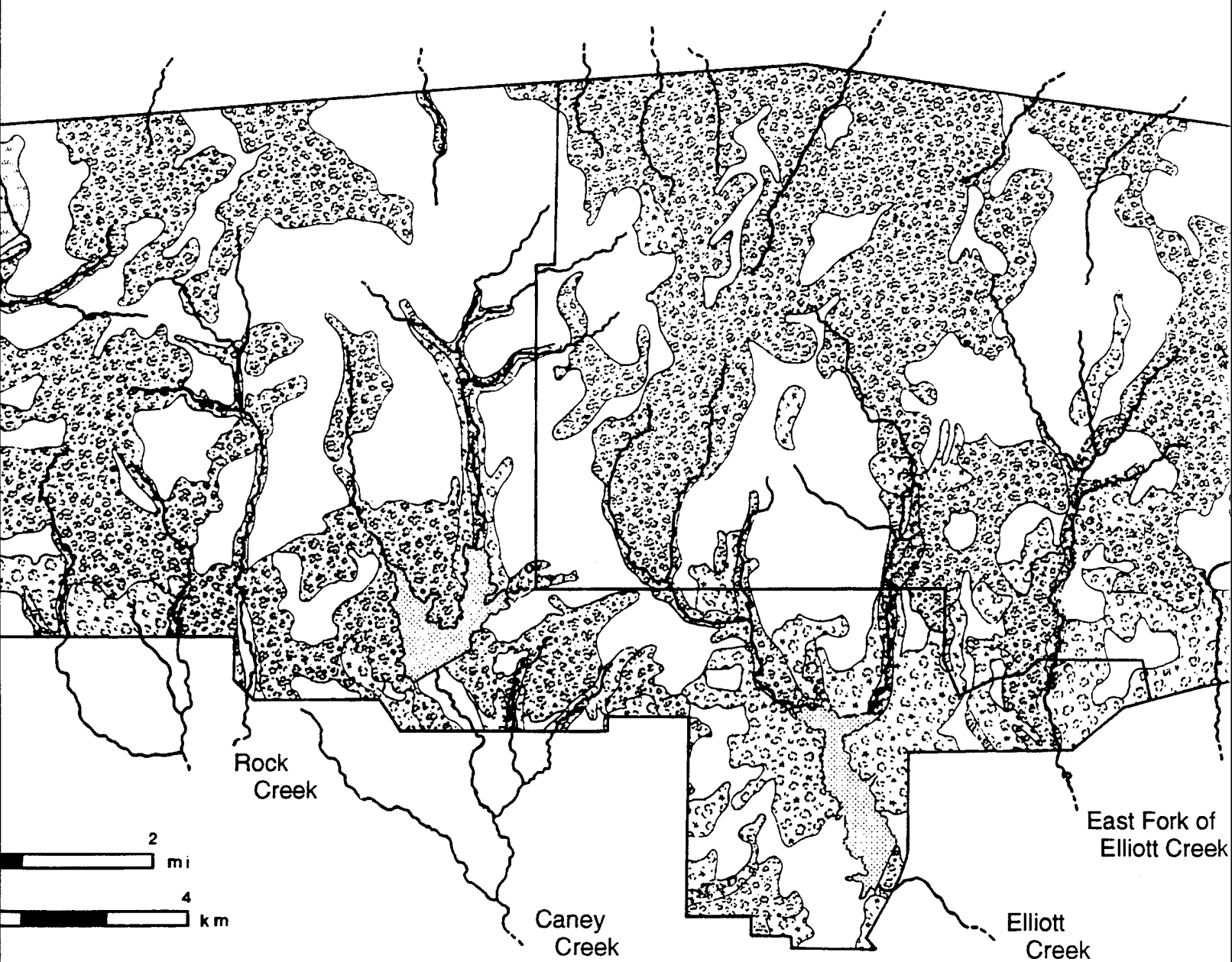


Figure 2. Distribution of 1850s vegetation zones (from Peter and Cliff 1990a).



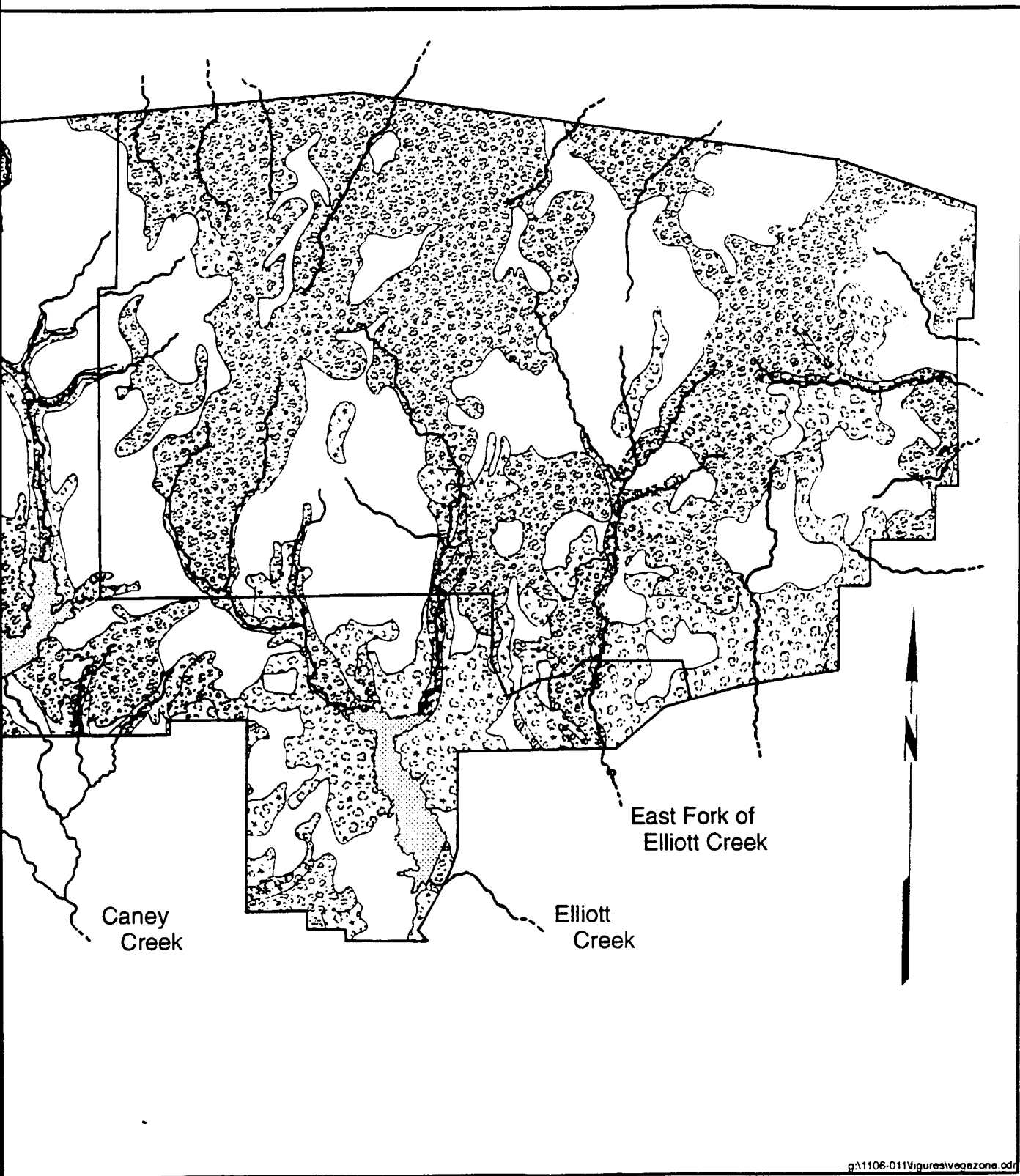


Table 1
Summary of Vegetation Associations Defined for the RRAD/LSAAP Area by Perttula
(Chapter II in Peter and Cliff, eds. 1990a)

Vegetation Association	Dominant Constituents	Principle Associated Soils
I Blackjack Oak-Post Oak	Post Oak Blackjack Oak	Annona loam Ruston fine sandy loam
II Pine Oak	Pine Black Oak Post Oak	Eylau very fine sandy loam McKamie loam Ruston loamy fine sand Woodtell very fine sandy loam Woodtell gravelly sandy loam
III Red Oak-Post Oak	Post Oak Red Oak Hickory	Sardis silt loam Sawyer silt loam
IV Flood Plain Hardwoods (elm, ash, sweetgum, black gum)	White Oak Sweetgum Black Tupelo	Thenas fine sandy loam
V Tall-Grass Prairie ("Rice's Prairie")	Big Bluestem Little Bluestem Indian Grass	Alusa loam

Hydrology

The RRAD/LSAAP lies within the basins of two major drainage systems: (1) the Red River, which forms the northern boundary of Bowie County, and (2) the Sulphur River, which forms its southern boundary. Within Bowie County, these rivers run relatively parallel to each other with an average of 25 miles of uplands and terraces between them. The RRAD/LSAAP lies on the interfluvial divide between the two basins. The headwaters of Panther and Jones creeks, which flow north to the Red River, are in the northeast corner of the RRAD/LSAAP. Big, Rock, Caney, Elliott, East Fork of Elliott, and Nettles creeks all flow south through the RRAD/LSAAP to the Sulphur River, and in most cases, the headwaters of these creeks are in the northern portion of the installations. Deeply dissected creek beds in the southern portion of the RRAD/LSAAP attest to the permanent water flow that these streams and their tributaries contribute. Two manmade lakes, Caney Creek Reservoir, covering about 80 hectares (200 acres), and Elliott Creek Reservoir, covering about 91 hectares (225 acres), can be found within the installation boundaries on the drainages of the same names (Fox 1980:sheet 40-42, 49-51; Heartfield and Dieste 1984b:2-3).

A yearly rainfall of about 1100 mm (44 in) provides a constant flow of water in the streams on the RRAD/LSAAP. Runoff averages less than 25 percent of the annual rainfall average, ranging from 230 to 333 hectare meters/km²/year (450 to 650 acre feet/mi²/year). This means that over 75 percent of the precipitation that falls on the RRAD/LSAAP is either absorbed into the soil and transpired by vegetation or recharges the Carrizo-Wilcox Aquifer (see Appendix H in Peter et al. 1991). Given the minor relief and low runoff which characterize this area, it is not surprising that the drainages within the RRAD/LSAAP are

Cultural Resources Survey: Red River Army Depot and Lone Star Army Ammunition Plant, Texas

neither large nor given to major flooding. At the same time, the poor permeability in many of the surrounding soils promote the formation of some marsh habitat, which serves to attract a variety of flora and fauna suitable to abundant water. These resources would have provided food and raw materials to both prehistoric and historic inhabitants of the area.

Climate

The climate of Bowie County can be described as subtropical, with primary influences on the area being its latitude, the warm winds from the Gulf of Mexico, and the cooler northern winds from the continental land mass to the north. The area is marked by long hot summers and short cool winters. Cold waves in the winter are not severe and usually last only one or two days. The average summer temperature is 27° C (80° F), with an average daily maximum temperature of 33° C (92° F). In winter, the average temperature is 7° C (45° F). The last freeze in spring usually occurs before April 1, while the first freeze in the fall usually does not occur until after November 1. The number of days in the growing season with temperatures above the freezing mark averages 209 (Fox 1980:2, 81).

Precipitation is fairly heavy throughout the year, with prolonged droughts being rare and frequent afternoon thunderstorms in summer adequate to maintain crops. Such afternoon thunderstorms occur about 50 days of the year. Severe storms, including tornadoes, strike the area occasionally and often cause flooding and erosion. Every few years in the summer or fall, a tropical depression moves inland causing extremely heavy rains for one to three days. The period from April to September is the wettest portion of the year, with over half of the mean annual precipitation (52 percent) falling during that time. As the average winter temperature is above freezing, snowfall is rare (Fox 1980:2).

Flora

The RRAD/LSAAP lies on the ecotonal boundary between the Pineywoods to the east and southeast, and the Post Oak Savannah to the north and west (Vines 1977:xiv-xviii). Indigenous floral species in the area characterize a mixed pine/oak woodland with pines dominant on the higher elevations and in drier areas, and water tolerant hardwoods predominant in the moist bottom lands (Heartfield and Dieste 1984a, 1984b:2-5). Common species reported as present within the RRAD/LSAAP when it was surveyed in the 1970s included loblolly, slash, and shortleaf pine; water, white, and Southern red oak; sweetgum (or American sweetgum); black gum (or water tupelo); and Eastern red-cedar (Fox 1980:88-90). Heartfield and Dieste (1984a, 1984b:2-5) add black willow (or Gulf black willow), blackjack oak, post oak, and "French mulberry", while nut-bearing mockernut or black hickory trees were observed in the fall of 1988. Understory vegetation includes long leaf uniola, plumgrass, beaked panicum, lespedeza, Virginia wildrye, panicum, sedge, broadleaf uniola, little bluestem, switch grass, bluestem, dallisgrass, velvet panicum, spike uniola, flatsedge, brownseed paspalum, Indiangrass, Bermuda grass, purpletop, big bluestem, pinehill bluestem, Canada ryegrass, arrowfeather threeawn, farkelberry, Carolina joint tail, knotroot bristlegrass, split beard bluestem, blueberry, greenbriar, hawthorn, sumac, tree huckleberry, Southern Wax-myrtle, honeysuckle, and American beauty berry (Fox 1980:91-95; Heartfield and Dieste 1984a, 1984b:2-5).

In addition to the wood resources for domestic activity, acorns, nuts, berries, and grasses were available for prehistoric and historic groups alike. In general, it is safe to say that vegetal food stuffs would have been most abundant in the hardwood dominated forests, but it is also clear that such resources would have been available in varying quantities throughout the RRAD/LSAAP. The presence of acorns and nut mast would have proved beneficial to the inhabitants of the area in several ways. First they are high in fats and would

have been a valuable addition to the diet (Hilliard 1980); and second, they would have attracted game such as deer and turkey during the fall (National Geographic Society 1983:222; Schmidly 1983:297). Trees in the area bearing edible nuts include White Oak, Black Oak, Southern Red Oak, Blackjack Oak, Water Oak, Shagbark Hickory, Mockernut Hickory, Black Walnut (or Eastern Black Walnut), and Pecan (Heartfield and Dieste 1984a, 1984b:2-5).

Wild fruits and berries, such as blackberry, dewberry, wild grape, wild strawberry, persimmon, plum, and cherry, would have served as a source of vitamins and carbohydrates for both prehistoric and historic peoples. Seeds of trees, shrubs, grasses, and weeds would attract faunal species which would in turn provide another food source. In addition, certain tubers available in the woodlands could have been collected for food as well as medicinal, craft, or ritual activities (Heartfield and Dieste 1984a, 1984b:2-5).

Fauna

The fauna in the RRAD/LSAAP area could have provided many of the daily needs for both prehistoric indigenous populations and early historic immigrants. Animal products would have provided shelter, clothing, and a means of monetary exchange, as well as bone, antler, and shell for tools, and feathers and various skins for decoration. Heartfield and Dieste (1984a, 1984b:2-6) note the abundance of all types of invertebrates in the RRAD/LSAAP area, along with various types of mollusks, including both bivalves and gastropods, and crustaceans known to have been used by indigenous southeastern groups (Swanton 1946).

Among the fish, economically important families for both prehistoric and historic populations probably would have included gar, crappie, bass, buffalo, shad, sucker, bowfin, shiner, pickeral, sucker, catfish, sunfish, and drum (Heartfield and Dieste 1984a, 1984b:2-6). Of the amphibians, only true frogs are valued for dietary purposes today, while the full range of frogs, turtles, turtle eggs, salamanders, and alligators would have been useful for both prehistoric and early historic populations. A wide variety of migratory birds, such as ducks, geese, and cranes, would have been most numerous in the late fall and early winter, while other resident birds, such as turkeys, doves, and pigeons, would have been available on a year-round basis.

Mammal species known to have provided staple meat supplies for indigenous southeastern groups include deer, squirrels, and rabbits (Swanton 1946) and the same was undoubtedly the case for early historic populations. Other important mammal resources included bears, opossums, and raccoons. One important resource of the early historic period would have been deerskins, which along with bison hides formed the basis of the early hide trade in Louisiana (Kniffen et al. 1987:210). Valuable fur-bearing animals in the RRAD/LSAAP area would have included rabbits, beavers, raccoons, weasels, and minks. Other faunal species, such as some fish and waterfowl, may not presently be available within the limits of the two installations, but are, and would have been, available within the Red River flood plain to the north and east or the Sulphur River flood plain to the south.

Deer, rabbit, squirrel, and turtle bones are among the most numerous remains recovered from many archeological sites in northeastern Texas and northwestern Louisiana (Bruseh and Perttula 1981; Webb 1959:180). Deer, due to their large size, would have provided the bulk of protein in the diet of prehistoric and early historic peoples. Remains of reptiles other than turtle, and small rodent bones, have also been recovered from archeological contexts at many sites in Texas and Louisiana, but it is difficult to determine whether they contributed to the diet or were simply intrusive into the deposits (see, for example, Martin et al. 1987).

Obviously, the availability of these resources, as well as that of botanical resources, may well have been different in the past as a result of regional climatic alterations which have been documented in pollen and geomorphological records in Texas and Oklahoma (Bryant and Holloway 1985; Davis 1989; Delcourt and Delcourt 1985). In spite of this, faunal studies at archeological sites, such as Rogers Rockshelter in southwestern Missouri, have shown that as climate changed over the past 9,000 to 10,000 years, different habitats comprising the mosaic of the total environment responded by increasing or decreasing in size. However, these climatic shifts were never significant enough to precipitate a complete change in species composition (Purdue 1983). The modern distributions of animal species are probably much the same as they were in the past, and only the relative abundance of each species has altered.

EARLY HISTORIC SETTING: 1850s

As part of the previous research conducted at the RRAD/LSAAP, General Land Office (GLO) notes from the land grant surveys within the two installations were examined to acquire baseline environmental data for the area from the mid-nineteenth century. This information was compiled by Dr. Timothy K. Perttula from information in the surveyors' notes relating to the species of corner and bearing trees and their distributions and diameters, as well as information on amount of arable land and stream channel widths (Chapter II in Peter and Cliff, eds. 1990a). This data (especially the distributions of particular tree species) were then compared with the distributions of specific soil series defined in the modern soil survey for Bowie County (Fox 1980), and five vegetational associations which are of significance at least for the late prehistoric and early historic periods were identified (Figure 2; see Table 1).

As defined by Perttula, only the first four vegetational associations are characterized by an arboreal component, with the fifth one (i.e., "Rice's Prairie") lacking any such element, although gallery forests of Blackjack Oak-Post Oak and Red Oak-Post Oak probably were present along the flood plain of Big Creek and its tributaries. Perttula identified extensive woodlands of Post Oak, Black Oak, Blackjack Oak, and hickory primarily on the poorly drained upland areas (termed "Post oak flats") which occur throughout the entire RRAD/LSAAP. The GLO data suggested that larger stands of Blackjack Oak-Post Oak forest were more common west of Elliott Creek as well as being particularly well represented within the Caney Creek watershed. East of Elliott Creek, upland stands of Blackjack Oak-Post Oak forest appear to have been somewhat smaller, and were intermingled with pine and pine-oak woodlands along the East Fork of Elliott Creek and the drainages further east (Peter and Cliff, eds. 1990a:9-17).

Based on both the GLO records and modern information (Fox 1980), the economic potential of each of these associations varies. While at least a portion of the upland soils associated with the Blackjack Oak-Post Oak forest is estimated by Fox (1980) to be moderately fertile, especially for the cultivation of corn, the GLO records suggest that less than half of these areas were perceived to consist of arable land (Peter and Cliff, eds. 1990a:Table 3). On the other hand, while notations in the GLO records suggest that the best commercial lumber resources were viewed as present in the Pine-Oak forest and that this association was perceived generally to be well suited for pasturage, several of the soils in this association are considered today to be very productive for the cultivation of cotton and corn, with estimated yields under modern cultivation methods running as high as 392 kg of cotton per hectare (350 lbs/acre) and 522-566 decaliters (dal) of corn per hectare (60-65 bushels/acre) (Fox 1980:Table 6). The evidence also suggests that perceptions regarding the Red Oak-Post Oak forest varied, but that these areas were considered most suitable for occupation, with early land surveyors tending to see about equal proportions of arable land and pasturage. On the other hand, the Flood Plain Hardwoods forest appears to have been considered totally unsuitable for settlement, while today it is felt to be well suited only for pasture and silviculture because of the tendency to flood throughout the year. Finally, the Tall Grass Prairie was perceived to be suited mainly for pasture,

a perception that continues to the present, although crops of soybeans, oats, and sorghum have been grown on it (Fox 1980:14). Jordan (1981) notes that upland prairie areas similar to that which was present in the RRAD/LSAAP area provided excellent range for the herds of horses and cattle which became established in Northeast Texas prior to the Civil War.

PALEOCLIMATIC RECONSTRUCTION

The prehistoric climatic history of the RRAD/LSAAP area, as presently known, indicates a gradual warming trend following the end of the Pleistocene, interrupted only by a period of warmer temperature than today (Bryant and Holloway 1985:56-66; Delcourt and Delcourt 1985:12-22). Paleoenvironmental data from East Texas relating to conditions prior to the last full glacial interval are limited, but radiocarbon dating of three stratified paleosols identified on Caney Creek in Cass County has provided some paleoenvironmental data relative to the Middle Wisconsin (Cliff and Peter, eds. 1992). These three paleosols are buried by a thick layer of colluvial material and date to the late Pleistocene period ($26,770 \pm 370$ B.P.; $24,880 \pm 320$ B.P.; and $24,500 \pm 180$ B.P.). The date on the middle soil is out of sequence (i.e., $26,770 \pm 370$ B.P.), although not by much, but the important thing is that all three paleosols fall within the Middle Wisconsin period Farmdalian interstade (22,000 - 28,000 years ago). Data on the paleoenvironment of the Middle Wisconsin in Texas are rare, but there is some data suggesting increasingly humid conditions subsequent to 30,000 years ago in southern Texas (Story 1990a:22), while pollen data from playa lake deposits in northwestern Texas have been taken to indicate, among other things, a cool and moist climate in western Texas from about 33,500 to 22,000 years ago, during what has been termed the Rich Lake Interpluvial (Bryant and Holloway 1985:41, 44). Based on this, and on fossil pollen records in nearby regions of the southeastern United States, Bryant and Holloway (1985:44) note the possibility of moist conditions for eastern Texas with an oak-hickory-pine forest zone covering the Gulf Coastal regions of eastern and southeastern Texas around 30,000 years ago. Stable carbon isotope ratios for the three paleosols from Cass County (-27.1‰ , -24.5‰ , -25.0‰) are greater than the ratio obtained from a soil with a modern date from the same area (-23.5‰) suggesting a higher component of C_3 plants (i.e., all trees and many shrubs and grasses) and possibly moister conditions during the Middle Wisconsin (Cliff and Peter, eds. 1992).

During the subsequent Late Wisconsin Full-Glacial Interval (ca. 23,000 - 16,500 years ago), it is believed that climatic conditions in the RRAD/LSAAP area were considerably different from those of today, being much cooler and more mesic (Bryant and Holloway 1985). At this time the general area has been reconstructed as falling on, or close to, an ecotonal boundary between boreal forest, similar to that which today characterizes eastern Canada, to the north and a narrow belt of mixed conifer northern hardwood forest to the south (Delcourt and Delcourt 1985:Figure 7a, 15-16). The pollen records at a number of sites between 34° and 37° N latitude in the southeastern United States at this time is dominated by Jack Pine (*Pinus banksiana*), today a dominant tree within the southern boreal forest of Manitoba and east central Ontario. Based on this, and on low coefficients of dissimilarity between full-glacial pollen assemblages and modern pollen samples from eastern Canada, Delcourt and Delcourt (1985:16) infer that "community composition of full-glacial boreal forests at 36° N latitude was within the range of variation in species occurrence and abundance within modern boreal forests of southern Manitoba and east-central Ontario."

Vegetational response to the onset of the Late Glacial Maximum to the north (ca. 16,500 years ago) must have had almost immediate ramifications in the RRAD/LSAAP area, given its location close to the southern full-glacial limit of the boreal forest. The decline of northern *Diploxylon* *Pinus* species, accompanied by increasing populations of mesic boreal and cool-temperate deciduous taxa, between 16,500 and 12,500 years ago has been interpreted as indicating the persistence of a cool climate with an increased availability of precipitation during the summer growing season (Delcourt and Delcourt 1985:18-19).

During the succeeding Early Holocene interval (12,500 - 8,500 years ago), cool-temperature, mesic tree species became dominant throughout the mid-latitudes of the southeastern United States (Delcourt and Delcourt 1985:19). Reconstructed vegetation maps suggest that the RRAD/LSAAP area was located in the Southeastern Evergreen forest with a Mixed Deciduous forest located to the north and west (Delcourt and Delcourt 1985:Figure 7b). In the Ouachita Mountains of eastern Oklahoma, pollen data from Ferndale Bog indicate that grasslands were replacing the previous deciduous conifer woodlands. Spruce trees were probably no closer than 160 km (Bryant and Holloway 1985:53-54). Whether or not pollen data from the Ouachita Mountains are directly applicable to the RRAD/LSAAP area remains to be demonstrated. Bryant and Holloway (1985:55) suggest that the changes during this period were probably compositional in that the proportions of certain species increased while others decreased.

The Middle Holocene interval, also known as the Hypsithermal or Altithermal (8,500 - 4,000 years ago), was a period of warming and drying which resulted in the expansion of prairie at the expense of forest (Delcourt and Delcourt 1985:19). Recent data from northern Texas suggests that the height of the Altithermal in that area occurred from 7,500 to 4,500 years ago (Reid Ferring, personal communication 1991). By 5,000 years ago, the large areas of Mixed Deciduous forest north and west of the RRAD/LSAAP area had migrated to the northeast and the Southeastern Evergreen forest had shifted from being dominated by xeric species of oak and hickory to being dominated by species of southern pine (Delcourt and Delcourt 1985:Figure 7c, 20).

Recent data from several areas in East Texas suggest that the Altithermal may have had a noticeable effect in that area. A matrix sample of organic carbon from a loamy fluvial deposit in the flood plain of the East Fork of Elliott Creek yielded a Middle Holocene age of $6,370 \pm 100$ years: 4420 B.C. (Beta-36437, ^{13}C adjusted), which falls in the middle of the Altithermal (Peter et al. 1991:Appendix H). A $^{13}\text{C}/^{12}\text{C}$ stable isotope ratio of -18.8‰ associated with this sample is less than the ratio of -23.5‰ associated with a modern soil and suggests that C_3 plants were less a component of the biosphere then than today, with climatic conditions possibly harsher (i.e., warmer and drier). Two buried paleosols in the Sulphur River flood plain in Cass County have yielded dates that also fall within the Middle Holocene ($6,540 \pm 90$ B.P. and $4,310 \pm 90$ B.P.; Cliff and Peter, eds. 1992). One of these two paleosols dates to the middle of the Altithermal, while the other dates just subsequent to its end. The stable carbon isotope ratios for these two soils also are lower than that of the modern soil (-19.9‰ and -23.1‰, respectively), and also suggest climatic conditions which were warmer and drier than today, with the harshest conditions present between approximately 6,500 and 6,000 years ago. East Texas probably was affected less by the Altithermal than were areas further west, but it apparently was not entirely unaffected. Delcourt and Delcourt suggest that modern conditions, with minor fluctuations, became prevalent subsequent to the beginning of the Christian era (Delcourt and Delcourt 1985:20-21).

The Ferndale Bog data (Albert 1981; Bryant and Holloway 1985), which presently comprise the most relevant data base for northeastern Texas, indicate that the initial post-glacial grasslands were first replaced by an oak savanna, then an oak woodland by mid-post-glacial times, and finally by the appearance of pines around 1,200 years ago (Bryant and Holloway 1985:64). It is highly probable that the Northeast Texas region responded less dramatically and at a slower rate than either the Ouachita Mountains region or the region to the east. The establishment of an oak-hickory-pine forest probably occurred earlier than the Ferndale Bog pollen record indicates; however, the timing and exact nature of the Holocene vegetational changes in Northeast Texas remain to be documented.

A recent review of paleoenvironmental data from North Central Texas and the adjacent Southern Plains (Peter and Jurney 1988) suggests that a dry-moist-dry trend in effective moisture occurred between 3,200 and 150 years ago. The initial dry period is projected prior to 1,950 years ago, and a moist period follows

until circa 950 years ago. Between 950 and 700 years ago, drought conditions were prevalent and a drying trend which continues today was initiated. Three paleosols dating to the Late Holocene have been identified within the Sulphur River flood plain in Cass County, one of them is very recent ($3,480 \pm 80$ B.P., $3,030 \pm 100$ B.P., and $106.2 \pm .8$ percent of modern; Cliff and Peter, eds. 1992). These soils would probably have formed under what were essentially modern climatic conditions, although the earliest Late Holocene paleosol appears to have formed under conditions moister than today, the second under conditions drier than today, and the third under present conditions. The stable carbon isotope ratio for the earliest soil (-24.4‰) suggests a higher component of C_3 plants and moister conditions than today; the ratio for the second soil (-21.9‰) suggests that C_3 plants were less a component of the biosphere, with climatic conditions possibly harsher than today; and the ratio for the recent soil providing a baseline $^{13}\text{C}/^{12}\text{C}$ ratio (-23.5‰) for interpreting the data from the earlier periods. Although this proposed episodic cycle of Late Holocene climatic change is the most plausible reconstruction at the present time, there remains the problem of regional variability and the specificity of the paleoenvironmental record. The nature and extent of the associated vegetation shifts are very poorly understood. Throughout the entire Holocene, it is probable that environmental shifts were gradual and variable across the ecotonal border of the eastern forests and the Southern Plains. It is also probable that the border did not shift in the normal sense, but rather that the mosaic of habitat patches changed in character and size. Unfortunately, our understanding of the timing and the nature of the Holocene environmental shifts in Northeast Texas is very generalized at this time and relies too much upon data from other regions that may or may not be applicable. Researchers must continue to pursue multiple lines of evidence (palynology, dating, sedimentology, malacology, archeofauna, and stable isotopes) in order to properly model the magnitude and timing of paleoenvironmental shifts in Northeast Texas.

CHAPTER 3

CULTURAL BACKGROUND

by
Maynard B. Cliff

INTRODUCTION

The area of extreme northeastern Texas, which includes the Red River Army Depot/Lone Star Army Ammunition Plant (RRAD/LSAAP), is included within the archeological area known as the Great Bend (Schambach 1982a:1), a region which takes its name from the Great Bend of the Red River at Fulton, Arkansas. It includes that portion of the Red River drainage between extreme southeastern Oklahoma and the vicinity of Shreveport, Louisiana, downstream. As an archeological area, the Great Bend includes portions of Oklahoma, Texas, Louisiana, and Arkansas, and is centered in Arkansas and Louisiana (Schambach 1982a:Figure 1-2). In northeastern Texas, the Great Bend region includes the lower reaches of the Sulphur River (Figure 3).

The following chapter is intended to provide a general background to the archeology of the Great Bend area in Northeast Texas, while providing the interested reader with sufficient references for a more in-depth coverage of the topic. The chapter is divided into three sections, the first of which gives a brief summary of previous archeological research carried out within the general area of the RRAD/LSAAP. The second briefly discusses the nature of the prehistoric and historic Native American archeological records in broad terms, while the third considers the historic Euroamerican and African-American settlement in the area.

PREVIOUS ARCHEOLOGICAL RESEARCH

Prehistoric Research

In recent years, several detailed overviews of the development of prehistoric archeology in the RRAD/LSAAP area (Perttula 1988a; Peter et al. 1991:Appendix I) specifically, and in East Texas in general, (Guy 1990) have been written, and the interested reader is referred to them for more detail. Organized archeological research in the general region of the RRAD/LSAAP has a relatively long history, going as far back as 1911 with Clarence B. Moore's riverboat survey of sites along the Red River in Louisiana, Arkansas, and Texas (Moore 1912; see also Miller 1986 and Schambach 1982a). Moore recorded three mound sites in Bowie County, Texas, but he failed to excavate in any of them (Moore 1912:637-638). Subsequently, in the 1910s and 1920s, J.E. Pearce of the University of Texas (UT) became interested in the archeology of Northeast Texas (Barnard 1939), but it was not until 1931 that the University began an intensive program of professional research (Pearce 1932; for specific reports of UT activities, see Dickinson 1941, Goldschmidt 1935, Jackson 1932, Krieger 1946, Lewis 1987, and Scurlock 1962).

For the four years prior to the outbreak of World War II, the federal Works Progress Administration (WPA) was active in Northeast Texas, carrying out archeological excavations at several sites, including the Hatchel Mound (41BW3) and the Paul Mitchell site (41BW4) (Creel 1984; Davis 1970; Hamilton 1972; Schambach 1982a). At the same time, nonprofessionals and collectors from Dallas and Texarkana also began to excavate in Caddoan mound and cemetery sites in extreme Northeast Texas (see for example, Harris 1953 and Miroir n.d.).

At the end of World War II, and into the 1960s, federal archeology was linked to reservoir salvage programs in a number of states, including Texas. During this period, surveys were carried out at Texarkana Reservoir (now Wright Patman Lake) on the Sulphur River immediately south of the RRAD/LSAAP (Stephenson 1950). Subsequently, three sites, Knight's Bluff (41CS14), Sherwin (41CS26), and Snipes (41CS8), were excavated there (Jelks 1961), and additional limited survey was undertaken in 1970, in response to proposed changes in the lake level (Briggs and Malone 1970). Between 1970 and 1976, crews from East Texas State University surveyed portions of Franklin, Morris, Red River, and Titus counties (East Texas State University 1971:50-84); while Milton Bell, of the Texas Highway Department, surveyed portions of Cass, Morris and Titus counties, recording over 50 prehistoric sites, many of which date subsequent to A.D. 800 (Bell n.d.; Perttula 1988a:14).

In the 1960s, limited efforts to salvage archeological data were carried out at several eroding Caddoan sites along the Red River, in Bowie and Red River counties. Generally this work was sparked by the need to salvage mortuary features, such as single burials (Brickey n.d.), larger shaft burials (Banks and Winter 1975), and even mounds (Skinner et al. 1969). These salvage efforts continued in the 1970s, as much in response to increased pothunting and graverobbing as to erosion, and included feature recording at the Tilson site (41BW14) in Bowie County (Creel and Fields 1979). Partially as a result of this work, a conservation easement was obtained on the Tilson site by the Archaeological Conservancy, while portions of the Hatchel site were obtained by the General Land Office (GLO) of the State of Texas (Perttula 1988a:14). More extensive archeological research northwest of the RRAD/LSAAP on the Red River during the 1970s and 1980s included survey and testing along Big Pine Creek in Red River and Lamar counties (Mallouf 1976); and excavations by the Museum of the Red River at the Bob Williams, Holdeman (41RR11), and Roland Clark (41RR77) sites (Perino 1983) and by the University of North Texas (UNT) at the Roseborough Lake site in Bowie County (Gilmore 1986, for more on this important contact site, see Miroir et al. 1975). At this same time, UNT instituted the Red River Archaeological Project, with the explicit goal of developing a predictive model for prehistoric site location within the Red River basin in Bowie, Red River, and Lamar counties (Gilmore and McCormick 1980, 1982).

More recent archeological activities have included the 1987 excavation by the Texas Department of Highways and Public Transportation of a small Caddoan hamlet and cemetery at the Murphy Branch site (41MX5), southwest of the RRAD/LSAAP on White Oak Creek (Brewington et al. 1995; Wormser 1988); survey and testing along Little Mustang and Cuthand creeks in Red River County, including work at the Cheatwood Place (41RR181) on Little Mustang Creek (Gaither et al. 1991; Perttula 1988a:15); and survey by UNT of pipelines in the Sulphur River and Cypress Bayou basins, and in Lamar County in the Red River basin (Perttula and Nathan 1989; Perttula et al. 1989).

Beginning in 1990, Geo-Marine, Inc. (GMI), began a long-term survey and site-evaluation project along the Sulphur River and White Oak Creek in Bowie, Cass, Morris, and Titus counties in connection with the White Oak Creek Mitigation Area (WOCMA) for Cooper Lake (Peter et al. 1990). The initial phase of survey work for this project located 16 sites within an area of about 579 hectares (1,430 acres) south of the Sulphur River in Cass County (Cliff and Peter, eds. 1992). More recently, additional survey has recorded 58 archeological sites within approximately 1,619 hectares (4,000 acres) in Bowie, Cass, and Morris counties

(Cliff, ed. 1994), with limited testing conducted at two sites in Cass County (41CS150 and 41CS155/156) and testing and block excavation at a third (41CS151). Further to the west, in Titus and Franklin counties, extensive cultural resources investigations have been undertaken by Espey, Huston and Associates, Inc., in association with surface coal mining projects. At the Monticello B-2 Mine, north of Mount Pleasant, survey of approximately 8,094 hectares (20,000 acres) resulted in the recording of 237 prehistoric and historic archeological sites (Jones et al. 1989). Subsequently, testing was conducted at six prehistoric sites (41TT154, 41TT370, 41TT372, 41TT373, 41TT550, and 41TT555) in 1991 (Kotter et al. 1993), and an additional 10 sites (41TT392, 41TT396, 41TT398, 41TT399, 41TT400, 41TT406, 41TT409, 41TT413, 41TT600, and 41TT601) in 1993 (Nash et al. 1995). On the basis of this work, data recovery was conducted at sites 41TT372 and 41TT550 in 1993 (Dixon et al. 1995). Elsewhere in Titus County, survey of 1,100 hectares (2,716 acres) at the Monticello I Area, southwest of Mount Pleasant, recorded another 22 prehistoric and historic sites (Hoyt et al. 1994).

In mid-June of 1991 and 1992, the Texas Archeological Society (TAS) conducted field school excavations under the direction of staff members of the Texas Historical Commission (THC) at several sites in the vicinity of the E.A. Roitsch/Sam Kaufman site in Red River County, north of WOCMA (Bruseth 1992; Bruseth et al. 1991:1, 6-9; Martin 1992; Prikryl 1992; Texas Historical Commission [THC] 1991:11-13). This research program included excavations at the Fasken Mounds (41RR14), the Ray site (41LR135), Salt Well Slough (41RR204), and the E.A. Roitsch site itself. Also as part of this research effort, survey operations were conducted within the Big Pine Creek drainage to the west, recording or rerecording 70 sites (THC 1991:13). Finally, very recently, data recovery excavations were undertaken at site 41BW422, along Barkman Creek north of Hooks in Bowie County, north of the RRAD/LSAAP (Tucker 1994).

Historic Period Site Research

A concern for historic Euroamerican and African-American archeological remains in Northeast Texas is an extremely recent development compared to prehistoric research in the area. Prior to the 1970s, historical archeological and architectural sites in Northeast Texas generally were not considered to have significant research potential (Perttula 1988a:16). In the general vicinity of the RRAD/LSAAP, archeological investigations conducted at the Roseborough Lake site in 1976 by UNT resulted in the identification of architectural remains from the early 1800s (Gilmore 1986:22). At about the same time, the UNT Red River Archeological Project recorded a number of historical archeological sites dating to the nineteenth and twentieth centuries along the Red River in Bowie, Red River, and Lamar counties (Gilmore and McCormick 1980, 1982).

More recently, numerous historical archeological sites have been recorded by cultural resources surveys in the Great Bend area, but very little work has been done beyond the site-recording stage. UNT recorded a number of historical sites and localities as part of its pipeline surveys in the Sulphur River and Cypress Bayou basins; while the survey work for the WOCMA project conducted in 1990 located only two sites with historical components, both of which were late-nineteenth-to-early-twentieth-century farmsteads or associated buildings (Cliff and Peter, eds. 1992). More extensive survey work conducted subsequently has recorded only an additional 10 sites with historical components dating to the same period (Cliff, ed. 1994). Extensive surveys in connection with proposed strip mining in Titus and Camp counties, to the southwest of the RRAD/LSAAP, has recorded large numbers of historical sites. In 1986-1987, survey at the proposed Monticello-Leesburg Mine, in Camp County, recorded 35 historical archeological and architectural sites and 12 historical cemeteries. The earliest of these dated to the 1870s but the majority appeared to date to the first quarter of the twentieth century (Glander et al. 1987). In 1989, limited testing was conducted at site

41TT87, a multicomponent prehistoric/historical site, in Titus County (Bell 1990). The historical component appeared to consist of a nineteenth-to-twentieth-century farmstead.

Previous Research at the RRAD/LSAAP

Archeological research within the boundaries of the RRAD/LSAAP has been ongoing since 1980 (Table 2). This work began in April of 1980 when an archeological and endangered wildlife survey of a proposed 345-KV transmission line right-of-way conducted by Espey, Huston and Associates, Inc., for Southwestern Electric Company (SWEPCO) extended across the southeastern portion of the RRAD and the southern portion of the LSAAP. The surveyed corridor within the installation was approximately 3.5 miles long and 150 ft wide for an estimated surveyed area of 64 acres (Newman 1988:14). This work resulted in the recording of five cultural resources properties, two within the RRAD (41BW175 and 176) and the remaining three within the LSAAP (41BW177, 178, and 179). All of these sites appeared to date to the late nineteenth-early twentieth centuries, and included four apparent farmsteads and one cemetery. None of them contained any prehistoric components.

Formal cultural resources management operations at the RRAD/LSAAP began in 1984 with the preparation of archeological overviews and management plans for both installations (Heartfield and Dieste 1984a, 1984b). Heartfield and Dieste mention the existence of three known prehistoric sites on the RRAD and a fourth on the LSAAP, all unrecorded with the THC or the Texas Archeological Research Laboratory (TARL). The three on the RRAD consisted of one next to Caney Creek Reservoir, tentatively dated to the late Early Ceramic/Early Caddoan period, and two next to Elliott Creek Reservoir, also dated to the late Early Ceramic/Early Caddoan period (Heartfield and Dieste 1984b:4-23). The site on the LSAAP was located an estimated 150 m north of Elliott Cemetery, and reportedly dated to the late Early Ceramic/Caddoan period while containing Paleo-Indian material as well (i.e., two broken Plainview, or earlier, points) (Heartfield and Dieste 1984a:4-1). Unfortunately, more recent survey of this area showed this site to have been totally destroyed by construction of a sanitary landfill.

In January and March of 1988, Newman (1988) surveyed about 59 hectares (145 acres) in three areas involved in proposed construction at the RRAD and the LSAAP, including approximately 8 hectares (20 acres) for a planned Central Distribution Center and about 18 hectares (45 acres) for a borrow pit on the RRAD, along with about 32 hectares (80 acres) for a sanitary landfill on the LSAAP. As a result of this work, seven cultural resources sites were located within the area of the RRAD, but only the three with prehistoric components were given TARL numbers (41BW182, 41BW183, and 41BW184). Later in August of that same year, test excavations were conducted by GMI at two of these sites, 41BW182 and 41BW183, in order to determine their National Register eligibility (Cliff and Peter, eds. 1988). Little of significance was found at either site, although limited samples from both did indicate utilization of the area during the Late Archaic, Early Ceramic, and Caddoan periods. The basal portion of a possible Plainview point from 41BW182 suggested a Paleo-Indian presence as well. Site 41BW182 also proved to have a historical component, consisting of an early-twentieth-century farmstead, probably occupied from about 1900 to 1940.

In December of 1988 and January of 1989, a combined survey of approximately 3,318 hectares (8,200 acres) within the RRAD/LSAAP was conducted by GMI and UNT. This survey recorded a total of 99 cultural resources properties (51 in the RRAD and 48 in the LSAAP), including 49 sites with historical components alone, 26 sites with prehistoric components, 19 sites with evidence of both prehistoric and historical occupations, and five historical cemeteries. Although the limited collections from the prehistoric sites did little to add to our understanding of chronological trends or the intensity of the usage of upstream tributary

Table 2
Summary of Cultural Resources Investigations to Date at the Red River Army Depot/
Lone Star Army Ammunition Plant

Project Type	Date	Contractor or Researcher	Reference	Summary of Work
Survey	1980	Espey, Huston and Associates, Inc.	Newman 1988	Survey of proposed transmission line on the RRAD/LSAAP; recorded four historical sites and one historical cemetery.
Cultural Resources Planning	1984	Heartfield, Price, and Greene, Inc.	Heartfield and Dieste 1984a, 1984b	Development of overviews and management plans for both the RRAD and the LSAAP.
Survey	1988	Fort Worth District, U.S. Army Corps of Engineers	Newman 1988	Survey of ca. 59 hectares (145 acres) on the RRAD/LSAAP; recorded three sites, all with prehistoric components, one with historical component.
Testing	1988	Geo-Marine, Inc.	Cliff and Peter, eds. 1988	Testing of one prehistoric site (41BW183) and one multicomponent prehistoric/historical site (41CS182) on the RRAD.
Survey	1988-1989	Geo-Marine, Inc. University of North Texas	Peter and Cliff, eds. 1990a	Survey of ca. 3,318 hectares (8,200 acres) on the RRAD/LSAAP; recorded 99 sites, 45 with prehistoric components, 68 with historical components, and five historical cemeteries.
Survey	1989	Geo-Marine, Inc.	Peter and Cliff, eds. 1990b	Point location survey and pedestrian survey of ca. 214 hectares (530 acres) in the LSAAP; recorded 77 sites, 16 with prehistoric components and 75 with historical components.
Cultural Resources Planning	1989-1990	Geo-Marine, Inc.	Peter et al. 1991	Combined Cultural Resources Management Plan for both the RRAD and the LSAAP.
Survey	1990-1991	Geo-Marine, Inc.	Cliff and Peter, eds. 1994a	Survey of ca. 2,225 hectares (5,500 acres) on the RRAD/LSAAP; recorded 58 archeological sites, 32 with prehistoric components and 28 with historical components, and one historical cemetery.
Survey	1992	Geo-Marine, Inc.	Hunt 1992	Survey of ca. 101 hectares (250 acres) in the northwestern corner of the LSAAP. No new cultural resources sites identified.

areas, the distribution did reveal a pattern of small-site use up to the limits of both the Sulphur and Red River watersheds for the prehistoric period in general. The recorded historical occupations ranged in date from 1840 to 1940, the majority dating between 1880 and 1920 and probably representing small owner or tenant farmsteads (Peter and Cliff, eds. 1990a).

In 1990, a point survey oriented toward locating historical period sites within the LSAAP recorded 77 cultural resources sites and surveyed an additional 214 hectares (530 acres). Sixty-one of these sites contained historical components alone, another 14 contained both historical and prehistoric remains, while only two were identified as having prehistoric components alone. Although most of the 16 prehistoric components were undatable, their distribution served to reinforce the conclusions drawn from the previous survey. With regard to the historical occupations, the vast majority once again appeared to be late nineteenth-early twentieth century farmsteads (Peter and Cliff, eds. 1990b). Subsequently at the end of 1990 and in early 1991, an additional 2,225 hectares (5,500 acres) were surveyed by GMI, recording 57 new sites (44 on the RRAD and 13 on the LSAAP) and relocating one previously recorded site on the RRAD (Cliff and Peter, eds. 1994a). Twenty-nine of these properties were identified as being prehistoric in date, 26 were historical sites, and three were multicomponent prehistoric and historical sites.

In early 1991 GMI completed a Cultural Resources Management Plan (CRMP) for both the RRAD and the LSAAP combined (Peter et al. 1991), which included a detailed environmental and cultural (both prehistoric and historical) overview for the two installations, as well as a complete cultural resources inventory as of 1989, prior to the 1990 surveys. Then, in February 1992, a survey of about 101 hectares (250 acres) was undertaken in the northwestern corner of the LSAAP (Hunt 1992). Only a single historical locality was identified.

Prior to the present survey, the sample of prehistoric components for both installations combined stood at 96, with diagnostic artifacts ranging from Paleo-Indian to Caddoan in date. The sample of historical archeological occupations consisted of 176 sites, most of which appear to be late-nineteenth-to-early-twentieth-century farmsteads, while an additional seven sites consisted of historical cemeteries.

NATIVE AMERICAN CULTURE HISTORY

The following brief discussion of the prehistoric archeological record in the vicinity of the RRAD/LSAAP in Northeast Texas draws from previous summaries by Perttula (1988a), Story (1981, 1985, 1990b), and Thurmond (1985, 1988, 1990). Chronological divisions are adapted from Thurmond (1985, 1988, 1990), Story (1985, 1988, 1990b), and Kenmotsu and Perttula (1993). Following Kenmotsu and Perttula (eds. 1993), the period of Native American occupation in Northeast Texas has been subdivided into eight temporal divisions, with the later periods being the best dated (Table 3).

Table 3
Native American Cultural Sequence for Northeast Texas

Temporal Period	Date
Paleo-Indian	9500 - 7000 B.C.
Archaic	7000 - 200 B.C.
Early Ceramic	200 B.C. - A.D. 800
Formative Caddoan	A.D. 800 - 1000
Early Caddoan	A.D. 1000 - 1200
Middle Caddoan	A.D. 1200 - 1400
Late Caddoan	A.D. 1400 - 1680
Historic Caddoan	A.D. 1680 - 1860

Paleo-Indian Period

The Paleo-Indian period in Northeast Texas (ca. 9500-7000 B.C.) generally includes those remains of human presence that can be dated to the very late Pleistocene and immediate post-Pleistocene periods (for recent reviews of this period in Northeast Texas, see Johnson 1989; Peter et al. 1991:Appendix I; and Story 1990b). As a matter of convenience, the period can be subdivided into an early Paleo-Indian period (ca. 9000-8500 B.C.) and a late Paleo-Indian period (8500-7000 B.C.). Unfortunately, although numerous diagnostic projectile points, such as Clovis, Plainview, Dalton, Scottsbluff, and San Patrice, have been recovered as isolated surface finds or in later excavated sites (Carley n.d.; Perttula 1988a:17), few Paleo-Indian sites in good stratigraphic context have been found (Perttula 1988a:17; Preston 1972, 1974), and fewer have received any sort of systematic excavation. Both Perttula and Story have noted the possible presence of horizontally stratified early Paleo-Indian deposits at the Forrest Murphey site (41MR62), at Lake O' the Pines, but the site was reportedly destroyed by dam construction before being excavated (Perttula 1988a:17; Perttula et al. 1986:47; Story 1990b:184-185). The situation of the Forrest Murphey site, and the discovery of the deeply buried Clovis-age Aubrey site (41DN479), along the Elm Fork of the Trinity River in North Central Texas (Ferring 1989), suggests that well-preserved Paleo-Indian sites in Northeast Texas will only be found by examining deeply stratified terraces or by penetrating more recent Holocene alluvium in modern flood plain situations.

Despite the lack of good data relating to the early Paleo-Indian period in Northeast Texas, some generalizations have been made regarding settlement mobility and intensity of site occupation, based on what little is known and on comparisons with other areas (see for example, Story et al. 1990:425-426). For instance, a number of researchers have seen evidence for a high degree of group mobility in the broad distribution of Paleo-Indian artifacts over the landscape and in the variety of presumably nonlocal lithic raw materials from which the artifacts were made (Meltzer and Smith 1986; Shafer 1977; Story 1990b:177). Likewise, the well-documented exploitation of large megafauna by Paleo-Indians in the western United States, coupled with the known presence of similar species in Northeast Texas between 11,000 and 9,000 years ago (see Hemmings 1983; Slaughter and Hoover 1963), has led to the conclusion that "big game hunting" was part of the Paleo-Indian subsistence strategy in Northeast Texas. Certainly, while the presence of a possible association between a Clovis point and mastodon remains at the Forrest Murphey site (Story 1990b:185) supports this likelihood, increasing evidence from sites to the west (such as the Aubrey site) indicates that Paleo-Indian groups were less dependent upon the hunting of large animals than has been assumed in the past.

The late Paleo-Indian period in the Great Bend region appears to be distinguished by the divergence of the earlier, widespread fluted point tradition into several distinctive subtraditions. The first of these includes Scottsbluff, Plainview, and similar lanceolate points that appear to be part of a more western, or plains-related, subtradition in terms of origin and style; while the second includes Dalton and Dalton-related projectile points that have a wide distribution throughout the wooded southeastern and midwestern United States. Some researchers have suggested that this Dalton horizon represents an adaptation to the changing environment at the end of the Pleistocene (Goodyear 1982:389-391), a view that has found some support in the addition of a presumed "heavy, woodworking tool, the Dalton Adz," to what otherwise is viewed as a Paleo-Indian tool kit (Kelley et al. 1988:21). San Patrice, an important complex which may be related to Dalton, is found in eastern Texas, southeastern Oklahoma, northern Louisiana, and southern Arkansas, and is characterized by San Patrice points, Keithville points, and the so-called Albany Scraper (Ensor 1987; Schambach 1979; Webb et al. 1971).

In the RRAD/LSAAP vicinity, apparent Paleo-Indian materials have been recorded at Wright Patman Lake to the east (Briggs and Malone 1970) and at the Keelan site (41BW12) on Barkman Creek to the northeast.

Test excavations at site 41BW182 on the RRAD itself yielded a Plainview point in mixed context (Cliff and Peter, eds. 1988:48); while within the LSAAP, Plainview points have been reported from two unrecorded sites (Newman 1988).

Archaic Period

The Archaic period in Northeast Texas is tentatively dated between 7000 and 200 B.C. As is true for many areas, a threefold division of the Archaic period, consisting of early, middle, and late "subperiods," has been applied in Northeast Texas. Although reliable dating for the Archaic period in this area is virtually nonexistent, these divisions have been given tentative dates on the basis of better-dated sites in surrounding areas. Thus the Early Archaic has been dated from 7000 to 4000 B.C.; the Middle Archaic from 4000 to 2000 B.C.; and Late Archaic from 2000 to 200 B.C. (recent overviews which cover the Archaic in this portion of Texas include Peter et al. 1991:Appendix I; Story 1985, 1990b; and Fields and Tomka 1993). Archaic remains are usually found in upland settings and are frequently mixed with later material (Campbell et al. 1983; Story 1981). General trends that have been proposed as characterizing the Archaic period in Northeast Texas include an increasing complexity of settlement systems, increasing population size and density, increasing sedentism, and the development of distinct group territories (Pertulla 1988a:17; Story 1985:52). Despite these changes, however, no evidence of any level of food production, even incipient production, has been reported from any Northeast Texas Archaic site (Pertulla 1988a:17; Story 1990b:Table 56), in spite of the fact that definite steps toward food production were being taken elsewhere in the eastern United States (Ford 1985:347-349; Watson 1988).

During the Early Archaic (ca. 7000-4000 B.C.), the occurrence of small and widely distributed sites has been suggested to reflect high group mobility within large and poorly defined territories, with a generalized hunting and gathering economy (Meltzer and Smith 1986; Story 1985:35, 39). Projectile point forms suggested to be associated with the Early Archaic in Northeast Texas include Kirk, Keithville, Palmer, Cossatot, Dawson, and Wells (Story 1990b; Thurmond 1990). In comparison to the Early Archaic, the Middle Archaic period in the Great Bend area (4000-2000 B.C.) appears to be characterized by: (1) an increased diversity of tool types; (2) greater interregional variability; (3) the addition of ground, pecked, and polished stone tools; and (4) an increased use of plant foods, as indicated by the addition of mortars, pestles, and mealing stones (Neuman 1984:77, 79). The dependence upon abundant forest resources (e.g., oak mast production, deer, and small mammals) evenly distributed over most of the region probably resulted in evenly distributed population densities and favored the development of exclusive or "fixed" territories (Plog and Upham 1983:202; Story 1985:41). Although grinding stones apparently were introduced during the Early Archaic period, it was not until the Middle Archaic that their use became widespread. Grinding and polishing were used to produce grooved axes, atlatl weights, and ground stone pendants at this time. Diagnostic dart points possibly associated with the Middle Archaic include Big Sandy, Calf Creek, Johnson, Carrollton, Morrill, Evans, Lone Oak, Trinity, and Wesley (Story 1990b; Thurmond 1990).

Population density may have reached a peak during the Late Archaic period in Northeast Texas (ca. 2000-200 B.C.), as evidenced by an apparent increase in the number of sites, a greater distribution of sites over the landscape, and evidence of increasing sedentism. At the same time, group mobility may have become more limited and interregional contact may have become increasingly common. It has been suggested that the greater spatial dispersal of sites may reflect an economic system making an increased use of all available floral and faunal resources, although the economic data to support this view is generally absent. Throughout the Great Bend region, Late Archaic period occupation sites are relatively common in the uplands and a number are known from the flood plain of the Red River, although no regional phases have yet been

identified (Schambach 1982a:3-6). Dart points that may be diagnostic of the Late Archaic include Lange, Castroville, Ellis, Palmillas, Edgewood, Yarbrough, Ensor, and Kent (Story 1990a; Thurmond 1990).

Early Ceramic Period

In Northeast Texas, the Early Ceramic period (500 B.C.-A.D. 800) is generally not well defined and is largely identified by similarities in pottery and projectile points to sites of the Fourche Maline tradition north of the Red River (recent overviews providing good information for this period include Perttula et al. 1993; Peter et al. 1991:Appendix I; and Story 1990b). Diagnostic artifacts consist of coarse plainware ceramics tempered with either clay/grog or bone, and Gary projectile points. The ceramics generally are grouped together as Williams Plain, but probably should be viewed as one or more undefined, regional varieties of that type. Elsewhere in Texas, sandy paste ceramics (cf. Bear Creek Plain and Goose Creek Plain) appear to be common on Early Ceramic period sites from the Sabine River south to the Gulf Coast (Story 1981:146). Discounting ceramic differences at the varietal level, the remains of the Early Ceramic period in Northeast Texas, however, seem to be most closely related to Schambach's (1982b:188) Fourche Maline tradition in Arkansas. Despite other similarities to Fourche Maline, no Early Ceramic period burial mounds are known in the Texas portion of the Great Bend. The few that are known in East Texas occur to the south, in the Sabine and Neches basins around the Toledo Bend and Sam Rayburn areas (see Story 1990b:Figure 41), at the Coral Snake (16SA48) and Jonas Short (41SA25) mound sites (Jensen 1968; McClurken et al. 1966, 1980). The lack of such evidence in Northeast Texas leaves open the question of whether or not this area was undergoing the same processes of cultural evolution presumably responsible for the development of burial mound building elsewhere (see Perttula 1988a:18; Story 1990b).

Perttula (1988a:18) has noted what appears to be a concentration of Early Ceramic period sites within the Sulphur River basin, although this may be more the result of intensity of research or factors of site preservation rather than the actual presence of an unusually large Early Ceramic population. With regard to modelling settlement patterns during this period, Perttula (1988a:18) suggests that "Early Ceramic or Fourche Maline settlements are . . . represented by villages and hamlets in the flood plains or terraces of larger streams, and by smaller components in the uplands." Many of the sites on which Perttula bases this model, including Snipes at Wright Patman Lake (Jelks 1961) and Tick, Thomas, Hurricane Hill, and Lawson at Cooper Reservoir (Doehner and Larson 1978; Martin 1995; Perttula 1988b) contain middens, taken as indicating a more sedentary settlement pattern than that of the preceding Archaic period. Two apparent pits (Features 1 and 2) radiocarbon dated to the Early Ceramic period ($1,460 \pm 60$ B.P., and $2,090 \pm 30$ B.P., respectively) at 41HP137 at Cooper Lake yielded hickory nut, acorn, wild tubers (possibly the Prairie turnip, *Pedimelum* or *Psoralea* sp.), and what may be fragments of cultivated squash or gourd (Fields et al. 1994:12; McGregor 1995:358).

The Formative and Early Caddoan Periods

The Formative (A.D. 800-1000) and Early Caddoan (A.D. 1000-1200) periods in northeastern Texas are not well defined. Ceramics for both of these periods include Hickory Fine Engraved, Carmel Engraved, Crockett Curvilinear Incised, and Pennington Punctated-Incised (Thurmond 1990:Table 8). Thurmond has distinguished between equivalents of these two periods on the basis of the presence of Davis Incised, Holly Fine Engraved, Kiam Incised, Spiro Engraved, and Weches Fingernail Impressed in the earlier (along with some late varieties of Coles Creek types); and Canton Incised, Haley Engraved, Maxey Noded Redware, Sanders Engraved, and Sanders Plain in the later, although some researchers are more inclined to put the latter four types in the Middle Caddoan period.

The Formative and Early Caddoan periods are characterized by what may best be termed the Alto complex or Alto sphere, a widespread manifestation related to the Alto phase, originally defined at the George C. Davis site in Cherokee County, Texas, south of the Great Bend area (Newell and Krieger 1949). The Alto complex shows strong influence from Coles Creek culture and appears to temporally overlap it. However, it also shows a number of new characteristics, including new projectile point types (e.g., Hayes and Homan arrow points), new ceramic vessel forms (e.g., the carinated bowl and the bottle), and new modes of vessel decoration (e.g., fine engraving with red pigment filler) (Neuman 1970).

It has been suggested that these and other cultural innovations, including the introduction of the bow and arrow and increased food production based on maize, appear to have led to increases in population and sociopolitical complexity during these periods (Perttula 1988a:18). The settlement system became increasingly complex, apparently involving sedentary villages and farmsteads, special function sites (what Binford [1980] has called logistical camps), and the mound centers, which were presumably ritual or ceremonial in function (see Perttula 1988a:18-19). A number of such mound centers dating to the Formative and Early Caddoan periods occurs within the Sulphur River basin south of the RRAD/LSAAP, including the T.M. Coles or Mustang Creek Mound (Jackson 1931) to the southwest and several mounds at Wright Patman Lake to the south (Stephenson 1950), while a great many more occur along the Red River and its immediate tributaries to the north (Banks 1983; Miller 1986; Taylor 1949).

The Middle Caddoan Period

The Middle Caddoan period (A.D. 1200-1400) in the Great Bend region includes what is known as the Haley phase, the definition of which is based largely on mortuary data; most is from C.B. Moore's excavations at the Haley site (3MI1) in Arkansas (Moore 1912). The Haley phase appears to represent a development from the earlier Alto complex and continuities from the earlier period include the use of shaft grave burials for some members of the society who were accompanied into the afterlife by relatively rich grave offerings (Kelley et al. 1988:26). This phase was centered in the Great Bend area in Arkansas, but northwestern Louisiana and northeastern Texas did fall within its peripheral influence and a Haley phase component has been recognized at the Hatchel site in Bowie County (Davis 1970:44). Despite its presence in Texas, however, the Haley phase was apparently most fully elaborated in the Arkansas portion of the Great Bend.

Most of the well-known Haley phase components, especially in Arkansas, relate to mound centers, although it is unclear whether all of them were associated with villages (Wyckoff 1974). One well-investigated nonmound habitation site is known from Arkansas, apparently a small farmstead located on "a natural levee" or "high ground overlooking riverine bottom lands" (Wyckoff 1974:106, 113). The site contained two circular house structures and a small trash dump and has suggested to some that the Haley phase settlement pattern involved small, dispersed farmsteads surrounding vacant ceremonial centers (Hoffman 1970). However, Wyckoff (1974:107) also notes the existence of mound centers with "potentially large villages," as well as nonmound cemeteries located close to mound centers. Finally, he states that

[t]here is certainly an overall tendency for the Haley components, mound centers and nonmound habitation areas alike, to associate with a riverine valley setting. Most of the mound centers did occur in the valleys of major streams, but [some mound centers] were on the flood plains of streams tributary to the major rivers [Wyckoff 1974:112].

In regard to sociopolitical organization within Haley phase society, the complexity of the mortuary ceremonialism and apparent status ranking evident in the burials recovered from Haley phase sites, as well as the presumed organizational control necessary to construct the mound centers, strongly suggests that there

was "a political and religious hierarchy that operated throughout the Haley Focus [sic] society" (Wyckoff 1974:110).

The Late Caddoan Period

The Late Caddoan period (A.D. 1400-1680) includes the final part of the prehistoric period and the initial years of European contact (for the most recent overview of this period and the subsequent Historic Caddoan period, see Perttula 1992). The survivors of the de Soto entrada apparently entered Northeast Texas about midway through the Late Caddoan period and the latter part appears to have overlapped with the initial movements of European explorers and traders into northeastern Texas.

In the lower Sulphur River basin in Northeast Texas, two archeological complexes have been defined for the Late Caddoan period, the Titus phase and the Texarkana phase (Schambach 1982a; Thurmond 1985). The former appears to be largely located south and west of the RRAD/LSAAP, centering in Titus and Camp counties; while the latter is located in the upper portion of the Great Bend of the Red River, and extends southward to include a portion of the lower Sulphur River drainage (Wyckoff 1974:Figure 4). The definition of the Texarkana phase is based largely on WPA excavations conducted at the Hatchel Mound and at the Mitchell and Moores cemeteries situated on the Red River northwest of Texarkana (Davis 1970:50-51). Texarkana phase sites such as Knight's Bluff and Sherwin on the lower Sulphur River may have existed as satellites to these large, permanent settlements on the Red River (Perttula 1988a).

Both the Titus and Texarkana phases appear to be characterized by small hamlets or farmsteads probably occupied by small family groups of shifting agriculturalists. These farmsteads were apparently characterized by a limited number of structures and a small family cemetery (see Brewington et al. 1995; Jelks 1961; Perttula 1988a; Wormser 1988). They presumably were associated with larger, more permanent suprahousehold sites (both mound centers and nonmound cemeteries) that served to integrate the scattered households into a united social group. In the case of the Titus phase, this function appears to have been served solely by large mortuary sites serving as cemeteries for a portion of the society. In contrast to this, the Texarkana phase appears to have retained the older pattern of mounded ceremonial centers, such as the Hatchel site.

The Historic Caddoan Period

The Historic Caddoan period (A.D. 1680-1860) began with the founding of La Salle's ill-fated French colony on the Texas coast and ended with the expulsion of the Caddo from Texas in 1859. Following the failure of La Salle's colony, various other Europeans, including Don Domingo Terán de los Ríos, Henri de Tonti, the Sieur de Bienville, and Louis Juchereau de Saint-Denis, entered the upper Red River valley and made contact with the Native Americans residing in the area. The primary Native American groups inhabiting the Great Bend region at that time consisted of Caddoan speakers, presumably descendants of groups which had inhabited the area at least as far back as A.D. 800. The groups which appear to have been closest to the RRAD/LSAAP comprised the Kadohadacho Confederacy (Swanton 1946:141).

The Kadohadacho Confederacy was originally composed of five groups: the Kadohadacho, the Petit Caddo, the Upper Natchitoches, the Upper Nasoni, and the Nanatsoho. According to Williams (1974:286), the Upper Yatasi and the Cahinnio joined the Confederacy at a later time, possibly in the early eighteenth century in the case of the Cahinnio and in the 1760s in the case of the Yatasi. The Confederacy apparently controlled the entire Texas portion of the Great Bend region. Terán de los Rios, who visited one of the Kadohadacho

villages, located just above the Great Bend of the Red River near present-day Texarkana, in 1692 (Swanton 1946:57), noted that their power extended as far south as Big Cypress Bayou, south of the Sulphur Basin, which he described as emptying into a lake system which *belonged* to them (Hackney 1966:3). The origins of the Kadohadacho Confederacy are unknown at present, but it may have arisen as a result of what was probably a severe demographic impact resulting from the de Soto entrada 150 years earlier (cf. Smith 1989).

Between 1788 and 1790, the groups of the Kadohadacho Confederacy were forced south into Louisiana by the severity of Osage raids (Williams 1974:297). At that time, they settled with the Petit Caddo near Caddo Lake on Cypress Creek, northwest of Shreveport (Williams 1974:297, Maps 1 and 2), where they were encountered by Freeman and Custis in 1806 (Flores, ed. 1984:16, fn 3). The Kadohadacho remained in this area until they agreed to leave Louisiana and enter Texas following the signing of the Caddo Treaty of 1835 (Williams 1974:309). By 1854, they were residing, along with other Native American groups, on a tract of land on the Brazos River in North Central Texas which had been selected for them, with their help, by the federal government. Subsequently, they were moved to what was then Indian Territory in 1859 (Swanton 1946:99).

After the abandonment of the Great Bend region by the Kadohadacho in 1790, groups of displaced Native Americans from east of the Mississippi River began to move into Caddoan territory in Spanish Texas. These movements were in response to the increasing pressure to give up their traditional livelihoods and to become incorporated into Angloamerican culture (Everett 1990). The Spanish initially welcomed these groups with the idea of using them to create a buffer between themselves and the land-hungry North Americans. Unfortunately, as more of these groups, such as the Choctaw, Delaware, Quapaw, Shawnee, Cherokee, and Alabama-Koasati, moved into East Texas, they began increasingly to compete with the Caddo for a diminishing resource base (see, for example, Kinnaird and Kinnaird 1980). This problem simply became exacerbated following the sale of Louisiana to the United States, when North Americans began moving into Northeast Texas, as well (Perttula 1988a:21), and was not ultimately resolved until both the Caddo and the immigrant groups were expelled following the Texas Revolution.

EUROPEAN AND AMERICAN HISTORICAL BACKGROUND

The period of European exploration and settlement, and the subsequent North American and African-American development of Northeast Texas is briefly covered in the remaining portion of this chapter. For more extensive treatments of this period in Northeast Texas, see Peter and Cliff (eds. 1990a:Chapters 3 and 7) and Peter et al. (1991:Appendix J). For ease of presentation, the European and American history of the region has been subdivided into five periods:

1. European Exploration and Colonization (1542-1803);
2. Initial North American Settlement and Growth (1804-1860);
3. Civil War and Aftermath (1860-1870);
4. Initial Commercialization (1870-1920); and
5. Depression and Recovery (1920-present).

European Exploration and Colonization, 1542-1803

The initial European penetration into the general area of Northeast Texas occurred in the middle of the sixteenth century when the survivors of the de Soto entrada, led by Luís de Moscoso de Alvarado, entered Texas in their attempt to reach New Spain by land (Bruseh and Kenmotsu 1991; Schambach 1989; Weddle

1985). Recent reconstructions of the Moscoso route through Texas (Bruseth and Kenmotsu 1991; Schambach 1989) suggest that the entrada either entered Northeast Texas from the east by moving up the Sulphur River basin before turning southwest (Schambach 1989), or crossed the Red River near the Hatchel-Mitchell-Moores site complex in northern Bowie County and moved southwest, through the vicinity of the RRAD/LSAAP, to cross the Sulphur River somewhere in the vicinity of Douglasville, where Wright Patman Lake is located (Bruseth and Kenmotsu 1991).

In 1719, the Frenchman Jean-Baptiste B  nard de la Harpe travelled up the Red and Sulphur rivers from the French outpost at Natchitoches and founded a trading post among the Nasoni, probably in the vicinity of the Eli Moores site in Bowie County (Gilmore 1986; Wedel 1978). The Nassonite Post (as la Harpe's trading post has come to be known) may have been vacant or intermittently garrisoned after 1726, and then reestablished and relocated, probably at the Roseborough Lake site, in about 1731-1733 by Alexis Grappe (Gilmore 1986). This later post was garrisoned until sometime around 1778 when it was finally abandoned completely (Miroir et al. 1975:162).

Initial American Settlement and Growth, 1804-1860

Following the sale of Louisiana to the United States in 1803, immigration into Northeast Texas intensified although for a number of years it was not clear who actually owned the area south of the Red River. The United States considered it, and indeed, most of Texas, to be part of Louisiana and encouraged settlement of the area (Chandler and Howe 1939). Spain, on the other hand, and later Mexico, was violently opposed to this view and at several times during the first few decades of the nineteenth century, the dispute nearly led to war (Smith 1991). The first official North American penetration of the region was by the Freeman-Custis Expedition of 1806, which was turned back at Spanish Bluffs (Figure 4), north of the RRAD/LSAAP on the Red River, by a Spanish military force (Flores, ed. 1984).

Despite Spain's claim, Northeast Texas was too close to the United States not to fall into the North American orbit of influence, and settlement continued. The earliest settlements were confined to the areas immediately adjacent to the Red River, but after 1818, settlement pushed into the prairies along river tributaries and early roads, such as Trammel's Trace and Dayton's Road. Trammel's Trace, a popular immigrant route into Texas after 1813, passed close to the southeast corner of the RRAD/LSAAP (GLO 1941). The Trace crossed the Sulphur River at Epperson's Ferry and continued southwestward through Cass County to Hughes Springs, founded in 1839, and then south to cross Cypress Bayou two miles west of Jefferson (Webb and Carroll, eds. 1952:2:793-794). Dayton's Road was a major east-west overland route which ran along the divide between the Sulphur and Red rivers, north of the RRAD/LSAAP.

The 1830s and 1840s were a period of steady population growth in this area of northeastern Texas. During the Republican period, the area of modern-day Bowie County was included within Red River County (organized in 1836). Bowie County, named for Jim Bowie, was separated from Red River County in 1840, and at that time it was decided that the new county seat should be located within five miles of the center of the county (Chandler 1937). As a result, the town of Boston was established as the county seat in 1841 and was located just west of the present-day RRAD/LSAAP (Webb and Carroll, eds. 1952:1:194). However, when the modern boundaries of Bowie County were established in 1846, a survey indicated that the town was not located within the required five miles of the county center, and the courthouse was moved to a new location which subsequently was known as Boston, while the original community became Old Boston.

The original North American settlers in the area were apparently largely subsistence farmers residing on small holdings, with an economy reportedly based on grain and livestock production (Peter and Cliff, eds.

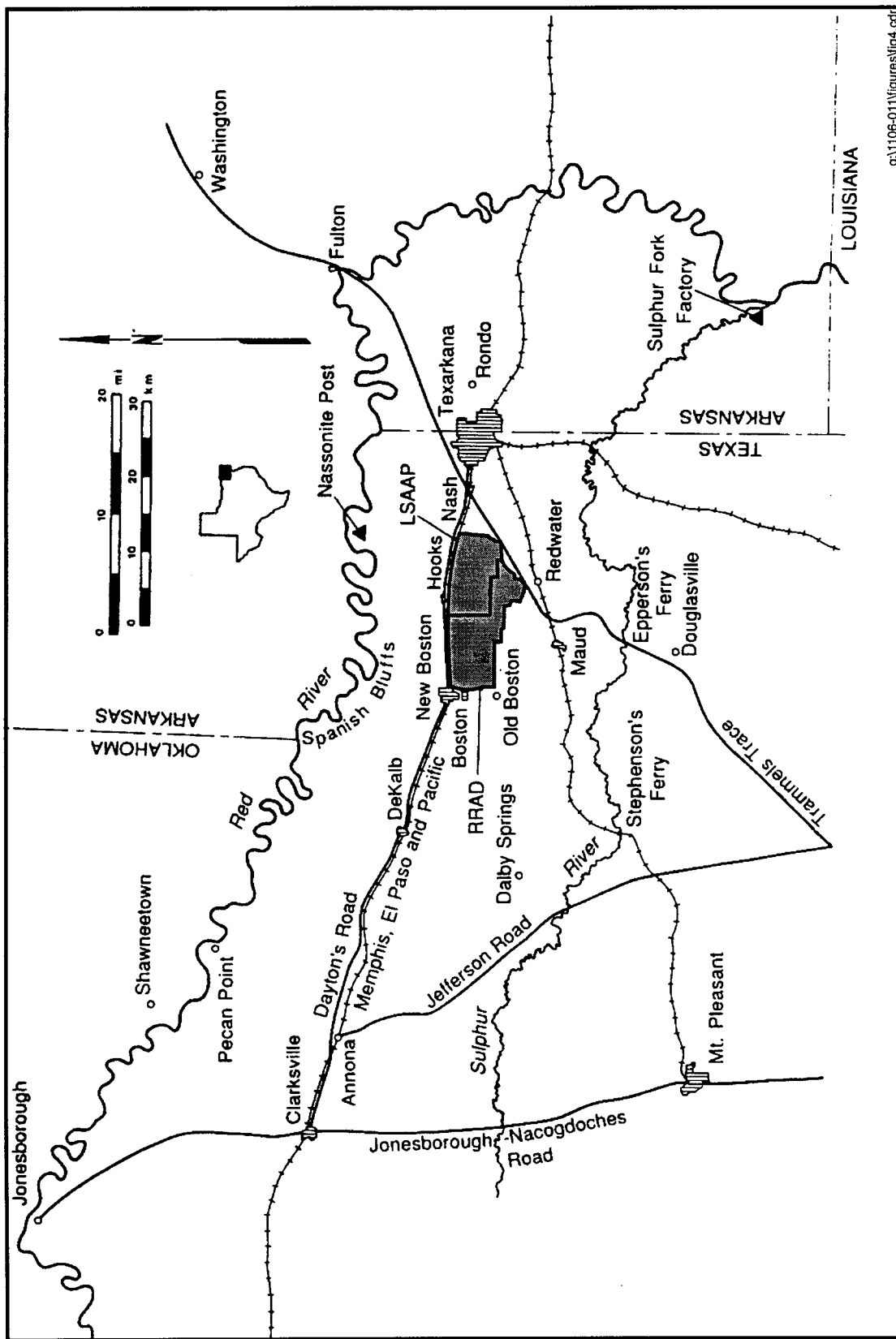


Figure 4. Early historic communities, transportation routes, and landmarks in the Great Bend area.

1990a:36). The commercial production of cotton apparently was not introduced until the 1830s (Fehrenbach 1968), a shift that was accompanied by increasing numbers of slaves in the region. In both 1850 and 1860, slaves made up over half of the population of Bowie County (see Campbell 1989:Maps 4 & 5). For the same years, the statewide percentages of slaves to the total population was much smaller, 27 percent for 1850 and 23 percent in 1860 (Jordan 1986). The town of Jefferson, on Cypress Bayou to the south, was the nearest cotton market to the RRAD/LSAAP, and the antebellum planters in the area undoubtedly sent their cotton there for sale (Peter and Cliff, eds. 1990a:39). The earliest cotton gin in the RRAD/LSAAP, owned by J.W. Elliot, was in operation by 1846, and by 1858 there were at least three gins operating in the area (Peter and Cliff, eds. 1990a:291). This period also saw the first growth of nonagricultural industries in northeastern Texas. To the south of Bowie County, the first saw pit and lumber mill in Cass County was constructed by T.J. Foster in order to supply lumber for the construction of the new county courthouse in Linden, and the first lumber residence was built in the county in 1855 (Webb and Carroll, eds. 1952:1:306). Other major industries established about the same time included tanyards and syrup mills; while after 1857, railroad construction progressed to the north in Bowie County (Webb and Carroll, eds. 1952:1:198; 2:59).

Civil War and Aftermath, 1860-1870

After the presidential election of 1860, it is not too surprising that the sympathies of most of the Angloamerican residents of Northeast Texas lay with the secessionist southerners. After all, a majority of them had immigrated from the South, the region as a whole had a substantial slave population, and the cash economy of the area was built on slave-based agriculture. In light of this, it is not surprising that Bowie County went with most of the other counties in the state and voted for secession in 1861 (Pool 1975:109).

Northeastern Texas escaped serious, direct effects from the Civil War, being too far from the centers of fighting to the east and south to be affected by Union forces, and too far east of the frontier to be affected by the resurgence of Native American problems that accompanied the withdrawal of United States and Texas military forces (Pool 1975:110-113). Indeed, as a result of its isolated location, Northeast Texas became a refuge for slaves sent west by their owners to avoid their confiscation as contraband by the federal forces, and by the end of the war they had become a source of concern for some of the civilian authorities in the region (Campbell 1989:243-246). Throughout the war, Texas supplied valuable industrial products to the Confederate armies fighting in the east. The penitentiary at Huntsville was one of the most important industrial sites in Texas, producing various cloth products for the Confederate Army, including both cotton and woolen goods (Webb and Carroll, eds. 1952:1:352). By 1864, industrial centers in Northeast Texas included Tyler, with a Confederate Quartermaster's Clothing Bureau depot producing shoes and equipage and a Field Transportation Bureau shop specializing in the manufacture and repair of military transportation equipment; Jefferson, with a shoe factory and clothing bureau depot; and Marshall, with a clothing bureau steam foundry producing skillets and camp kettles (Webb and Carroll, eds. 1952:1:352). Field Transportation Bureau shops in the region were also located in Rusk, Mount Pleasant, and Paris. Marshall was also a center of powder and ammunition production, and after the fall of Vicksburg in 1863 it became the seat of civil authority west of the Mississippi River and housed the wartime capital of Missouri and the headquarters of the Trans-Mississippi Postal Department (Webb and Carroll, eds. 1952:2:148).

The defeat of the South in 1865 brought with it the end of slavery in Texas and the breakdown of the old slave-based plantation system, the presence of a Union army of occupation, and a Radical Republican administration firmly in control of the state house. Despite this situation, conservative Democrats were able to blunt many of the radical reforms of the Reconstruction period (Moneyhon 1989) and in 1874, the Radical Republicans lost control of the state government and the Reconstruction period in Texas officially ended (Webb and Carroll, eds. 1952:2:446-447).

The end of slavery brought with it many changes in the economy of rural East Texas. Lacking the cheap and dependable labor resources provided by slavery, the large plantations of the Antebellum period became economically unfeasible and many were broken up and partially sold off. While this process sometimes included the disposal of productive land, it often involved the sale of unproductive or unimproved acreage in an attempt to obtain cash during the post-war recession. Whereas previously slaves had been the primary form of disposable property, being bought and sold as much for investment purposes as for their labor (see, for example, Campbell 1989), after the war land came increasingly to play this roll. As a result, despite the large number of newly freed slaves, most of the land put on the market found its way into the hands of speculators and investors, with the result that a new system of share-cropping or tenant farming replaced the old plantation system. Productive land was now often held by absentee landlords with the labor supplied by African-American or poor Euroamerican share croppers or tenants. Although this system failed to improve the lot of the sharecroppers and tenants, it was a successful replacement for the earlier system and by the beginning of the twentieth century, the bulk of the rural farms in Northeast Texas were operated by sharecroppers or tenants.

Initial Commercialization, 1870-1920

After 1870, the population of Northeast Texas began to increase and the region began to recover from the worst effects of the war and the subsequent recession. One of the most important factors in this recovery was the increasing role of the railroad in the regional economy. A small amount of railroad construction had occurred prior to the outbreak of the war, with more than 50 miles of track laid from Texarkana westward by the Memphis, El Paso and Pacific Railroad in 1857. Following the end of the war, construction did not resume for four more years, but when it finally did it continued at a relatively steady rate. Twenty-three miles of railroad were in operation in Bowie County in 1870, and in 1872 the Jefferson Branch of the Texas and Pacific Railroad went through the eastern portion of Cass County. In 1876 the East Line and Red River Railroad (later part of the Louisiana and Arkansas) crossed the southwest portion of Cass County, the southeast corner of Titus County and, building west from Jefferson, crossed Morris County. In 1878, the Tyler Tap Railroad (later the St. Louis and Southwestern of Texas) crossed Titus County. In 1880, the Texas and St. Louis (also later the St. Louis and Southwestern) Railroad crossed the northern part of Morris County from Texarkana, while in 1895 the Cotton Belt Railroad crossed the northwest corner of Cass County (Webb and Carroll, eds. 1952:1:306; 2:238, 783).

New towns sprang up along these railroad routes and developed as important shipping centers, while the growth patterns of older towns became altered. For example, in 1869, when the railroad passed to the north of the town of Boston, the entire community shifted northward to be closer to the tracks and became known as New Boston, the current county seat for Bowie County. The continuing expansion of the railroads after 1870, and the improved communications they brought, spurred the development of other local industries as well. During this period, lumbering assumed its place as an important industry in many areas of East Texas (Chandler 1937). It became one of the chief industries in Northeast Texas during the 1870s and reached its peak there in the 1890s (Webb and Carroll, eds. 1952:1:306). During the 1880s, over 100 workers in Bowie County were employed by the lumber industry; while sawmills to process this lumber sprang up throughout Northeast Texas and provided another major source of employment. A number of these sawmills were located in the general vicinity of the RRAD/LSAAP at this time. One major mill was located south of the plant at Redwater, while a number of smaller lumber mills were in operation within the area of the RRAD/LSAAP itself (Perttula 1988a:25). All of these mills helped supply raw material to factories located at Texarkana (Webb and Carroll, eds. 1952:1:198).

Cultural Resources Survey: Red River Army Depot and Lone Star Army Ammunition Plant, Texas

In spite of the steady growth in nonagricultural industries during these years, however, agriculture and farming continued to be important in Northeast Texas, with the small, owner-operated farm still prominent. Despite the inequities of the sharecropper and tenant systems, the participants were not locked into the system has had been the case under slavery, and the last three decades of the nineteenth century witnessed increasing numbers of African-Americans achieving the status of small landowners. They often settled in dispersed rural communities separate from those of their white neighbors.

Depression and Recovery, 1920-Present

Between about 1920 and 1935, rural population in Northeast Texas seems to have generally declined, although the population of the region as a whole continued to grow (Webb et al., eds. 1952:1:198). Some factors which may have influenced this demographic shift were the continued growth of urban industries, declining agricultural productivity of the land, and the depressed regional and national economy.

In 1941, the U.S. Congress approved funds for the construction of an ordnance installation to be located in northeastern Texas, and on June 21 of that year the purchase of approximately 8,092 hectares (19,998 acres) of land in Bowie County was authorized. The facility was officially named the Red River Ordnance Depot and was designated as a permanent installation by War Department General Order No. 9, dated August 9, 1941. Initial construction on the Red River Depot was completed in April of 1942. At about the same time in 1941, the government acquired by outright purchase, an additional 6,569.6 hectares (16,233.85 acres) for the location of a second ordnance facility. Construction on this plant also began in mid-1941 and was completed during the summer of 1942. Upon completion, the facility was placed into active production by the Lone Star Defense Corporation, a subsidiary of B.F. Goodrich. Following the war, the plant was merged with the adjacent Red River Ordnance Depot, under the name of the Red River Army Depot. The Lone Star facility was reactivated in 1951 as the Lone Star Army Ammunition Plant and an operation contract awarded to Day and Zimmerman, Inc., of Philadelphia (Heartfield and Dieste 1984a, 1984b).

The period following the end of World War II has been one of general prosperity and urbanization for Bowie County, as well as for the entire region. Demographic changes for the county as a whole have been dominated by the growth of Texarkana on its eastern edge. The population of the county in 1970 was 67,813, with over half residing in Texarkana (35,000) and New Boston (4,100). Commercial patterns have benefitted from the construction of a major interstate highway (I-30), which has served to link the area to major manufacturing centers to both east and west. The improved infrastructure, as well as the construction of Wright Patman Lake on the southern border of the county, has also brought increased prosperity in the form of tourism and recreational dollars.

In spite of this growth, agriculture, livestock, and timber continue to play a major role in the local economy. Approximately 68,796 hectares (170,000 acres) in Bowie County are in use today for hay or pasture for livestock; while an additional 40,468.5 hectares (100,000 acres) are planted in soybeans, cotton, wheat, and rice (Fox 1980:1). In addition, about 117,359 hectares (290,000 acres) are used for commercial timbering activities, including most of the approximately 12,140 hectares (30,000 acres) covered by the RRAD/LSAAP; while lignite leasing is an important resource in the southern part of the county (Fox 1980:2).

CHAPTER 4

RESEARCH OBJECTIVES AND METHODS

by
Maynard B. Cliff, Steven M. Hunt, and Duane E. Peter

INTRODUCTION

The cultural resources investigations reported here were undertaken in order to identify both prehistoric and historical archeological sites and other important cultural resources contained within approximately 1,342 hectares (3,317 acres) of forest land scheduled for timber harvesting at the Red River Army Depot (RRAD) and the Lone Star Army Ammunition Plant (LSAAP). These 1,342 hectares were divided into five noncontiguous tracts, which for convenience have been designated Tracts 1 through 5 (Figure 5). Tract 1 is located in the east central portion of the RRAD and covers about 14 hectares (35 acres); Tract 2 is also located on the RRAD southeast of Tract 1 and covers about 20.2 hectares (50 acres); Tract 3 is situated in the southeastern portion of the RRAD, west of Elliott Creek Reservoir, and covers about 508.7 hectares (1,257 acres); Tract 4 is to the east and north of Elliott Creek Reservoir, partially on the RRAD and partially on the LSAAP, and covers approximately 569.8 hectares (1,408 acres); and, finally, Tract 5 is located in the eastern portion of the LSAAP and covers about 229.5 hectares (567 acres).

Since timber harvesting on the RRAD/LSAAP comprises a federal undertaking, as defined by the National Historic Preservation Act (NHPA) of 1966, as amended through 1992, its effects are subject to the Section 106 review process (Peter et al. 1991). This cultural resources survey was undertaken in compliance with the requirements of Section 106 and with three primary goals in mind:

1. to *locate* cultural resources occurring within the designated survey area;
2. to *assess* the significance of those resources in regard to their potential for inclusion in the National Register of Historic Places (NRHP); and
3. to *recommend* adequate and appropriate treatment of the resources based on these NRHP assessments.

The first of these goals was accomplished by a program of intensive pedestrian survey and shovel testing undertaken using the field methodology described in the second part of this chapter. The intensive survey located and recorded 44 previously unrecorded cultural resources sites and 50 localities. The assessments of significance and recommendations for these 44 sites are presented in preliminary fashion in the next two chapters on research results, and are reiterated in Chapter 7. The remaining portions of this chapter present the methodological background for the present investigations, the explicit survey methodology used in the field, and a discussion of the artifact analysis phase of the research.

INTENSIVE SURVEY METHODOLOGY

The intensive pedestrian survey of the 1,342 hectares at the RRAD/LSAAP was accomplished primarily during a single period of fieldwork between September 14 and October 15, 1993, with a small amount of followup work conducted on December 1, 1993. The pedestrian survey effort involved one Field Supervisor, a second Crew Chief, and six crew members, all under the supervision of the Principal Investigators (P.I.). After the completion of the bulk of the fieldwork, a short visit was made to the RRAD in order to complete recording of the McAdams and Elliott cemeteries (sites 41BW559 and 41BW560, respectively). During the survey, the junior P.I., in company with the Field Supervisor, visited several of the cultural resources sites that had been located to evaluate their significance and potential eligibility for inclusion on the National Register of Historic Places (NRHP).

In all, the pedestrian survey of the 1,342 hectares of the RRAD/LSAAP covered by this work order involved a total of 163 person-days spent in the field, for an average daily work figure of about 20 acres surveyed per person-day. During this survey, 44 archeological sites were located and recorded, for an average density of about one site per 30.5 hectares (ca. one per 75 acres).

In accordance with previous methodologies used on the RRAD/LSAAP, the survey crews systematically traversed the survey areas in parallel transects at uniform survey intervals. These intervals varied from 20 m in areas considered to be of high potential for prehistoric sites, to 30 m in areas considered to have low potential for the presence of prehistoric sites. High probability areas included, but were not necessarily limited to: flat upland edges close to water or adjacent to flood plains; level knolls or benches on slopes above water sources or flood plains; level terrace areas adjacent to flood plains or streams; and rises or levee deposits within flood plains. Because ground cover hindered site detection in most areas, judgmental shovel tests were excavated frequently in these areas. Such shovel tests were excavated to, or into, the sandy clay Bt subsoil in most areas, or to a depth of 50 cm, whichever was reached first. The fill from these shovel tests was screened through 64-mm ($\frac{1}{4}$ in) hardware cloth.

A minimum of 810 shovel tests was excavated on survey throughout the 1,342 hectares of forest area in the process of locating sites, with an additional 400 shovel tests being excavated as part of the site recording procedure at the 44 located sites. At minimum, this averaged one shovel test every .6 hectares (or one test every three acres) for the entire area of intensive pedestrian survey. Of course, because the actual distribution of creeks and associated high probability areas in the RRAD/LSAAP survey tracts was not uniform, the actual distribution of shovel tests was not uniform either.

Once cultural material had been located, either on the basis of shovel testing or through the discovery of surface materials, additional shovel testing was undertaken in an effort to determine the status of the material (i.e., site or locality), to define the horizontal and vertical extent of the material, to determine the nature of the subsurface deposits, and to evaluate the degree of disturbance, if any. Basically, the practical distinction between site and locality had to do with whether or not the cultural remains had horizontal or vertical integrity. Thus, if material was recovered from more than one shovel test, it was called a site; but if only a single positive shovel test was found, it was designated a locality (for a further discussion of localities, see below). If a well or cistern was found to be present, the remains were designated a site but no further shovel tests were excavated in consideration of the potential for these features having been used previously by the RRAD/LSAAP as dumps for hazardous waste, with concomitant ground water and soil contamination. Instead, the limits of such sites were defined on the basis of surface evidence alone, such as scatters of historic artifacts, recognizable features, and differences in the vegetation in the area. A minimum of eight shovel tests, judgmentally placed, were excavated at the other sites, although in most cases, more than this minimum were excavated. Shovel tests were approximately square and measured about 30 cm on a side

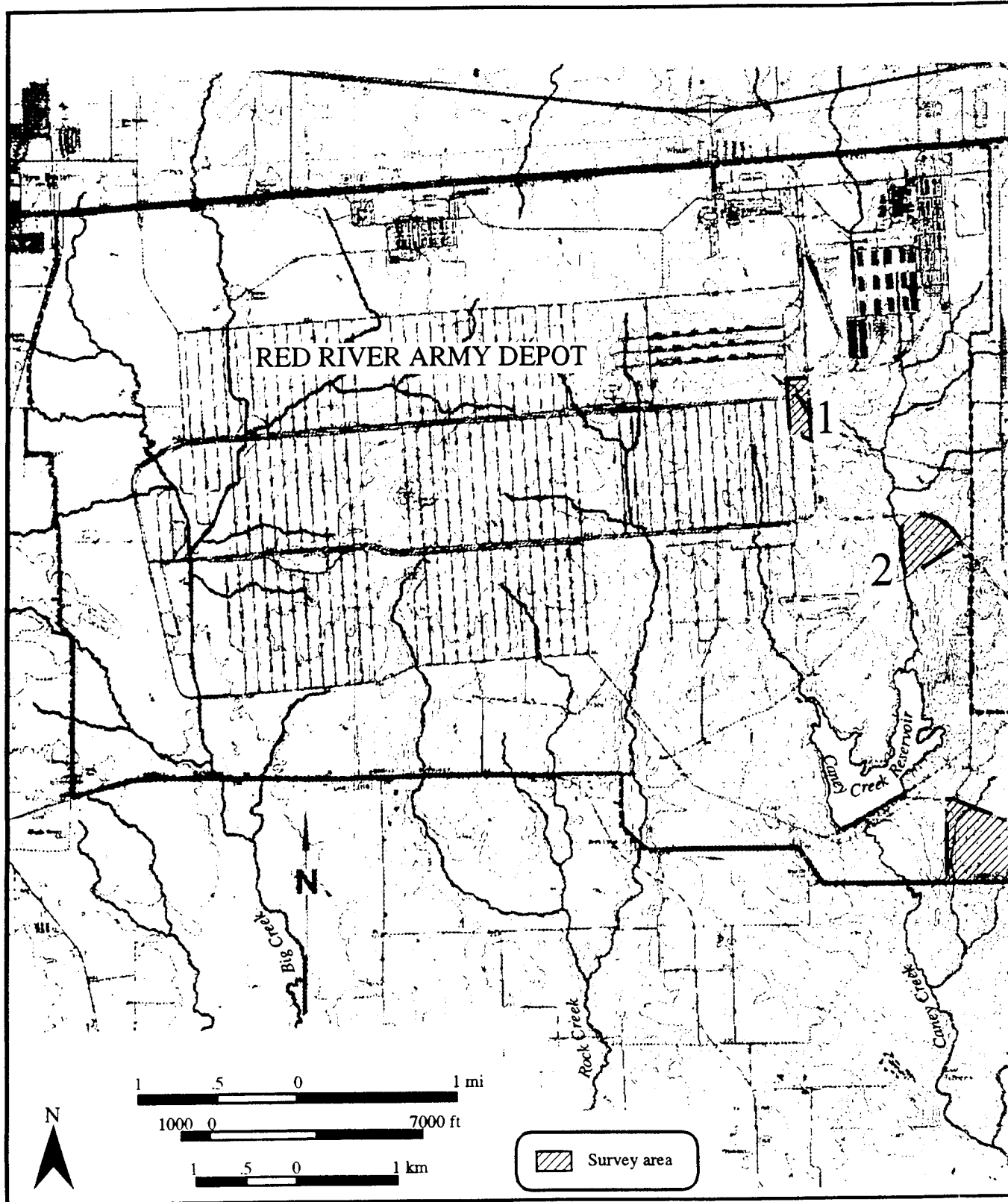
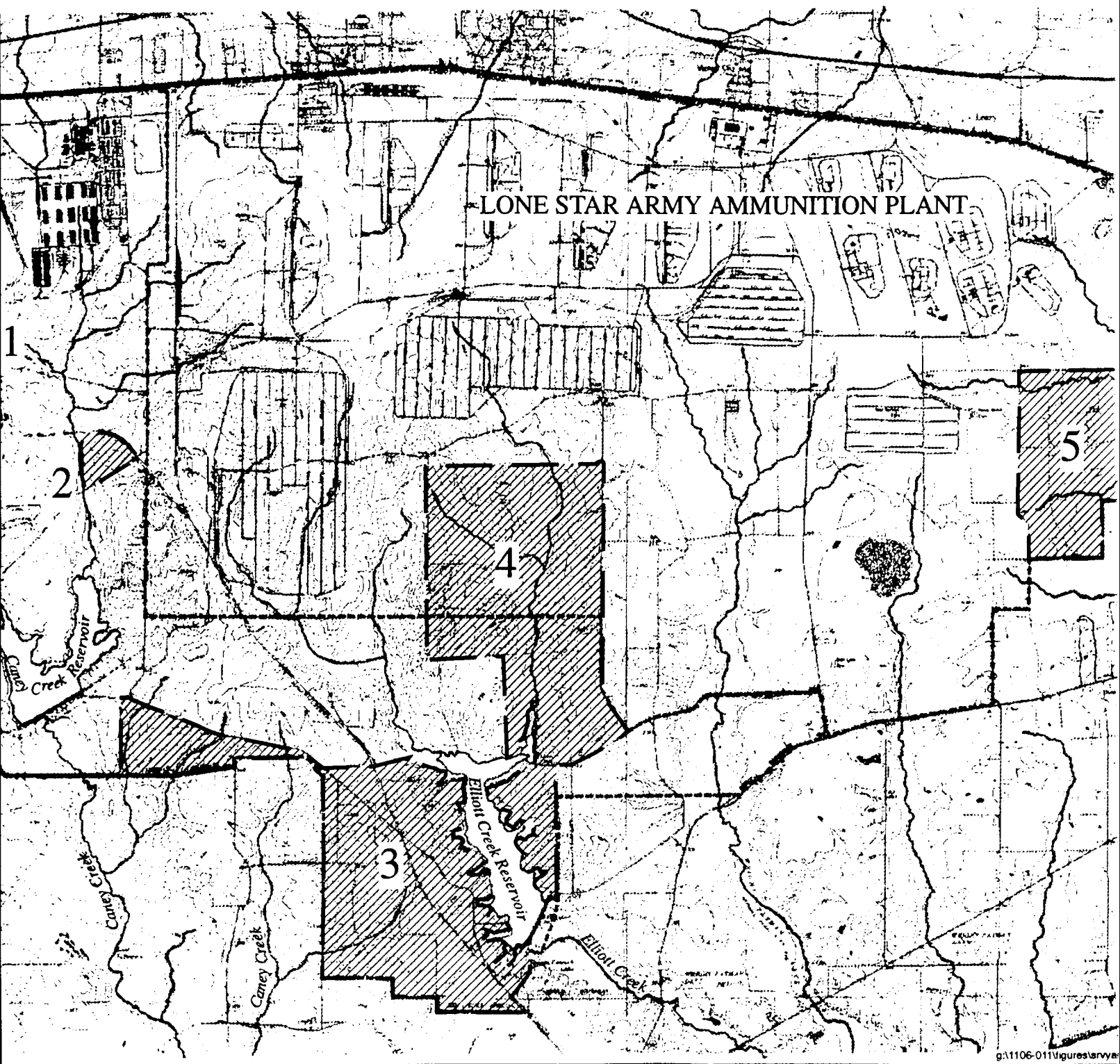


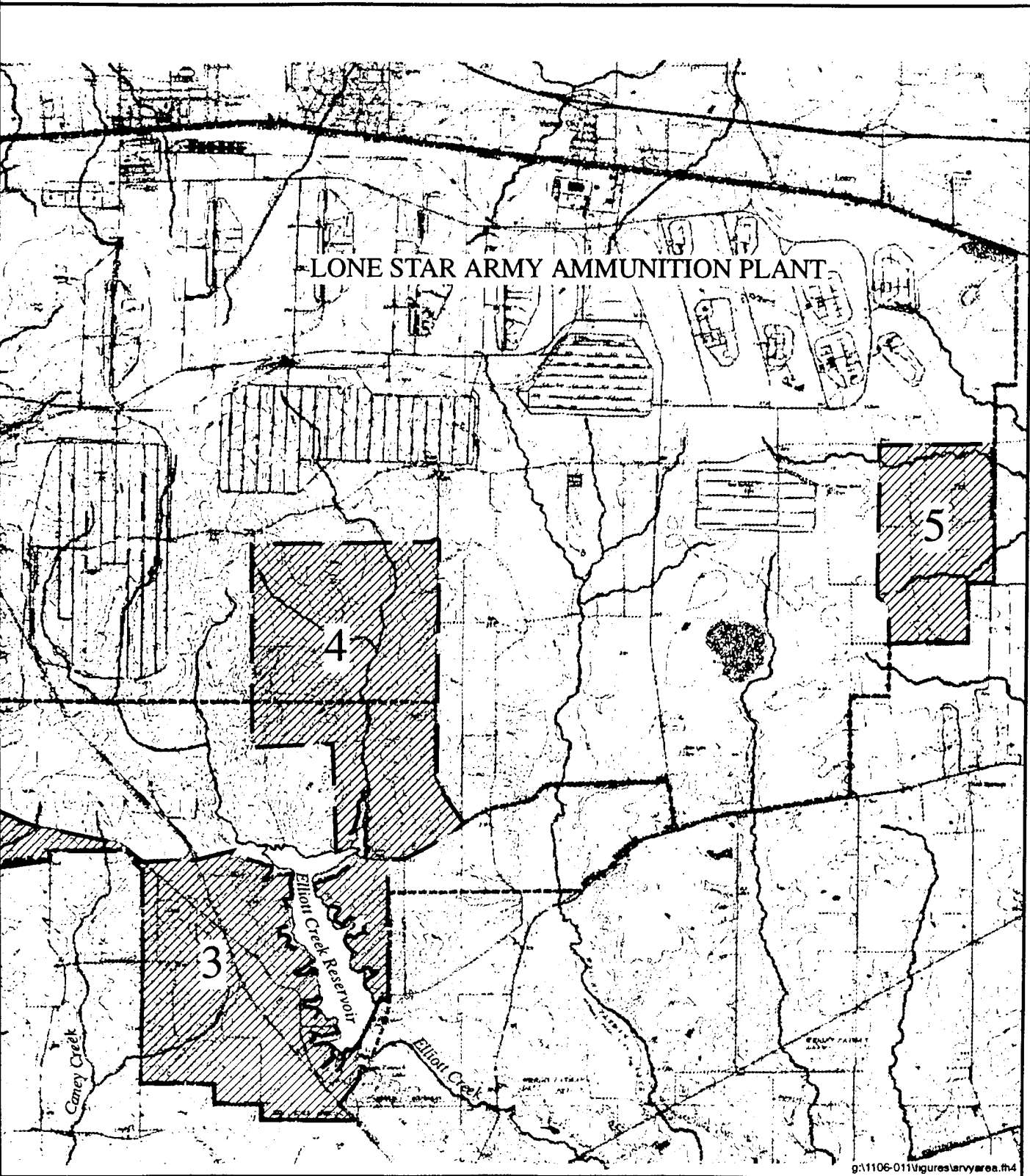
Figure 5. Areas intensively surveyed during the 1993 survey at the Red River Army Depot/Lone Star Army Ammunition Plant (RRAD/LSA)



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LONE STAR ARMY AMMUNITION PLANT



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(i.e., ca. 900 cm²). They were excavated in 20-cm levels and the fill from each level was screened through 64-mm hardware cloth. If possible, all shovel tests were excavated to the base of the culture-bearing deposits, no matter how deep that was. Each shovel test was recorded on an individual test unit form, and all shovel test units were plotted on the site map.

A State of Texas site recording form was filled out while on the site, noting locational information, vegetational cover, contextual integrity, approximate temporal period, and artifactual material (both surface and subsurface); and the location of the site was noted on the appropriate U.S. Geological Survey (USGS) topographic map. A scaled pace-and-compass map was drawn of each site, showing the locations of all significant features, areas of disturbance, vegetation, surface artifacts, and testing units. Each site was photographed from several viewpoints, using both black-and-white prints and color transparencies. Included in the image was any damage evident to the cultural resources by vandalism, construction, or earth disturbances of any kind. Surface features and uncollected surface artifacts were also photographed. These photographs were recorded in a photo log.

Surface collections of both historic and prehistoric materials were intended to include only temporally diagnostic artifacts or tools. On historic sites with surface materials, special attention was given to decorated ceramics, decorated and embossed glass, and pieces with maker's marks or indications of manufacturing technology, but general samples of undecorated earthenwares, stonewares, window glass, colored glass, and nails were collected as well. In such cases, only the limits of the surface scatters were mapped.

For any sites which contained either surface features or features discovered in shovel tests, recording procedures included the additional description of these features on the shovel test form and in the supervisor's notes, and photographs in addition to the normal photographs taken on the site.

Each recorded site was identified with a permanent marker, consisting of a metal rebar stake, placed on the site. The location of each marker was indicated on the site map. The top of this marker was in turn covered with an aluminum cap bearing the site's identifying State of Texas number in the form of 41BWxxx. This number is a permanent state site number given by the Texas Archeological Research Laboratory (TARL) of the University of Texas at Austin. Site designations were applied only to clusters of artifacts (whether surface or subsurface), which had both horizontal and vertical dimensions, and which were believed to represent occupation or activity areas. Any artifact or artifacts recovered from a single shovel test, isolated surface finds with no subsurface remains, or unique nonsite features, such as dams or rock scatters, were designated as localities, and were recorded in field notes so as to allow the documentation of specific locational information and field interpretations. All evidence of post-1940 activities was similarly classified. Localities generally were shovel tested in the same manner as sites. A total of 50 such localities were recorded within the 1,342-hectare survey area. The locations of all localities were also plotted on the appropriate USGS topographic map. Field notes concerning survey procedures for each transect, shovel testing observations, localities, and sites were maintained by the Field Supervisor and the second Crew Chief. These field notes documented survey conditions, vegetation cover, amount of area covered daily, and initial interpretations of the cultural properties.

ARTIFACT TREATMENT AND ANALYSIS

All cultural material collected during the survey and site recording of the 1,342 hectares at the RRAD/LSAAP were bagged by site or locality number, shovel test number, and excavation level. The bags were collected at the end of each day while in the field, and each was assigned an arbitrary Bag Number that was recorded on a master log sheet, along with the project number, the site or locality number, the shovel

test number, the level number, the depth of the level below surface, the contents of the bag, the excavator's initials/name, and the date. This system provided a means of tracking the bags once out of the field, locating lost bags, and identifying mislabeled bags. All of this material was returned to the laboratory facilities of Geo-Marine, Inc. (GMI), in Plano, Texas, where all artifacts were washed, catalogued, and labeled in compliance with TARL standards. Prehistoric and historic artifact analysis was undertaken at GMI facilities by GMI personnel.

A total of 1,349 artifacts was recovered from 42 of the cultural resources properties and from 40 of the nonsite localities reported here. The vast majority of these (n=1,182; 87.6 percent) were prehistoric artifacts, recovered from 31 sites and 33 localities (see Appendix C); while the remaining 167 artifacts (12.4 percent) were historic and were recovered from 13 sites with historic components and eight localities (see Appendix D). Besides these remains, a small amount of charcoal was recovered from one prehistoric site (41BW530). The results of the analysis of this collection are presented along with the descriptions for each site in the following two chapters.

The primary goal of the artifact analysis was to assign the sites to a particular temporal period and to provide some initial indication of site function, although for prehistoric sites such an estimation of function must be considered only preliminary. From the beginning, it was suspected that most of the historic sites located would fit into the broad late-nineteenth-to-early-twentieth-century period, but it was felt that the artifact analysis, in combination with whatever archival data was available, might allow a more accurate determination to be made of the date of occupation.

Prehistoric Artifact Analysis

The analysis of the prehistoric artifacts collected within the RRAD/LSAAP by this project was designed to provide some estimate of period of site occupation, if possible, and to characterize the range of artifacts present on each site, with the assumption that the range of artifacts present is a reflection of the range of activities that occurred on the site. Finally, in order to provide comparability with previously collected data from similar prehistoric sites in the region, the analysis makes use of artifact categories used previously in Northeast Texas (see Appendix A). A total of 1,182 prehistoric artifacts was collected from the prehistoric sites and localities recorded within the 1,342-hectare survey area at the RRAD/LSAAP. Over 99 percent of these were recovered from shovel tests. During the analysis of this material, each artifact was examined in sufficient detail to allow the identification of specific attributes and its placement into a specific artifact class.

The major artifact classes identified by this analysis included finished bifacial tools, unfinished bifaces, unifaces, unmodified lithic debitage, utilized debitage, cores, ground stone, and prehistoric ceramics. Other cultural remains such as unworked cobbles, fired clay, and burned rock were separated out and analyzed, when present (see Appendix C). Unfinished bifaces were divided into subclasses specified as "early aborted," "late aborted," "preforms," or "unidentified fragments." Detailed definitions for all categories of chipped stone used in the present analysis are presented in Appendix A. The variables recorded for the prehistoric ceramics included the type of sherd (i.e., rim or body), sherd size (especially thickness) and weight, size and type of aplastic inclusions (i.e., temper), and exterior surface treatment and decoration (if any present). Whenever possible, a tentative identification as to type was made.

Historic Artifact Analysis

The goals of the historic artifact analysis were primarily to provide data on the periods during which a given site was occupied, and secondarily to generate data which would allow an initial estimation of site function. In regard to this second goal, it has been found in the past that a reliable estimate of the period of occupation of a site often can lead to information on the ethnic background and socioeconomic standing of the occupants, when used in conjunction with archival and chain-of-title data. Use of both types of data (i.e., artifact dates and chain-of-title) together often has proven critical in evaluating the NRHP eligibility of a historic site. As in previous studies of historic artifacts from the RRAD/LSAAP (Peter and Cliff, eds. 1990a, 1990b; Cliff and Peter, eds. 1994a), dateable historic artifacts were used to determine general ranges of time, in order to provide an estimation of the temporal period of occupation of the site. This artifact "time guide," along with any archival records available, was then used to provide a general understanding of the area and the living conditions of the people who were there (see Appendix D for a complete listing of the historic material recovered).

A total of only 167 historic artifacts was recovered from 12 archeological sites and eight localities within the 1,342 hectares surveyed at the RRAD/LSAAP. Neither of the two historic cemeteries recorded by the present survey yielded any artifactual remains, while one historic artifact was recovered from a prehistoric site (41BW531) but was insufficient to identify a historic occupation there. Approximately 74 percent of the historic artifacts were recovered from subsurface shovel tests. As in an earlier study (Cliff and Peter, eds. 1994a), the analytical framework used for the historic artifact analysis follows that of South's (1977) artifact pattern analysis method (see Appendix B). The historic artifacts recovered from the RRAD/LSAAP sites were sorted into various categories, consisting of:

1. domestic,
2. architectural,
3. miscellaneous activities,
4. furnishings, and
5. personal items.

The domestic category was used for items related to food service (e.g., tableware) and food storage (including food preparation). Many, although by no means all, of the ceramic and glass items were considered to be connected with food service or storage activities. The architectural category included all items related to buildings, such as brick, mortar, plaster, nails, window glass, and other miscellaneous artifact classes (such as electrical items) recovered during the research. The miscellaneous activities category is somewhat of a mixed assortment, which included any nonhousehold items, transportation- or farm-related equipment, and firearms. Furnishings included artifacts such as household items, furniture, stove parts, and lamp glass. A personal category was created for items of individual use, such as clothing, buttons, shoes, dolls, and smoking pipes. Finally, unidentified metal fragments and artifacts of ceramic or glass which were unidentifiable as to category, were not included in the analysis nor were they assigned a separate category, although they were tabulated. Although these categories tend to perpetuate ideas about functional artifact classes, it is felt that this is the most efficient analytical framework with which to examine this particular data set.

The analysis of the historic material from the 1993 RRAD/LSAAP sites also attempted to identify temporally specific occupation periods for the historic sites encountered. Identification of the date ranges for these sites was attempted using a modified version of South's (1972) evolution and horizon in ceramic analysis work. This type of analysis uses knowledge of production dates for ceramics and the popularity of types as a basis for identifying the temporal and spatial changes at historic sites. Because of the difficulty in analyzing sites

Cultural Resources Survey: Red River Army Depot and Lone Star Army Ammunition Plant, Texas

with ceramic samples of similar types with extended periods of production, especially when these samples are very small, the current analysis also makes use of some types of glass as an analytical tool to assist in identifying temporal occupation periods.

Detailed descriptions of nineteenth and twentieth century ceramic types has been covered in other publications (e.g., Hughes and Hughes 1968; Lofstrom 1976; Miller 1974; Price 1979) and will not be repeated here. Similarly, glass has been described in a great number of publications (e.g., Ferraro and Ferraro 1966; Fike 1966, McKearin and McKearin 1968; Walbridge 1969) and also will not be repeated here. The abundance and variety of late nineteenth and twentieth century glass offers a unique research tool with which to evaluate sites. Mold types, embossing, glass type, and other attributes can be used to perform the same tasks as is accomplished with South's formulas. No economic scaling (Miller 1980) was attempted of either the ceramics or of the recovered glass because of the small sample size from the sites surveyed. Dates for cut and wire nail usage are based on Nelson (1968).

CHAPTER 5

RESEARCH RESULTS, PART I: CULTURAL RESOURCES PROPERTIES ON THE RED RIVER ARMY DEPOT

by
Steven M. Hunt, Floyd D. Kent, Melissa M. Green, and Maynard B. Cliff

As previously noted, the intensive pedestrian survey of a combined 1,342 hectares (3,317 acres) of timber land at the Red River Army Depot and Lone Star Army Ammunition Plant (RRAD/LSAAP) located a total of 44 cultural resources sites and 50 localities (Table 4). Twenty-two cultural resources sites and 24 nonsite localities were located within the RRAD (Figure 6). This sample included 10 sites with prehistoric components and 12 sites with historical components.

Table 4
Summary of Cultural Resources Properties Located by the 1993 RRAD/LSAAP Survey

Type of Property	Location		Total
	RRAD	LSAAP	
<i>Sites</i>			
Prehistoric	10	21	31
Historic	12	1	13
Subtotal	22	22	44
<i>Localities</i>			
Prehistoric	12	21	33
Historic	12	5	17
Subtotal	24	26	50
Total	46	48	94

It has also been noted in a previous chapter that cultural resources remains were recorded as sites only when they appeared to represent occupation or activity areas, but that isolated finds or unique nonoccupation features were noted as localities. As a result of these criteria, 12 prehistoric and 12 historical localities were

noted and recorded within the RRAD. All of these consisted of single or multiple artifacts recovered from individual shovel tests with no other associated material, isolated surface artifacts with no subsurface remains, or some cultural remains or possibly cultural surface feature with no subsurface remains. In all cases, additional shovel testing involving from two to seven tests in the area of the original find failed to locate any associated subsurface cultural material.

The first part of the present chapter describes in detail the prehistoric and historic cultural resources recorded within the survey areas on the RRAD, together with estimates of their potential for inclusion in the National Register of Historic Places (NRHP). In the individual descriptions, sites are evaluated as being small, medium, large, or very large based on the actual size distribution of this sample of sites, with small sites ranging from 240 to 2,000 m², medium-sized sites from 2,000 to 5,000 m², large sites from 5,000 to 13,600 m², and a single very large site at 54,000 m². Likewise, subsurface artifact densities are evaluated as being low, moderate, or high based on the average density of artifacts per onsite shovel test (disregarding shovel tests believed to be beyond the site boundaries), with low density sites having an average of three or less artifacts per shovel test, medium or moderate density sites having an average of between three and eight artifacts per shovel test, and high density sites having an average of more than eight artifacts per shovel test. The descriptions of the cultural resources are followed by shorter descriptions of the localities recorded within the RRAD survey areas.

SITE DESCRIPTIONS

Site 41BW421

Site 41BW421 is a medium-sized, low density historical site located on a hilltop, approximately 500 m east of Elliott Creek in Survey Tract 4 (see Figure 6). The site is at an elevation of approximately 103 m (340 ft) above mean sea level (amsl) and encompasses an estimated area of 4,600 m² (50-x-115 m). The site is mapped as being on Ruston fine sandy loam, 3 to 8 percent slopes, a gently sloping and sloping soil found on convex upland terraces. This soil has an A horizon of brown (10YR4/3 to 5/3) fine sandy loam to a depth of 13 cm, which is underlain by yellowish brown (10YR5/4 to 5/8) fine sandy loam down to 16 cm. The Bt horizon is a red (2.5YR4/6 to 5/8) sandy clay loam to 203 cm or more below surface (Fox 1980:26). The site is covered with a mixed pine/hardwood forest containing moderate densities of pine, oak, hickory, and walnut with an understory comprised almost exclusively of french mulberry, with small quantities of poison ivy and grasses. Bulldozer cuts were observed at the site, indicating that it has suffered some disturbance.

Site 41BW421 was originally identified on the basis of an extensive surface scatter of historic artifacts. These materials include washtubs, buckets, graniteware, a white enamelware chamberpot, a stew pot, wash basins, 55-gallon drums, cast iron stove parts, a tubular metal bed frame, bed rails, car/tractor seat springs, an automobile gas tank, tin cans, a 1-pt screw-cap glass bottle, handmade brick, and decorated whiteware. Subsequently, eight shovel tests were excavated at the site, of which four fall within the site boundary (Figure 7). Shovel Test (S.T.) 1 yielded five historic artifacts and S.T. 2 yielded three, for an average of 2.0 artifacts per onsite shovel test. The shovel tests revealed an A horizon consisting of a very dark gray (10YR2/2) to brown (10YR4/3 to 5/3) sandy loam, approximately 20 cm deep, which was underlain by a very pale brown (10YR7/3 to 10YR8/4) sandy loam E horizon. The units were terminated when a dense gravel lens was encountered between 5 and 40 cm below ground surface. Artifacts were recovered down to 20 cm below ground surface in S.T. 1. An additional six artifacts were collected from the site surface.

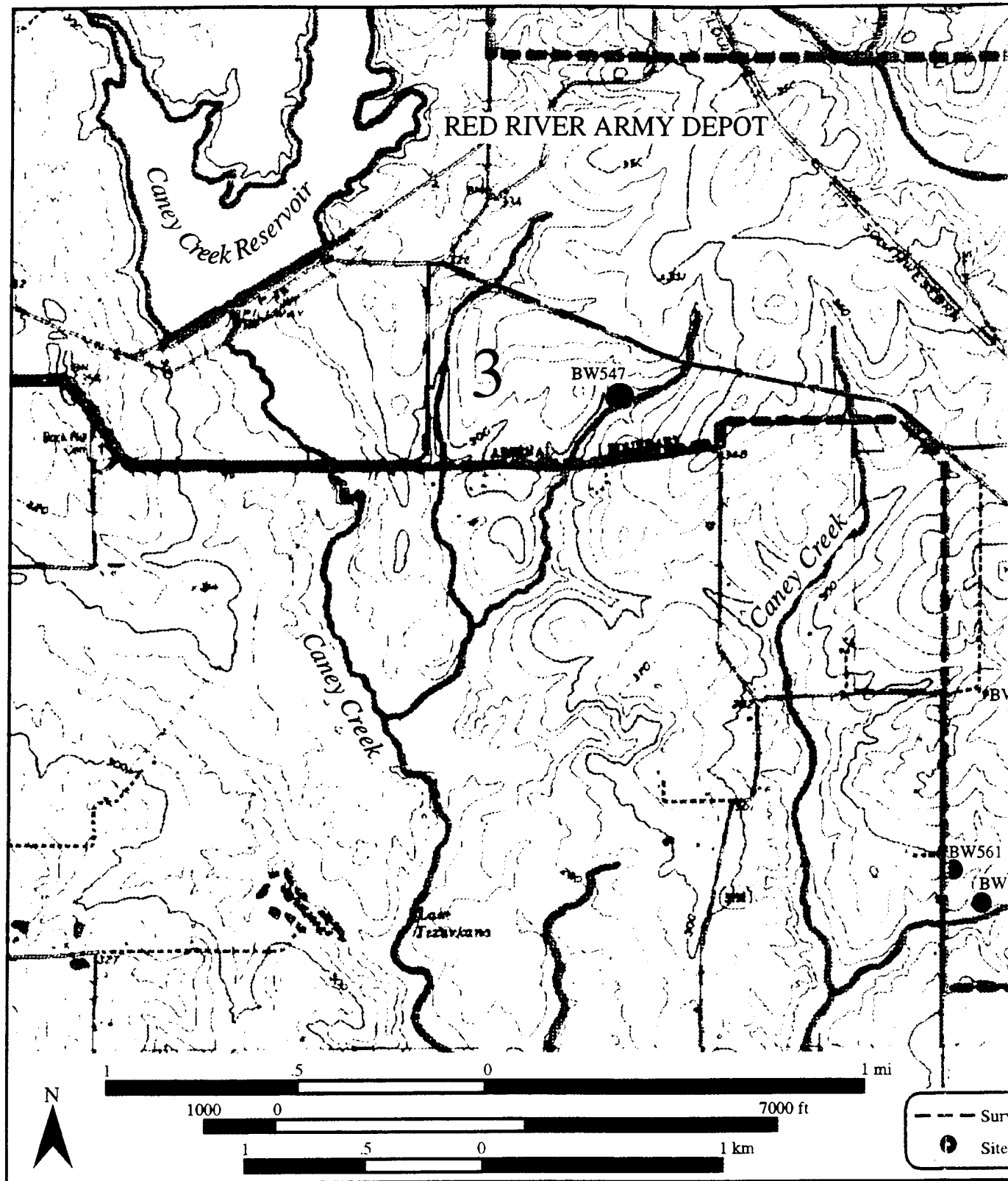
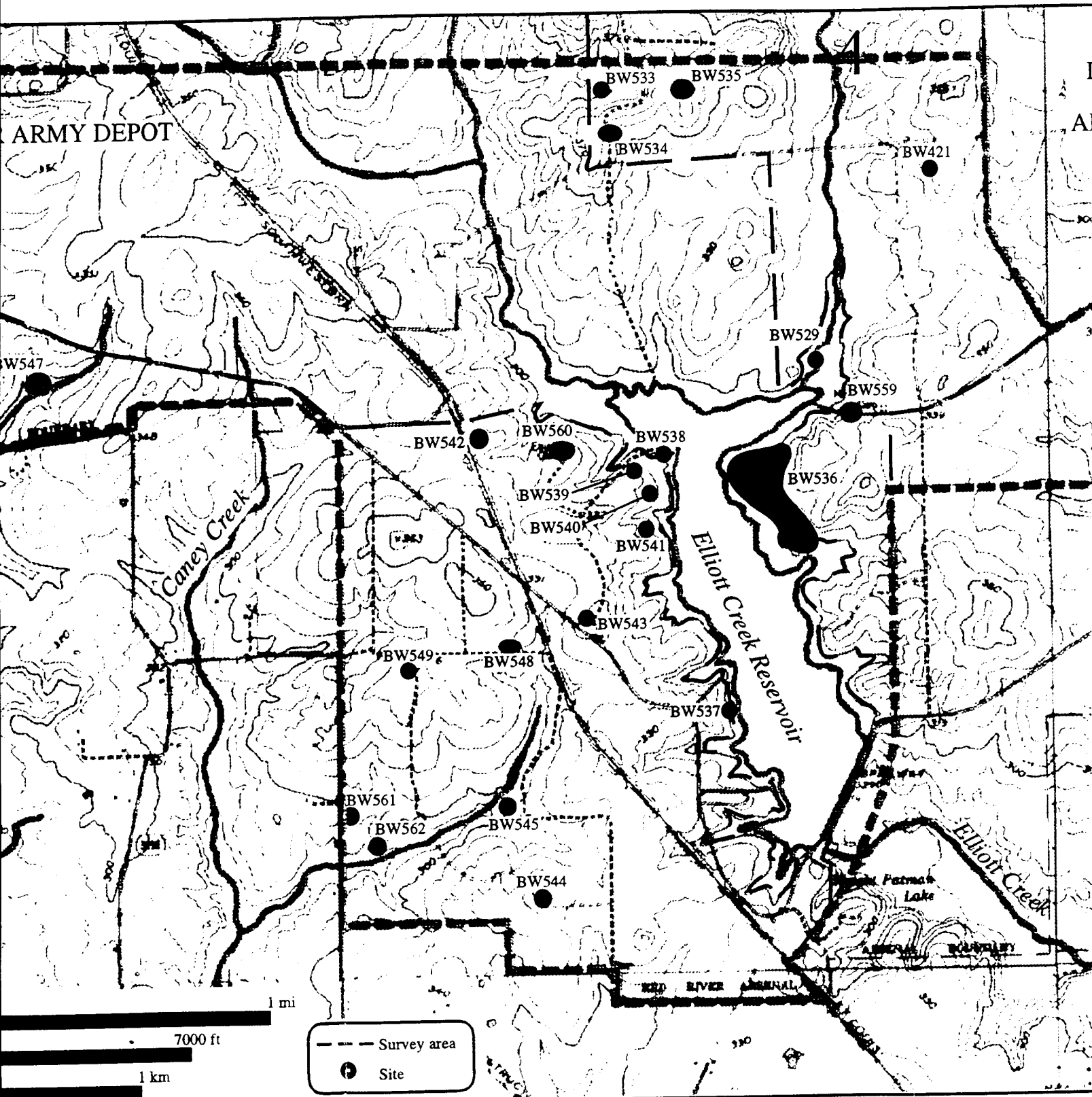
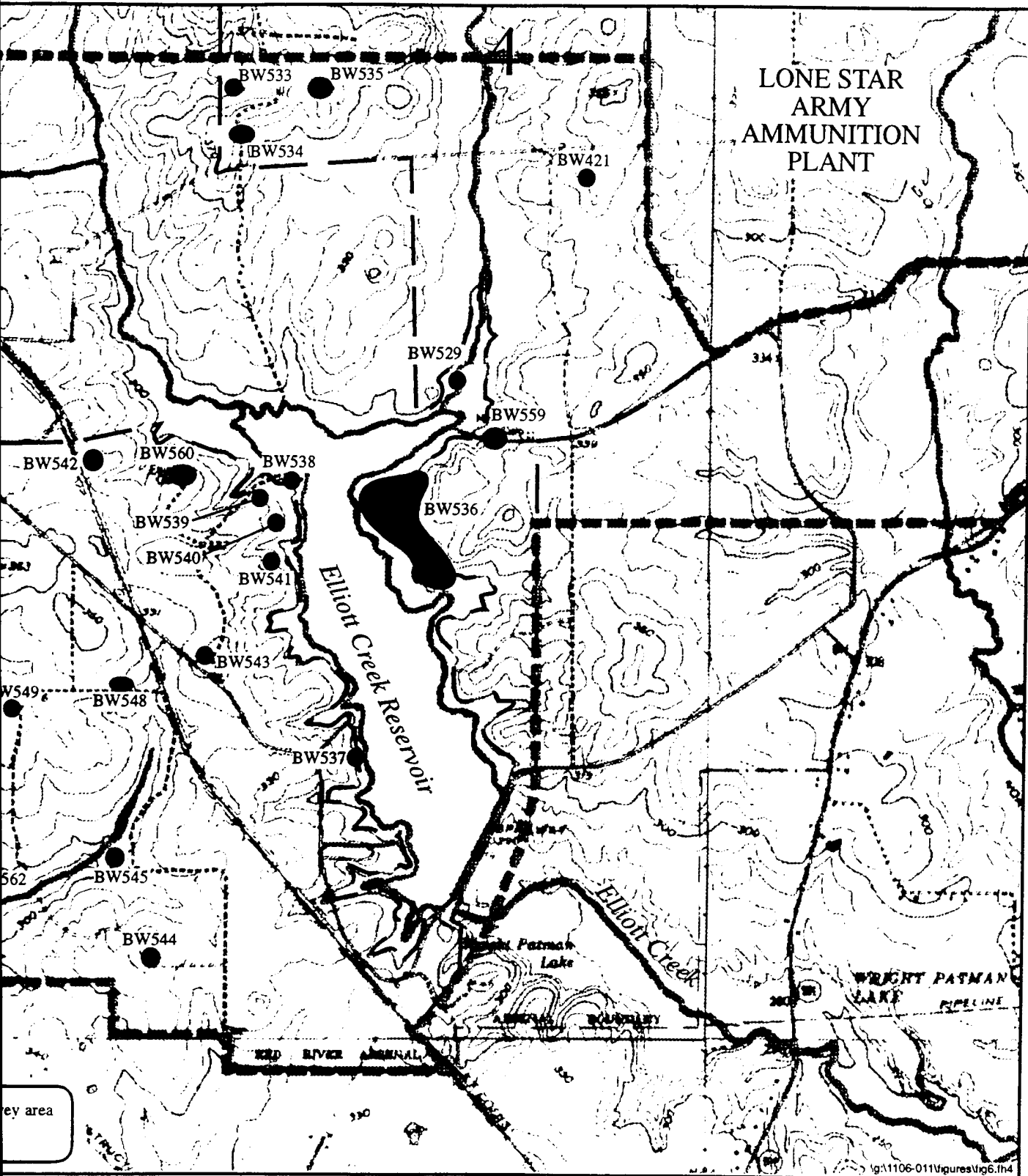


Figure 6. Archeological sites recorded on the Red River Army Depot during the 1993 RRAD/LSAAP survey.





key area

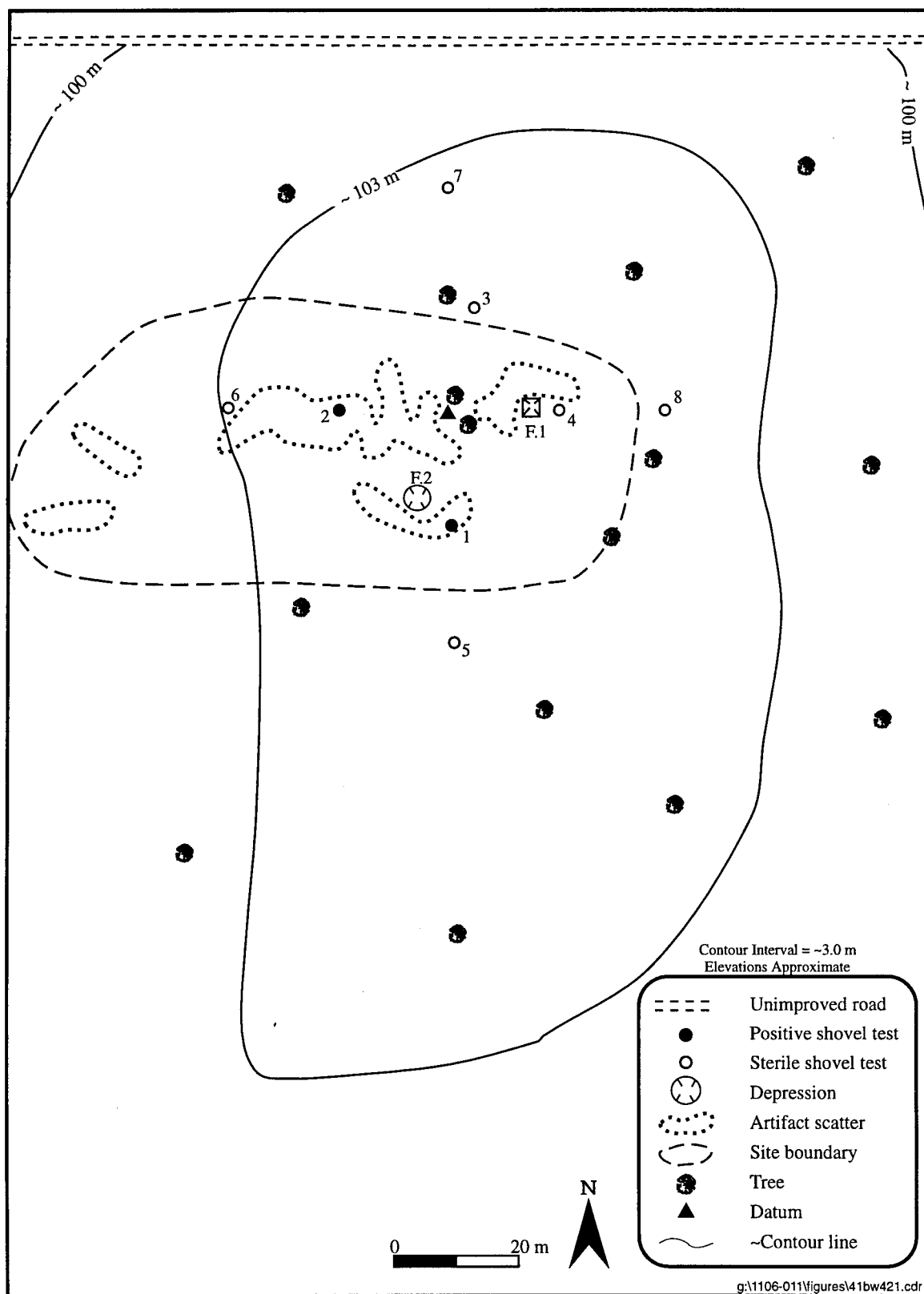


Figure 7. Pace and compass map of site 41BW421.

Two potential features were identified at site 41BW421. Feature 1 consisted of a 1.5-x-1.5-m depression, possibly a filled-in well or privy, although no building materials were observed in the vicinity. Feature 2 was located about 25 m southwest of Feature 1 and consisted of a circular depression 4 m in diameter and 2.5 m deep. Feature 2 may be a storm/root cellar or cistern, although again no evidence of building material was found in its vicinity either. In addition to these depressions, agricultural terraces were identified east and south of the site.

Historic materials recovered from site 41BW421 consisted of 14 items from the domestic and architecture categories (see Appendix D). Domestic items were in the majority (n=9), with food service items (n=5) outnumbering storage items (n=4). These domestic artifacts included bottle glass (n=3), whiteware (n=5), and stoneware (n=1). One complete clear, round bottle, approximately 19 cm long with a base 8.4 cm in diameter, was recovered. The maker's mark, an embossed "F" within a hexagon, indicates that it was made between 1945 and 1960 by the Fairmount Glass Works of Indianapolis, Indiana. Two glass bottle fragments completed the domestic portion of the sample. One was clear, made on an automated bottle machine (ABM; post-1910), while the other was aqua and possibly was made on a semiautomated bottle machine (1891-1903). The single piece of stoneware recovered was a natural clay slipped interior/exterior base sherd (1875-1900). In addition, one blue tinted molded ironstone sherd (1840-1910), one white ironstone rim sherd with a black floral transfer print (1840-1910), and two light blue tinted undecorated whiteware sherds (1880-1930) were also recovered. The remainder of the sample consisted of architectural items (n=5), which included two wire nails (post-1890), one handmade brick fragment (pre-1890), a piece of mortar, and a piece of cement. The Mean Ceramic Date (MCD) for this sample is 1885, while the Mean Glass Date (MGD) is much later (1933), due to the late date for the Fairmont Glass Works, which may not be associated with the occupation, and the contemporary use-date for automated bottle machines. The combined mean ceramic and glass date is 1905.

Site 41BW421 is located in the 50-acre Tract 119 in the William Young Headright Survey (HRS). The site correlates with the archivally known site A-134 (Peter et al. 1991:Table V-3, Map 3). This was a farmstead belonging to A.T. Satterfield, a widower, and was purchased by the Ordnance Department on December 31, 1941, for the sum of \$1,260.00. Four buildings were present on the site when it was inspected on October 21, 1941:

- one 30' x 32' frame house in poor condition;
- one 16' x 32' box barn;
- one 18' x 9' box barn with 9' x 18' shed in fair condition; and
- one 9' x 12' poultry house in fair condition.

Although listed as having an occupation that might predate 1909 (Peter et al. 1991:Table V-3, Map 3), no structure was noted in this vicinity on a 1904-1906 topographic map (USGS 1906). Structures were shown, however, on a 1930s road map and a 1941 aerial survey map (Prack and Prack-Architects and Chester Engineers 1942), although in this instance the number of structures shown on the 1941 map does not match the verbal description (Figure 8). Based on the size of the structures shown on the 1941 map, they appear to be the house and the larger of the two box barns.

In summary, site 41BW421 is a medium-sized, low density historical homestead that appears to have been occupied in the early twentieth century. Despite an 1885 MCD, the available map data suggests an occupation between 1910 and 1941, more in agreement with the MGD (1933). The archival information indicates that the site was a farmstead, with a house and at least three ancillary buildings as late as 1941. Two features were identified at the site, a possible well/privy and a possible cellar/cistern. However, evidence of bulldozing was noted at the site, giving it only fair contextual integrity. Consequently, the site

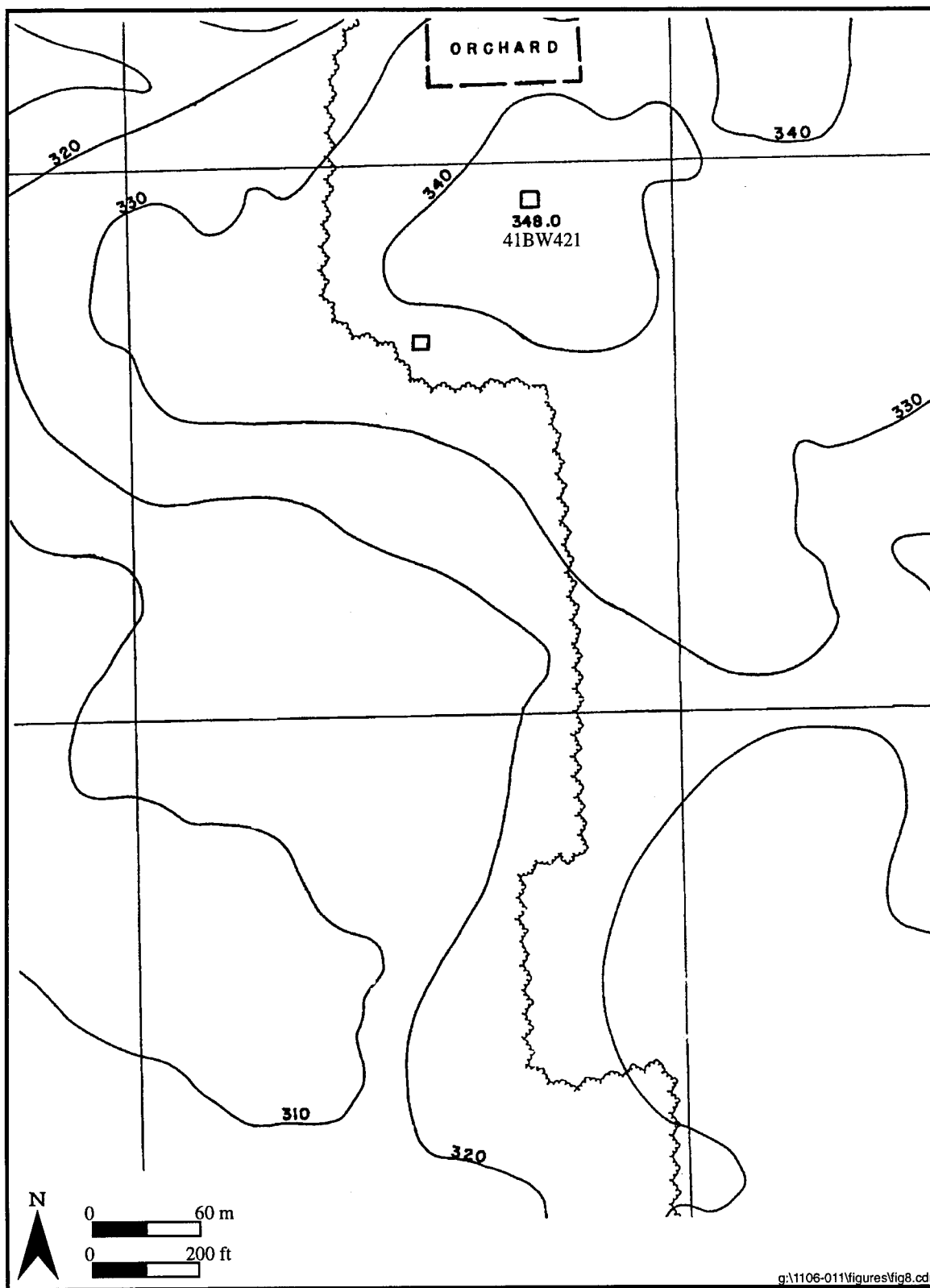


Figure 8. 1941 topographic map showing structures identified as site 41BW421.

is felt to have a low research potential, and it is recommended that it be considered to be ineligible for inclusion in the NRHP.

Site 41BW529

Site 41BW529 is a small, moderate density prehistoric site located on a low rise or levee remnant in the flood plain of Elliott Creek, immediately east of the channel, in Survey Tract 4 (see Figure 6). The site is at an elevation of about 90 m (295 ft) amsl and occupies an estimated area of 1,900 m² (40-x-50 m). The site is mapped as being on Thenas fine sandy loam, frequently flooded, a nearly level soil found on flood plains. Thenas soil typically consists of a dark brown (10YR3/3 to 4/3) fine sandy loam surface layer, approximately 25 cm thick, underlain to a depth of 140 cm by the subsoil. The upper 86 cm of the subsoil is a fine sandy loam, dark brown (10YR3/3 to 4/3) in the upper part and dark yellowish brown (10YR3/4 to 4/6) in the lower part. Below 86 cm, it consists of a yellowish brown (10YR5/4 to 5/8) loamy fine sand. Underlying this is a light yellowish brown (10YR6/4) loamy fine sand stratified with loamy and sandy layers (Fox 1980:32). The site is covered with a mixed pine/hardwood forest containing moderate densities of pine, white oak, red oak, and black walnut, with a moderately dense understory of french mulberry and grasses. Disturbances noted at the site included timbering and bioturbation and possibly the loss of portions of the site due to erosion from Elliott Creek.

Eight shovel tests were excavated at the site, of which seven are within the site boundary, as defined by surface topography (Figure 9). Six of these shovel tests contained a total of 27 artifacts (S.T. 1=11; S.T. 2=4; S.T. 3=1; S.T. 4=2; S.T. 5=6; and S.T. 7=3) for an average of 3.85 artifacts per onsite shovel test. The cultural deposits extended to a maximum depth of 80 cm, with the deepest material recovered from S.T. 1 (to 80 cm below surface [b.s.]) and S.T. 5 (to 60 cm b.s.). Sediment on the knoll generally consisted of yellowish brown (10YR4/3 to 5/3) to light yellowish brown (10YR6/4) silty sand to the bottom of the units. However, S.T. 7 showed a dark brown (10YR3/3 to 4/3) silty sand in the upper 18 cm, perhaps indicating a culturally darkened zone; while S.T. 8, the only unit excavated off of the rise, contained a thick gravel lens at 15 cm below surface.

As mentioned above, 27 artifacts were recovered from site 41BW529 (see Appendix C), most of which (n=24; 88.9 percent) consisted of chipped stone, including one finished dart point, one early aborted biface, and 21 pieces of lithic debitage. The single finished bifacial tool collected from the site consisted of a Gary, *var. Panna-Maria* dart point recovered in S.T. 1, Level 4 (Figure 10). It is made of chert; measures 48 mm long, 23 mm wide, 11 mm thick; and weighs 8.0 g. Gary, *var. Panna-Maria* points were defined by Johnson at the Yarbrough site in Van Zandt County (Johnson 1962:165), and their distribution includes the Limerick and Jake Martin sites in Texas, and the Scott and Ck-44 sites in Oklahoma. Johnson does not assign a date to this variety of Gary point, but more recently Story (1990b:Figure 32) has dated Gary points in general to the Early Ceramic period.

The early aborted biface was also of chert, and was from the same provenience as the Gary point. It measures 31 mm long, 23 mm wide, 8 mm thick, and weighs 5.9 g. The lithic debitage consists entirely of flakes, ranging in size from 25 mm downward (Table 5). Decortification flakes (primary and secondary) are about equal in frequency to interior (tertiary) flakes (n=8; 38.1 percent), with biface thinning flakes comprising about 23.8 percent of the total. Medium to small flakes predominate (19.0-6.3 mm), and there seems to be little reduction in flake size from initial decortification (mean size = 11.6 mm) to biface thinning (mean size = 9.47 mm). Some variability in raw material is present in this sample, but it is not great (Table 6). Quartzite and sandstone were probably available on the site, given their use as burned rock. The preponderance of chert and novaculite probably reflects use of locally available Bowie Gravels, and contrasts

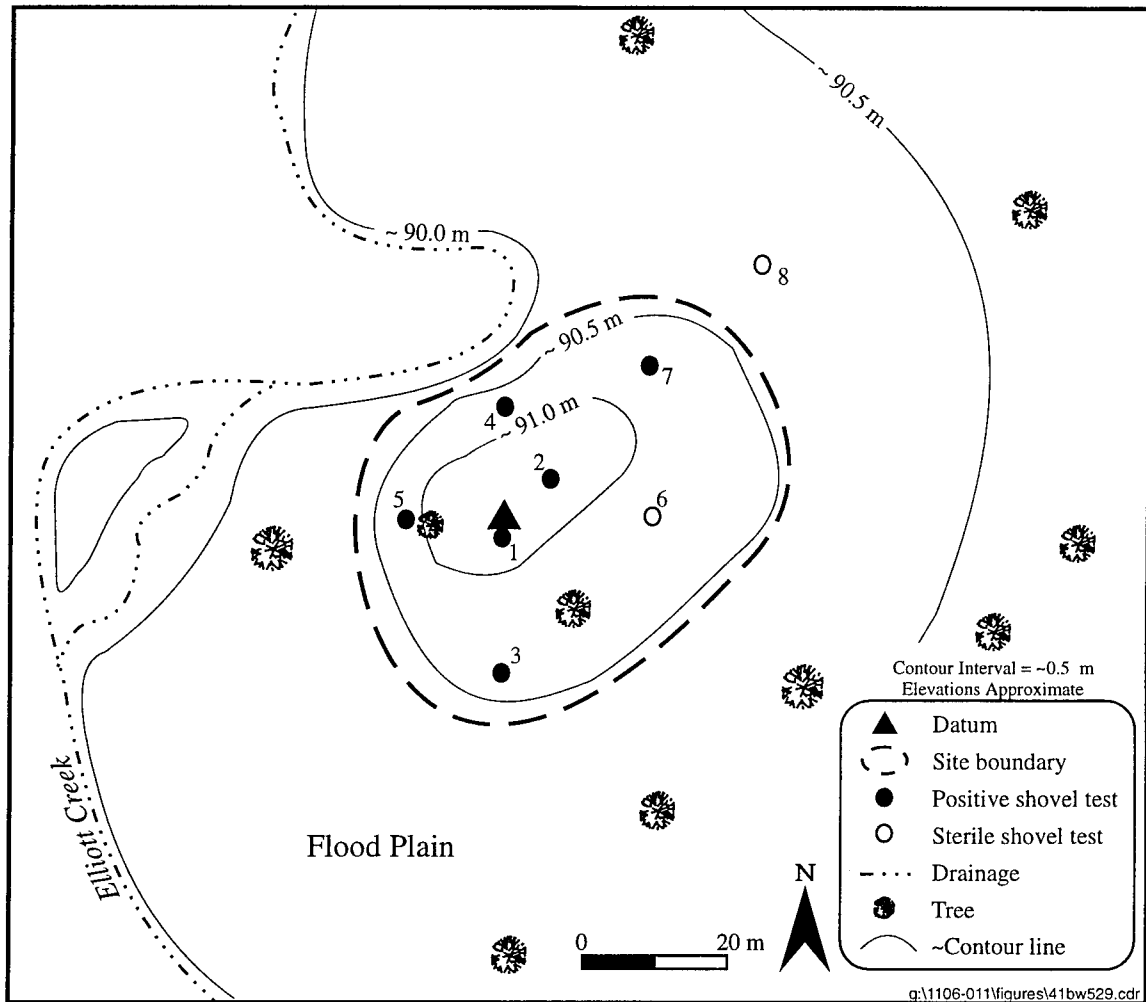


Figure 9. Pace and compass map of site 41BW529.

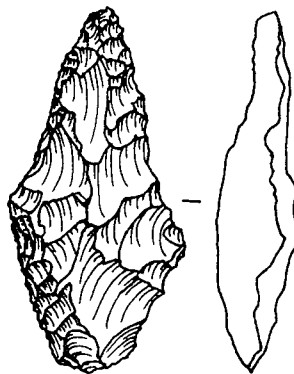


Figure 10. Gary, var. *Panna-Maria*, dart point recovered from site 41BW529, Shovel Test 1, Level 4 (Scale 1:1).

Table 5
Flake Types and Size Categories for Site 41BW529

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	-	1	1	2	-	4
Secondary Flake	-	1	1	-	2	-	4
Tertiary Flake	-	-	2	3	-	3	8
Biface Thinning Flake	-	-	1	-	4	-	5
Total	-	1	5	4	8	3	21

Table 6
Lithic Raw Material Types for Site 41BW529

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	1	8.0	11	20.0	-	-	12	28.0
Quartzite	-	-	2	1.8	3	114.0	5	115.8
Petrified Wood	-	-	1	4.7	-	-	1	4.7
Sandstone	-	-	-	-	1	58.7	1	58.7
Novaculite	-	-	5	2.2	-	-	5	2.2
Woodford Chert	-	-	1	7.2	-	-	1	7.2
Ogallala Quartzite	-	-	2	.7	-	-	2	.7
Total	1	8.0	22	36.6	4	172.7	27	217.3

sharply with the small amount of Ogallala Quartzite present. The presence of Woodford Chert may indicate the use of alluvial gravels from the Red River valley, or it may indicate the as-yet unrecognized presence of this material in the Bowie Gravels. Only one chert flake shows definite evidence of thermal alteration.

In summary, site 41BW529 is a small, moderate density prehistoric site which probably dates to either the latter part of the Late Archaic or the Early Ceramic period. Based on the location of the site, as well as its small size and limited artifactual inventory, site 41BW529 is felt to be a small campsite of limited duration. Although a number of similar prehistoric sites have been identified on the RRAD/LSAAP, site 41BW529 appears to retain good contextual integrity and the site may have good research potential. Consequently, it is recommended that site 41BW529 be considered to be of unknown eligibility for inclusion in the NRHP pending test excavations designed to better determine its NRHP status.

Site 41BW533

Site 41BW533 is a small, moderate density historical site located on a knoll on the slope above an unnamed tributary of Nettles Creek in Survey Tract 4 (see Figure 6). The site is at an elevation of about 105 m (345 ft) amsl and occupies an estimated area of 1,800 m² (75-x-35 m). The site is mapped as being on Ruston fine sandy loam, 3 to 8 percent slopes, a gently sloping to sloping soil found on convex upland terraces. This soil has an A horizon of brown (10YR4/3 to 5/3) fine sandy loam to a depth of 13 cm, which is underlain by yellowish brown (10YR5/4 to 5/8) fine sandy loam to a depth of 41 cm. The Bt horizon is a red (2.5YR4/6 to 5/8) sandy clay loam found to 203 cm or more in depth (Fox 1980:26). The site is covered by a mixed pine/hardwood forest consisting of moderate densities of pine, oak, red oak, and hickory, with a low density understory containing rattan, mulberry, greenbriar, dogwood, and hackberry. The site appears to have good contextual integrity, with minimal erosion and bioturbation.

Site 41BW533 was originally identified as a surface scatter of hogwire, brick, and bottle glass. Eight shovel tests were excavated, three of which contained historic materials (Figure 11). In all, 13 artifacts were collected in the three onsite shovel tests (S.T. 1=2; S.T. 2=4; S.T. 3=7), for an average of 4.33 artifacts per unit. All of the artifacts were recovered from the upper 20 cm of deposit. The A horizon may have been absent or eroded in S.T.s 1, 6, 7, and 8, which were characterized by a surface horizon of yellowish brown silt or silt loam (10YR 5/4), in contrast to the dark grayish brown loam or sandy loam (10YR 3/2-4/2) present in the other tests.

Two potential features were identified at site 41BW533. Feature 1 was a 1-x-1-m depression, possibly a filled well/privy, although no building materials were found in its vicinity. Feature 2 was a 2-x-2-m depression located 4 to 5 m south of Feature 1, possibly a filled-in cellar although, again, no building materials were observed nearby.

Thirteen historic artifacts were recovered from site 41BW533, with architectural items being most abundant (n=10; 76.9 percent). The remaining three artifacts were all domestic items, including a single sherd of Bristol slipped interior/exterior stoneware (post-1900), an ash tinted ABM bottle glass fragment (post-1915), and a clear fragment from a lamp globe. The architectural items included two window glass fragments, measuring 2.0 mm and 1.9 mm thick; six cut nails (1840-1890); one wire nail (post-1890); and one gray machine-pressed brick fragment (post-1903). The low frequency of both domestic serving ware (n=1) and domestic storage ware (n=1), coupled with the high frequency of architectural items (n=10) suggests that this may not represent a domestic sample. The samples of both glass and ceramics are too small to generate either an MCD or an MGD, but it is notable that the mean date derived from the architectural items (1885) is considerably different from that generated by the domestic items (1950).

Site 41BW533 is located in the 295-acre Tract 115 in the William Young HRS. It appears to correlate with archival site A-141 (Peter et al. 1991:Table V-3, Map 3). The William Young HRS was surveyed on March 27, 1849, and the patent issued to Ward Taylor on December 1, 1853 (TGLO; Bowie-BTY-8). Although the early history of the property is unclear, A.J. Broder gained a partial interest in the property with Taylor, and later these two men sold the property to R.S. Ramseur and R.L. Trigg (Bowie T:288).

R.S. Ramseur later gained full interest in the property, and upon his death it passed to his widow, Fannie Ramseur. On November 9, 1908, Fannie Ramseur sold property including the Young HRS to the Texas Baptist Memorial Sanatorium of Dallas for \$5.00 (Bowie 53:447-453). On August 11, 1910, property including the Young HRS was sold by the Texas Baptist Memorial Sanatorium to C.C. Crump for \$26,414.50 in cash and the assumption of a \$11,250.00 note due to R.W. Sears (Bowie 55:162-165). Crump owned the property only until August 19, 1910, when it was sold to the Southern Realty Trust Company and James

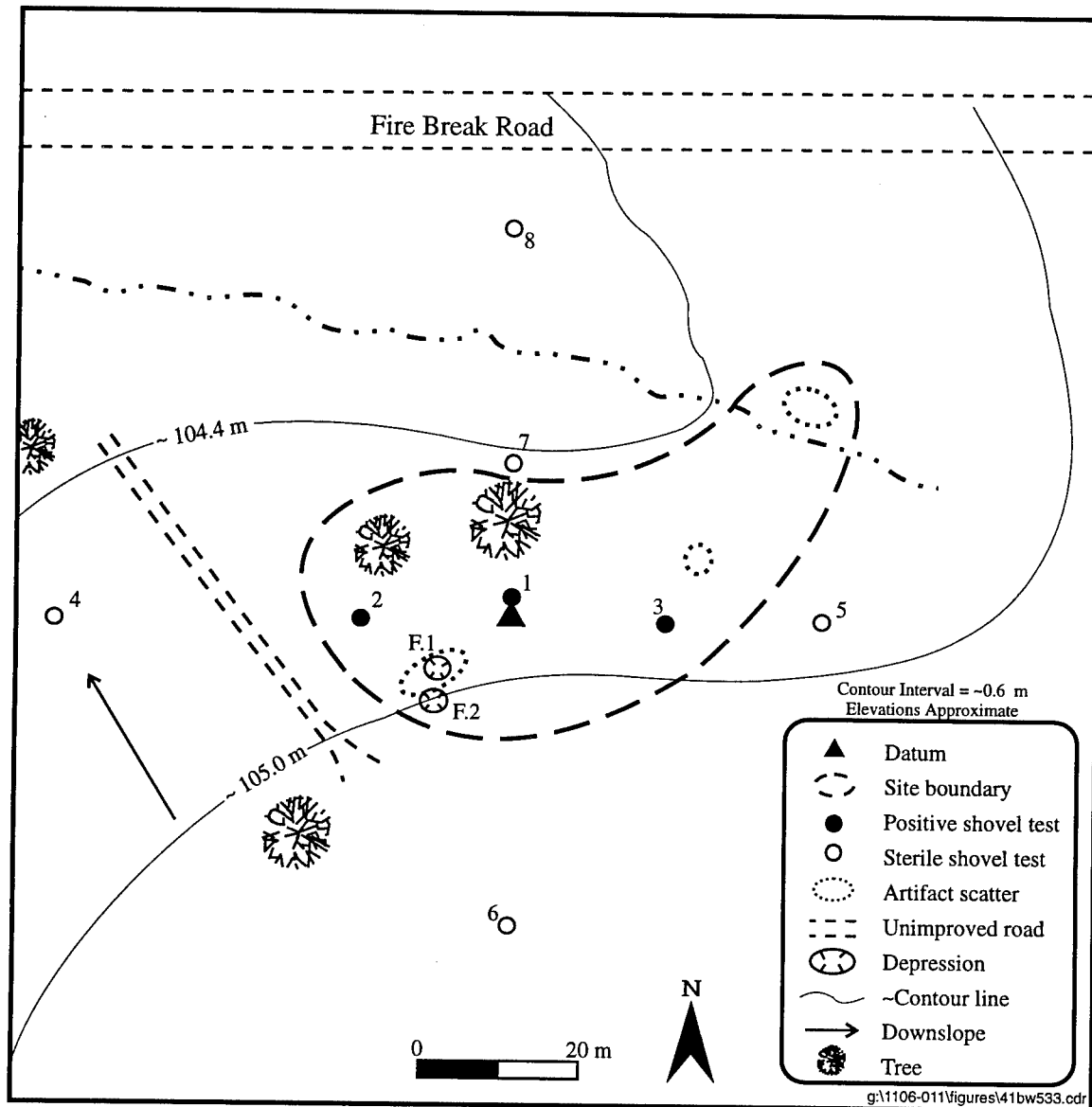


Figure 11. Pace and compass map of site 41BW533.

Gould for \$22,711.5 and assumption of the Sears note (Bowie 55:136-139). On April 16, 1915, the Southern Realty Trust Company sold its half-interest in 6,831.5 acres (including the Young HRS) to James Gould for \$5,000 cash and assumption of the Sears note (Bowie 73:66-69). James Gould then sold all of the Dunn and Young HRS to Louis Heilbrun for \$3,650 cash and assumption of a \$6,000 note (Bowie 76:501). Louis Heilbrun transferred property including Tract 115 to Leo Krause on March 4, 1918, for \$4,530 (Bowie 81:74). Krause retained this property for only a short period, as it was sold to D.F. Johnson on March 27, 1918, for \$7,550 and a pledge to spend \$300 on repairs to buildings before the end of 1918. The Krauses also reserved the timber rights to the property (Bowie 89:45). D.F. Johnson provided some stability to the land tenure, retaining the property until it underwent foreclosure in 1930. Tract 115 was purchased by the Interstate Security Corporation for \$2,250 at a sheriff's sale held February 4, 1930 (Bowie 132:511-512).

The next day Tract 115 was bought by P.B. Elliott for \$3,020 (Bowie 132:533-534). On March 7, 1933, the property later designated Tract 115 was bought from P.B. and Lois Elliott by Jim Branson of Bowie County for \$2,500, which included improvements, livestock, and tools (Bowie 146:192). Soon afterwards (January 9, 1934), the property was sold by Jim and Marie Branson to H.F. Holden, also of Bowie County. The property, described as including 302 acres, was then purchased by Gloria Olivia Mullikin for \$3,020. In the deed the property was noted as being a portion of the Ramseur Ranch, which encompassed both the Young and Dunn HRS, and which was subsequently subdivided by Louis Heilbrun (Bowie 164:387). Finally, the property was purchased as Tract 115 by the U.S. government on December 30, 1941, for \$7,365. Curiously, the property is described as being 295 acres, with no explanation of the 7-acre difference from the previous transaction (Bowie 186:157).

Although the early history of the property which includes Tract 115 is not overly detailed, it appears that the Ramseur family retained possession of the property for a considerable period, as even 30 years later their name was still associated with it (as Ramseur Ranch). On the 1904-1906 topographic map (USGS 1906), a large cluster of structures is shown in the vicinity of site 41BW533, comprising archival sites A-128, A-129, A-131, A-132, A-135, A-136, A-138, A-139, A-140, and A-141 in Tracts 115 and 379. As the property was still owned by the Ramseur family at this time, these structures are probably residences and outbuildings associated with Ramseur Ranch. The same concentration of structures was noted on the 1930s road map. In the 'Option for Purchase of Land' between G.O. Mulliken and the U.S. government, Tract 115 is described as containing the following structures:

- House, 24' x 28';
- House, 16' x 24';
- Barn, 60' x 32';
- Shed, 60' x 22';
- Barn, 10' x 32';
- Hay Barn, 20' x 30';
- Garage, 10' x 14';
- Storage, 4' x 6';
- Poultry House, 12' x 18';
- Poultry House, 12' x 24';
- Poultry House, 12' x 22';
- Open Shed, 12' x 14'; and
- Swimming Pool, 20' x 50' x 6.5'.

Unfortunately, by October 5, 1941, all of these structures had been removed from Tract 115 and thus they do not appear on the 1941 map (Prack and Prack-Architects and Chester Engineers 1942), so it is not clear which of the structures listed above (if any) is represented by site 41BW533.

In summary, site 41BW533 appears to be a small, moderate density historical site, probably a part of Ramseur Ranch. The nature of the architectural sample suggests that the site may have been constructed in the latter part of the nineteenth century, with some renovation done subsequent to 1903, possibly the same repairs pledged by D.F. Johnson in 1918. The two features associated with the site support a domestic function but are in conflict with the overall nondomestic appearance of the artifact sample. Possibly the initial occupation of the site was a domestic one during the late nineteenth and early twentieth centuries, and subsequent to renovation, the site function changed and it was used as a nondomestic outbuilding until its sale to the U.S. government in 1941. Overall, the contextual integrity of the site appears to be good and, with two apparent features present, the site appears to have good research potential. Consequently, it is

recommended that site 41BW533 be considered to be of unknown eligibility for inclusion in the NRHP and be protected until test excavations can be conducted to better determine its NRHP status.

Site 41BW534

Site 41BW534 is a medium-sized, low density historical site located on an upland ridge between Nettles and Elliott creeks in Survey Tract 4 (see Figure 6). The site is at an elevation of 112-114 m (370-375 ft) amsl and occupies an estimated area of 3,400 m² (85-x-50 m). It is mapped as being near the boundary between Darden loamy fine sand, 8 to 12 percent slopes, a strongly sloping sandy soil found along streams (Fox 1980:19-20), and McKamie loam, 1 to 5 percent slopes, a gently sloping soil found on ridges and slopes of old terraces along streams (Fox 1980:21-22). Darden loamy fine sand has an A horizon consisting of a dark yellowish brown (10YR3/4 to 4/6) loamy fine sand 13 cm thick, underlain to a depth of 64 cm by a yellowish brown (10YR5/4 to 5/8) loamy fine sand E horizon. Below this, to a depth of 203 cm is a strong brown (7.5YR4/6 to 5/8) loamy fine sand (Fox 1980:19). McKamie loam typically has a loam surface layer approximately 33 cm thick, which is dark grayish brown (10YR4/2) in the upper part and brown (10YR4/3 to 5/3) in the lower part. The subsoil extends to 147 cm deep and is a red (2.5YR4/6 to 5/8) clay in the upper part and red sandy clay loam in the lower. Below this is a red fine sandy loam to 203 cm deep (Fox 1980:21). The site is covered by mixed pine/hardwood forest, which consists of moderate densities of pine, oak, and red oak and a moderately dense understory of greenbriar and pine and sweetgum saplings. The site has been extensively impacted by bulldozing and the construction of Main Pit Road and has lost much of its contextual integrity.

Site 41BW534 is characterized by an extensive surface scatter along Main Pit Road, with hand-made brick, whiteware (both decorated and relief-molded), window glass, a cast iron pot, strap metal, and square nails. Eight shovel tests were excavated at the site, five of which were within the site boundaries as defined by the surface material (Figure 12). S.T. 4 contained two metal fragments which disintegrated in the field, while S.T. 5 yielded one piece of glass, for an average subsurface density of .60 artifacts per unit. All of these artifacts were recovered within 20 cm of ground surface. Another nine artifacts were collected from the surface scatter. The shovel testing revealed an A horizon of dark brown (10YR3/3 to 4/3) to very dark brown (10YR2/2) sandy loam 10-30 cm thick, underlain by an E horizon of yellowish brown (10YR5/4 to 5/8) to light yellowish brown (10YR6/4) sandy loam which varied from 20 to 40 cm thick. In some units the A horizon has apparently been removed. The Bt horizon was generally found from 17 to 40 cm below surface.

Two potential features were observed at site 41BW534. Feature 1 consisted of a 4-x-4-m depression, 2.5 to 3 m deep, which appears to be the remains of a cistern or root cellar. Near ground surface on the west side of Feature 1 two or three courses of mortared, hand-made bricks were observed, apparently in situ. Feature 2 is 20 m east of Feature 1 and consists of a 2-x-3-m depression, oriented north-south, and 1.5 m deep. No building materials were observed in the vicinity. Feature 2 may be the remains of a well.

Ten historic artifacts were recovered from site 41BW534 (two metal fragments from S.T. 4 disintegrated in the field) and are evenly divided between domestic and architectural items. The majority of the domestic items were identified as food service items (n=4) and included a single sherd of gray tinted porcelain with a polychrome (light pink and light green) floral over-the-glaze decalcomania (1895-1950) decorative motif; one white molded ironstone rim sherd (1840-1910); and two white, highly vitrified ironstone sherds, possibly from the same vessel. One of these sherds had a lion and unicorn crest makers' mark with the words "ROYAL IRONSTON . . ." printed above it. The name of the company was not present making identification of the manufacturer impossible, as this type of mark was used by both English and American

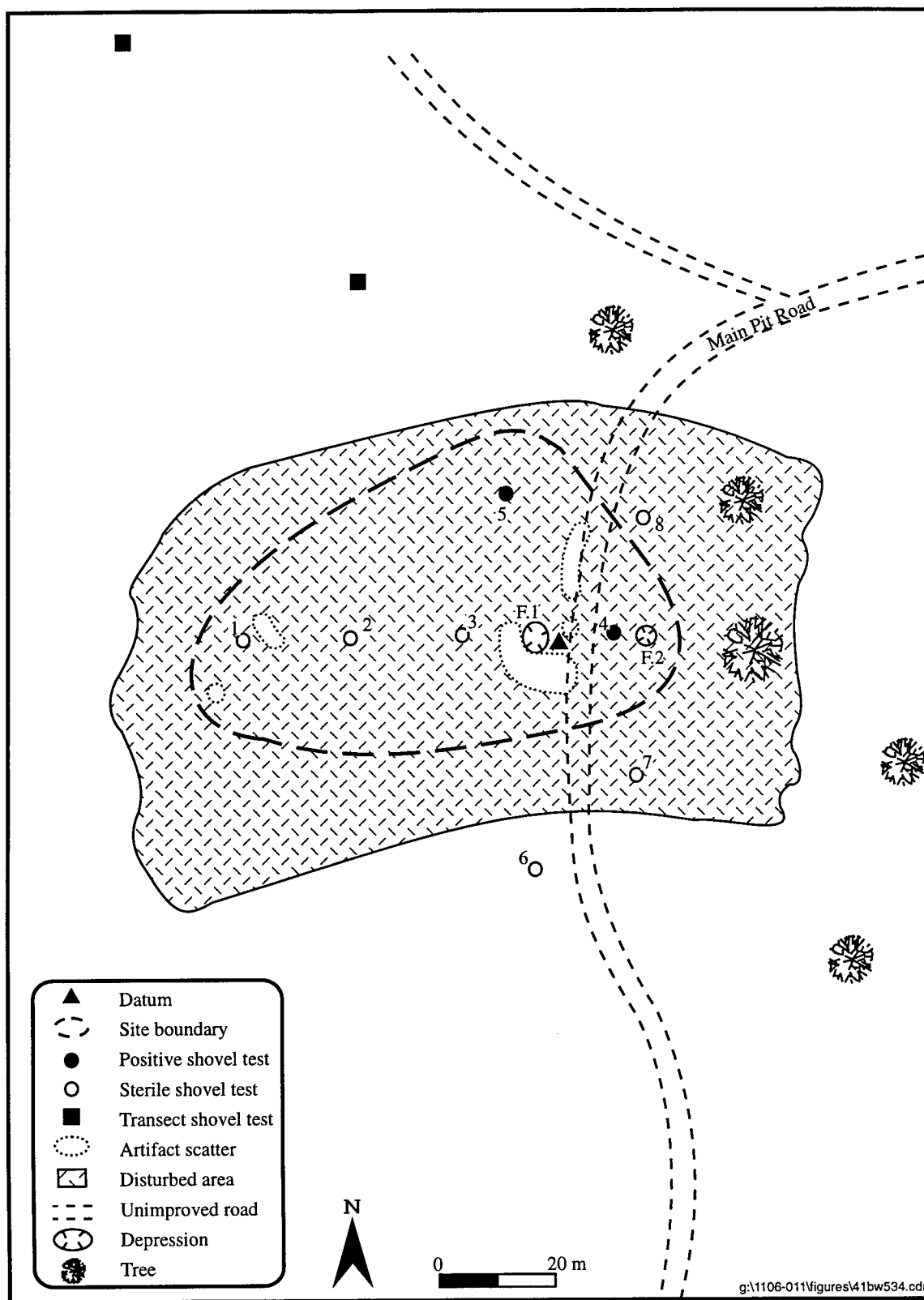


Figure 12. Pace and compass map of site 41BW534.

potteries, particularly in the late 1800s. The final domestic item was a single piece of manganese decolorized (1880-1920), slightly solarized glass which was melted and so distorted in shape that determination of function (e.g., bottle, lamp, or table) could not be made. The architectural items consisted of one handmade brick fragment (pre-1890); one sherd of window glass (2.7 mm thick); and three large, broken cut nails or spikes (1840-1890). Despite the small sample, an MCD of 1889 was calculated for this sample, which is general in agreement with the dates on the single glass specimen and the architectural items.

Site 41BW534 is located in Tract 115 of the William Young HRS and appears to correlate with archival site A-131 (Peter et al. 1991:Table V-3, Map 3). As this is the same tract described above for site 41BW533, the history of the property will not be repeated here. As with site 41BW533, the fact that it is not shown on the 1941 topographic maps (Prack and Prack-Architects and Chester Engineers 1942) makes it difficult to determine which structure is associated with the site.

In summary, site 41BW534 is a medium-sized, low density historical site, which was a part of Ramseur Ranch. Based on the material recovered, the occupation appears to date to the late nineteenth century, and to have been domestic in nature. Two potential features were observed at the site, a possible well and a possible cistern/root cellar. Despite this, the remainder of site 41BW534 has been largely destroyed by bulldozing, with very little subsurface deposits left; the site is felt to retain little or no research potential. Consequently, it is recommended that site 41BW534 be considered to be ineligible for inclusion in the NRHP.

Site 41BW535

Site 41BW535 is a medium-sized, low density historical site located on an upland knoll between Nettles and Elliott creeks in Survey Tract 4 (see Figure 6). The site is at an elevation of 113 m (370 ft) amsl and covers an estimated area of 2,400 m² (60-x-50 m). The site is mapped as being on Darden loamy fine sand, 8 to 12 percent slopes, a strongly sloping sandy soil found along streams. This soil has an A horizon consisting of a dark yellowish brown (10YR3/4 to 4/6) loamy fine sand 13 cm thick, which is underlain to a depth of 64 cm by a yellowish brown (10YR5/4 to 5/8) loamy fine sand E horizon. Below this, to a depth of 203 cm is a strong brown (7.5YR4/6 to 5/8) loamy fine sand (Fox 1980:19-20). The site is covered by mixed pine/hardwood forest consisting of moderate densities of pine, oak, and dogwood with a moderately dense understory of french mulberry, grasses, and dogwood saplings. The contextual integrity of the site has been damaged by bulldozing, timbering, and erosion.

Eight shovel tests were excavated at site 41BW535, with three yielding historic materials from 0 to 20 cm b.s. (Figure 13). Only four artifacts were recovered (S.T. 1=1; S.T. 2=1; and S.T. 3=2), for an average of 1.33 artifacts per unit. The shovel tests revealed a soil profile consisting of a light yellowish brown (10YR6/4) sandy loam AE horizon up to 40 cm deep. In the deeper units, dense gravels were found below 20 cm, while in the remaining units, which were outside the site limits, these dense gravels were found at or near ground surface, possibly indicating that part of the AE horizon has been removed.

Two potential features were observed at site 41BW535. Feature 1 is a 3-x-3-x-2-m deep depression, possibly a cistern or root cellar, although no building materials were found in the vicinity. Feature 2 is a 2-x-1-x-1-m deep depression, possibly a well or privy, although once again, no building materials were found in the vicinity.

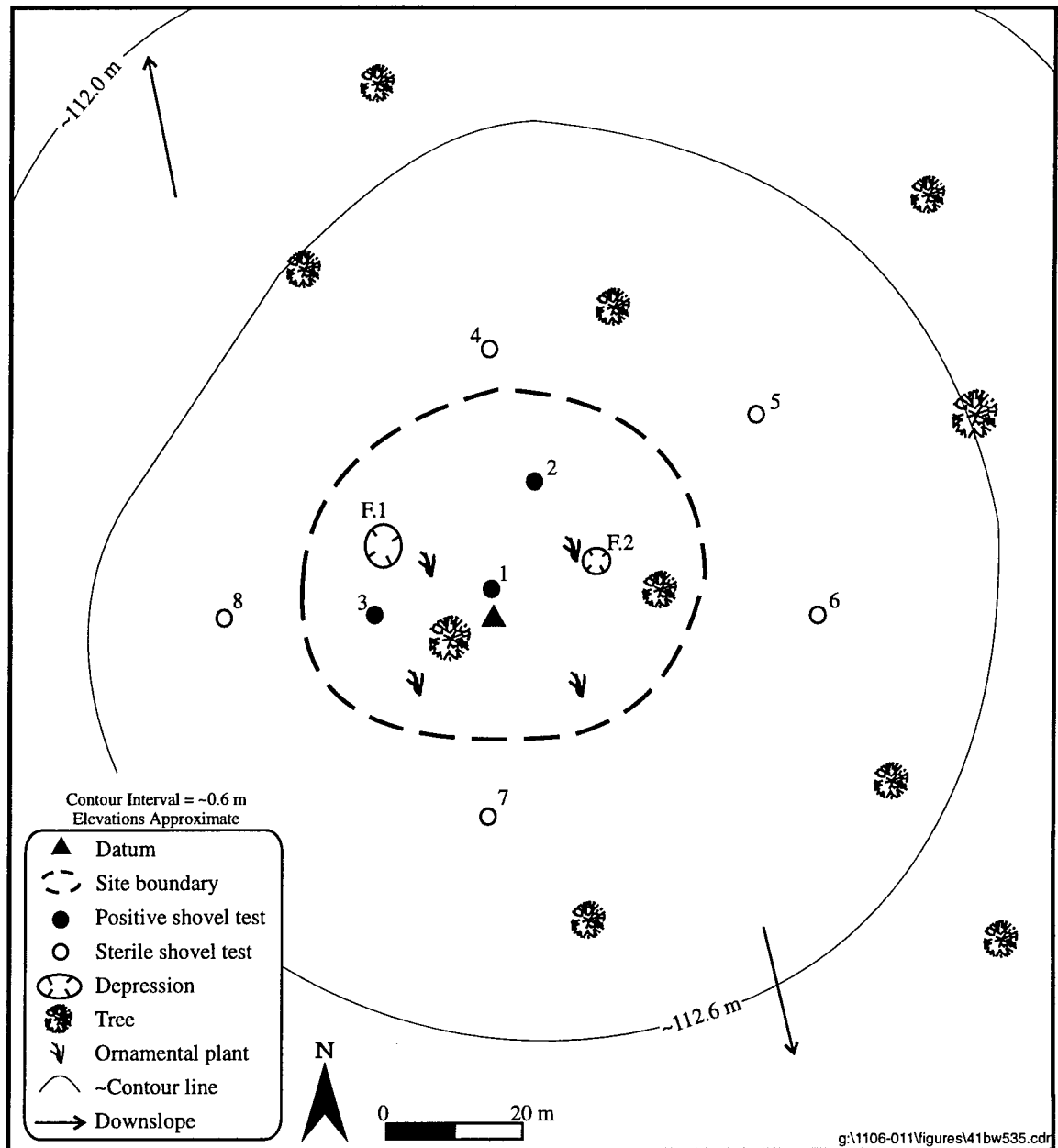


Figure 13. Pace and compass map of site 41BW535.

The sample from site 41BW535 consisted of four artifacts recovered from subsurface contexts (see Appendix D). Three of these four artifacts were architectural items, consisting of fragments of window glass, two of which measured 1.9 mm thick while the third measured 2.3 mm thick. The final artifact was a domestic storage item, a single fragment of clear ABM bottle glass (post-1910). Unfortunately, the small size of this sample makes it difficult to interpret, but it could be a nondomestic sample dating from the early twentieth century.

Site 41BW535 is also located in Tract 115 of the William Young HRS; again, the history of Tract 115 will not be repeated here. Interested readers are referred to the site description for site 41BW533. However, unlike the previous two sites, no structure appears to be in the vicinity of site 41BW535 on either the 1904-1906 topographic map (USGS 1906) or the 1930s road map. The 1941 aerial map of the Lone Star Ordnance Plant (Prack and Prack-Architects and Chester Engineers 1942) is, of course, inconclusive since none of the known structures on Tract 115 are shown on that map.

In summary, site 41BW535 is a medium-sized, low density historical site of uncertain date and function, located on the Ramseur Ranch. The fact that the site is not shown on either the 1904-1906 or 1930s maps may indicate that it represents either (1) a short-term domestic site that predated 1904 or (2) an outbuilding which was not recorded on the map. The artifact sample, although small, points to the site being a post-1900 outbuilding, but the two possible features present on the site suggest a domestic occupation. Possibly the site was originally constructed as a domestic site and then abandoned and reused as a nondomestic outbuilding. Despite the presence of two potential features at the site, it appears to have been extensively disturbed, with the result that the site is not felt to retain any research significance. Therefore, it is recommended that the site be considered to be ineligible for inclusion in the NRHP.

Site 41BW536

Site 41BW536 is a very large, very high density prehistoric site immediately adjacent to the northeastern portion of Elliott Creek Reservoir in Survey Tract 4 (see Figure 6). Prior to construction of the reservoir, the site probably occupied a flat upland bench or terrace edge overlooking the confluence of Elliott and Nettles creeks. The site is at an elevation of 91-94 m (300-310 ft) amsl and encompasses an estimated area of 54,000 m² (450-x-40 m to 450-x-80 m). It is covered with a mixed pine/hardwood forest, consisting of pine, oak, and dogwood with a low density understory of french mulberry, briars, devils club, and dogwood. The site deposits have been mapped as McKamie loam, 1 to 5 percent slopes, a gently sloping soil found on ridges and slopes of old terraces along streams. This soil typically has a loam surface layer approximately 33 cm thick, which is dark grayish brown (10YR4/2) in the upper part and brown (10YR4/3 to 5/3) in the lower part. The subsoil extends to 147 cm deep and is a red (2.5YR4/6 to 5/8) clay in the upper part and red sandy clay loam in the lower. Below this is a red fine sandy loam to 203 cm deep (Fox 1980:21-22). Disturbances noted at the site were minimal, consisting of erosion, timbering, and pot-hunting.

In all, 49 shovel tests were excavated in the vicinity of site 41BW536, 34 during the recording of the site and the remainder from survey transects (Figure 14). Of the 34 shovel tests dug to define the site, 25 contained cultural material but 27 were located within the defined limits of the site. Three-hundred-and-nineteen (319) artifacts were collected from these shovel tests, ranging from as little as one artifact (S.T. 1, S.T. 23, and S.T. 29) to as many as 78 (S.T. 14). The average subsurface artifact overall was 11.81 artifacts per unit. A large proportion of this material (n=195; 61 percent) was collected from just four units (S.T.s 14, 15, 20, and 22) in the central portion of the site, suggesting this was the primary or most intensively occupied area. Smaller, high density areas may be present on the northern end of the site, around S.T. 11 (n=8), and near the southern end of the site, including S.T.s 27 (n=6), 28 (n=9), and 30 (n=12). Due to time constraints some shovel tests had only one level excavated in an attempt to find the site perimeter, rather than the depth of cultural deposits. In the central portion of the site, S.T.s 14, 21, and 22 yielded material in some abundance down to 60 cm; while S.T. 20 contained a large amount of material down to 80 cm. In the southern portion of the site, S.T.s 27 and 28 also yielded material down to 60 cm. Elsewhere material was recovered from between 10 and 20 cm. Soil profiles revealed during shovel testing showed a brown to dark brown (10YR3/3 to 4/3) sandy loam A horizon, 20-40 cm deep, underlain by a light yellowish brown (10YR6/4) sandy loam, 20-60 cm deep. The B horizon was found in some shovel tests to be from 30 to over

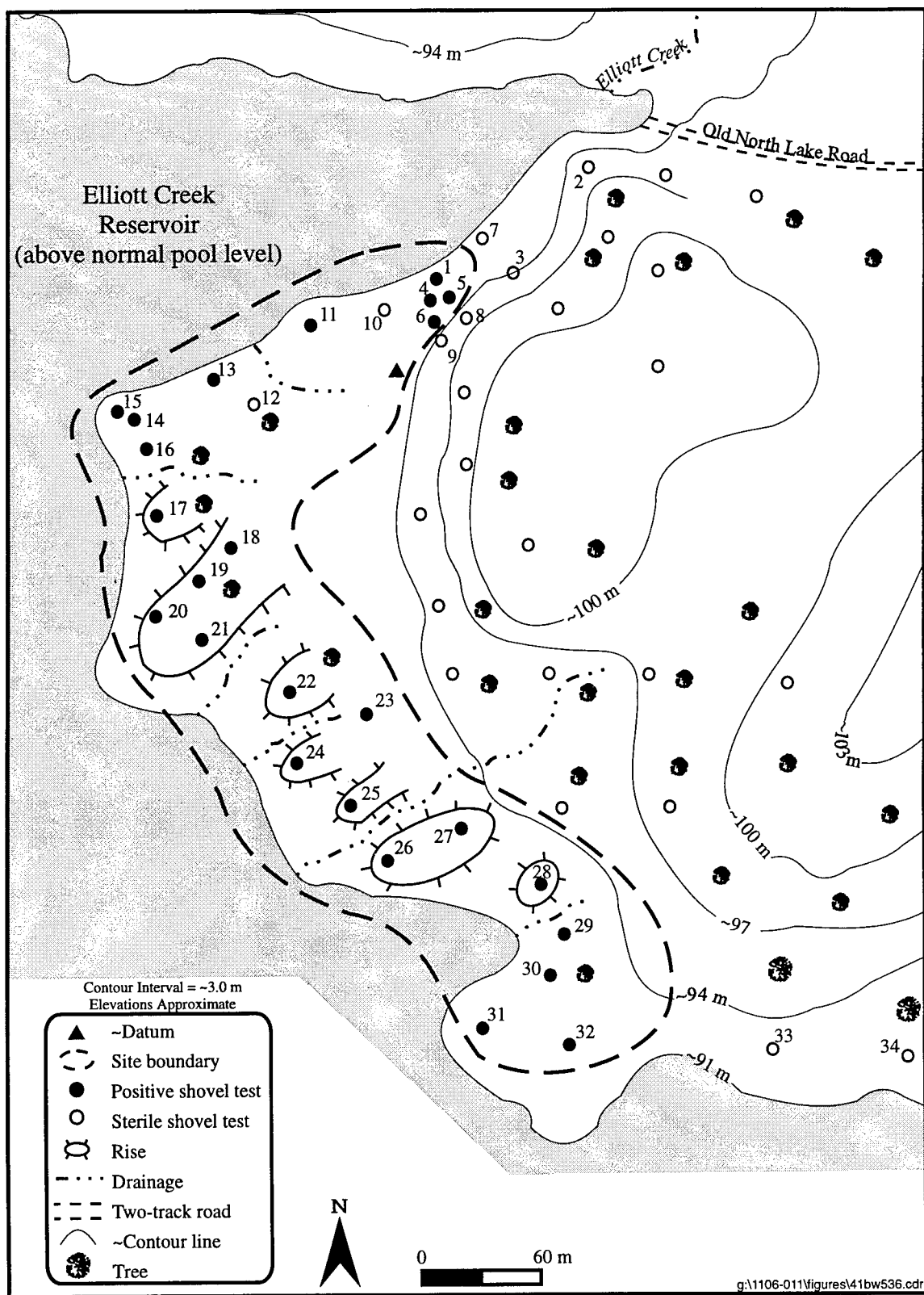


Figure 14. Pace and compass map of 41BW536.

60 cm below surface, while in others excavation was terminated due to a dense gravel lens. Also, in some shovel tests no A horizon soils were observed, suggesting that there has been some surface erosion. In addition to the excavated artifact sample, a surface collection of five artifacts (two flakes and three pieces of burned rock) was made near S.T. 15.

As noted above, 319 prehistoric artifacts were recovered from shovel tests, with an additional five collected from the surface of site 41BW536 (see Appendix C). This artifact sample includes three tools, two early aborted bifaces, one tested pebble, 261 pieces of lithic debitage, 56 fragments of burned rock, and one ceramic sherd. The tools include two dart points and one unifacial side scraper. One of the points is a Gary, *var. Hobson* of Ogallala Quartzite, collected from S.T. 22, Level 3 (Figure 15). It measures 30 mm long, 21 mm wide, and 6 mm thick, and weighs 4.0 g. Gary, *var. Hobson* was originally defined by Johnson on the basis of a sample of 144 points from the Yarbrough site in Van Zandt County (Johnson 1962:163). He noted its presence at the Limerick, Harroun, Martin, Boat Dock, Sam, and Hogge Bridge sites, but made no estimation of its age. More recently, Story (1990b:Figure 32) has dated Gary points in general to the Early Ceramic period. The second dart point is a chert stem fragment, also possibly from a Gary point, found in S.T. 14, Level 3. A burin spall has been removed from one edge, using the snap as a platform. The piece is 25 mm long, 21 mm wide, and 8 mm thick, and weighs 4.3 g. The unifacial side scraper was collected from S.T. 14, Level 2. This tool is novaculite; measures 40 mm long, 15 mm wide, and 5 mm thick; and weighs 2.7 g.

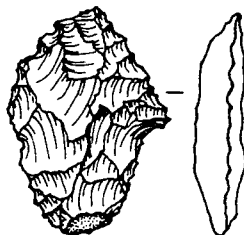


Figure 15. Gary, *var. Hobson*, dart point recovered from site 41BW536, Shovel Test 22, Level 3 (Scale 1:1).

As noted above, the chipped stone debris from the site includes two aborted bifaces, a tested pebble, and a large sample of lithic debitage ($n=261$). One early aborted biface is from S.T. 20, Level 4. It is Ogallala Quartzite; measures 49 mm long, 34 mm wide, and 13 mm thick; and weighs 18.2 g. The other early aborted biface is chert and was found in S.T. 22, Level 3. It measures 47 mm long, 15 mm wide, and 14 mm thick, and weighs 5.7 g. The tested pebble was recovered in S.T. 30, Level 1. The piece is chert; measures 42 mm long, 32 mm wide, and 15 mm thick; and weighs 24.0 g. Lithic debitage comprise the largest artifact category recovered from the site ($n=261$; 80.6 percent). A full range of flake types was present (Table 7), with primary and secondary decortification flakes being slightly in the majority ($n=148$; 57.4 percent). A wide range of lithic raw material was present on the site, with chert, quartzite, novaculite, and sandstone all being present in large amounts and included their use as a resource for burned rock (Table 8). These types may be components of the Bowie Gravels. Ogallala Quartzite was also present in a large amount, but was not used as a burned rock resource. Heat-treated materials are a very minor part of the sample, with only five pieces observed. These consist of quartzite ($n=3$), Ogallala Quartzite ($n=1$), and novaculite ($n=1$).

Table 7
Flake Types and Size Categories for Site 41BW536

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	5	12	6	8	2	33
Secondary Flake	1	3	28	37	40	6	115
Tertiary Flake	-	1	6	11	26	21	65
Biface Thinning Flake	-	-	9	7	24	5	45
Total	1	9	55	61	98	34	258

Table 8
Lithic Raw Material Types for Site 41BW536

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	1	4.3	80	115.0	9	120.0	90	239.3
Quartzite	-	-	77	192.3	44	398.9	121	591.2
Petrified Wood	-	-	2	1.8	-	-	2	1.8
Quartz	-	-	1	.2	-	-	1	.2
Sandstone	-	-	-	-	2	86.9	2	86.9
Novaculite	1	2.7	34	43.7	1	52.9	36	99.3
Bowie Chert	-	-	14	13.1	-	-	14	13.1
Ogallala Quartzite	1	4.0	56	94.4	-	-	57	98.4
Total	3	11.0	264	460.5	56	658.7	323	1130.2

A single ceramic body sherd was collected from S.T. 15, Level 2. It is 6 mm thick and weighs 2.8 g. The fragment has a soft, clay-silt paste and is tempered with abundant bits of coarse clay, grog (crushed potsherd), and hematite (.5 to 1.0 mm across). Both the interior and exterior surfaces have been smoothed and have been equally oxidized, but it is impossible to estimate vessel form.

Burned rock was also a large part of the sample recovered from site 41BW536 (n=56; 17.3 percent). As noted above, raw material used for burned rock included chert, quartzite, sandstone, and novaculite, suggesting that these materials may have been present in some quantity in the immediate vicinity of the site.

In summary, site 41BW536 is a very large, high density prehistoric site located adjacent to Elliott Creek Reservoir, near the former confluence of Nettles and Elliott creeks. Based on its large size, and the variety and density of subsurface material present at the site, it was probably an intensively reoccupied campsite. The presence of at least three areas of high subsurface artifact density, in the northern, central, and southern portions of the site, suggests multiple reoccupations over a period of time. The overall dearth of pottery on

the site suggests most of these occupations occurred during the Archaic period, although the recovery of several dart points (including a Gary, *var. Hobson* point) in close spatial association with a coarse clay-tempered sherd suggests that at least a part of the site was utilized during the Early Ceramic period.

Although some disturbances were noted at the site, they have affected only a comparatively small area, and thus there appears to be a very good potential for the preservation of features. The size of the site suggests a high likelihood of spatial segregation of components, while the depth of cultural remains in the central and southern portions of the site may indicate the presence of one or more buried components, perhaps due to colluvial redeposition of sediment from upslope. As a result of these considerations, site 41BW536 is believed to have excellent research potential, and it is recommended that the site be considered to be of unknown eligibility for inclusion in the NRHP pending test excavations designed to determine its NRHP status. Until such time, it is further recommended that the site be actively protected, especially with regard to preventing further pot-hunting, the evidence of which was observed at the site.

Site 41BW537

Site 41BW537 is a small, low density prehistoric site located on a knoll west of Elliott Creek Reservoir, immediately south of the recreation area along the lake in Survey Tract 3 (see Figure 6). The site is at an elevation of about 91-94 m (300-310 ft) amsl and covers an estimated 1,950 m² (70-x-40 m). Prior to the construction of Elliott Creek Reservoir, the site was probably located on a terrace or bench on an upland slope overlooking Elliott Creek. The site is mapped as being on Ruston fine sandy loam, 3 to 8 percent slopes, a gently sloping to sloping soil on convex upland terraces. This soil has an A horizon of brown (10YR4/3 to 5/3) fine sandy loam to a depth of 13 cm, which is underlain by yellowish brown (10YR5/4 to 5/8) fine sandy loam to a depth of 41 cm. The Bt horizon is a red (2.5YR4/6 to 5/8) sandy clay loam, 203 cm or more deep (Fox 1980:26). Approximately 75 percent of the site has been cleared for a powerline right-of-way, while the remainder of the site is covered by a mixed pine/hardwood forest consisting of pine, oaks, and hickory and a low density understory of french mulberry, greenbriar, poison ivy, and sweetgum. The majority of the site appears to retain good contextual integrity, with the major disturbances noted being the construction of a powerline which crosses the site and clearing for the associated right-of-way.

Four of the eight shovel tests excavated at the site yielded artifacts, and it is on this basis that the site boundaries were defined (Figure 16). Nine artifacts were recovered from these four shovel tests (i.e., S.T. 1=1; S.T. 2=5; S.T. 4=2; and S.T. 6=1), for an average subsurface density of 2.25 artifacts per shovel test. These shovel tests revealed a soil profile consisting of a light yellowish brown (10YR6/4) sandy loam AE horizon, 50 to 70 cm deep, overlying the red sandy clay loam subsoil. The depth of the cultural remains varied widely across the site, from 20 cm deep in S.T. 1, to 40 cm deep in S.T. 2, to 60 cm deep in S.T.s 4 and 6.

As noted above, nine artifacts were recovered from site 41BW537 (see Appendix C), including one unfinished biface fragment and eight flakes. The single unfinished biface fragment was recovered from S.T. 1, Level 1. This piece is chert; measures 12 mm long, 21 mm wide; and 6 mm thick. It weighs 11 g. All types of flakes were present, although the samples were small (Table 9). Raw material types present in the sample included chert, novaculite, Ogallala Quartzite, Bowie chert, and quartzite (Table 10); all of which were probably present locally in the Bowie Gravels. None of the material appears to have been heat-treated.

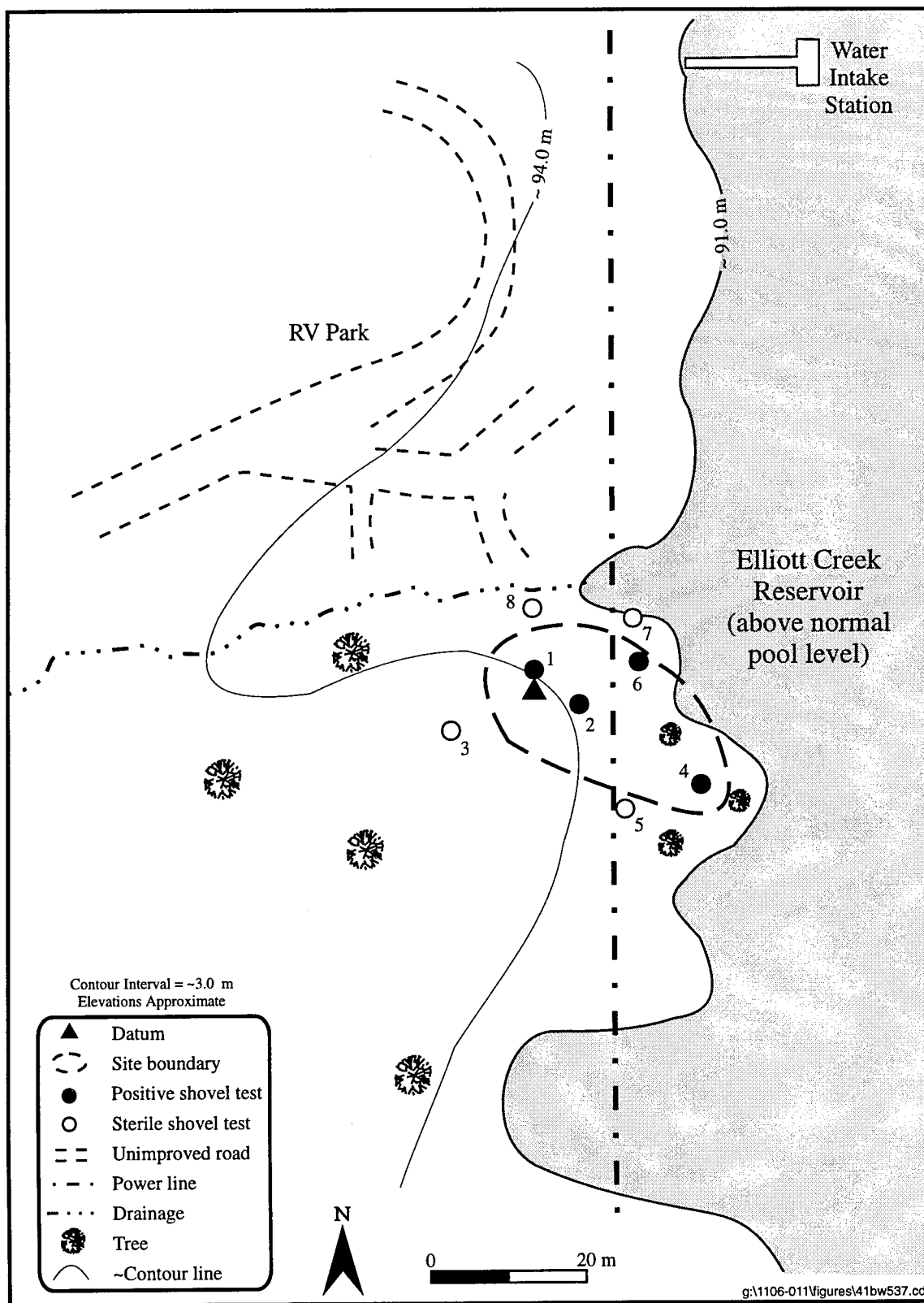


Figure 16. Pace and compass map of site 41BW537.

Table 9
Flake Types and Size Categories for Site 41BW537

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	-	1	-	-	1	2
Secondary Flake	-	-	1	-	1	-	2
Tertiary Flake	-	-	-	-	1	-	1
Biface Thinning Flake	-	-	1	-	2	-	3
Total	-	-	3	-	4	1	8

Table 10
Lithic Raw Material Types for Site 41BW537

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	4	3.3	-	-	4	3.3
Quartzite	-	-	1	3.3	-	-	1	3.3
Novaculite	-	-	2	.8	-	-	2	.8
Bowie Chert	-	-	1	.6	-	-	1	.6
Ogallala Quartzite	-	-	1	5.0	-	-	1	5.0
Total	-	-	9	13.0	-	-	9	13.0

In summary, site 41BW537 is a small, low density prehistoric site. Unfortunately, the lack of temporally diagnostic artifacts precludes any age estimation. The small size, low density of material, and limited artifact inventory suggest a short-term campsite. Although site 41BW537 has good contextual integrity, it is felt that the site's small size and low density limit its research potential. Consequently, it is recommended that site 41BW537 be considered ineligible for inclusion in the NRHP and that no further work be required there.

Site 41BW538

Site 41BW538 is a large, high density prehistoric site located on a terrace or bench very close to the northwestern shore of Elliott Creek Reservoir in Survey Tract 3, in a topographic context similar to site 41BW536 (see Figure 6). Prior to the construction of the reservoir, site 41BW538 was probably located on a terrace or upland slope overlooking the confluence of Elliott and Nettles creeks. The site is located at an elevation of 91-93 m (300-305 ft) amsl and covers an estimated 6,050 m² (95-x-80 m). It is located on McKamie loam, 1 to 5 percent slopes, a gently sloping soil on ridges and slopes of old terraces along streams. McKamie soil typically has a loam surface layer, approximately 33 cm thick, dark grayish brown (10YR4/2) in the upper part and brown in the lower part. The subsoil extends to 147 cm and is a red (2.5YR4/6 to 5/8) clay in the upper part and red sandy clay loam in the lower. Below this is a red fine sandy

loam to 203 cm (Fox 1980:21-22). Vegetation on the site consisted of a moderately dense mixed pine/hardwood forest of pine, oak, white oak, and dogwood, with a moderately dense understory of french mulberry, greenbriar, grapevine, and pin oak. Approximately 25 percent of the site has been impacted by erosion, bulldozing, an abandoned two-track road, and a large 2-x-3-m hole which may be associated with pot-hunting activities.

Five of the nine shovel tests excavated at site 41BW538 contained cultural deposits from ground surface to at least 75 cm deep, and it is on this basis that the site boundaries are defined (Figure 17). Sixty-one artifacts were recovered from subsurface contexts at the site (S.T. 1=21; S.T. 2=8; S.T. 3=18; S.T. 5=3; and S.T. 8=11), for an average density of 12.2 artifacts per shovel test. Together, S.T.s 1 and 3 contained 63.9 percent of the sample recovered (n=39), as well as yielding the deepest remains (75 and 70 cm, respectively). A second area of high subsurface artifact density may be present in the southwestern portion of the site, where S.T. 8 yielded 11 artifacts down to 60 cm. The shovel testing revealed a soil profile consisting of a brown to light yellowish brown (10YR6/4) sandy loam A horizon, 20 to 70 cm thick, which is underlain by a brownish yellow (10YR6/6 to 6/8) to yellowish brown (10YR5/4 to 5/8) compact silt E horizon. Depth to the Bt horizon varied from about 50 cm in some units, to over 70 cm in others.

One potential feature or disturbance was noted at the site. This was a large, 3-x-2-x-2-m deep hole, which had been dug into a natural rise along the terrace. This feature may be associated with pot-hunting activities at the site, as no historic materials were found nearby to indicate a historic occupation.

As noted above, 61 artifacts were recovered from shovel testing at site 41BW538 (see Appendix C). This material consisted of 58 flakes and one piece of angular shatter, as well as two pieces of burned rock. All types of flakes were present in the sample (Table 11), with primary and secondary decortification flakes being slightly in the majority (n=33; 56.9 percent). A moderate variety of lithic raw material types is present, with chert accounting for over 75 percent of the raw material by weight (Table 12). The use of both chert and quartzite as material for burned rock suggests their occurrence in the immediate vicinity of the site. None of the flakes or shatter appears to be thermally altered.

In summary, site 41BW538 is a large, high density prehistoric site of unknown date. The size of the site, together with the presence of several spatially separate areas of high subsurface artifact density, suggests a habitation or campsite which was reoccupied periodically. Contextual integrity is fair, and in combination with the high density of material recovered from the site, it appears to have a good research potential. Consequently, it is recommended that site 41BW538 be considered to be of unknown potential for inclusion in the NRHP pending test excavations designed to definitively determine its NRHP status. It is further recommended that until such test excavations are undertaken, the site be protected from any further impacts, especially from pot-hunting activities.

Site 41BW539

Site 41BW539 is a small, low density prehistoric site located on several natural rises along an upland slope west of Elliott Creek Reservoir in Survey Tract 3 (see Figure 6). Prior to the construction of the reservoir, the slope would have overlooked the flood plain of Elliott Creek and the confluence of Elliott and Nettles creeks. The site is at an elevation of 94-97 m (310-320 ft) amsl and occupies an estimated 1,300 m² (55-x-35 m). It is mapped as being on McKamie loam, 1 to 5 percent slopes, a gently sloping soil found on ridges and slopes of old terraces along streams. This map unit typically has a loam surface layer, approximately 33 cm thick, which is dark grayish brown (10YR4/2) in the upper part and brown (10YR4/3 to 5/3) in the lower part. The subsoil extends to 147 cm and is a red (2.5YR4/6 to 5/8) clay in the upper part and red

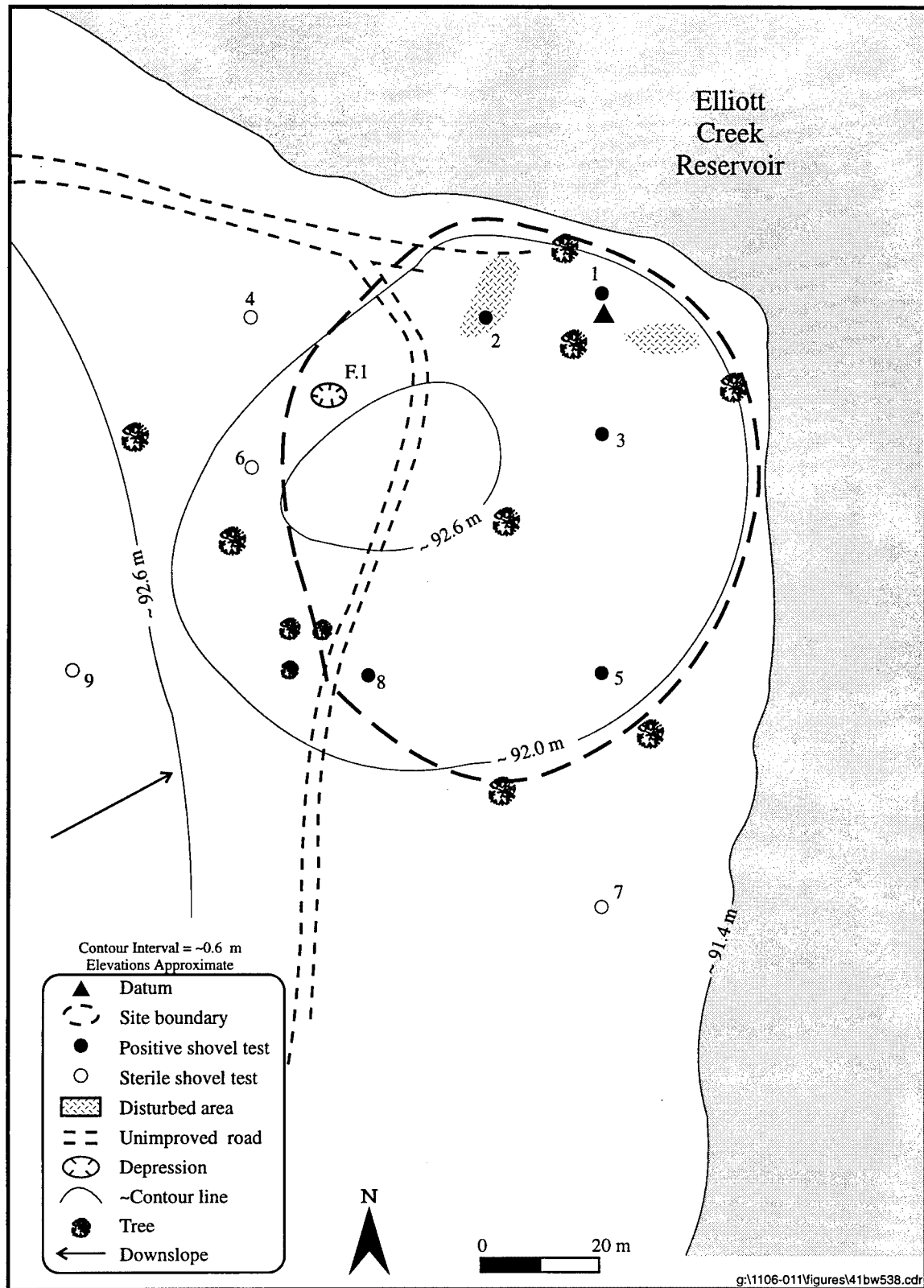


Figure 17. Pace and compass map of site 41BW538.

Table 11
Flake Types and Size Categories for Site 41BW538

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	-	-	4	6	1	11
Secondary Flake	-	-	3	5	10	4	22
Tertiary Flake	-	1	1	3	7	2	14
Biface Thinning Flake	-	-	-	1	7	3	11
Total	-	1	4	13	30	10	58

Table 12
Lithic Raw Material Types for Site 41BW538

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	25	17.5	1	84.0	26	101.5
Quartzite	-	-	15	15.8	1	5.6	16	21.4
Novaculite	-	-	4	1.6	-	-	4	1.6
Bowie Chert	-	-	1	.3	-	-	1	.3
Ogallala Quartzite	-	-	13	7.3	-	-	13	7.3
Chalcedony	-	-	1	.3	-	-	1	.3
Total	-	-	59	42.8	2	89.6	61	132.4

sandy clay loam in the lower. Below this is a red fine sandy loam to 203 cm (Fox 1980:21-22). A mixed pine/hardwood forest covers the site, consisting of moderate densities of pine, oak, and hickory, with a moderately dense understory of pin oak, greenbriar, and poison oak. Most of the site appears to retain good contextual integrity, with the only disturbances noted being erosion and timbering.

Eight shovel tests were excavated at site 41BW539, two of which were found to contain cultural materials (Figure 18). Both positive shovel tests were located on natural rises and the site boundaries were based as much on surface topography as on the shovel tests. S.T. 1 yielded material to a depth of only 20 cm in the southern rise. S.T. 2, in the northern rise, contained artifacts to a depth of 60 cm. Only three artifacts were recovered from these two tests (S.T. 1=1 and S.T. 2=2), for an average of 1.50 artifacts per shovel test. The soil profile revealed in these shovel tests consisted of a 10-cm-thick A horizon, overlying a 30 to 40-cm-thick E horizon, which was in turn underlain by the reddish yellow Bt horizon.

As noted above, site 41BW539 yielded a very limited sample of three flakes (see Appendix C). These consist of a quartzite secondary flake, 19-25 mm in size; a tertiary flake of Bowie Chert, 6.3-9.5 mm in size; and a chert bifacial thinning flake, 9.5-12.5 mm in size. None of these artifacts appeared to be heat-treated. Not

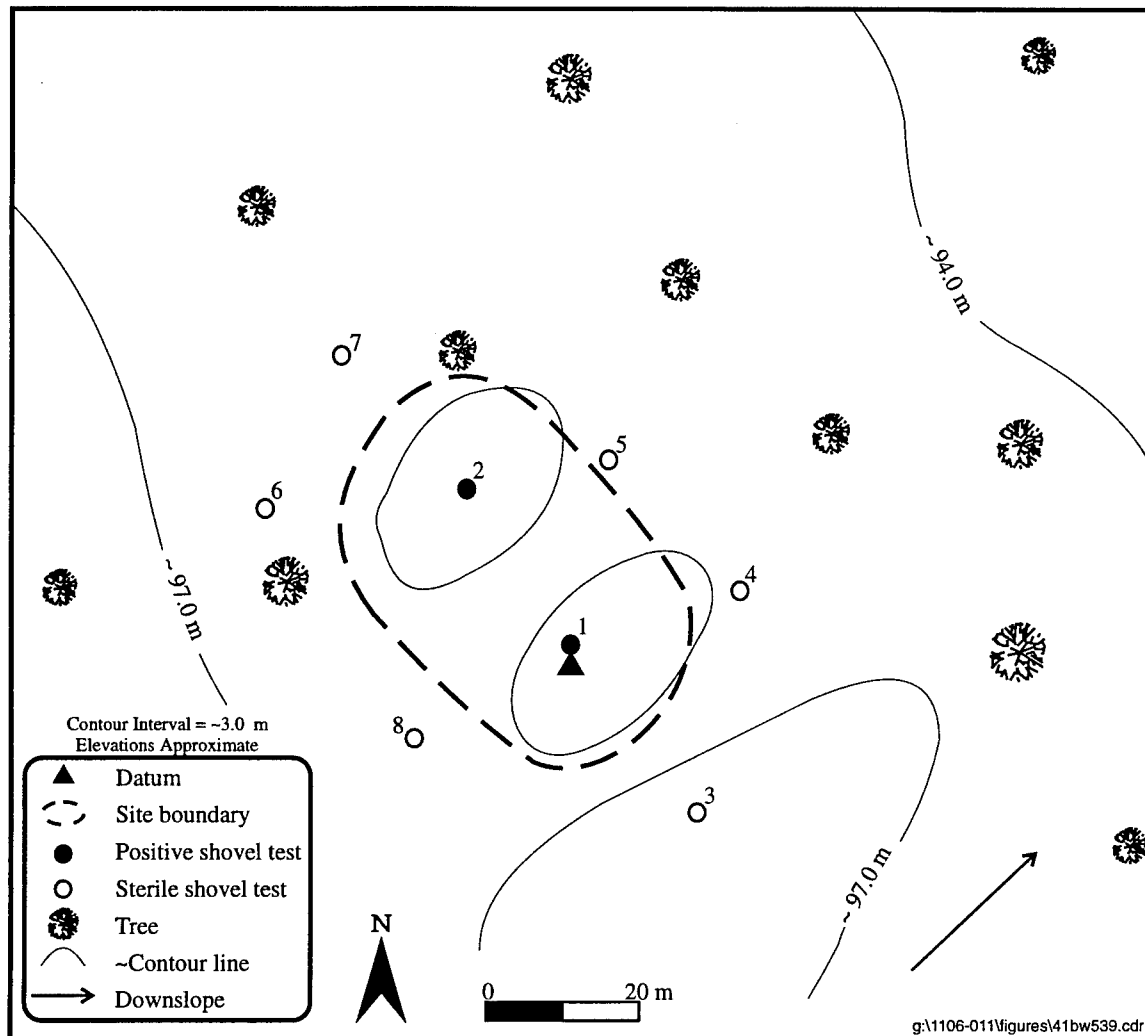


Figure 18. Pace and compass map of site 41BW539.

much can be said about this sample, considering its small size; but it may be worth noting that it does not appear out of place with the other samples recovered from the prehistoric sites in the RRAD/LSAAP area.

In summary, site 41BW539 is a small, low density site of an unknown prehistoric period. Considering the small quantity of lithic debitage recovered, the site probably represents a short-term campsite. Although site 41BW539 retains good contextual integrity, it is felt that its small size and low density limit its research potential. Consequently, it is recommended that the site be considered ineligible for inclusion in the NRHP and that no further work be required there.

Site 41BW540

Site 41BW540 is a small, low density prehistoric site located on a knoll along the upland slope west of Elliott Creek Reservoir in Survey Tract 3 (see Figure 6). Prior to the construction of the reservoir, the site would have overlooked the flood plain of Elliott Creek, just downstream of the confluence of Elliott and Nettles creeks. The site is at an elevation of about 97 m (320 ft) amsl and encompasses an estimated 1,200 m² (50-x-30 m). It is mapped as being on McKamie loam, 1 to 5 percent slopes, a gently sloping soil found on ridges and slopes of old terraces along streams. The McKamie map unit typically has a loam surface layer, approximately 33 cm thick, which is dark grayish brown (10YR4/2) in the upper part and brown (10YR4/3 to 5/3) in the lower part. The subsoil extends to 147 cm and is a red (2.5YR4/6 to 5/8) clay in the upper part and red sandy clay loam in the lower. Below this is a red fine sandy loam to 203 cm (Fox 1980:21-22). A mixed pine/hardwood forest of pine, red oak, dogwood, and sweetgum covers the site, with an understory of french mulberry, greenbriar, pin oak, and blackberry. Disturbances noted at the site included erosion, an old two-track road cleared with a bushhog, timbering, and possibly plowing. A beaver dam was found in the drainage south of the site.

Four of the eight shovel tests excavated at the site contained cultural materials (Figure 19), and the site boundaries were largely defined on this basis. The only exception was the eastern boundary that was defined by the presence of a surface deflated down to the clay subsoil. All of the artifacts recovered from the shovel tests were recovered within 20 cm of the ground surface. Eight artifacts were recovered from the four onsite shovel tests (S.T. 1=3; S.T. 2=1; S.T. 3=3; and S.T. 8=1), for an overall average of 2.0 artifacts per unit. Most of the artifacts were recovered from the northwestern portion of the site (n=6; 75 percent). The shovel tests revealed a generalized soil profile consisting of light yellowish brown (10YR6/4) to brownish yellow (10YR6/6 to 6/8) sandy loam E or EB horizon, from 5 to 40 cm thick, overlying a red (2.5YR4/6 to 5/8) clay Bt horizon. The A horizon was apparently missing everywhere on the site, and the Bt horizon was within 10-15 cm of the surface in S.T.s 2 and 8.

All of the artifacts recovered from site 41BW540 consisted of lithic flakes (see Appendix C). It should be noted that the sample is small, but that no primary flakes are present and bifacial thinning flakes are most abundant (Table 13). The only raw material types present in the sample were chert, novaculite, and Ogallala Quartzite, with the latter most abundant (Table 14).

In summary, site 41BW540 is a small, low density site of an undetermined prehistoric period. In view of its small size, low subsurface artifact density, and limited artifact inventory, the site may represent a short-term campsite or a special function site. In addition to its small size and low subsurface artifact density, site 41BW540 also seems to have been adversely impacted by deflation and erosion, which have removed the A horizon over the entire site and left the clay Bt horizon within 20 cm of the surface in the southern and eastern areas. Given these considerations, it is felt that site 41BW450 has only a limited research potential; it is recommended that it be considered ineligible for inclusion in the NRHP and that no further work be required there.

Site 41BW541

Site 41BW541 is a small, low density prehistoric site located on a small upland ridge, which slopes gradually eastward toward Elliott Creek Reservoir, in Survey Tract 3 (see Figure 6). Prior to the construction of the reservoir, the site may have occupied an upland edge overlooking the flood plain of Elliott Creek. The site is at an elevation of about 94 m (310 ft) amsl and occupies an estimated 600 m² (45-x-25-m). It is mapped as being on McKamie loam, 1 to 5 percent slopes, a gently sloping soil found on ridges and slopes of old

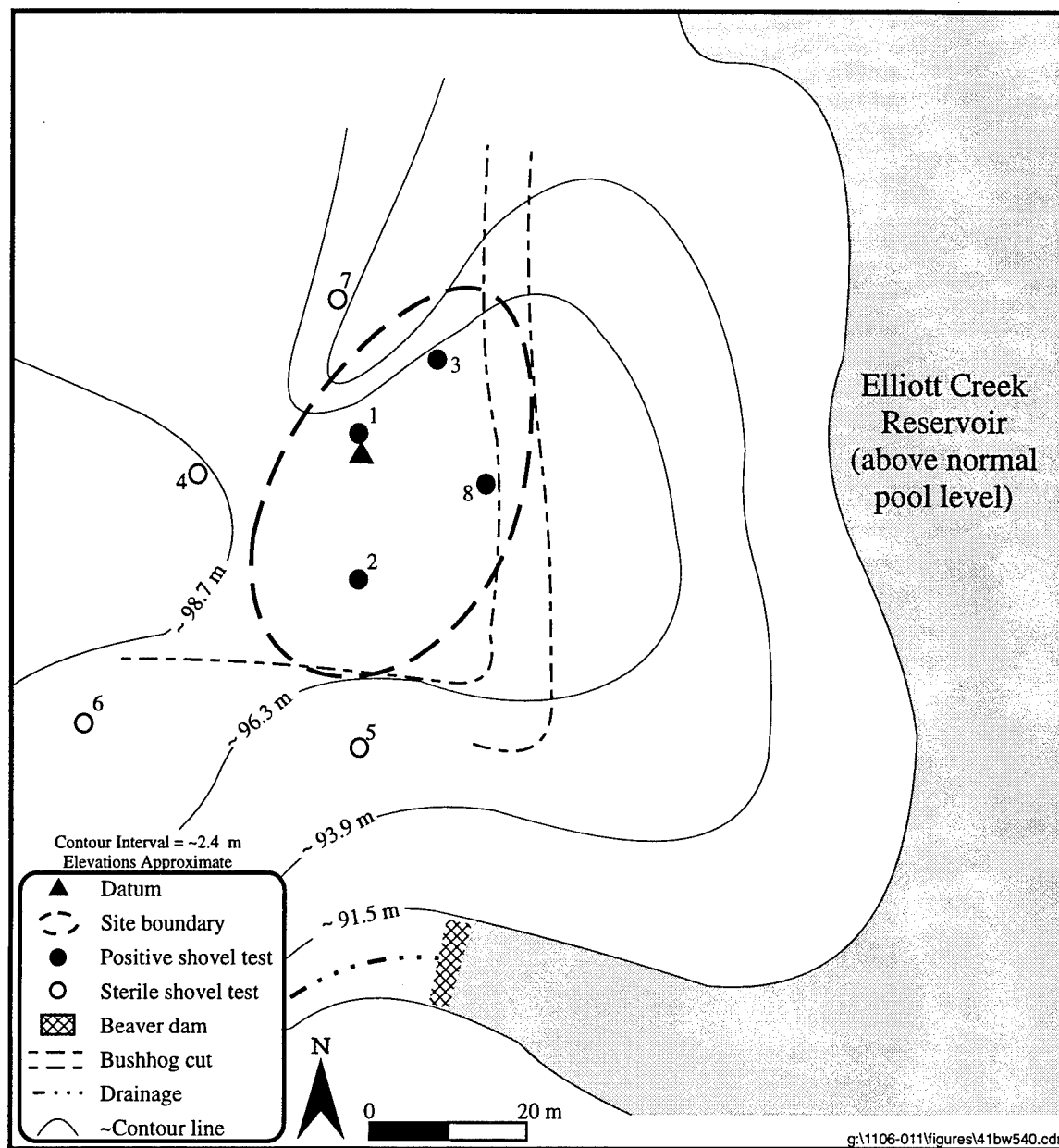


Figure 19. Pace and compass map of site 41BW540.

terraces along streams. McKamie soil typically has a loam surface layer, approximately 33 cm thick, which is dark grayish brown (10YR4/2) in the upper part and brown (10YR4/3 to 5/3) in the lower part. The subsoil extends to 147 cm and is a red (2.5YR4/6 to 5/8) clay in the upper part and red sandy clay loam in the lower. Below this is a red fine sandy loam to 203 cm (Fox 1980:21-22). A mixed pine/hardwood forest consisting of pine, oak, hickory, and sweetgum covers the site, with an understory of greenbriar, grapevine, french mulberry, and pin oak. Some erosion was noted at the site, in addition to impacts from timbering. An old two-track road was noted west of the site and a poured concrete water or feed trough, measuring 2-x-1-x-.5-m, was about 40 m downslope from the site (Figure 20).

Table 13
Flake Types and Size Categories for Site 41BW540

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	-	-	-	-	-	-
Secondary Flake	-	-	-	1	1	1	3
Tertiary Flake	-	-	-	-	1	-	1
Biface Thinning Flake	-	-	-	1	1	2	4
Total	-	-	-	2	3	3	8

Table 14
Lithic Raw Material Types for Site 41BW540

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	2	.6	-	-	2	.6
Novaculite	-	-	1	.1	-	-	1	.1
Ogallala Quartzite	-	-	5	2.2	-	-	5	2.2
Total	-	-	8	2.9	-	-	8	2.9

Eight shovel tests were excavated at site 41BW541, of which two contained cultural materials. In both cases, the prehistoric remains were confined to the upper 20 cm of deposit. These two tests yielded three artifacts (S.T. 1=2 and S.T. 2=1), for an average of 1.5 artifacts per unit. Where present, the A horizon in the shovel tests consisted of a dark grayish brown (10YR3/2 to 10YR4/2) to brown (10YR4/3 to 5/3) sandy loam, 10 to 25 cm thick. Underlying this was a yellowish brown (10YR5/6 to 6/4) to brownish yellow (10YR6/8) E or EB horizon, from 12 to 60 cm thick. The subsoil consisted of a red (2.5YR4/6) clay or sandy clay. The A horizon was present only in S.T.s 2, 5, 6, and 7, although in the latter three it directly overlay the Bt horizon. The E or EB horizon was present in S.T.s 1, 2, 3, and 4. In S.T. 8, the subsoil was exposed on the surface.

Only three tertiary flakes were recovered from site 41BW541 (see Appendix C). All three are less than 6.4 mm in size and are of three raw material types: chert, quartzite, and Ogallala Quartzite. Very little may be said regarding this sample, but it does appear to be very limited, even for low density upland sites.

Site 41BW541 is a small, low density site of an unknown prehistoric period. Based on its small size, low subsurface density, and limited artifact inventory, the site may be a short-term campsite or a special function site. As such, the site belongs to a large class of essentially similar sites identified throughout the RRAD/LSAAP. In addition to its small size and low subsurface artifact density, site 41BW541 also seems to have been adversely impacted by deflation and erosion, which have removed the A horizon over a portion of the site area and exposed the clay Bt horizon in others. In light of this, it is felt that site 41BW541 has only a limited research potential; it is recommended that it be considered ineligible for inclusion in the NRHP and that no further work be required there.

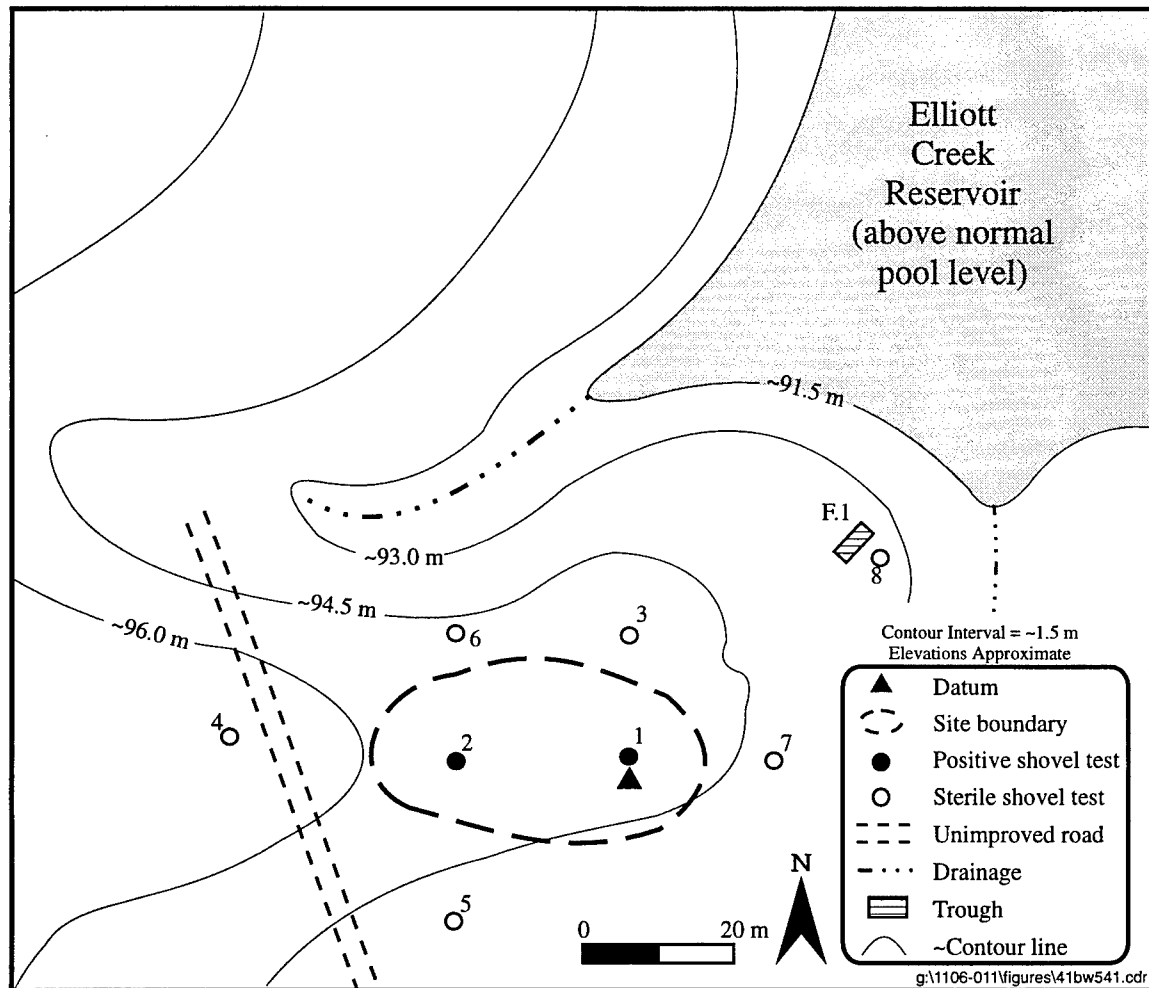


Figure 20. Pace and compass map of site 41BW541.

Site 41BW542

Site 41BW542 is a medium-sized, moderate density historical site located on an upland knoll west of the upper end of Elliott Creek Reservoir in Survey Tract 3 (see Figure 6). The site is at an elevation of about 102 m (335 ft) amsl and covers 3,350 m² (60-x-70 m). It is located at the boundary between Eylau very fine sandy loam, 0 to 3 percent slopes, a nearly level to gently sloping soil found on broad interstream divides (Fox 1980:20), and Ruston fine sandy loam, 0 to 3 percent slopes, a gently sloping soil found on the crests and side slopes of upland terraces (Fox 1980:25-26). Eylau soil typically consists of a dark grayish brown (10YR4/2) very fine sandy loam A horizon, 15 cm thick, underlain by a brown (10YR4/3 to 5/3) very fine sandy loam E horizon, 15 cm thick. The Bt horizon is a sandy clay loam which is strong brown (7.5YR4/6 to 5/8) in the upper part, brownish yellow (10YR6/6 to 6/8) in the middle part, and mottled with red, brown, and gray in the lower part. It reaches a depth of 203+ cm (Fox 1980:20). Ruston soil has an A horizon of brown (10YR4/3 to 5/3) fine sandy loam to a depth of 13 cm, which is underlain by yellowish brown (10YR5/4 to 5/8) fine sandy loam to a depth of 41 cm. The Bt horizon is a red (2.5YR4/6 to 5/8) sandy clay loam found to 203 cm or more below surface (Fox 1980:26). The site is covered with mixed pine/hardwood

forest of pine, oak, and dogwood and a moderately dense understory of devils club, vines, and creepers. About half of the site appears to have been impacted by erosion, timbering, and bulldozing. In addition, the Saint Louis and Southwestern railroad grade is about 30 m west of the site.

A large surface scatter of hogwire, brick, mortar, tin cans, and a metal washtub was observed at the site, as well as a large number of concrete practice bombs. Eight shovel tests were excavated, four of which contained cultural materials (Figure 21). The site boundaries were defined on the basis of these shovel tests as well as the distribution of surface material. Sixteen artifacts were recovered from the four onsite shovel tests, for an average of 4.0 artifacts per shovel test. S.T.s 1 and 3 each yielded one artifact within 20 cm of ground surface, while S.T. 5 contained one artifact between 20 and 40 cm. S.T. 4 yielded the remaining 13 artifacts between 20 and 40 cm down, but there was no indication that the material was being recovered from a feature. The shovel tests showed generalized soil profile consisting of a 20-cm thick, dark yellowish brown (10YR3/4 to 4/6) sandy loam A horizon, underlain by a brown to light yellowish brown (10YR6/4) sandy loam E horizon. The red (2.5YR4/6 to 5/8) clay Bt horizon was found between 15 and 50 cm below surface. In two units (S.T.s 6 and 8), the A horizon was present.

Two features were identified at site 41BW542. Feature 1 was a large (4-x-5-m) pile of concrete practice bombs, perhaps used as fill for a well or cistern. Feature 2 consisted of a brick scatter about 2-x-3-m across, which contained individual and mortared bricks and brick fragments. This may represent a chimney fall or the remains of a porch foundation. The bricks all appeared to be machine-made.

Sixteen artifacts were recovered from shovel testing at site 41BW542 (see Appendix D). Most of these are domestic items (n=14; 87.5 percent), with storage items being most common (n=12; 85.7 percent of the domestic category). Domestic storage items included two aqua fruit jar glass fragments; three fragments of ABM bottle glass, one aqua and two clear (post-1910); a piece of manganese decolorized bottle glass (1880-1920); and six pieces of rusted tin can with evidence of seams (post-1900). One piece of thick, ash tinted table glass (post-1915), probably from a large mug, and a single sherd of light blue tinted undecorated whiteware (1880-1930) comprised the service-related domestic sample (14.3 percent of the domestic category). The remaining two artifacts consisted of one item from the architectural category, a large fragment of transitional brick (ca. 1876-1903) with several inclusions, and one from the furnishings category, one-half of a small ceramic furniture caster. The sample of glass (n=7) yields an MGD of 1942. No MCD was calculated due to the small sample size. The late MGD is due to a reliance on artifacts with no terminal date, and the resulting MGD is not fully in agreement with the date for the ceramic and architectural items, which suggest an earlier pre-1930 date.

Site 41BW542 is located in Tract 396 of the Julia Davis HRS and corresponds to archival site A-142 (Peter et al. 1991:Table V-3, Map 3). A site is shown in this location on both the 1904-1906 (USGS 1906) and the 1930s road map, while five structures are shown on the 1941 map of the Lone Star Ordnance Plant (Figure 22; Prack and Prack-Architects and Chester Engineers 1942). In a document dated August 18, 1941, Tract 396 is described as containing four structures:

- a combination store building and house, 48' x 42', with 12' x 28' porch;
- a chicken house, 8' x 12';
- a toilet, 4' x 4'; and
- a barn, 38' x 34'.

In another document, dated September 16, 1941, all of these buildings are said to have been removed. The survey for the Julia Davis headright was conducted on March 29, 1849 (TGLO; Bowie 3-98), and the patent issued on April 25, 1855 (Bowie 3-98). The owners in the intervening period are not known, but Tract 396 was purchased by the U.S. government from Alvin G. and Thelma Johnson for \$2,250 on March 18, 1942.

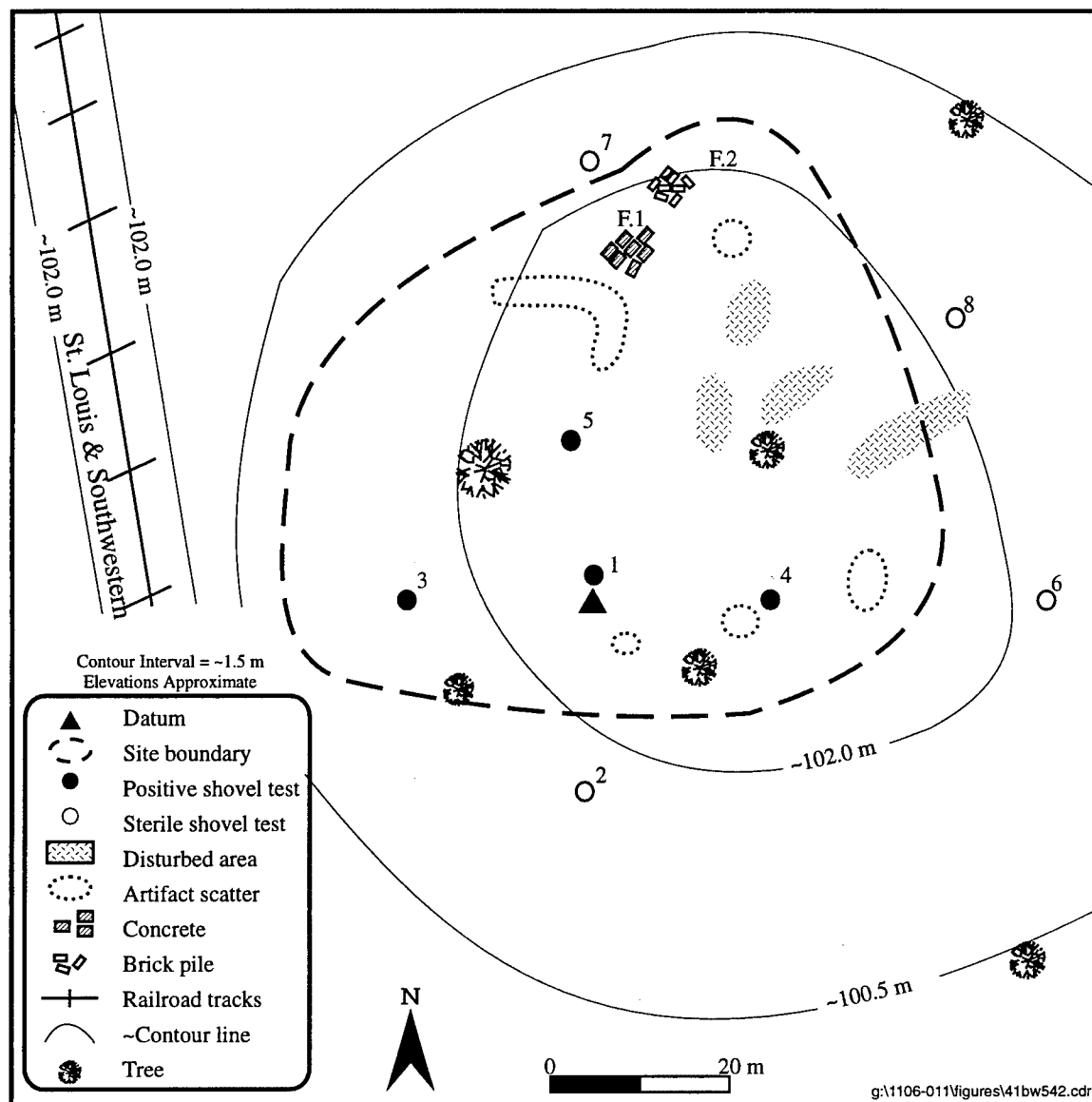


Figure 21. Pace and compass map of site 41BW542.

In summary, site 41BW542 is a medium-sized, moderate density historical site. The limited artifact inventory from the site is not strongly suggestive of a domestic sample, but the available archival information strongly suggests that the site was a domestic one in 1941. The limited sample also makes it difficult to assign a date to the occupation; however, the presence of a structure in this vicinity on a 1904-1906 map of the region indicates an occupation beginning at least as early as the first decade of the twentieth century, but there is very little in the artifact inventory to suggest an earlier date of occupation. In any event, the small size of the artifact sample and the relatively high degree of disturbance noted combine to give the site little research potential. Therefore, it is recommended that site 41BW542 be considered to be ineligible for inclusion in the NRHP and that no further work be required there.

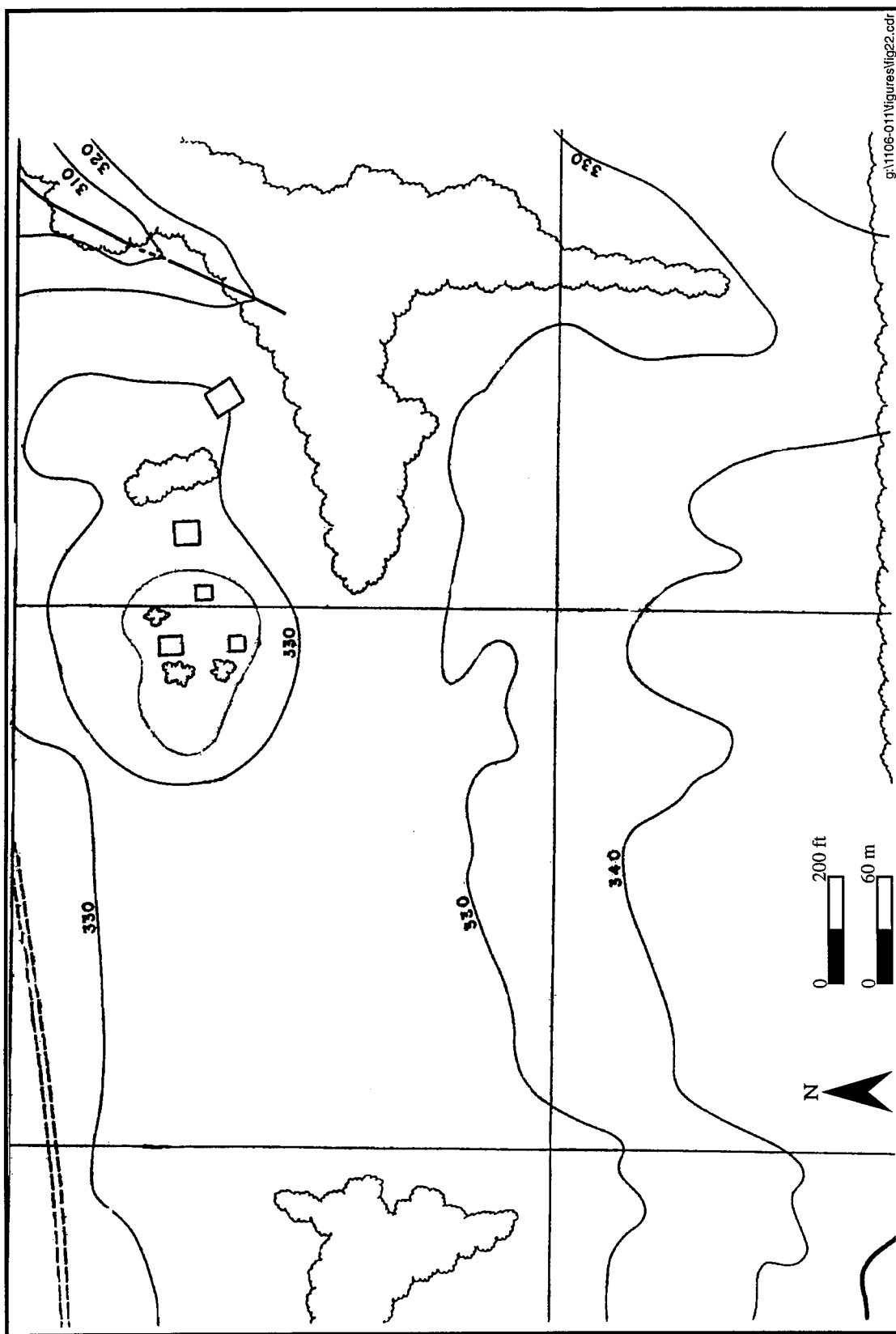


Figure 22. 1941 topographic map showing structures identified as site 41BW542.

Site 41BW543

Site 41BW543 is a medium-sized, moderate density historical site located on an upland knoll northwest of the intersection of Elliott Lake Road and the road to Elliott Cemetery in Survey Tract 3 (see Figure 6). The site is at an elevation of about 103 m (340 ft) amsl and covers an estimated area of 3,500 m² (65-x-70 m). The site is on McKamie loam, 1 to 5 percent slopes, a gently sloping soil found on ridges and slopes of old terraces along streams. This map unit typically has a loam surface layer, approximately 33 cm thick, dark grayish brown (10YR4/2) in the upper part and brown (10YR4/3 to 5/3) in the lower part. The subsoil extends to 147 cm and is a red (2.5YR4/6 to 5/8) clay in the upper part and red sandy clay loam in the lower. Below this is a red fine sandy loam to 203 cm (Fox 1980:21-22). The site is covered with a mixed pine/hardwood forest, consisting of moderately dense pine, oak, and hickory and a dense understory of rattan, sumac, grapevine, and blackberry. Four large oaks were noted inside the site boundary. The site has been virtually destroyed by bulldozing, timbering, and erosion. The right-of-way along Elliott Lake Road has also had a major impact on the site, as whiteware and glass are exposed along its surface.

A large mound of concrete practice bombs was found in the northeastern part of the site, although unlike Feature 1 at site 41BW542, these are not thought to be fill in a historic feature. A large concrete culvert was also found on the site. Four of the eight shovel tests excavated at the site fall within the site boundary, although only three of these contained cultural materials (Figure 23). Thirty artifacts were excavated (S.T. 1=23; S.T. 2=1; and S.T. 3=6), for an average of 7.5 artifacts per onsite shovel test. These artifacts were primarily historical, although one prehistoric projectile point was collected from the surface of the site. Almost all of the artifactual material (n=28; 93.3 percent) was recovered from within 20 cm of the ground surface. Only S.T. 1 yielded any remains below this: two artifacts between 20 and 40 cm below surface. The shovel testing revealed a soil profile consisting of a dark reddish brown (5YR2.5/2 to 3/4) sand AE horizon, 25-40 cm thick, underlain by the dark red (2.5YR3/6) clay Bt horizon. In S.T. 4, bedrock was encountered at 15 cm below surface, while bedrock was exposed at the surface in the northeastern part of the site.

One potential feature was found at the site. This was a large (2-x-3-m) depression in the west central portion of the site, designated Feature 1. This depression is possibly the remains of a root cellar or cistern, although no building materials were found in the vicinity.

As noted above, 30 artifacts were recovered from shovel tests at site 41BW543 (see Appendix D). The domestic category was most abundant (n=23; 76.7 percent), followed by architectural items (n=6; 20.0 percent) and activities-related items (n=1; 3.3 percent). Within the domestic category, storage items are most abundant (n=20; 86.9 percent of the domestic category), consisting of 19 manganese decolorized (18 slightly solarized) bottle fragments (1880-1920) and one piece of brown ABM bottle glass (post-1910). The domestic serving ware items consist of three highly stained, undecorated whiteware sherds (post-1890). The architectural category includes one 10d cut nail (1840-1890), two fragments of plate glass 6.4 mm thick, and three fragments 6.5 mm thick. A piece of iron pipe, possibly a sewer pipe, with an embossed "2" comprises the activities-related category. The sample of glass items from site 41BW543 yielded an MGD of 1902.5, while the sample of ceramics yielded an MCD of 1942, due no doubt to contemporary terminal use-dates.

A single projectile point was collected from the surface of site 41BW543, within the bladed right-of-way along Elliott Lake Road. This is a dart point, typed as Gary, *var. Gary/Kaufman* (Figure 24). This artifact is made of quartzite and measures 52 mm long, 33 mm wide, and 10 mm thick. It weighs 12 g. This variety of Gary point appears to be widespread and has been designated *Kaufman* variety in Northeast Texas (Johnson 1962:161-163) and *Gary* variety in Southwest Arkansas (Schambach 1982b:174). Johnson gives no date for this variety of Gary, but Schambach places it in the terminal Late Archaic to the preceramic Fourche Maline (i.e., Early Ceramic). Most recently, Story has dated all varieties of Gary point to the Early Ceramic period (Story 1990b:Figure 32).

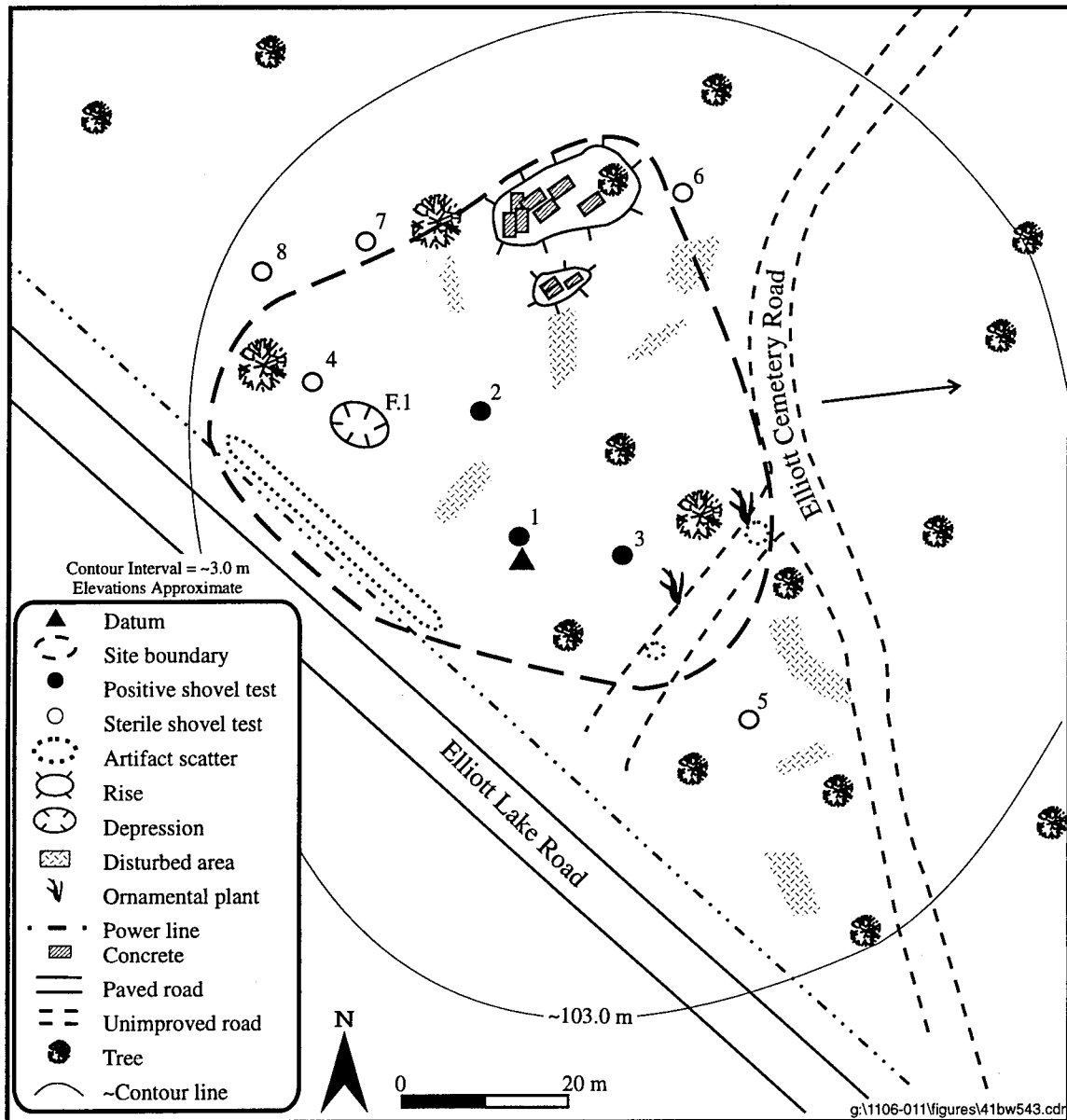


Figure 23. Pace and compass map of site 41BW543.

Site 41BW543 is located in the 100-acre Tract 362 of the Julia Davis HRS and corresponds to archival site A-145 (Peter et al. 1991:Table V-3, Map 3). The survey for the Julia Davis headright was conducted on March 29, 1849 (TGLO; Bowie 3-98), and the patent issued on April 25, 1855 (Bowie 3-98). The penultimate owner of the property was Nettie Davis, possibly a descendant of Julia Davis, who gained ownership from H.M. Clark et al. on September 20, 1920 (Bowie 95:288). The cost of this 100-acre tract to the U.S. government was \$1,935. In the 'Option for Purchase of Land' entered into by Nettie Davis and the War Department, six structures were noted on the property:

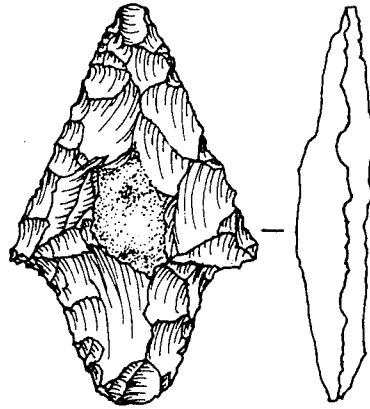


Figure 24. Gary, var. Gary/Kaufman, dart point recovered from the surface of site 41BW543 (Scale 1:1).

a house, 28' x 28';
a garage, 8' x 16';
a chicken house, 6' x 8';
a cow shed, 7' x 16';
a barn, 8' x 12'; and
a shed, 9' x 12'.

In a document dated September 16, 1941, Tract 362 is described as having been vacated and all buildings removed. Two structures are shown in this vicinity on both the 1904-1906 topographic map (USGS 1906) and the 1930s road map, which correspond with archival sites A-144 and A-145 (sites 41BW548 and 41BW543, respectively). Unfortunately, both structures are within Tract 362 and, as these structures are not shown on the 1941 map (Prack and Prack-Architects and Chester Engineers 1942), it is difficult to determine which structures in the above inventory correspond to which sites.

In summary, site 41BW543 is a medium-sized, moderate density historical site of uncertain function and date. The artifacts strongly suggest a utilization during the early part of the twentieth century. Utilization may have begun as early as the late nineteenth century, but only cut nails belong totally to that century and such artifacts often are reused in later buildings. The artifacts also suggest that utilization ceased in the 1920s or early 1930s. Extensive disturbance was noted to the site area which gives it a poor research potential. Consequently, it is recommended that site 41BW543 be considered to be ineligible for inclusion in the NRHP and that no further work be required there.

Site 41BW544

Site 41BW544 is a large, low density historical site located on an upland knoll at the intersection of Lone Pear and East Pear roads southwest of Elliott Creek Reservoir in Survey Tract 3 (see Figure 6). The site is at an elevation of 103-106 m (340-350 ft) amsl and covers an estimated 5,800 m² (70-x-110 m). It is on Sawyer silt loam, 0 to 3 percent slopes, a nearly level and gently sloping soil found on uplands. Sawyer soil has a typical profile of a dark grayish brown (10YR4/2) silt loam A horizon, 15 cm thick, which is directly underlain by the Bt horizon. The Bt horizon extends to a depth of 203 cm or more and consists of a

yellowish brown (10YR5/4 to 5/8) silty clay loam in the upper 23 cm, yellowish brown clay loam with grayish and reddish mottles in the next 28 cm, and mottled gray, red, and strong brown (7.5YR4/6 to 5/8) clay in the lower part (Fox 1980:28-29). The site is covered with a mixed pine/hardwood forest comprised of sparse pine, oak, elm, and walnut and a low density understory of persimmon, goldenrod, pine saplings, and johnson grass. Ornamental plants, including chinaberry, rose bushes, red bud, black walnut, and holly, were also observed. The site has been heavily impacted by bulldozing, erosion, and timbering, which has virtually destroyed its contextual integrity.

Six of the eight shovel tests excavated at site 41BW544 were located within the site boundary, although only three contained cultural materials (Figure 25). The site boundary was determined on the basis of surface artifacts and positive shovel tests. These shovel tests yielded a total of eight historical artifacts (S.T. 1=5; S.T. 2=2; and S.T. 8=1), for an average of 1.33 artifacts per unit. With the exception of a single fragment of barbed wire recovered from 20 to 40 cm down in S.T. 8, all of these remains were within 20 cm of the present ground surface. Soil profiles within the shovel tests generally consisted of a dark yellowish brown (10YR3/4 to 4/6) sand AE horizon, 3 to 30 cm thick, underlain by a red (2.5YR4/6 to 5/8) clay Bt horizon. However, in two units (S.T.s 1 and 3) a significantly different profile was exposed, consisting of a red clayey sand stratum directly below ground surface, probably representing a Bt horizon exposed due to deflation and erosion.

Eight historical artifacts were recovered from the shovel tests on this site (see Appendix D). Five of these items (62.5 percent) belong to the domestic category, while the remaining three are activities-related (37.5 percent). Of the sample of domestic artifacts, three are food service items (60 percent of the domestic category), one is storage-related (20 percent), and one is a furnishing (20 percent). The three service items consist of two white, highly stained and frost fractured ironstone sherds (1840-1910) and a white whiteware sherd (post-1890). The storage item is one bottle fragment of manganese decolorized glass (1880-1920). Finally, the single furnishings item is a fragment of clear lamp glass. The activities-related items consist of two pieces of brown, machine-made snuff bottle glass (post-1910), and a piece of double strand, single barb, barbed wire (post-1880). Despite uncomfortably small sample sizes, an MCD of 1908.5 was calculated for the ceramics and an MGD of 1918.5 was calculated for the glass. A combined mean glass and ceramic date of 1916 was obtained.

Site 41BW544 is located near the boundary between Tracts 368 and 371 in the H.P. Benningfield HRS. As the archival site A-162 in Tract 371 appears to be very close to the reported position of site 41BW544, the assumption is made that sites 41BW544 and A-162 refer to the same property and thus the site is in Tract 371. A structure appears to be present in the vicinity of site 41BW544 on both the 1904-1906 topographic map (USGS 1906) and the 1930s road map, while two structures are shown on the 1941 aerial survey map of the Lone Star Ordnance Plant (Figure 26; Prack and Prack-Architects and Chester Engineers 1942). Four structures are noted in 'Exhibit "A,"' dated July 30, 1941:

- a house, 24' x 40';
- a barn, 12' x 16';
- a smoke house, 10' x 16'; and
- a sanitary toilet, 4' x 4'.

In view of the size and shape of the structures shown on the 1941 map, they appear to be the toilet and possibly the barn. When data were acquired for the 1941 map, the removal of these structures must have been in progress, as by September 16, 1941, all buildings had been removed from the tract. To complicate matters, two other archival sites, A-162 and A-163, are also within Tract 371.

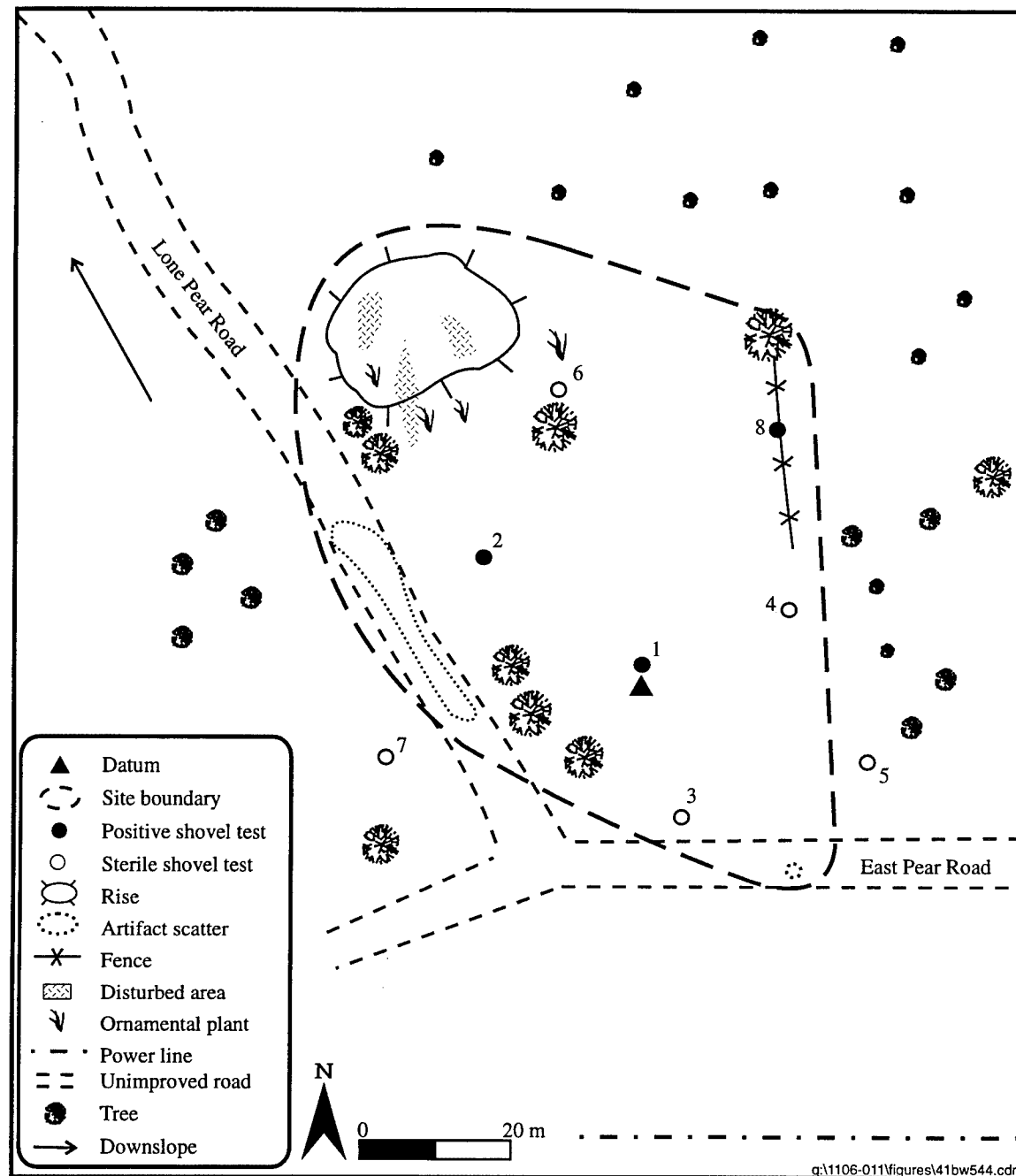


Figure 25. Pace and compass map of site 41BW544.

The early history of the property has not been ascertained. Amelia Josephine Banks Nance conveyed the property to the U.S. government on February 23, 1942, for \$900. Mrs. Nance is described as a widow by desertion and was thus able to sell Tract 371 without the signature of her husband. The property is described as being "a part of an 80 acre tract of land deeded to M.M. Crane by Ball and Estes," purchased from W.P. Parker by Amelia Josephine Banks on December 8, 1934 (Bowie 150:103), less the tract deeded to Ralph

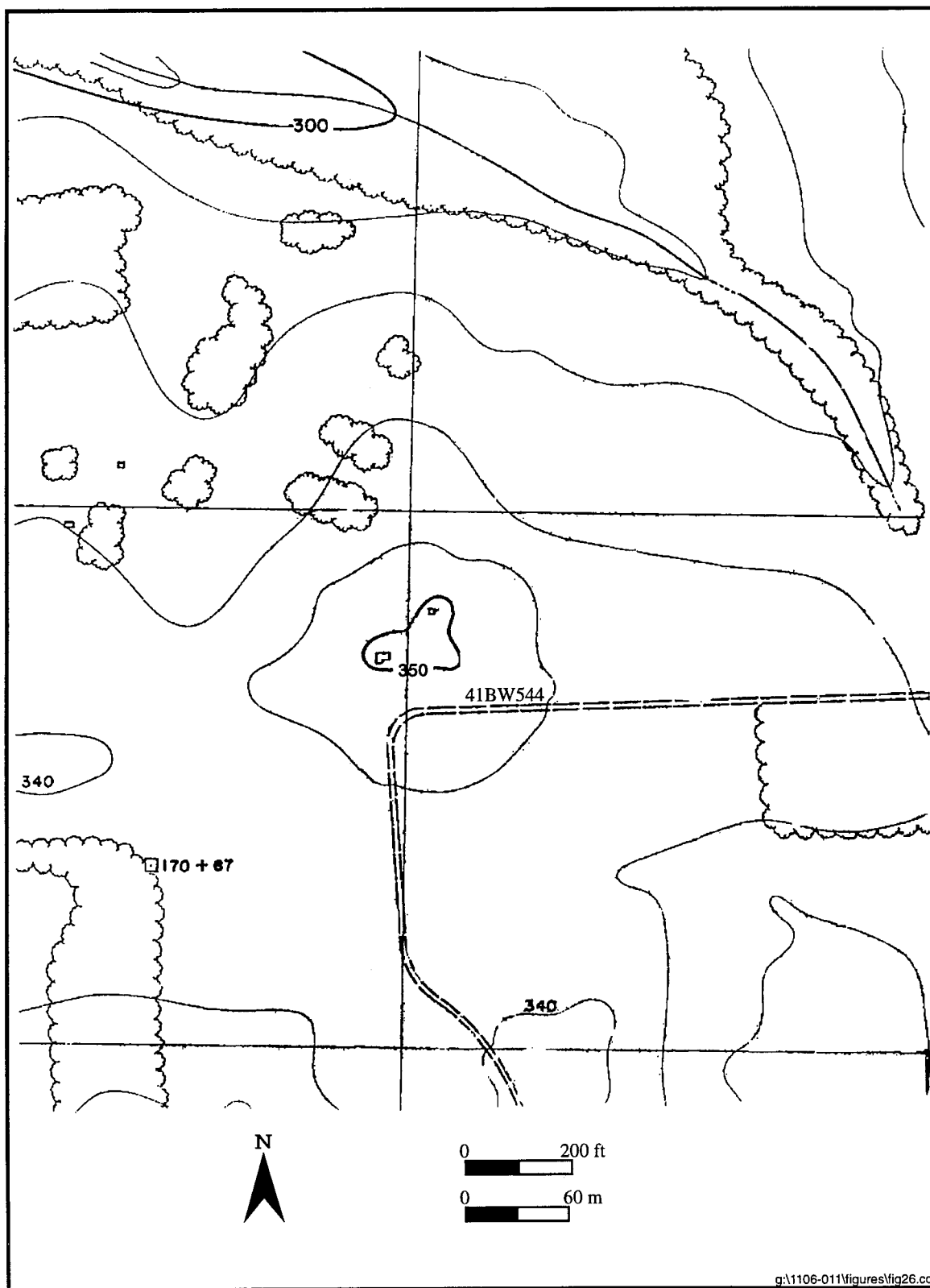


Figure 26. 1941 topographic map showing structures identified as site 41BW544.

Jackson by Amelia Josephine Nance on December 30, 1940 (Bowie 182:413); this appears to refer to the adjacent Tract 219.

In summary, site 41BW544 is a large, low density historical site. Although artifact sample size is small, it appears to represent a domestic habitation site, dating to the early portion of the twentieth century. The apparent presence of a structure in this location on the 1904-1906 USGS map supports both of these interpretations. Unfortunately, the site has little contextual integrity, giving it a limited research potential. Due to this, it is recommended that site 41BW544 be considered to be ineligible for inclusion in the NRHP and that no further work be required there.

Site 41BW545

Site 41BW545 is a small, low density prehistoric site located on an upland edge at the intersection of Haw and Big Oak roads in Survey Tract 3, overlooking the confluence of two small, intermittent drainages southwest of Elliott Creek Reservoir (see Figure 6). The site is at an elevation of about 93 m (305 ft) amsl and covers an estimated 1,200 m² (55-x-35 m). It is on Sawyer silt loam, 0 to 3 percent slopes, a nearly level and gently sloping soil on uplands. The Sawyer map unit has a typical profile of a dark grayish brown (10YR4/2) silt loam A horizon, 15 cm thick, which is directly underlain by the Bt horizon. The Bt horizon extends to a depth of 203 cm or more and consists of a yellowish brown (10YR5/4 to 5/8) silty clay loam in the upper 23 cm, yellowish brown (10YR5/4 to 5/8) clay loam with grayish and reddish mottles in the next 28 cm, and mottled gray, red, and strong brown clay in the lower part (Fox 1980:28-29). The site is covered with mixed pine/hardwood forest containing moderate quantities of pine, oak, and sweetgum and a moderately dense understory of french mulberry, pin oak, and sweetgum saplings. The site shows minor impacts from erosion, bioturbation, and timbering.

Eight shovel tests were excavated at the site, of which two contained cultural materials (Figure 27). The site boundary was determined on the basis of these shovel tests alone. All of the material recovered from these tests came from within 20 cm of the ground surface. Five artifacts were recovered from site 41BW545 (S.T. 1=3 and S.T. 2=2) for an average subsurface density of 2.5 artifacts per shovel test. The shovel testing revealed a profile consisting of a yellowish brown (10YR5/4 to 5/8) to light yellowish brown (10YR6/4) sandy loam A horizon, underlain in some shovel tests by a pale brown (10YR6/3) compacted sandy loam which appears to be the E horizon. The Bt horizon was encountered between 30 and 40 cm below surface and consists of a light yellowish brown (10YR6/4) sandy clay loam.

As noted above, five artifacts were recovered from site 41BW545 (see Appendix C). This small sample consists of four flakes and one fragment of angular shatter. The flake sample includes only one secondary decortification flake and three interior finishing flakes (one tertiary and two biface thinning). Two of the flakes were between 9.5 and 6.3 mm across (including the secondary flake), while the other two were less than 6.3 mm. Chert was the only raw material present in this sample.

In summary, site 41BW545 is a small, low density site of an unknown prehistoric period. Based on the small size, low subsurface density, and limited range of artifacts present, the site may be a short-term campsite or a special function site. Although site 41BW545 appears to retain some contextual integrity, it is believed that the site's small size and low density limit its research potential. Therefore, it is recommended that site 41BW545 be considered to be ineligible for inclusion in the NRHP and that no further work be required there.

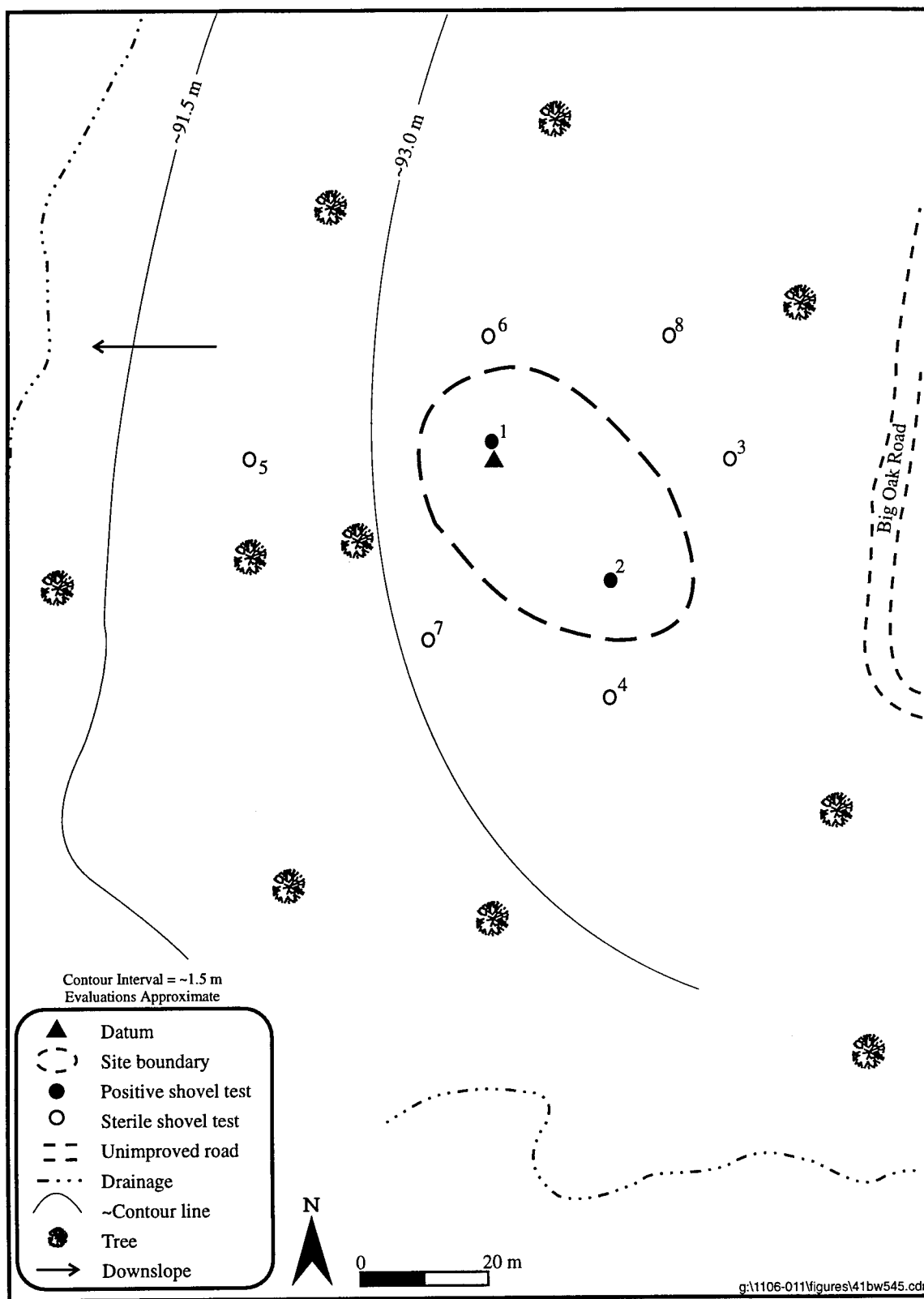


Figure 27. Pace and compass map of site 41BW545.

Site 41BW547

Site 41BW547 is a medium-sized, moderate density prehistoric site located on a terrace or upland slope immediately north of an unnamed tributary of Caney Creek, southeast of Caney Creek Reservoir in Survey Tract 3 (see Figure 6). The site is at an elevation of about 94 m (310 ft) amsl and covers an estimated area of 3,000 m² (95-x-40 m). It is located on Woodtell very fine sandy loam, 5 to 12 percent slopes, a sloping to strongly sloping soil found on forested upland slopes along drainageways. The typical soil profile in this map unit consists of a brownish very fine sandy loam, about 15 cm thick, underlain to a depth of 135 cm by the clay subsoil, which is red in the upper part and grayish in the lower part, and which is mottled with red, gray, and brown throughout the stratum. Below this is a partially weathered, stratified, light brownish gray shale and sandy clay loam (Fox 1980:33-34). The site is covered with a mixed pine/hardwood forest and appears to be virtually intact, with minimal disturbance from bioturbation.

Eight shovel tests were dug in the vicinity of the site, of which three were found to contain cultural materials. The site boundaries were defined on the basis of the shovel tests and the edge of the slope above the creek (Figure 28). Ten prehistoric artifacts were recovered from these shovel tests (S.T. 1=1; S.T. 2=6; and S.T. 4=3), for an average subsurface density of 3.3 artifacts per onsite shovel test. All of the artifacts recovered from the site were within 20 cm of the present ground surface and 60 percent of them came from S.T. 2, on the southeastern end of the site. The soil profiles revealed through shovel testing consisted of a dark grayish brown (10YR4/2) to dark brown (10YR3/3 to 4/3) silty sand AE horizon which was underlain at 30-40 cm below surface by a strong brown (7.5YR4/6 to 5/8) sandy clay loam Bt horizon.

As noted above, 10 prehistoric artifacts were recovered from site 41BW547 (see Appendix C). These consist solely of chipped stone flakes, but include all flake types despite the small sample (Table 15). A surprisingly large number of raw material types is present, given the limited sample of material (Table 16). These types include chert, novaculite, Bowie Chert, quartzite, and Ogallala Quartzite. In terms of both frequency and weight, chert is the most common raw material present, with novaculite the next most common by weight.

In summary, site 41BW547 is a medium-sized, moderate density site of an undetermined prehistoric period. Based on the size of the site, the subsurface density of materials, and the limited categories of artifacts present, it may be a short-term campsite or a special function site. Many sites like 41BW547 have already been found at the RRAD/LSAAP, but as site 41BW547 has good contextual integrity, it is felt to have a good research potential. Therefore, it is recommended that the site be considered to be of unknown eligibility for inclusion in the NRHP until test excavations can be conducted there in order to better determine its NRHP status. Until such time as testing is undertaken, it is also recommended that the site be protected from any further impacts.

Site 41BW548

Site 41BW548 is a large, low density historical site located at the intersection of Big Oak Road and Short Trail, west of Elliott Creek Reservoir in Survey Tract 3 (see Figure 6). The site is at an elevation of about 100 m (330 ft) amsl and covers an estimated 5,700 m² (130-x-55 m). It is mapped as being on Ruston fine sandy loam, 3 to 8 percent slopes, a gently sloping to sloping soil found on convex upland terraces. This soil has an A horizon of brown (10YR4/3 to 5/3) fine sandy loam to 13 cm, underlain by yellowish brown (10YR5/4 to 5/8) fine sandy loam to 41 cm. The Bt horizon is a red (2.5YR4/6 to 5/8) sandy clay loam to 203 cm or more (Fox 1980:26). The site is covered by a mixed pine/hardwood forest. Massive bulldozing was noted in the site area which has destroyed much of its contextual integrity.

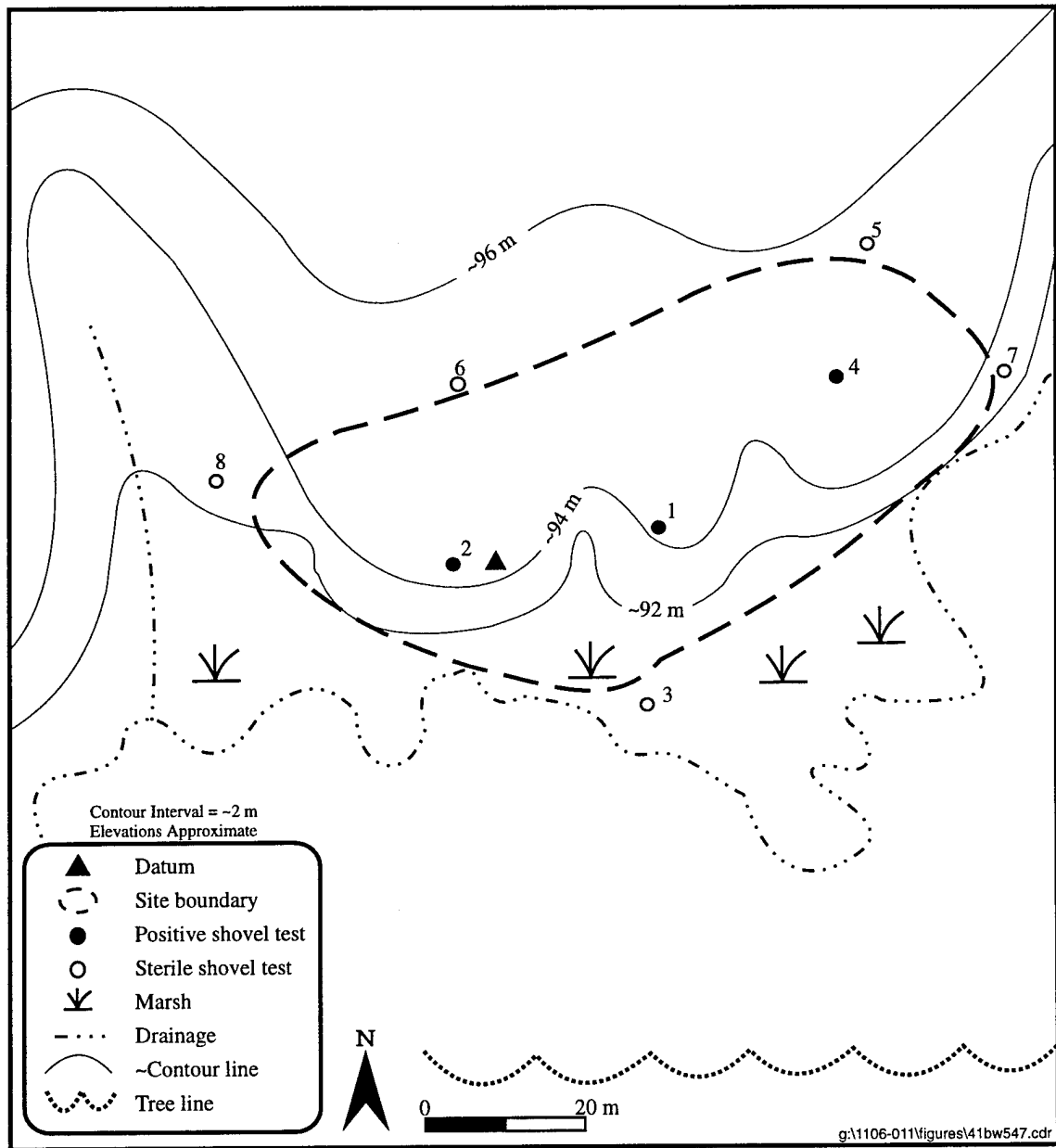


Figure 28. Pace and compass map of site 41BW547.

Large quantities of material were found on the surface of the site, including two abandoned Ford Model A car bodies with no axles, wheels, or motors; stove parts; and a metal gear or drill head. Nine shovel tests were excavated at the site, four of which proved to have historical remains. The site boundary was determined on the basis of these shovel tests and the limits of the surface artifact scatter (Figure 29). Six shovel tests fell within the site limits, and the four positive tests yielded 13 artifacts (S.T. 1=10; S.T. 5=1; S.T. 6=1; and S.T. 8=1), for an average of 2.2 artifacts per onsite shovel test. All of these artifacts were

Table 15
Flake Types and Size Categories for Site 41BW547

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	1	-	-	1	-	2
Secondary Flake	-	-	-	-	1	2	3
Tertiary Flake	-	-	-	-	3	-	3
Biface Thinning Flake	-	-	-	1	1	-	2
Total	-	1	-	1	6	2	10

Table 16
Lithic Raw Material Types for Site 41BW547

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	5	2.7	-	-	5	2.7
Quartzite	-	-	2	.4	-	-	2	.4
Novaculite	-	-	1	1.0	-	-	1	1.0
Bowie Chert	-	-	1	.2	-	-	1	.2
Ogallala Quartzite	-	-	1	.2	-	-	1	.2
Total	-	-	10	4.5	-	-	10	4.5

recovered within 20 cm of the ground surface, and about 77 percent came from S.T. 1. An additional 25 artifacts were collected from the surface of the site. No features were observed at the site. Due to the extensive bulldozing noted at the site area, soil profiles varied radically. Generally, however, the A horizon appears to be a grayish brown (10YR5/2) to dark yellowish brown (10YR3/4 to 4/6) sandy loam, underlain by a yellowish brown sandy loam E horizon. The red (2.5YR4/6 to 5/8) clay Bt horizon was encountered from the surface to in excess of 60 cm below surface.

As noted above, 38 historic artifacts were recovered from site 41BW548, including 13 artifacts from shovel tests and 25 artifacts from the surface of the site (see Appendix D). The majority of these items belong to the domestic category (n=31, 81.6 percent; n=9, 69.2 percent of the excavated sample); while other categories included architectural items (n=5, 13.2 percent; n=4, 30.8 percent of the excavated sample) and activities-related items (n=2, 5.3 percent; none excavated).

The domestic category includes 11 food service items (35.5 percent of the domestic category; n=1, 11.1 percent of the excavated sample of domestic items) and 20 food storage items (64.5 percent of the domestic category; n=8, 88.9 percent of the excavated sample of domestic items). The domestic service items include two Bristol slipped interior/exterior stoneware sherds (post-1900); two undecorated, white, high fired, vitrified ironstone sherds (1840-1910); two undecorated white ironstone sherds (1840-1910); one

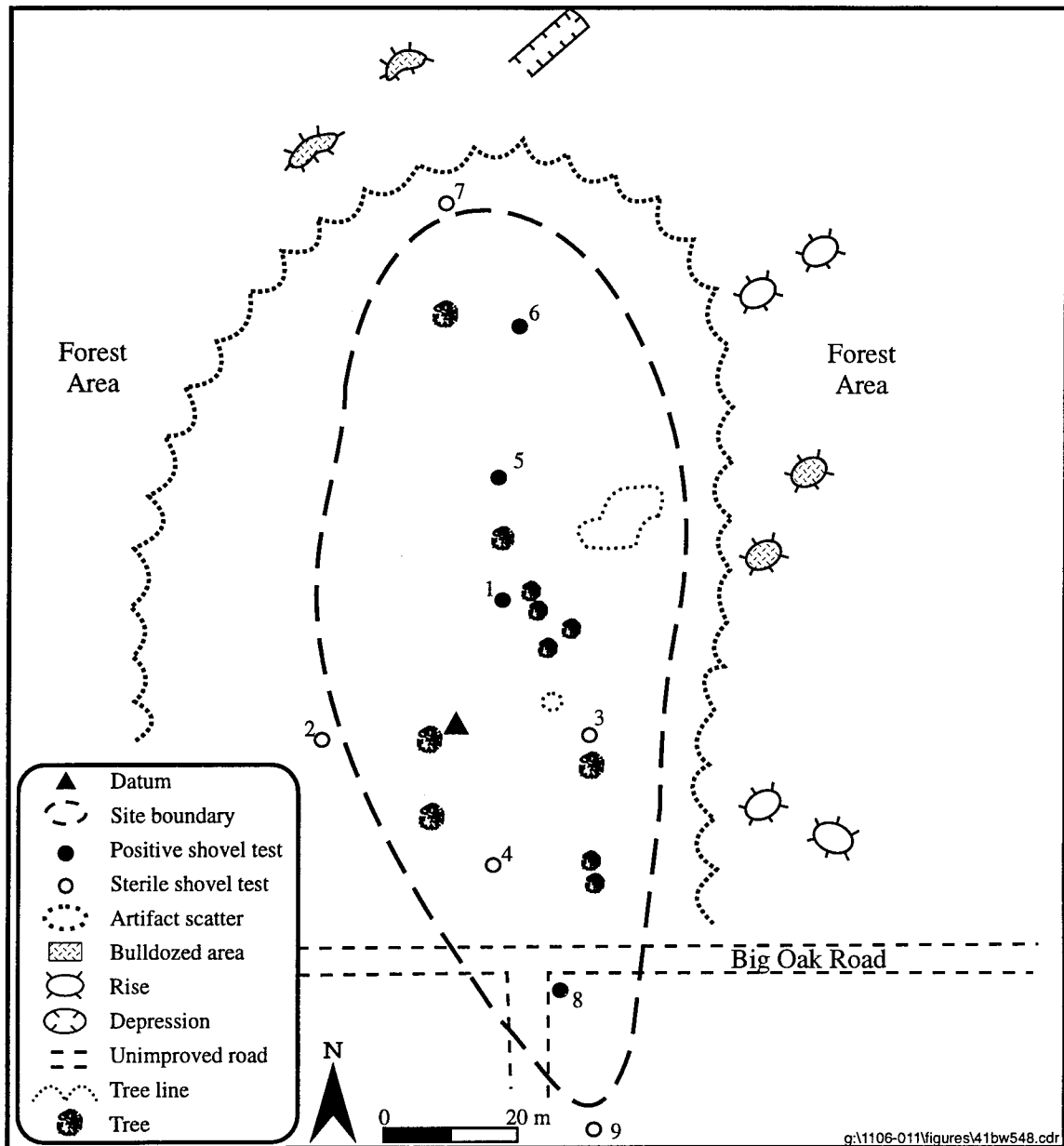


Figure 29. Pace and compass map of site 41BW548.

undecorated, blue tinted ironstone sherd (1850-1910); one undecorated, light blue tinted whiteware sherd (1880-1930); two fragments of an opaque milk glass saucer base (1920-1950); and one fragment of translucent milk glass with an acid-etched floral design (1920-1950). The domestic storage items include four rusted tin can fragments; one manganese decolorized bottle fragment (1880-1920); seven fragments of brown snuff jar including a lip (post-1920); two clear ABM bottle fragments (post-1910); one aqua ABM bottle fragment (post-1910); three aqua fruit jar fragments (ca. 1890-1920); one opaque milk glass fruit jar inset cap fragment (pre-1950); and a clear bottle base with a maker's mark consisting of an 'I' in a circle within a diamond, which represents the Owens Illinois Glass Company of Toledo, Ohio (1929-1954). Four wire

nails (post-1890) and a piece of a white porcelain doorknob make up the architecture category, while activities-related items include a large battery core (1900-1940) and a centerfire cartridge headstamped "L C 7 4." It is not known if this cartridge is of military or civilian origin. The relatively large sample of datable ceramics (n=8) yielded an MCD of 1897; the larger sample of dated glass (n=18) yielded an MGD of 1941. The combined sample of ceramics and glass yielded a mean date of 1927.5.

Site 41BW548 is located within Tract 362, as was site 41BW543, and appears to correlate with archival site A-144 (Peter et al. 1991:Table V-3, Map 3). The history of Tract 362 will not be repeated here, as it was detailed above in the description of site 41BW543. As with site 41BW543, the presence of two archival sites within the property only confuses matters. Two structures are shown on the 1941 aerial survey map in the vicinity of site 41BW548 (Prack and Prack-Architects and Chester Engineers 1942), one of which scales to be 45-x-40 ft, while the other measures 25-x-20 ft (Figure 30). Unfortunately the larger structure does not match in size any described for the property, making it very difficult to determine which structure it may represent.

In summary, site 41BW548 is a large, low density historical site. On the basis of the artifactual sample collected from the site, it appears to have been a domestic habitation site and initially may have been occupied in either the late nineteenth or the early twentieth century. The length of occupation is uncertain, but the degree of disturbance present at the site suggests that it was still extant in 1941 and was removed at that time. Although structures are known to have been present in the site area, no structural features were observed due to the massive impact from bulldozing. In view of the high level of disturbance noted at site 41BW548, it is believed to have no research potential, and it is therefore recommended that the site be considered to be ineligible for inclusion in the NRHP and that no further work be required there.

Site 41BW549

Site 41BW549 is a large, low density historical site located immediately west of Lone Pear Road, west of Elliott Creek Reservoir in Survey Tract 3 (see Figure 6). It is at an elevation of 104.5-106 m (345-350 ft) amsl and covers an estimated area of 5,000 m² (90-x-70 m). The site is on Ruston fine sandy loam, 3 to 8 percent slopes, a gently sloping to sloping soil found on convex upland terraces. This soil has an A horizon of brown fine sandy loam to a depth of 13 cm, underlain by yellowish brown (10YR5/4 to 5/8) fine sandy loam to a depth of 41 cm. The Bt horizon is a red (2.5YR4/6 to 5/8) sandy clay loam to 203 cm or more (Fox 1980:26). It is covered with mixed pine/hardwood forest. The site has been virtually destroyed through bulldozing.

Nine shovel tests were excavated at the site, six of which were within the site boundary which was defined on the basis of both the shovel tests and surface features (Figure 31). Eight artifacts were recovered from five of the six onsite shovel tests (S.T. 1=2; S.T. 2=2; S.T. 4=1; S.T. 5=1; and S.T. 8=2), for an average of 1.33 artifacts per shovel test. No structural features were identified, probably due to the extensive bulldozing noted. The soil profile revealed by the shovel tests consisted of a dark grayish brown (10YR4/2) to dark brown (10YR3/3 to 4/3) A horizon, 20 to 40 cm thick, underlain by a yellowish red (5YR4/6 to 5/8) clay Bt horizon.

As noted above, eight artifacts were recovered from site 41BW549 (see Appendix D). The majority of these items (n=7; 87.5 percent) belonged to the domestic category, with the single remaining artifact being an architectural item. Over half of the domestic category are food service items (n=4, 57.1 percent of the domestic category), consisting of one clear table glass fragment (post-1915); one piece of pink, pressed Depression-era table glass (1920-1950); one sherd of undecorated whiteware (post-1890); and one whiteware

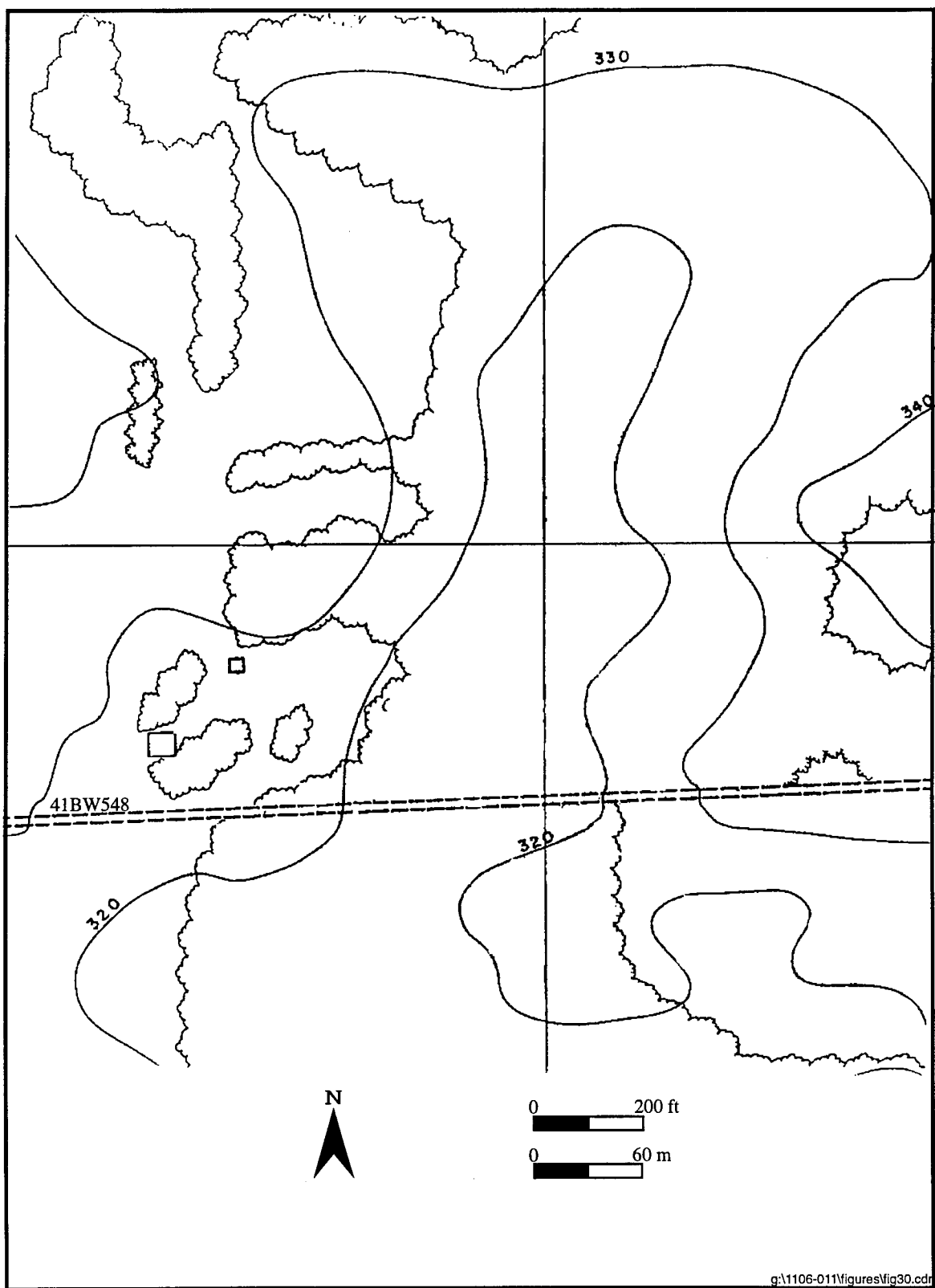


Figure 30. 1941 topographic map showing structures identified as site 41BW548.

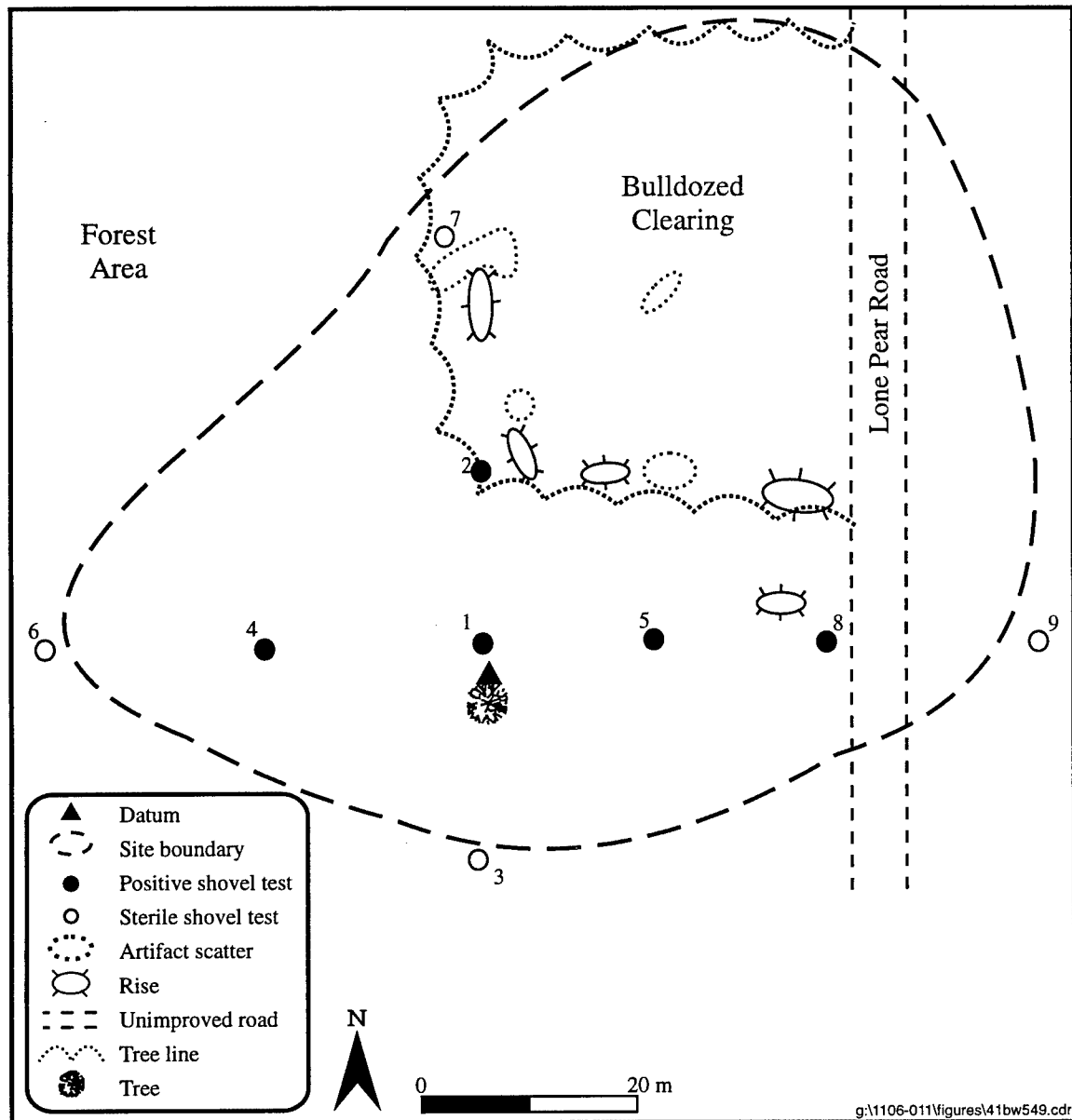


Figure 31. Pace and compass map of site 41BW549.

sherd decorated with a polychrome (light green and light pink) floral over-the-glaze decalcomania (1890-1950). The remaining domestic items belong to the food storage category and include a single piece of rusted tin can with a seam (post-1900); one clear ABM bottle glass fragment (post-1910); and one whole clear condiment bottle, with a maker's mark consisting of a large 'H' with an 'A' beneath the cross bar of the 'H,' which was used by the Hazel-Atlas Glass Company of Wheeling, West Virginia, from 1920 to 1964. This bottle is 17.5 cm long and has a squared oval base measuring 6.2 cm along the long axis. The single architectural item is a cut nail (1840-1890). The few ceramic sherds (n=2) yielded an MCD of 1931, while the small sample of glass (n=4) yielded an MGD of 1945. The combined sample of ceramics and glass yielded a mean date of 1940.

Chapter 5: Research Results Part I: Cultural Resources Properties on the RRAD

Site 41BW549 is located in Tract 190 of the H.P. Benningfield HRS and appears to correlate with the archival site A-148 (Peter et al. 1991:Table V-3, Map 3). A structure is shown in this location on both the 1904-1906 topographic map (USGS 1906) and the 1930s road map, while three buildings are shown in the site area on the 1941 aerial survey map (Figure 32; Prack and Prack-Architects and Chester Engineers 1942). A fourth building, shown to the north across the road, is probably not associated with the site as it is on another tract of land. Five structures were present on the site on September 16, 1941, consisting of:

- one 44' x 16' frame house in poor condition;
- one 18' x 16' boxed ell in poor condition;
- one 24' x 20' frame barn in poor condition;
- one 9' x 12' boxed crib in poor condition; and
- one 10' x 12' boxed smoke house in poor condition.

The information derived from the documentary evidence and the 1941 map do not match very well in either size or number of structures present. It seems likely that at least some of the structures noted in the documentary evidence are contiguous, for example, the "T"-shaped structure is probably comprised of the frame house and boxed ell, while the nearby structure may be the smoke house and crib combined. The remaining structure is, however, far larger than the barn or any other structure noted for the property.

The early history of Tract 190 is unclear, as the Benningfield HRS appears to have been subdivided early on and the chain-of-title was not followed. The headright was surveyed in October of 1838 and patented October 7, 1844 (TGLO; Red River-1-29). The subsequent owners of the property have not been determined, until the last private owners of Tract 190, M.R. "Lit" Sheldon and his wife Ruby Lee. Tract 190 was the western half (Tract 364 is the eastern half) of a property acquired by the Sheldons on October 24, 1936, from J.D. Long et al. (Bowie 159:351). Tract 190 was purchased by the U.S. government for \$685 on March 16, 1942.

In summary, site 41BW549 is a large, low density historical site. The small artifact sample recovered from the site strongly suggests a domestic occupation dating to the first part of the twentieth century. The only artifact dating entirely to the nineteenth century is a cut nail, which probably is reused from an earlier structure. Although five structures were present on the site when it was purchased in 1942, no features relating to these structures were observed on the present site. The lack of any contextual integrity to the site gives it little research potential, therefore, it is recommended that the site be considered ineligible for inclusion in the NRHP and that no further work be required there.

The McAdams Cemetery (41BW559)

Site 41BW559 is the McAdams Cemetery, a historical cemetery located on an upland knoll immediately north of Old North Lake Road and east of the upper end of Elliott Creek Reservoir in Survey Tract 4 (see Figure 6). The site is located at an elevation of about 102 m (335 ft) amsl. It is currently maintained by the RRAD and is enclosed by a fence made of galvanized pipe fenceposts connected by a single strand of chain. An area of approximately 484 m² (22-x-22 m) is enclosed within the cemetery fence (Figure 33). Six large pine trees and two stumps were found within the cemetery limits, which is surrounded by a mixed pine/hardwood forest. It is mapped as being on Eylau very fine sandy loam, 0 to 3 percent slopes, a nearly level to gently sloping soil on broad interstream divides. Eylau soil typically consists of a dark grayish brown (10YR4/2) very fine sandy loam A horizon, 15 cm thick, which is underlain by a brown (10YR4/3 to 5/3) very fine sandy loam E horizon, 15 cm thick. The Bt horizon is a sandy clay loam which is strong brown (7.5YR4/6 to 5/8) in the upper part, brownish yellow (10YR6/6 to 6/8) in the middle part, and mottled with red, brown, and gray in the lower part. The Bt horizon extends to or exceeds 203 cm below ground surface (Fox 1980:20). No major sources of disturbance were noted within the confines of the cemetery.

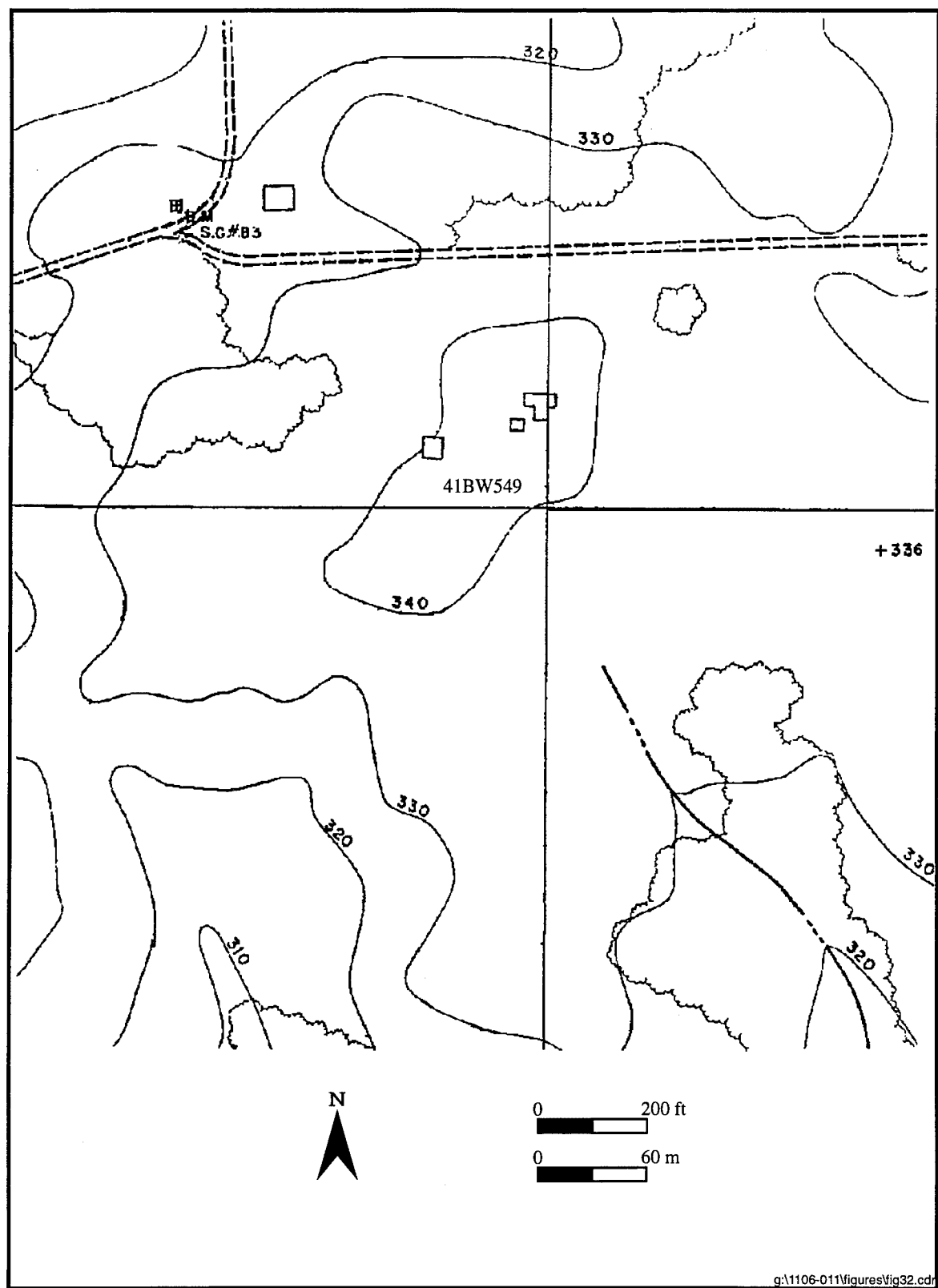


Figure 32. 1941 topographic map showing structures identified as site 41BW549.

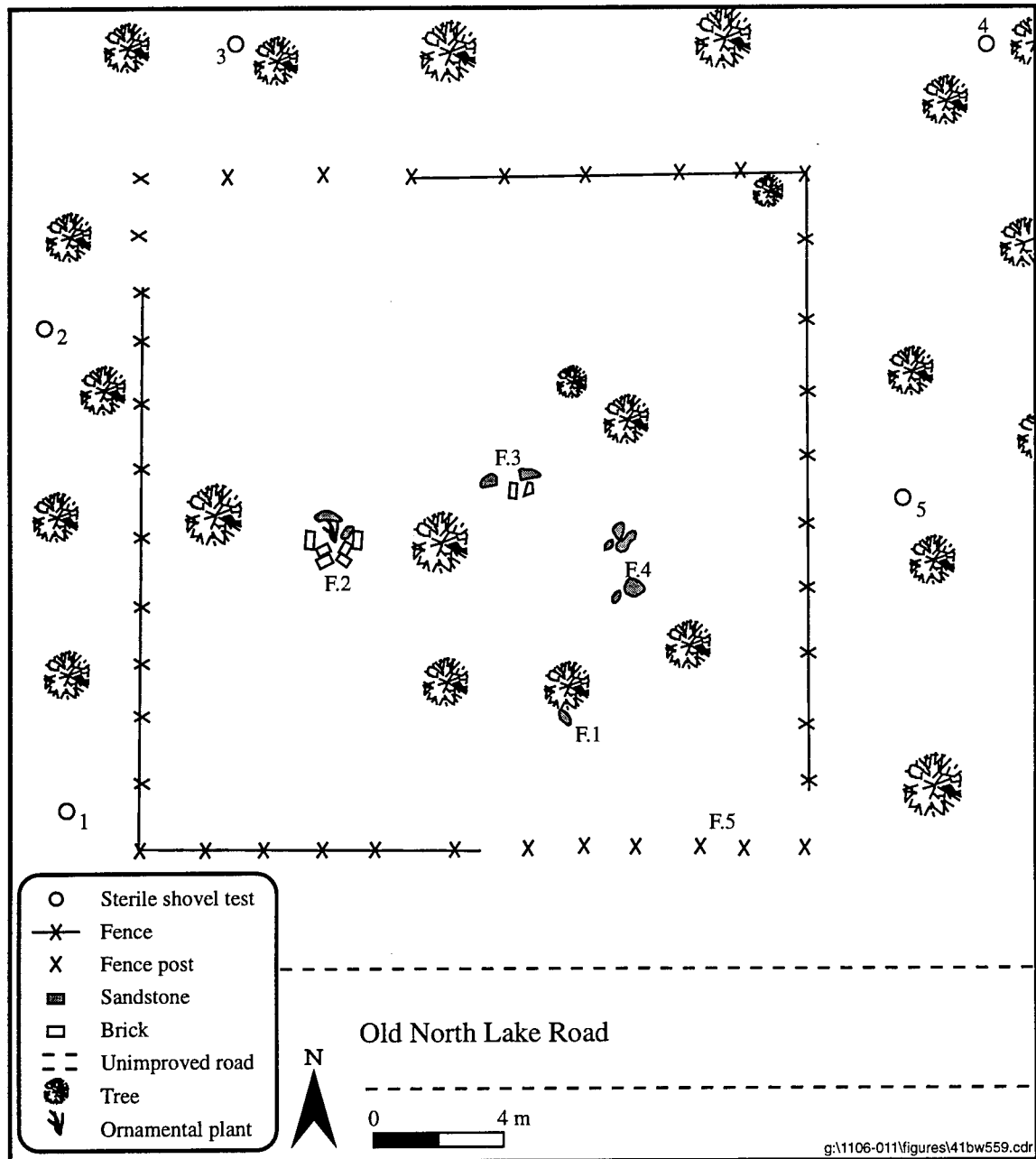


Figure 33. Pace and compass map of the McAdams Cemetery (site 41BW559).

Five shovel tests were excavated outside the perimeter of the site to determine whether a former structure or any subsurface deposits were associated with the cemetery. All five units were sterile. Although no grave stones were observed at the site, four features were identified. Feature 1 is a piece of sandstone (ca. 20 x 30 cm) found leaning against a large pine tree. Feature 2 was a brick scatter which covers a 1-x-1-m area and which contains five "Acme Brick Co. Everlast" fire brick (yellow tan in color, measuring 22.9-x-11.4-x-6.4 cm), one machine-made brick (reddish in color, measuring 21.6-x-10.2-x-5.1 cm), one hand-made brick

(orange, measuring 20.9-x-10.2-x-5.7 cm), and a large piece of sandstone (ca. 25-x-35 cm). A holly is growing in Feature 2. Feature 3 is a 60-x-60-cm concentration containing two of the "Acme Brick Co. Everlast" bricks described above and two sandstone chunks measuring 25 to 30 cm across. Feature 4 consists of two rock concentrations that may mark the position of a grave. The northern concentration is made of three sandstone blocks in close proximity to one another, the largest of which is about 30 cm across. Two meters south are two additional sandstone blocks, one measuring 40 cm and the other 15 to 20 cm.

In summary, site 41BW559 is the McAdams Cemetery. As no extant grave markers were found at the cemetery, its period of use is not known but it is assumed that it predates the establishment of the RRAD in 1942. At this point in time, it is not known whether the McAdams Cemetery is eligible for inclusion in the NRHP. Although the cemetery does not appear to be associated with any significant historical personage or event, this is not certain. Nor is it clear that the site has no potential for yielding "important information not available in extant documentary evidence" (USDI, NPS 1991). In light of this uncertainty, it is recommended that the protection of NRHP eligibility be extended to include the McAdams Cemetery and that the Texas State Law protecting cemeteries should continue to be obeyed and enforced by the RRAD, which currently maintains a protective fence and cares for the cemetery. As long as these efforts to protect and care for the site continue, no further historical work is required. However, should the site ever be in danger of disturbance, appropriate steps to complete the NRHP evaluation process, consisting of archival research and informant interviewing, should be taken by the RRAD.

The Elliott Cemetery (41BW560)

Site 41BW560 is the Elliott Cemetery, a historical cemetery located on an upland knoll west of the upper end of Elliott Creek Reservoir in Survey Tract 3 (see Figure 6). The site is at an elevation of about 103 m (340 ft) amsl. It is surrounded by a fence built from galvanized pipe fenceposts connected by a single strand of chain. This fenced off area encloses approximately 1,050 m² (30-x-35 m). A hand-lettered sign at the southwest corner of the site identifies it as the Elliot (sic) Cemetery. The site is mapped as being on Eylau very fine sandy loam, 0 to 3 percent slopes, a nearly level to gently sloping soil on broad interstream divides. Eylau soil typically consists of a dark grayish brown (10YR4/2) very fine sandy loam A horizon, 15 cm thick, underlain by a brown (10YR4/3 to 5/3) very fine sandy loam E horizon, 15 cm thick. The Bt horizon is a sandy clay loam which is strong brown (7.5YR4/6 to 5/8) in the upper part, brownish yellow (10YR6/6 to 6/8) in the middle part, and mottled with red, brown, and gray in the lower part. It is found to a depth of 203+ cm (Fox 1980:20). The Elliott Cemetery is currently maintained by the RRAD. Three large pine trees, a stump, and mown grass are within the fence, which is surrounded by a mixed pine/hardwood forest. No major disturbances were noted at the site, although an abandoned two-track road was found adjacent to the western edge of the fence.

Seven sterile shovel tests were excavated at the site in an effort to identify any former structure locations or any subsurface artifact deposits. No grave markers were observed at the site, but four features were noted (Figure 34). Feature 1 is a 30-x-80-cm area containing two brick fragments and two blocks of sandstone (ca. 20-25 cm long). Feature 2 is a 150-x-30-cm scatter of seven hand-made brick. The bricks are red, brown, and orange in color and contain inclusions such as clinker or gravels. Feature 3 consists of two hand-made brick fragments about 40 cm apart. Feature 4 is a 150-x-200-x-15-cm depression, which may be a grave.

In summary, site 41BW560 is the historical Elliott Cemetery. As no extant grave markers were found at the cemetery, its period of use is not known but it is assumed that it predates the establishment of the RRAD in 1942. At this point in time, it is not known whether the Elliott Cemetery is eligible for inclusion in the NRHP. Although the cemetery does not appear to be associated with any significant historical personage or

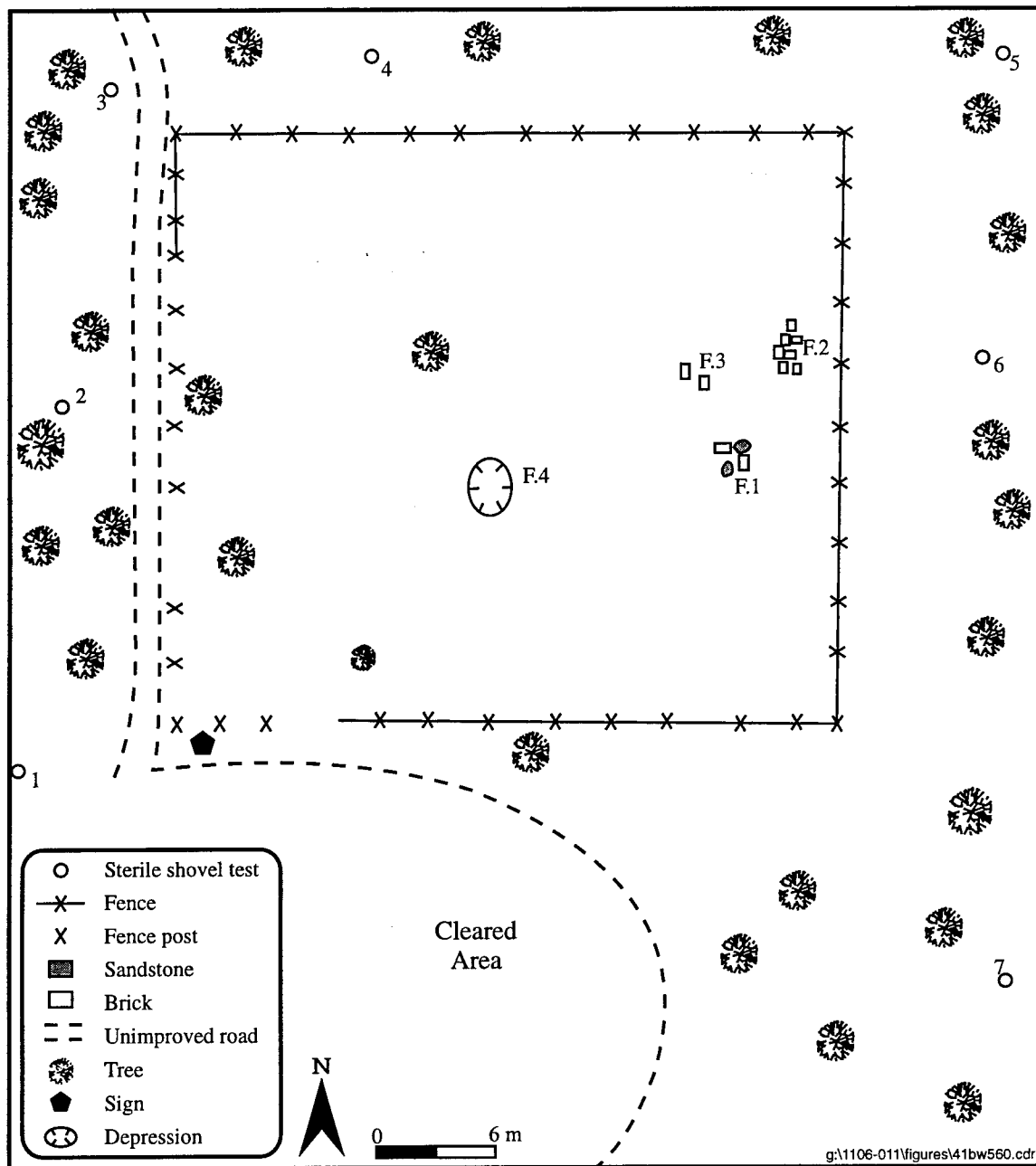


Figure 34. Pace and compass map of the Elliott Cemetery (site 41BW560).

event, this is not certain. Nor is it clear that the site has no potential for yielding “important information not available in extant documentary evidence” (USDI, NPS 1991). In light of this uncertainty, it is recommended that the protection of NRHP eligibility be extended to include the Elliott Cemetery and that the Texas State Law protecting cemeteries should continue to be obeyed and enforced by the RRAD, which currently maintains a protective fence and cares for the cemetery. As long as these efforts to protect and care for the site continue, no further historical work is required. However, should the site ever be in danger of

disturbance, appropriate steps to complete the NRHP evaluation process, consisting of archival research and informant interviewing, should be taken by the RRAD.

Site 41BW561

Site 41BW561 is a medium-sized, low density historical site located on an upland slope overlooking an unnamed tributary of Caney Creek along the perimeter of the RRAD fence and southwest of Elliott Creek Reservoir in Survey Tract 3 (see Figure 6). It is at an elevation of 88-91 m (290-300 ft) and covers an estimated area of 3,600 m² (115-x-40 m). The site is mapped as being on Eylau very fine sandy loam, 0 to 3 percent slopes, a nearly level to gently sloping soil on broad interstream divides. Eylau soil typically consists of a dark grayish brown (10YR4/2), very fine sandy loam A horizon, 15 cm thick, underlain by a brown very fine sandy loam E horizon, 15 cm thick. The Bt horizon is a sandy clay loam which is strong brown (7.5YR4/6 to 5/8) in the upper part, brownish yellow (10YR6/6 to 6/8) in the middle part, and mottled with red, brown, and gray in the lower part. It is found to a depth of 203+ cm (Fox 1980:20). Vegetation on the site is a mixed pine/hardwood forest containing red oak, pin oak, sweetgum, yellow pine, elm, french mulberry, and greenbriar. The site has been virtually destroyed through bulldozing and logging.

A surface artifact scatter containing clear glass, brown glass, metal fragments, whiteware, stoneware, buckets, tin cans, washtubs, rolls of barbed wire, and a medicine bottle covers site 41BW561, and most of the site boundary is defined on this basis (Figure 35). Eight shovel tests were excavated at the site, six of which were actually within the site boundary. Only two of these units, however, were found to contain cultural materials. Ten artifacts were recovered from these shovel tests (S.T. 3=8 and S.T. 7=2), for an average of 1.67 artifacts per onsite shovel test. All of the subsurface cultural remains were recovered within 20 cm of the ground surface. The shovel tests revealed a soil profile with a brown (10YR4/3 to 5/3) to dark yellowish brown (10YR3/4 to 4/6) sandy loam A horizon, 20 to 40 cm thick, underlain by a light yellowish brown (10YR6/4) sandy loam E horizon. The Bt horizon was not reached in any unit, although shovel tests were excavated to 60 cm below surface.

As noted above, 10 artifacts were recovered from site 41BW561 (see Appendix D). All of these fell into the domestic category, with the majority (n=9; 90 percent) being storage items, and the tenth being a single furnishing item. The domestic storage category included two pieces of brown ABM bottle glass (post-1910) and seven rusted tin can fragments with seams (post-1900). The single furnishings item was a pressed, slightly solarized manganese decolorized lamp base fragment (1880-1920).

Site 41BW561 is located in Tract 365 of the H.P. Benningfield HRS. Although one archivally known site, A-150, is within Tract 365, it does not appear to be in the same location as site 41BW561 (Peter et al. 1991:Map 3). Five structures are described as having been present on Tract 365 in 1941:

- a house, 28' x 14';
- a house wing, 22' x 16';
- a barn, 36' x 26';
- a smoke house 8' x 10'; and
- a chicken house, 7' x 12'.

These buildings were removed from the property by September 27, 1941. The early history of the property is not available, as the headright appears to have been subdivided relatively early and the chain-of-title was not ascertained. Tract 365 was purchased from W.P. Clark by W.E. McCarthy on December 3, 1917 (Bowie 107:485), and was eventually purchased by the U.S. government for \$930.

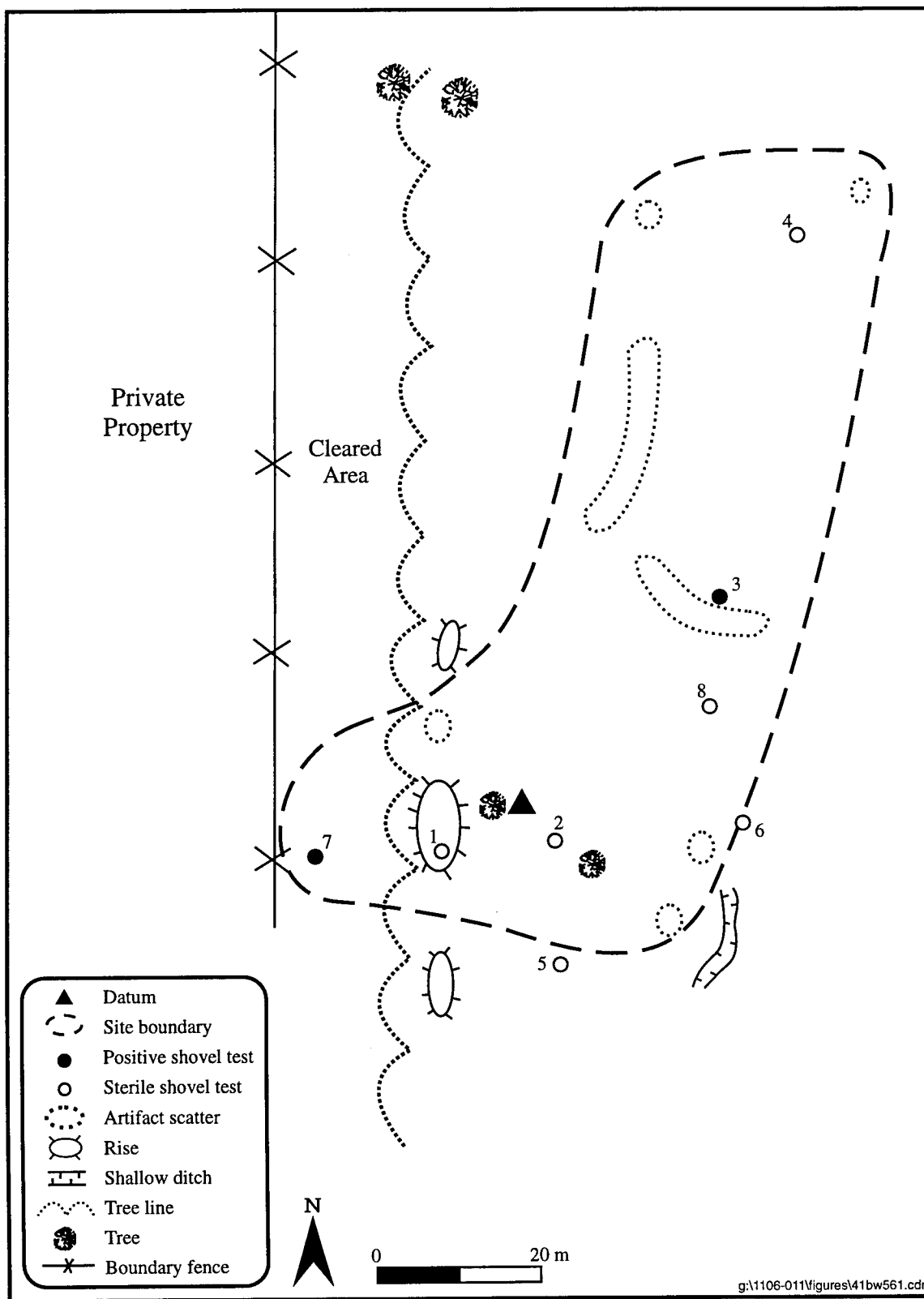


Figure 35. Pace and compass map of site 41BW561.

In summary, site 41BW561 is a medium-sized, low density historical site. The small artifact sample collected from the site suggests that it was probably utilized during the early twentieth century, but it is not certain that it was a domestic site. Although a homestead was located within the same tract of land, it does not appear to be in the location of this site. It is possible that site 41BW561 was the location of an ancillary outbuilding and not of a domestic habitation. In any event, the extensive disturbance noted to the site has virtually destroyed its contextual integrity and gives the site poor a research potential. Therefore, it is recommended that site 41BW561 be considered to be ineligible for inclusion in the NRHP and that no further work be required there.

Site 41BW562

Site 41BW562 is a medium-sized, high density prehistoric site located on a terrace or upland remnant north of an unnamed tributary of Caney Creek, west of Elliott Creek Reservoir in Survey Tract 3 (see Figure 6). It is at an elevation of about 88 m (290 ft) amsl and covers an area estimated at 3,600 m² (100-x-45 m). It is mapped on Thenas fine sandy loam, frequently flooded, a nearly level soil on flood plains. Thenas soil typically consists of a dark brown (10YR3/3 to 4/3) fine sandy loam surface layer, approximately 25 cm thick, which is underlain to a depth of 140 cm by the subsoil, the upper 86 cm of which is a fine sandy loam, dark brown (10YR3/3 to 4/3) in the upper part and dark yellowish brown (10YR3/4 to 4/6) in the lower part. Below 86 cm, it consists of a yellowish brown (10YR5/4 to 5/8) loamy fine sand. Underlying this stratum is a light yellowish brown (10YR6/4) loamy fine sand stratified with loamy and sandy layers (Fox 1980:32). The site is covered with yellow pine, elm, sweetgum, red oak, sassafras, french mulberry, blackgum, devils claw, greenbriar, and poison ivy. Contextual integrity is high, with only minimal disturbances from bioturbation being observed.

Nine shovel tests were excavated at site 41BW562, five of which were found to contain cultural materials (Figure 36). The site boundaries were defined solely on the basis of the positive shovel tests. Forty-five artifacts were recovered from these tests (S.T. 1=7; S.T. 2=1; S.T. 3=30; S.T. 4=5; and S.T. 5=2), for an average of 9.0 artifacts per onsite shovel test. The majority of this material (66.7 percent) came from S.T. 3, which yielded artifacts to a depth of 80 cm. S.T.s 1 and 4 yielded material down to 60 cm, while S.T.s 2 and 5 contained material only to 40 cm below surface. The sediments revealed by the shovel tests consisted of a very dark gray to brown sandy loam A horizon, 20 to 40 cm thick, underlain by a yellowish brown (10YR5/4 to 5/8) to light yellowish brown (10YR6/4) sandy loam E horizon, to at least 80 cm below the surface. A recognizable Bt horizon was not reached in any shovel test.

As noted above, 45 prehistoric artifacts were recovered from site 41BW562 (see Appendix C). All of this material consist of unmodified lithic debitage, including 44 flakes and one piece of angular shatter. All types of flakes are present in the sample (Table 17), with primary and secondary decortification flakes (n=26; 59.1 percent) in the majority. The raw material present on the site was somewhat limited, but does include chert, quartzite, novaculite, chalcedony, and Ogallala Quartzite (Table 18). Chert was most abundant, in terms of both frequency and weight, with novaculite second and quartzite third. One chert tertiary flake appeared to have been heat-treated.

In summary, site 41BW562 is a medium-sized, high density site of an undetermined prehistoric period. Based on the size of the site, the density of subsurface material, and the limited artifact inventory, the site may have been a periodically reoccupied campsite. Contextual integrity is very good and the site seems to have good research potential. Consequently, it is recommended that site 41BW562 be considered to be of unknown eligibility for inclusion in the NRHP pending test excavations designed to determine its NRHP status. Until such excavations are undertaken, it is further recommended that the site be protected from any disturbances.

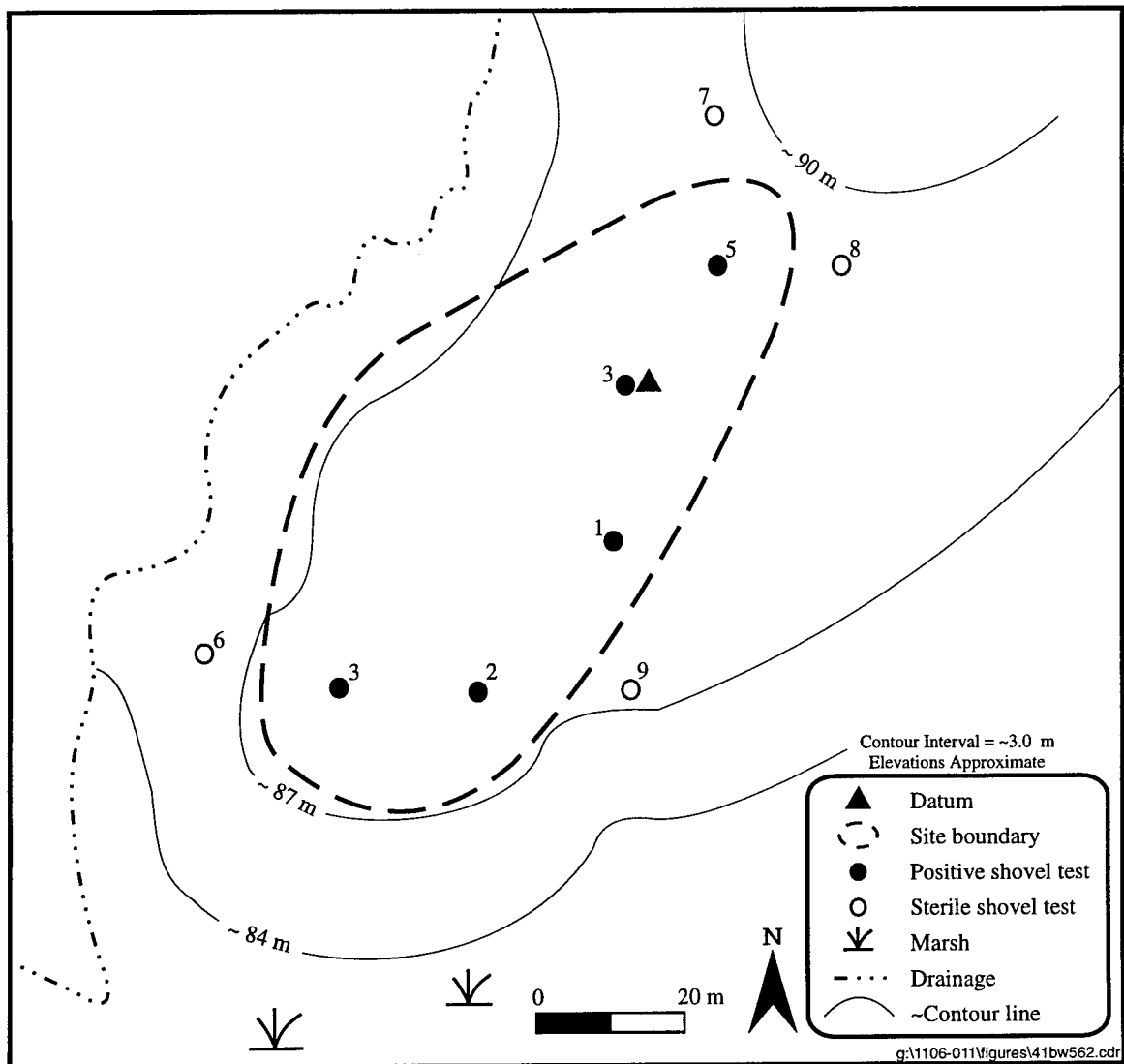


Figure 36. Pace and compass map of site 41BW562.

Table 17
Flake Types and Size Categories for Site 41BW562

Flake Type	Flake Size (mm)						Total
	> 25	25-19	19-12.5	12.5-9.5	9.5-6.3	< 6.3	
Primary Flake	-	-	1	2	4	1	8
Secondary Flake	-	-	1	8	1	8	18
Tertiary Flake	-	-	-	1	4	9	14
Biface Thinning Flake	-	-	-	2	1	1	4
Total	-	-	2	13	10	19	44

Table 18
Lithic Raw Material Types for Site 41BW562

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	28	11.6	-	-	28	11.6
Quartzite	-	-	6	4.8	-	-	6	4.8
Novaculite	-	-	6	5.1	-	-	6	5.1
Ogallala Quartzite	-	-	4	2.2	-	-	4	2.2
Chalcedony	-	-	1	.5	-	-	1	.5
Total	-	-	45	24.2	-	-	45	24.2

RRAD LOCALITY DESCRIPTIONS

Locality 11

Locality 11 is on top of a high bench or upland edge on the south side of an unnamed tributary of Caney Creek in Survey Tract 3 (Figure 37). The locality consists of a single chert tertiary flake, between 12.5 and 19 mm in size, recovered within the top 20 cm of a survey shovel test. An additional five shovel tests dug in the same vicinity failed to locate any other cultural materials.

Locality 12

Locality 12 consists of a Ford Model A car body located on the surface of an upland slope north of an unnamed, intermittent drainage in Survey Tract 3. The car has been stripped of its motor, axles, and wheels with only the frame, fenders, sidewalls, and seat springs remaining. Four shovel tests were excavated in the vicinity of the car body to determine whether it marked the location of a historical site, but no additional historic materials were uncovered.

Locality 13

Locality 13 consists of a historical trash dump located on a flat upland edge above an unnamed tributary of Caney Creek in Survey Tract 3. It is about 40 m south of Big Oak Road along an old, abandoned road or logging trail. Materials observed within the dump included rusted washtubs, buckets, and tin cans; glass fragments; old metal pots; and stoneware fragments. Five shovel tests were excavated in the vicinity of the trash dump, but none contained any historic materials and there was no indication of an occupation site nearby.

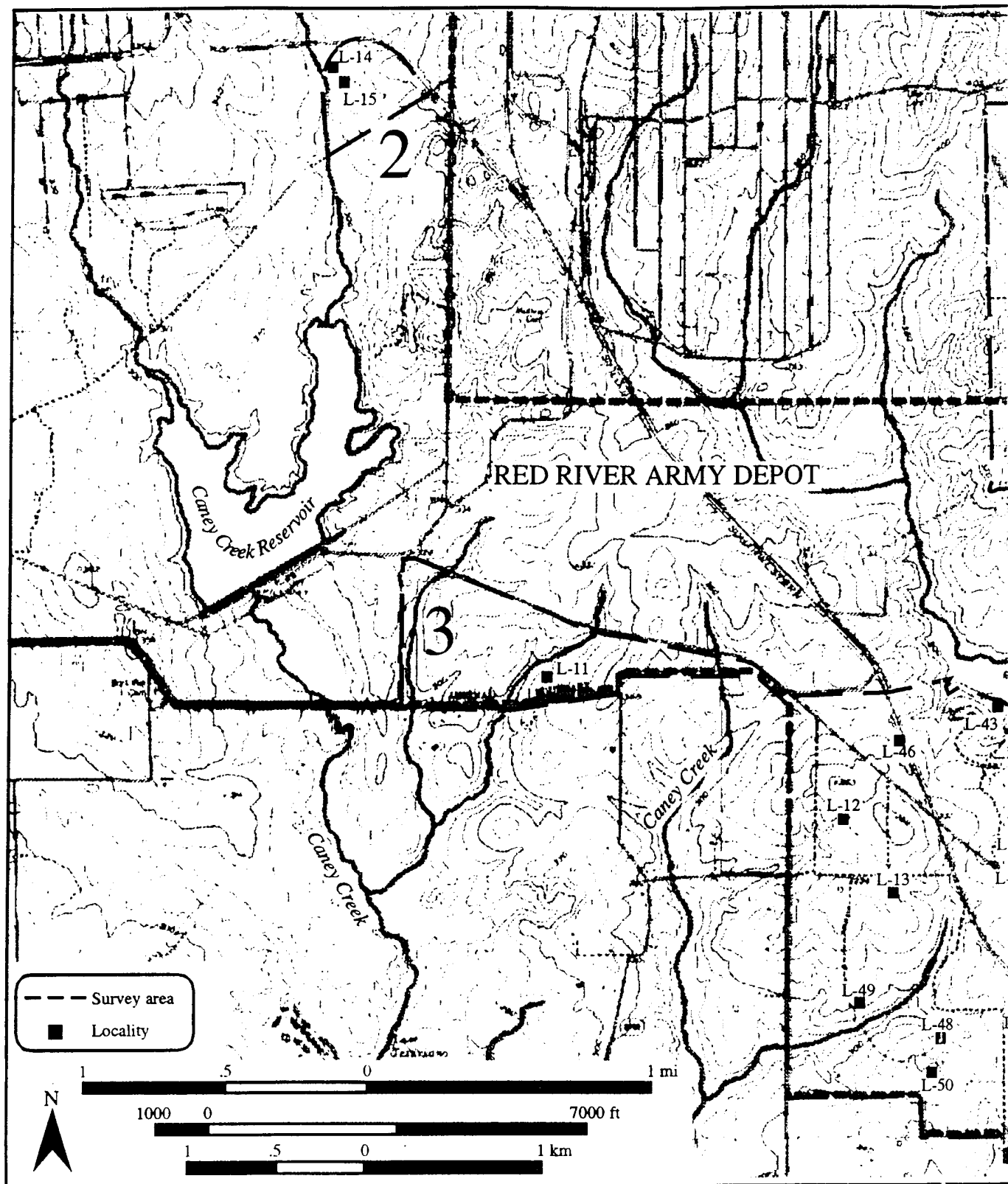
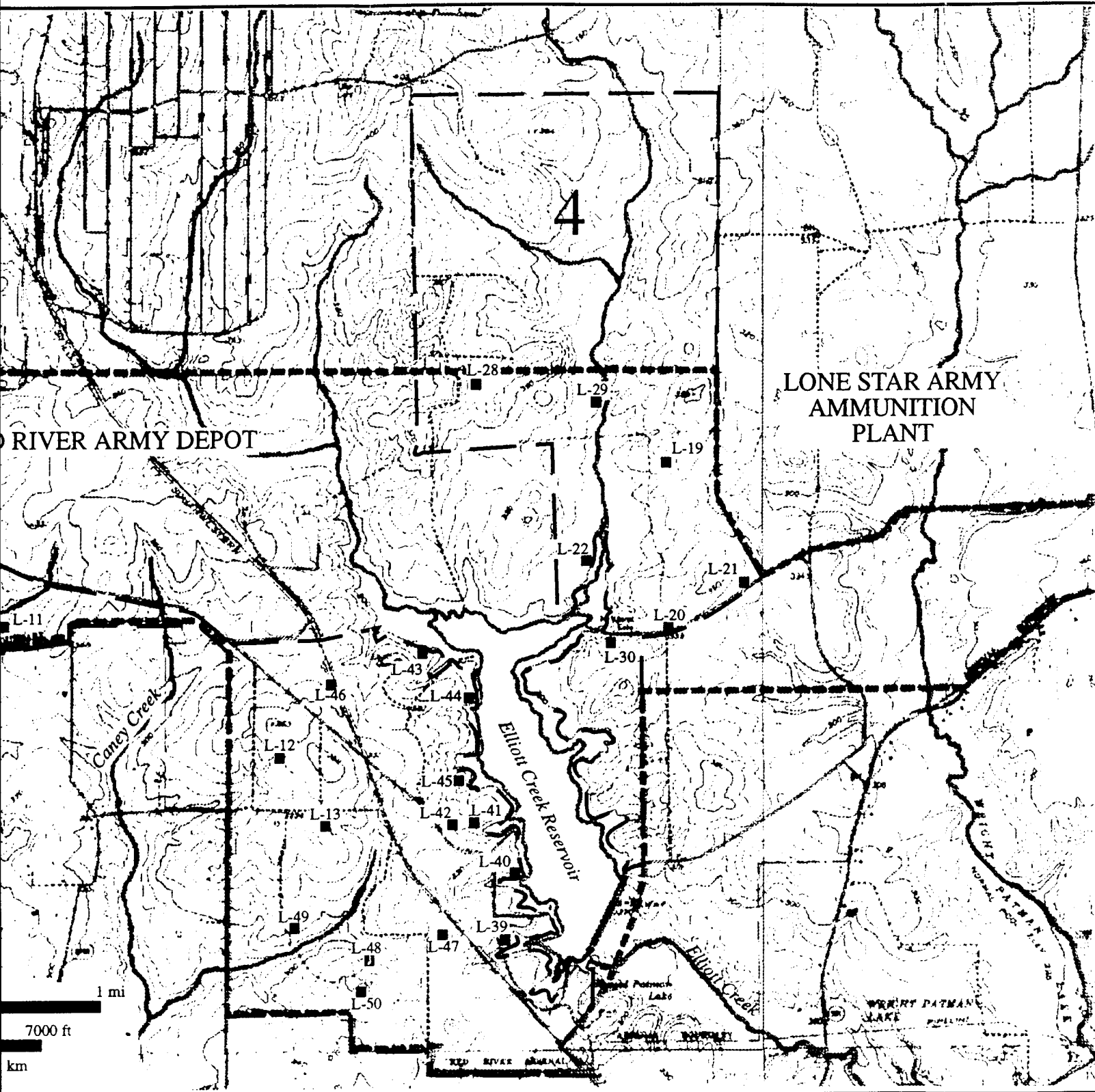
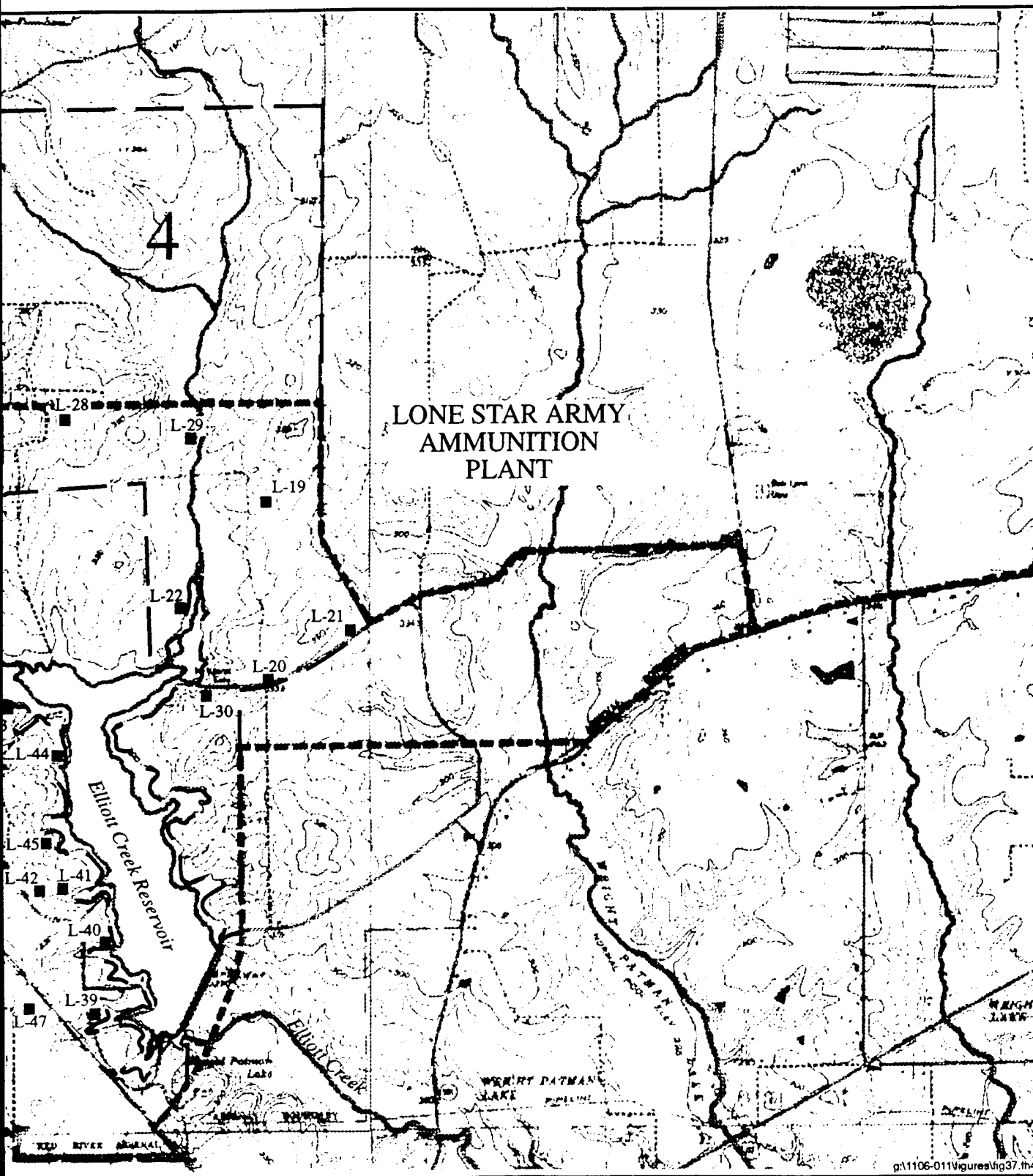


Figure 37. Localities recorded on the Red River Army Depot during the 1993 RRAD/LSAAP survey.





Chapter 5: Research Results Part I: Cultural Resources Properties on the RRAD

Locality 14

Locality 14 is on a small sand ridge (approximately 1 m wide by 5 m long) in the flood plain of Caney Creek in Survey Tract 2. Surrounding this sand ridge are extensive clay alluvial deposits. A single shovel test in this ridge yielded one chert secondary flake and one novaculite secondary flake within 20 cm of the surface. Both pieces were between 9.5 and 12.5 mm in size. An additional four shovel tests excavated in the vicinity proved to be sterile.

Locality 15

Locality 15 is on a bench east of a small, southward flowing, unnamed tributary of Caney Creek in Survey Tract 2. A single shovel test in this deposit yielded one chert primary flake and one chert secondary flake within 20 cm of the surface. The primary flake was between 12.5 and 9.5 mm in size, while the secondary flake was between 6.3 and 9.5 mm and appears to be heat-treated. Further shovel testing in the vicinity failed to uncover any additional material.

Locality 19

Locality 19 is on an upland slope east of Elliott Creek in Survey Tract 4. Five shovel tests were excavated at this locality, but only one was found to contain any cultural material. In that test, artifacts were recovered within the upper 20 cm below surface and included an amber/brown ABM bottle glass fragment, possibly from a snuff bottle (post-1910), a wire nail (post-1890), a tin can fragment with a seam (post-1900), and an iron bracket. Locality 19 appears to represent agricultural activities, possibly associated with site 41BW421, which is 65 m upslope from the locality.

Locality 20

Locality 20 is on an upland bench in the northeast corner of an intersection of two dirt roads, east of the upper end of Elliott Creek Reservoir in Survey Tract 4. Huge oaks were found on the north side of the east-west road, and no underbrush was observed at the locality, merely grasses. Locality 20 consists of a surface scatter of historic materials (barrels and cans) and a single fragment of clear window glass (2.2 mm thick) recovered from the upper 20 cm of one survey shovel test. Another five shovel tests in this area proved to be sterile.

Locality 21

Locality 21 is on an upland knoll immediately north of North Lake Road in Survey Tract 4. It consists of a drilled well, cased with 8" clay pipe, along with a tin washtub and a piece of galvanized pipe on the surface nearby. Five shovel tests were excavated around the well, but no artifacts were recovered.

Locality 22

Locality 22 is on a narrow ridge immediately adjacent to the flood plain west of Elliott Creek in Survey Tract 4. Two chert primary flakes were found within the upper 20 cm in a single survey shovel test in this area.

One of the flakes is between 6.3 and 9.5 mm in size, while the other was less than 6.3 mm in size. An additional four shovel tests excavated in the vicinity all proved to be sterile.

Locality 28

Locality 28 is in a saddle between two upland knolls on the ridge between Elliott and Nettles creeks in Survey Tract 4. A survey shovel test in this area was found to contain a single chert tertiary flake (9.5-12.5 mm in size) within the upper 20 cm of deposit. Four more shovel tests were excavated around this unit, but no further artifacts were discovered.

Locality 29

Locality 29 is on a low natural rise, or prairie mound, within the flood plain of Elliott Creek, west of the main channel in Survey Tract 4. One of five shovel tests dug at this locality yielded cultural material, consisting of a large (19-25 mm) chert primary flake within 20 cm of the surface. Gravels were encountered at 14 cm below surface in these shovel tests.

Locality 30

Locality 30 is a surface scatter of historical trash on an upland edge east of Elliott Creek Reservoir in Survey Tract 4. Artifacts observed on the surface at this locality included two No. 2 washtubs, a graniteware kettle, hog wire, and two glass jars. Five shovel tests were excavated in and around this surface scatter, but all of these units proved to be sterile.

Locality 39

Locality 39 is on a low natural rise or prairie mound immediately south of the recreational vehicle park adjacent to Elliott Creek Reservoir in Survey Tract 3. Five shovel tests were excavated at this locality, one of which was found to contain a single novaculite bifacial thinning flake in the upper 20 cm of deposit. The flake measured between 9.5 and 12.5 mm in size. The remaining four shovel tests excavated at Locality 39 proved to be sterile.

Locality 40

Locality 40 is on an upland bench which projects out into Elliott Creek Reservoir in Survey Tract 3. The perimeter of the lake in this area appears to have been cleared with a bush hog. Five shovel tests were dug at this locality, with one unit yielding a chert secondary flake and a chert tertiary flake. Both of these were found resting on a gravel lens at about 18 cm below surface in this one shovel test. The secondary flake measures between 9.5 and 12.5 mm in size, while the tertiary flake is between 6.3 and 9.5 mm. The other four shovel tests excavated in this area all proved to be sterile.

Chapter 5: Research Results Part I: Cultural Resources Properties on the RRAD

Locality 41

Locality 41 is on a narrow upland ridge west of Elliott Creek Reservoir in Survey Tract 3. One large hardwood tree was observed in this area and was investigated as being the possible location of a historical site. Six shovel tests were dug in the vicinity, and in one shovel test a fencing staple was recovered within the upper 20 cm below surface. All of the other shovel tests in this locality were sterile.

Locality 42

Locality 42 is on a narrow upland ridge west of Elliott Lake Reservoir in Survey Tract 3. As was the case with Locality 41, Locality 42 was originally investigated due to the presence of large hardwood trees which might have indicated the former location of a historical homestead. In addition, a piece of hogwire and a child's chamber pot were observed on the surface of the locality. One shovel test yielded a piece of clear bottle glass within 20 cm of the ground surface, but all of the other shovel tests excavated at this locality were sterile.

Locality 43

Locality 43 is on a low natural rise or prairie mound along the western edge of Elliott Creek Reservoir in Survey Tract 3. A single shovel test in this area yielded a quartzite secondary flake between 20 and 40 cm below surface. The piece is between 6.3 and 9.5 mm in size. An additional four shovel tests excavated in this vicinity were all sterile.

Locality 44

Locality 44 is on a low natural rise or prairie mound on the upland edge west of Elliott Creek Reservoir in Survey Tract 3. A single debitage core was recovered from between 0 and 20 cm below surface in one shovel test. This artifact is chert; measures 61 mm long, 40 mm wide, and 25 mm thick; and weighs 67.5 g. An additional four shovel tests excavated at this locality proved to be sterile.

Locality 45

Locality 45 is on a knoll along the upland slope between two minor inlets of Elliott Creek Reservoir in Survey Tract 3. Six shovel tests were excavated at this locality, one of which was found to contain a stained but undecorated white whiteware sherd (post-1890) within 20 cm of the ground surface. The remaining five shovel tests in this area all proved to be sterile.

Locality 46

Locality 46 consists of a surface scatter of historical material in a drainage along an upland bench west of Elliott Creek Reservoir in Survey Tract 3. The locality is covered by a predominantly pine forest. Artifacts observed in the surface scatter included a graniteware washpan, mason jars, condiment bottles, an automobile wheel with wire spokes, a tin can, a one-oz. blue nostrum bottle, and several toiletry bottles with pressed

geometric patterns. The steep slope and the presence of the drainage in this area suggest that this locality is a dump site and not a habitation site.

Locality 47

Locality 47 consists of a historical trash dump in a swampy area along the St. Louis and Southwestern Railroad tracks west of Elliott Creek Reservoir in Survey Tract 3. Many large oaks, but no underbrush, were observed at this locality, while the ground was cracked and blackened as if from standing water. Artifacts observed in the dump included washtubs, a crock, graniteware, a mason jar, a toiletry bottle, a medicine bottle (labeled "A.H. Hand Co."), a kerosene lamp base, a whiteware sherd, and assorted tin cans. The swampy nature of this area strongly argues for this being a dump site and not a habitation site.

Locality 48

Locality 48 is on a low natural rise or prairie mound on an upland slope overlooking the south side of a westward-flowing tributary of Caney Creek, near a small seep spring, in Survey Tract 3. The area is covered by a mixed pine/hardwood forest, while many ferns were found around the seep spring. Five shovel tests were excavated at this locality; one of which contained a single chert tertiary flake within 20 cm of the ground surface. The piece measures between 9.5 and 12.5 mm in size. All of the other shovel tests in this area were sterile.

Locality 49

Locality 49 is on an upland or terrace bench, which appears to be in an old logging road, above an unnamed, westward-flowing tributary of Caney Creek, in Survey Tract 3. A single shovel test in this area yielded one novaculite secondary flake and one chalcedony bifacial thinning flake within 20 cm of the ground surface. The secondary flake measures between 12.5 and 19 mm in size, while the bifacial thinning flake is between 6.3 and 9.5 mm in size. Four additional shovel tests excavated in the vicinity all proved to be sterile.

Locality 50

Locality 50 is on an upland bench which slopes northwesterly to an unnamed tributary of Caney Creek in Survey Tract 3. The area was investigated due to the presence of several large oaks and chinaberry trees in an area otherwise covered by pine and sweetgum saplings and greenbriar. An amber/brown ABM bottle glass fragment (post-1910), a manganese solarized bottle glass fragment (1880-1920), and an unidentified metal fragment were found in a shovel test between 0 and 20 cm below surface. Additional shovel testing in the vicinity failed to recover any further cultural materials.

CHAPTER 6

RESEARCH RESULTS PART II: CULTURAL RESOURCES PROPERTIES ON THE LONE STAR ARMY AMMUNITION PLANT

by

Steven M. Hunt, Floyd D. Kent, Melissa M. Green, and Maynard B. Cliff

As previously noted, the combined pedestrian survey of 1,342 hectares (3,317 acres) at the Red River Army Depot and Lone Star Army Ammunition Plant (RRAD/LSAAP) resulted in the recording of 44 cultural resources sites, of which 22 were located on the LSAAP (Figure 38). Twenty-one of these sites contain prehistoric components, while only one has a historical component. In addition to the cultural resources sites, 26 nonsite localities (21 with prehistoric remains and five with historical remains) also were located within the LSAAP survey areas (see Table 4). As previously mentioned, all of these localities consisted of an artifact or artifacts recovered from individual shovel tests, isolated surface artifacts with no subsurface remains, or some cultural remains or possibly cultural surface feature with no subsurface remains. In all cases additional shovel testing in the area of the original find failed to locate any further associated subsurface cultural material.

The format of the present chapter is the same as that used for Chapter 5, with the first part describing in detail the cultural resources sites recorded within the LSAAP survey areas, together with estimates of their potential for inclusion on the National Register of Historic Places (NRHP). This is, in turn, followed by shorter descriptions of the localities recorded within the LSAAP. As noted in the last chapter, sites are evaluated as being small, medium, or large based on the actual size distribution of this sample of sites, with small sites ranging from 240 to 2,000 m², medium-sized sites from 2,000 to 5,000 m², and large sites from 5,000 to 13,600 m². Likewise, subsurface artifact densities are evaluated as being low, moderate, or high based on the average density of artifacts per onsite shovel test (disregarding shovel tests believed to be beyond the site boundaries), with low density sites having an average of three or less artifacts per shovel test, medium or moderate density sites having an average of between three and eight artifacts per shovel test, and high density sites having an average of more than eight artifacts per shovel test.

SITE DESCRIPTIONS

Site 41BW417

Site 41BW417 is a medium-sized, low density prehistoric site located on the flood plain and adjacent higher ground east of Elliott Creek in Survey Tract 4 (see Figure 38). The site is at an elevation of 98-103 m (325-

340 ft) above mean sea level (amsl) and is estimated to be 3,350 m² (140-x-30 m) in area. It is covered by a mixed pine/hardwood forest containing moderate densities of pine, oak, elm, hickory, sweetgum, dogwood, holly, box elder, and maple. The site is mapped as being on Eylau very fine sandy loam, 0 to 3 percent slopes, a nearly level to gently sloping soil on broad interstream divides. Eylau soil typically consists of a dark grayish brown (10YR4/2) very fine sandy loam A horizon, 15 cm thick, which is underlain by a brown (10YR4/3 to 5/3) very fine sandy loam E horizon, 15 cm thick. The Bt horizon is a sandy clay loam which is strong brown (7.5YR4/6 to 5/8) in the upper part, brownish yellow (10YR6/6 to 6/8) in the middle part, and mottled with red, brown, and gray in the lower part. The Bt horizon extends to 203+ cm (Fox 1980:20). Although Elliott Creek currently flows adjacent to the western edge of the site and erosion along the cutbank may have removed part of it, the remaining portions retain good contextual integrity with no major indications of disturbance.

Eleven shovel tests were excavated at site 41BW417, of which six were found to contain cultural remains (Figure 39). The site boundary is defined on the basis of these shovel tests. The six onsite shovel tests contained a total of 13 artifacts (Shovel Test [S.T.] 1=3; S.T. 3=1; S.T. 4=1; S.T. 7=5; S.T. 8=2; and S.T. 11=1), for an average of 2.17 artifacts per shovel test. S.T. 3 yielded material down to only 20 cm below ground surface, but all of the other shovel tests recovered artifacts to a depth of 40 cm. The most material (38.5 percent) was recovered from S.T. 7, in the approximate center of the site. The shovel tests revealed a generalized soil profile consisting of a dark brown (10YR2/2) to dark yellowish brown (10YR3/6) fine sandy loam A horizon, up to 20 cm thick when present, overlying a yellowish brown (10YR4/4-5/6) to light yellowish brown (10YR6/4-7/4) fine loamy sand E horizon, between 20 and 60 cm thick. The subsoil appeared to consist of a brownish yellow (10YR5/6-6/6) compact sandy clay, which began between 30 and 60 cm below surface. A recognizable A horizon was only identified in S.T.s 1, 8, and 9.

As noted above, 13 prehistoric artifacts were recovered from the shovel tests at site 41BW417 (see Appendix C). These include one arrow point fragment and 12 unmodified flakes. The arrow point fragment was recovered from S.T. 7, Level 2 (Figure 40). It consists of a chert distal fragment measuring 21 mm long, 9 mm wide, and 2 mm thick, and weighing .4 g. Due to the fragmentary nature of the piece, it cannot be typed. The sample of flakes includes all types, although primary and secondary decortification flakes represent only 33.3 percent of the sample (Table 19). Despite the small sample size, a moderate number of raw material types was present, including chert and quartzite, as well as Bowie Chert, Woodford Chert, and Ogallala Quartzite (Table 20). Chert was the most abundant raw material present, in terms of both frequency and weight, while Bowie Chert and Ogallala Quartzite were about equal in terms of weight.

In summary, site 41BW417 is a medium-sized, low density prehistoric site, dating apparently to either the late portion of the Early Ceramic, or sometime in the Caddoan period. Based on the size of the site, the density of subsurface deposits, and the limited range of artifacts recovered, the site may be a periodically reoccupied campsite. Given its good contextual integrity, it is believed that the site may retain good research potential. Therefore, it is recommended that site 41BW417 be considered to be of unknown eligibility for inclusion in the NRHP, with test excavation being required to better determine the NRHP status of the site. Until such excavations are undertaken, it is further recommended that the site be protected from any disturbances.

Site 41BW418

Site 41BW418 is a small, high density prehistoric site located on several low natural rises, or prairie mounds, and the surrounding area is on a terrace or upland bench east of Elliott Creek in Survey Tract 4 (see Figure 38). The site is at an elevation of 98-100 m (320-330 ft) amsl and occupies an estimated area of 1,200 m²

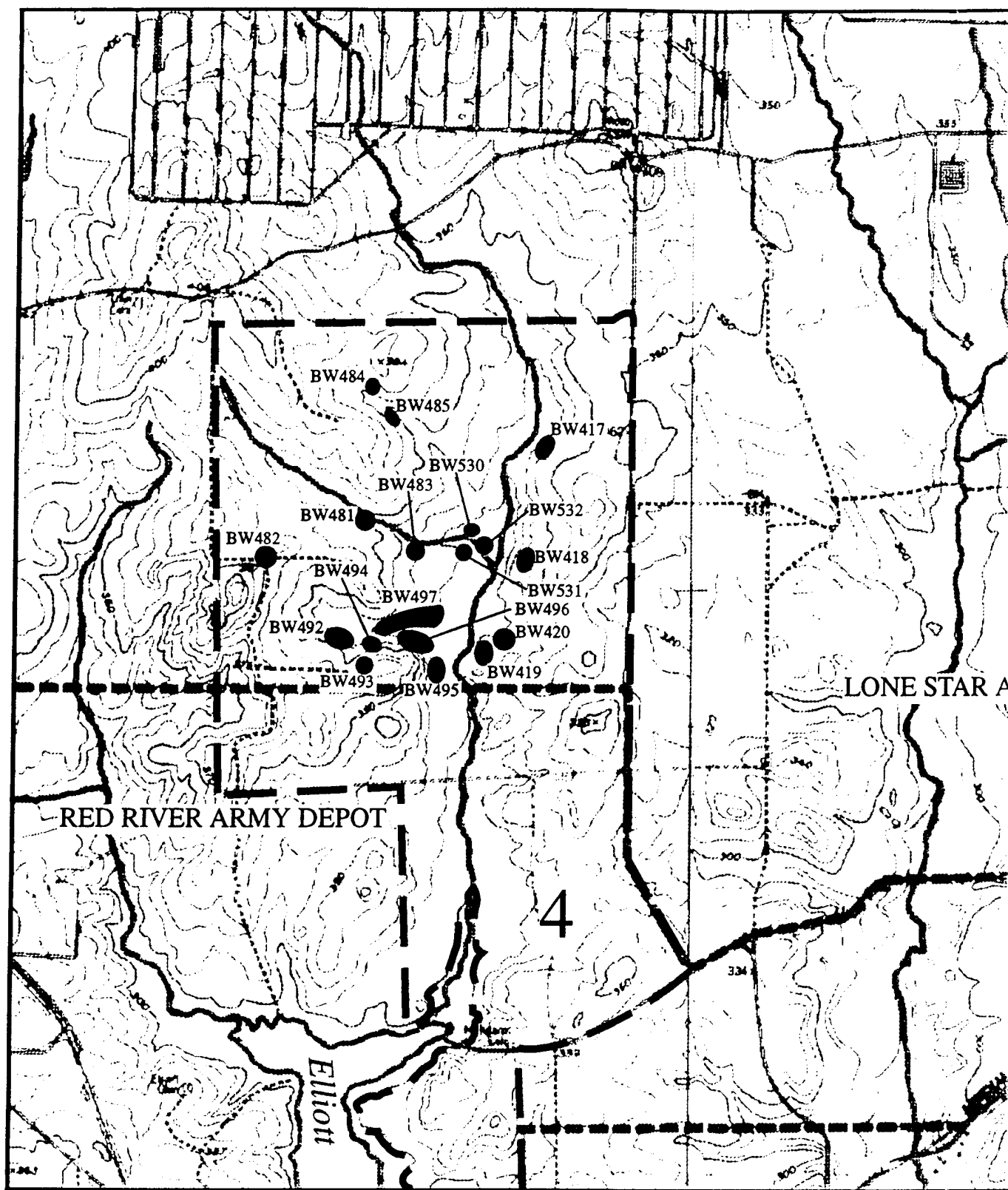
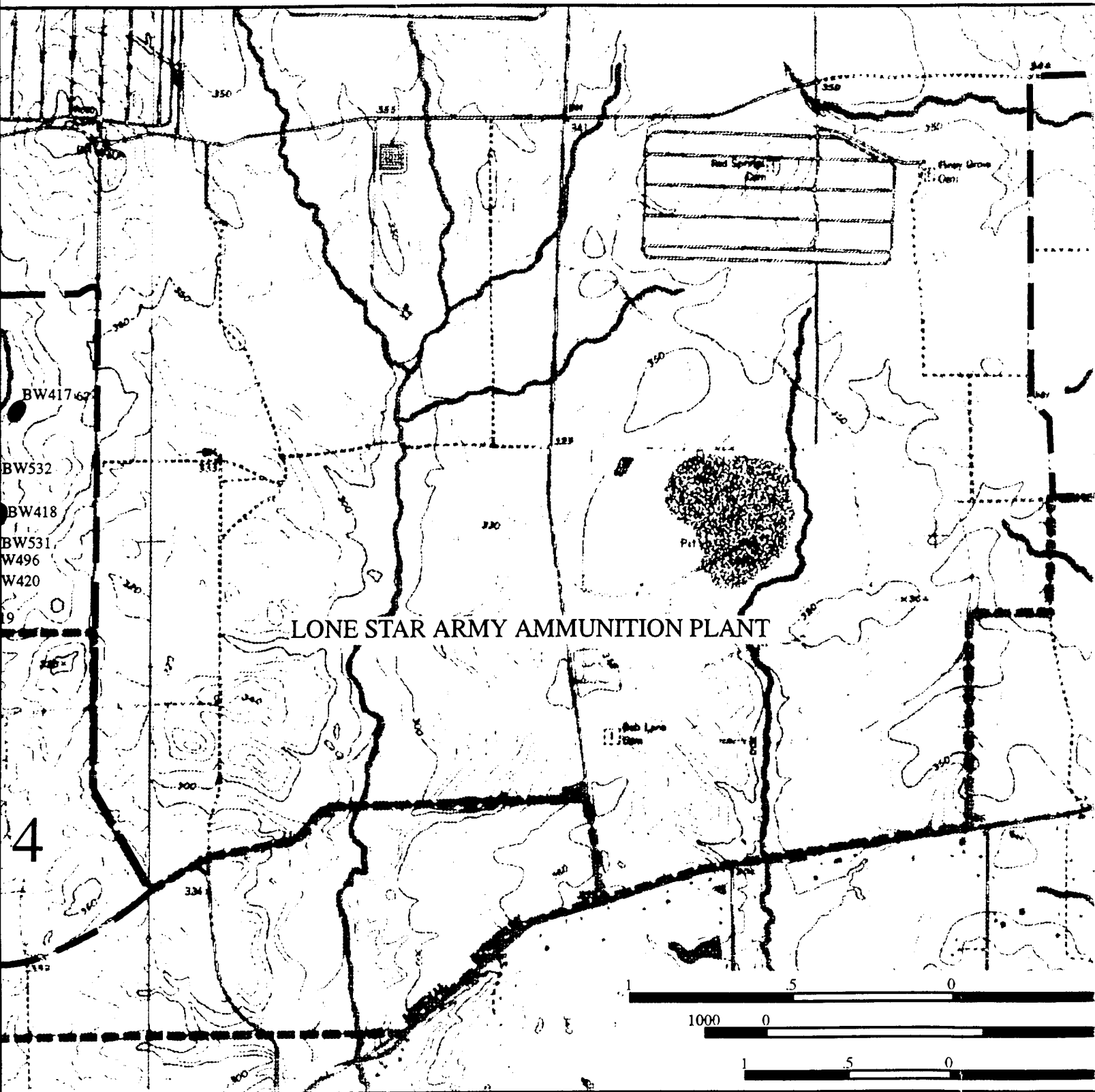
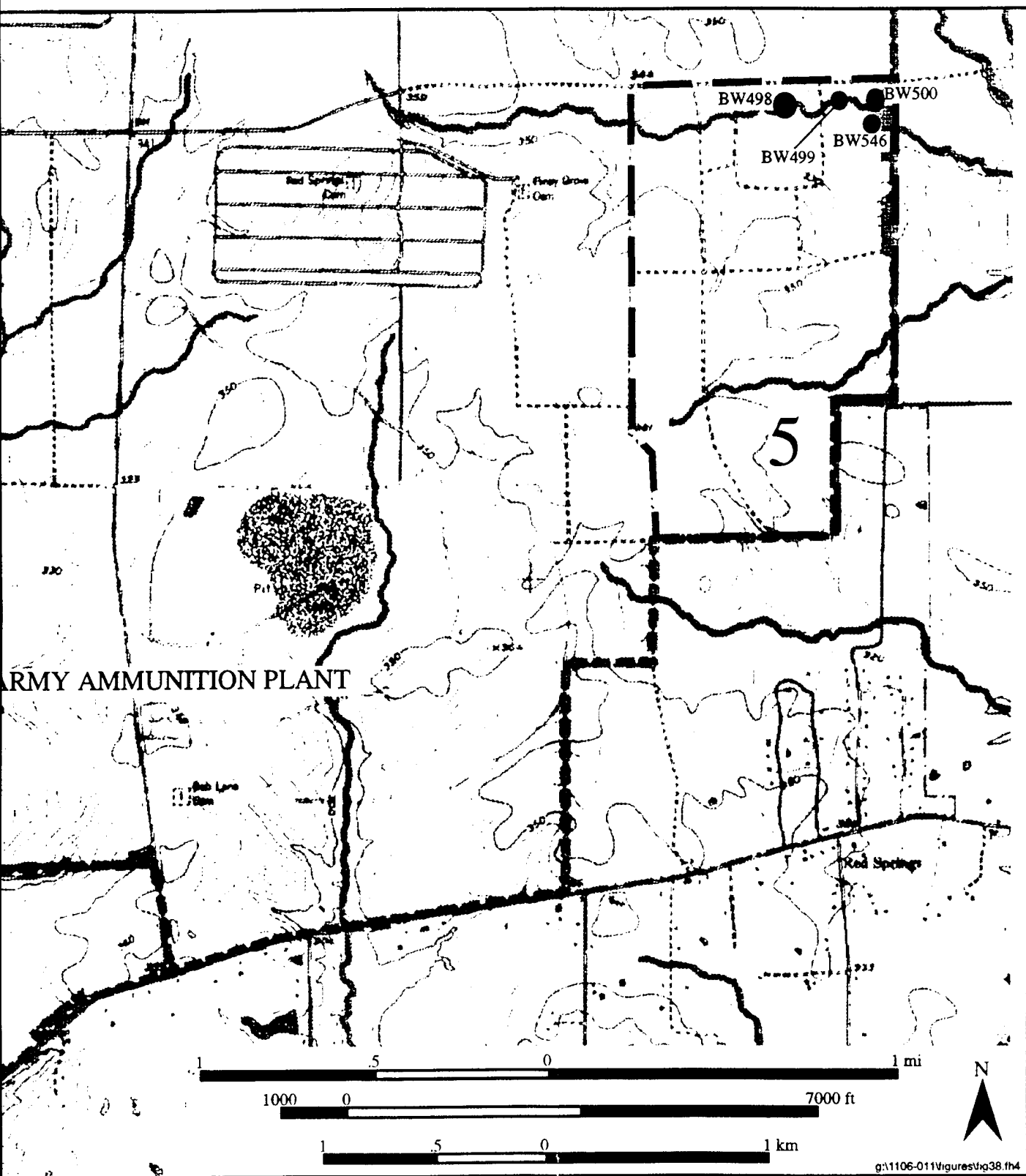


Figure 38. Archeological sites recorded on the Lone Star Army Ammunition Plant during the 1993 RRAD/LSAAP survey.



ion Plant during the 1993 RRAD/LSAAP survey.



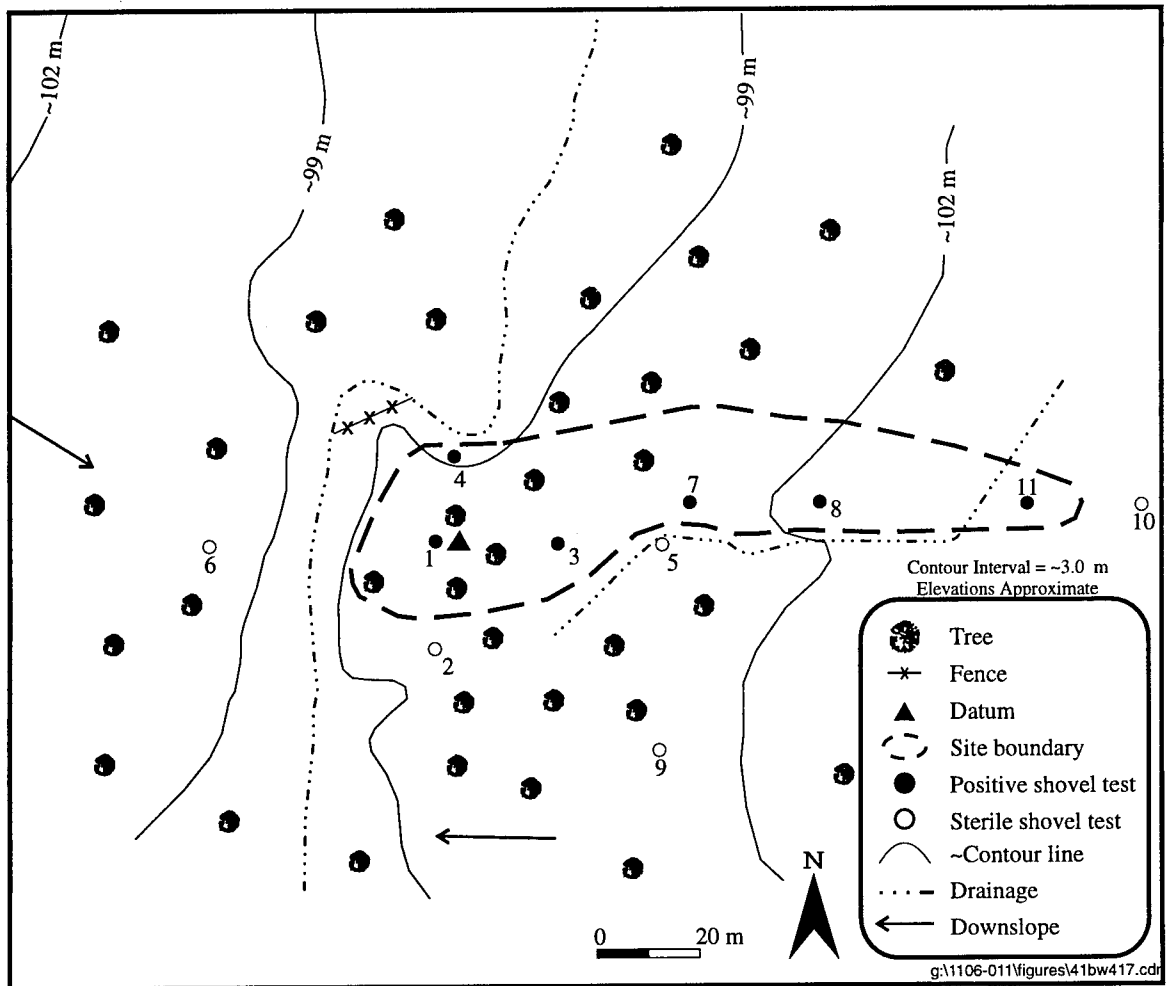


Figure 39. Pace and compass map of site 41BW417.

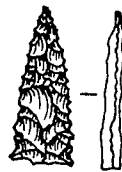


Figure 40. Arrow point fragment recovered from site 41BW417, Shovel Test 7, Level 2 (Scale 1:1).

Table 19
Flake Types and Size Categories for Site 41BW417

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	-	1	-	-	-	1
Secondary Flake	-	-	-	2	1	-	3
Tertiary Flake	-	-	-	-	4	1	5
Biface Thinning Flake	-	-	-	1	2	-	3
Total	-	-	1	3	7	1	12

Table 20
Lithic Raw Material Types for Site 41BW417

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	1	.4	7	3.8	-	-	8	4.2
Quartzite	-	-	1	1.2	-	-	1	1.2
Bowie Chert	-	-	1	.2	-	-	1	.2
Woodford Chert	-	-	1	.7	-	-	1	.7
Ogallala Quartzite	-	-	2	1.2	-	-	2	1.2
Total	1	.4	12	7.1	-	-	13	7.5

(80-x-20 m). It is mapped as being at the edge of Sawyer silt loam, 0 to 3 percent slopes, a nearly level to gently sloping soil found on uplands (Fox 1980:28-29), and Thenas fine sandy loam, frequently flooded, a nearly level soil on flood plains (Fox 1980:32). The Sawyer map unit has a typical profile of a dark grayish brown (10YR4/2) silt loam A horizon, 15 cm thick, directly underlain by the Bt horizon. The Bt horizon extends to a depth of 203 cm or more and consists of a yellowish brown (10YR5/4 to 5/8) silty clay loam in the upper 23 cm, yellowish brown (10YR5/4 to 5/8) clay loam with grayish and reddish mottles in the next 28 cm, and mottled gray, red, and strong brown clay in the lower part (Fox 1980:28). Thenas soil typically consists of a dark brown (10YR3/3 to 4/3) fine sandy loam surface layer, approximately 25 cm thick, which is underlain to a depth of 140 cm by the subsoil. The upper 86 cm of subsoil is a fine sandy loam, dark brown (10YR3/3 to 4/3) in the upper part and dark yellowish brown (10YR3/4 to 4/6) in the lower part. Below 86 cm, it consists of a yellowish brown (10YR5/4 to 5/8) loamy fine sand. Underlying this stratum is a light yellowish brown (10YR6/4) loamy fine sand stratified with loamy and sandy layers (Fox 1980:32). The site is covered with a mixed pine/hardwood forest containing pine, oak, maple, elm, and dogwood, with an understory consisting of french mulberry, briar, sassafras, and cane. Several nearby seep springs were identified through a heavy growth of ferns. No major disturbances were identified to the site.

Eight shovel tests were excavated around the site, three of which were found to contain cultural remains. The site limits were defined on the basis of these shovel tests, along with the limits of the natural rises (Figure 41). One additional sterile shovel test was included within the site limits. The positive shovel tests

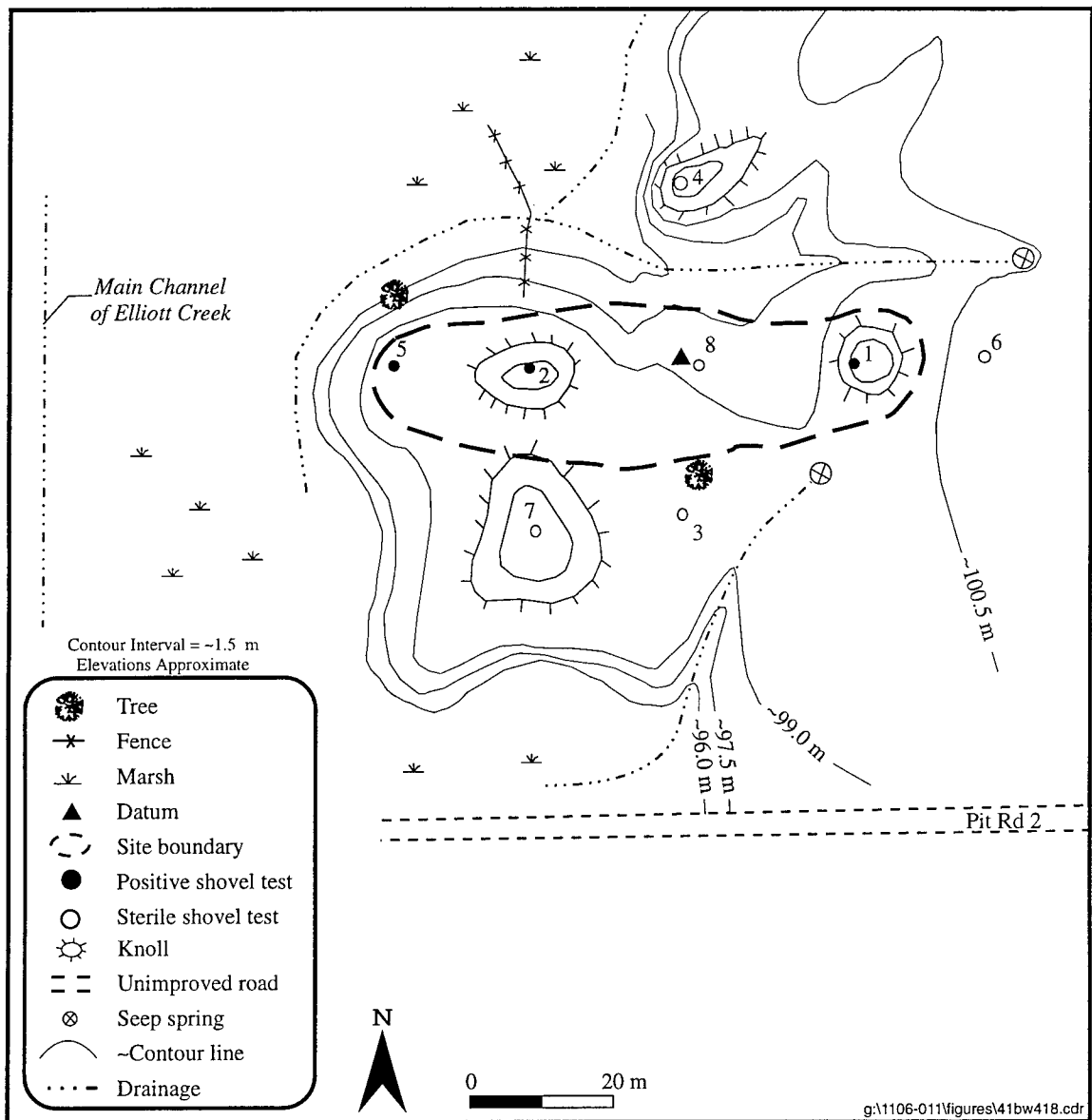


Figure 41. Pace and compass map of site 41BW418.

yielded a total of 32 artifacts (S.T. 1=7; S.T. 2=17; and S.T. 5=8), for an average of 8.0 artifacts per onsite shovel test. Cultural deposits were found down to 80 cm below surface in the two shovel tests in the natural rises (S.T.s 1 and 2), but material was recovered to only 60 cm in the off-rise S.T. 5 on the western edge of the site. S.T. 8, excavated between the two natural rises, proved to be sterile. The shovel tests showed a generalized soil profile consisting of a dark yellowish brown (10YR3/4 to 4/6) loamy sand A horizon, 10 to 20 thick, underlain by a very pale brown (10YR7/3 to 10YR8/4) compact loamy sand E horizon. Although several units were dug below 80 cm, what appeared to be a Bt horizon was only recorded in one unit (S.T. 5) when a yellowish brown (10YR5/4 to 5/8) clay was encountered at 63 cm below surface.

As mentioned above, 32 prehistoric artifacts were recovered from subsurface contexts at site 41BW418 (see Appendix C). This sample consisted of 24 unmodified flakes and eight fragments of burned rock. The sample of flakes included all types in approximately equal frequencies (Table 21). A moderate variety of raw material types was present in this sample, including chert, quartzite, and novaculite, as well as Woodford Chert and Ogallala Quartzite, specifically (Table 22). Chert and novaculite were most commonly used for tool manufacture, while quartzite was most common for burned rock, making it most common overall. The use of both chert and quartzite for burned rock suggests their presence on, or very close to, the site.

Table 21
Flake Types and Size Categories for Site 41BW418

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	-	1	-	2	1	4
Secondary Flake	-	-	1	2	3	1	7
Tertiary Flake	-	-	-	1	2	3	6
Biface Thinning Flake	-	-	1	-	5	1	7
Total	-	-	3	3	12	6	24

Table 22
Lithic Raw Material Types for Site 41BW418

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	13	9.6	1	20.8	14	30.4
Quartzite	-	-	3	1.1	7	356.0	10	357.1
Novaculite	-	-	4	6.0	-	-	4	6.0
Woodford Chert	-	-	1	.6	-	-	1	.6
Ogallala Quartzite	-	-	3	1.2	-	-	3	1.2
Total	-	-	24	18.5	8	376.8	32	395.3

In summary, site 41BW418 is a small, high density prehistoric site of an undetermined period. The small size of the site, coupled with a high density of subsurface material and the limited artifact sample present, suggests that the site was an intensively utilized or frequently reoccupied campsite. Although many similar sites have been found on the RRAD/LSAAP, the contextual integrity of site 41BW418 appears to be very good, as no signs of disturbance were observed, and site 41BW418 may retain a good research potential. Consequently, it is recommended that the site be considered to be of unknown eligibility for inclusion in the NRHP, with test excavation being required to better determine the NRHP status of the site. Until such excavations are undertaken, it is further recommended that the site be protected from any disturbances.

Site 41BW419

Site 41BW419 is a small, low density prehistoric site located on a terrace or upland bench east of Elliott Creek in Survey Tract 4 (see Figure 38). The site is at an elevation of about 98 m (320 ft) amsl and covers an estimated area of 900 m² (35-x-40 m). It is mapped as being on Sawyer silt loam, 0 to 3 percent slopes, a nearly level to gently sloping soil on uplands. Sawyer soil has a typical profile of a dark grayish brown (10YR4/2) silt loam A horizon, 15 cm thick, directly underlain by the Bt horizon. The Bt horizon extends to a depth of 203 cm or more and consists of a yellowish brown (10YR5/4 to 5/8) silty clay loam in the upper 23 cm, yellowish brown (10YR5/4 to 5/8) clay loam with grayish and reddish mottles in the next 28 cm, and mottled gray, red, and strong brown clay in the lower part (Fox 1980:28-29). The site is covered by a mixed pine/hardwood forest, with an understory consisting of moderate quantities of grapevine, greenbriar, and sweetgum and pine saplings. No major sources of disturbance were noted at the site.

Eight shovel tests were excavated at site 41BW419 (Figure 42). Three of these contained artifacts and the site limits were defined on this basis, but with a fourth, sterile, shovel test included within the boundary. The three positive shovel tests contained a total of 11 artifacts (S.T. 1=4; S.T. 2=6; and S.T. 7=1), for an average of 2.75 artifacts per onsite shovel test. The deepest material (40 cm down) was recovered from S.T. 2 on the southern margin of the site, with the other positive shovel tests containing material only within the upper 20 cm. The shovel tests revealed a generalized soil profile consisting of a yellowish brown (10YR5/4 to 5/8) sandy loam AE horizon, underlain by a compact sand.

The 11 artifacts recovered from site 41BW419 all consisted of unmodified lithic debitage, with 10 flakes and one piece of angular shatter (see Appendix C). The sample of flakes includes all types (Table 23), although primary and secondary decortification flakes are present at a higher proportion than at many of the other sites recorded by this survey (n=7; 70 percent). Once again, a moderate variety of raw material types was present, including chert, quartzite, and novaculite, as well as Bowie Chert and Ogallala Quartzite, specifically (Table 24). Quartzite is in the majority by weight and tied with chert by frequency, while chert and novaculite are next most common by weight.

In summary, site 41BW419 is a small, low density site of an unknown prehistoric period. Based on the size of the site, its low subsurface density, and the limited range of artifacts present, site 41BW419 may represent a short-term campsite or a special activity site. Since site 41BW419 appears to have good contextual integrity with no major sources of disturbance, it is thought that it may retain good research potential. Consequently, it is recommended that the site be considered to be of unknown eligibility for inclusion in the NRHP, with test excavation being required to better determine the NRHP status of the site. Until such excavations are undertaken, it is further recommended that the site be protected from any disturbances.

Site 41BW420

Site 41BW420 is a small, low density prehistoric site located on a terrace or upland bench east of Elliott Creek in Survey Tract 4 (see Figure 38). The surface of the bench undulates and is covered with a number of low natural rises, or prairie mounds. The site is at an elevation of about 98 m (320 ft) amsl and covers an estimated area of 900 m² (45-x-25 m). The site is mapped as being on Sawyer silt loam, 0 to 3 percent slopes, a nearly level to gently sloping soil on uplands. The Sawyer map unit has a typical profile beginning with a dark grayish brown (10YR4/2) silt loam A horizon, 15 cm thick, which is directly underlain by the Bt horizon. The Bt horizon extends to a depth of 203 cm or more and consists of a yellowish brown (10YR5/4 to 5/8) silty clay loam in the upper 23 cm, yellowish brown (10YR5/4 to 5/8) clay loam with grayish and reddish mottles in the next 28 cm, and mottled gray, red, and strong brown clay in the lower part

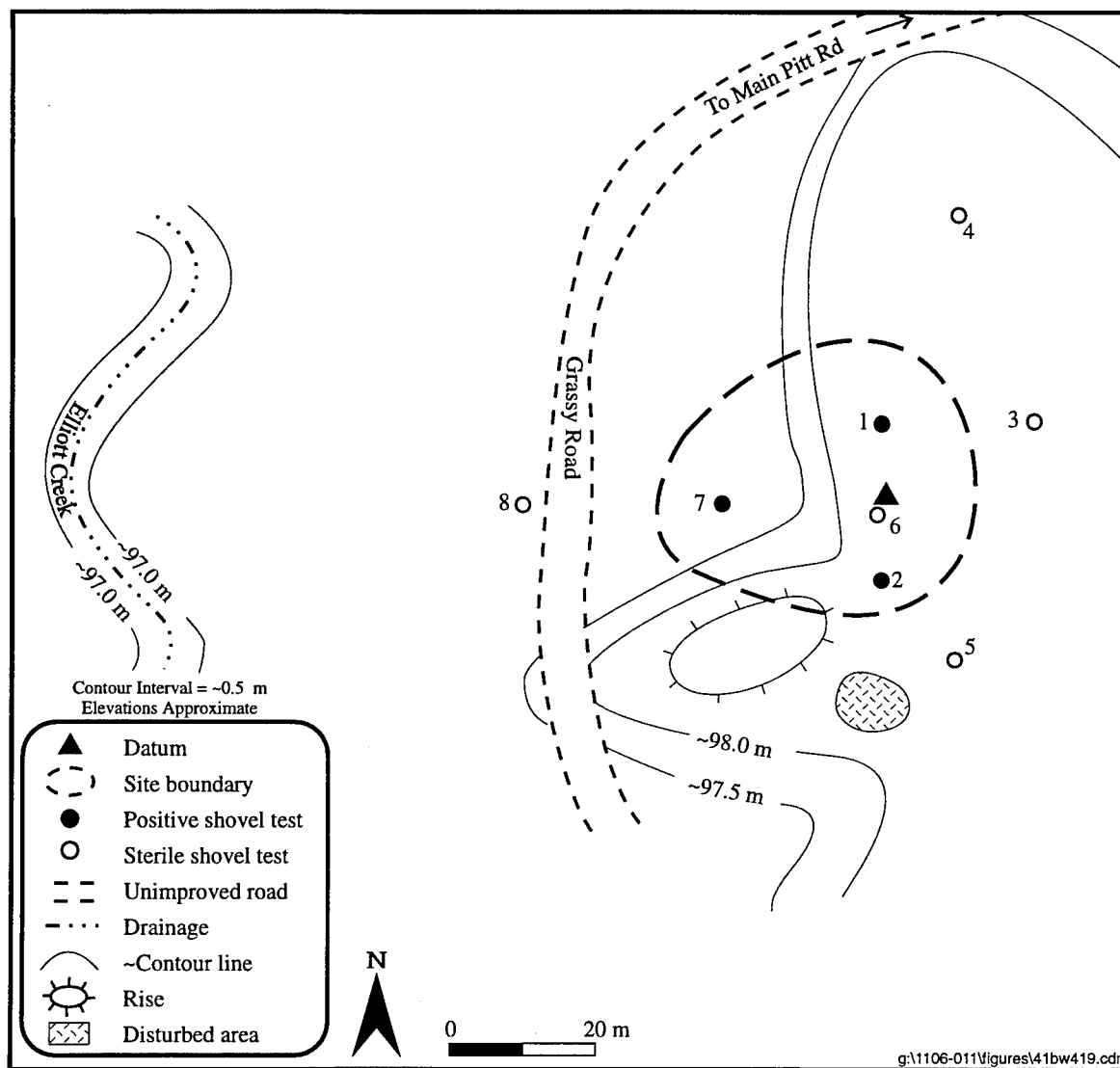


Figure 42. Pace and compass map of 41BW419.

Table 23
Flake Types and Size Categories for Site 41BW419

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	1	-	1	3	-	5
Secondary Flake	-	-	-	1	-	1	2
Tertiary Flake	-	-	-	1	-	-	1
Biface Thinning Flake	-	-	-	-	2	-	2
Total	-	1	-	3	5	1	10

Table 24
Lithic Raw Material Types for Site 41BW419

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	4	5.0	-	-	4	5.0
Quartzite	-	-	4	12.7	-	-	4	12.7
Novaculite	-	-	1	1.3	-	-	1	1.3
Bowie Chert	-	-	1	.8	-	-	1	.8
Ogallala Quartzite	-	-	1	.2	-	-	1	.2
Total	-	-	11	20.0	-	-	11	20.0

(Fox 1980:28-29). The site is covered with a pine forest with a moderately dense understory containing briars and pine and sweetgum saplings. It has suffered to a small degree from the timbering activities at the LSAAP, but the majority of the site appears to retain good contextual integrity.

Eight shovel test were excavated at the site, with three found to contain cultural materials (Figure 43). The site limits were defined on the basis of these three shovel tests. Six artifacts were recovered from site 41BW420 (S.T. 1=4; S.T. 2=1; and S.T. 7=1), for an average of 2.0 artifacts per onsite shovel test. S.T. 1, on the eastern edge of the site, yielded the majority of material (66.7 percent) down to 40 cm below surface. S.T.s 2 and 7 each contained artifacts within the upper 20 cm of deposit. The shovel tests revealed an AE horizon consisting of a light yellowish brown (10YR6/4) silt, 30 to 40 cm thick, underlain by a compact loamy sand.

The six prehistoric artifacts recovered from site 41BW420 consist of five flakes and one tested cobble (see Appendix C). The small sample of flakes from site 41BW420 consists of mostly secondary decortification flakes (one quite large compared to other site samples) and almost no interior flakes (Table 25). The raw material types are more limited than at most other sites, but once again the sample size is small (Table 26). Ogallala Quartzite is the most frequent material at this site, largely due to the presence of a tested cobble in the sample (accounting for 93.9 percent of the weight for this material). Otherwise, chert is the most frequent raw material. The presence of a tested nodule of Ogallala Quartzite in this sample supports the idea that this material is a component of the gravels along Elliott Creek. This tested cobble measures 49 mm long, 47 mm wide, and 23 mm thick, and weighs 32.7 g.

In summary, site 41BW420 is a small, low density site of an unknown prehistoric period. Based on the small size of the site, the low density of subsurface material, and the limited range and quantities of artifacts recovered, site 41BW420 may be a short-term campsite or a special activity site. Given that the contextual integrity of 41BW420 appears to be good, with only limited disturbances from timbering activities, the site may retain good research potential. Therefore, it is recommended that it be considered to be of unknown eligibility for inclusion in the NRHP, with test excavations being required to better determine the NRHP status of the site. Until such excavations are undertaken, it is further recommended that the site be protected from any disturbances.

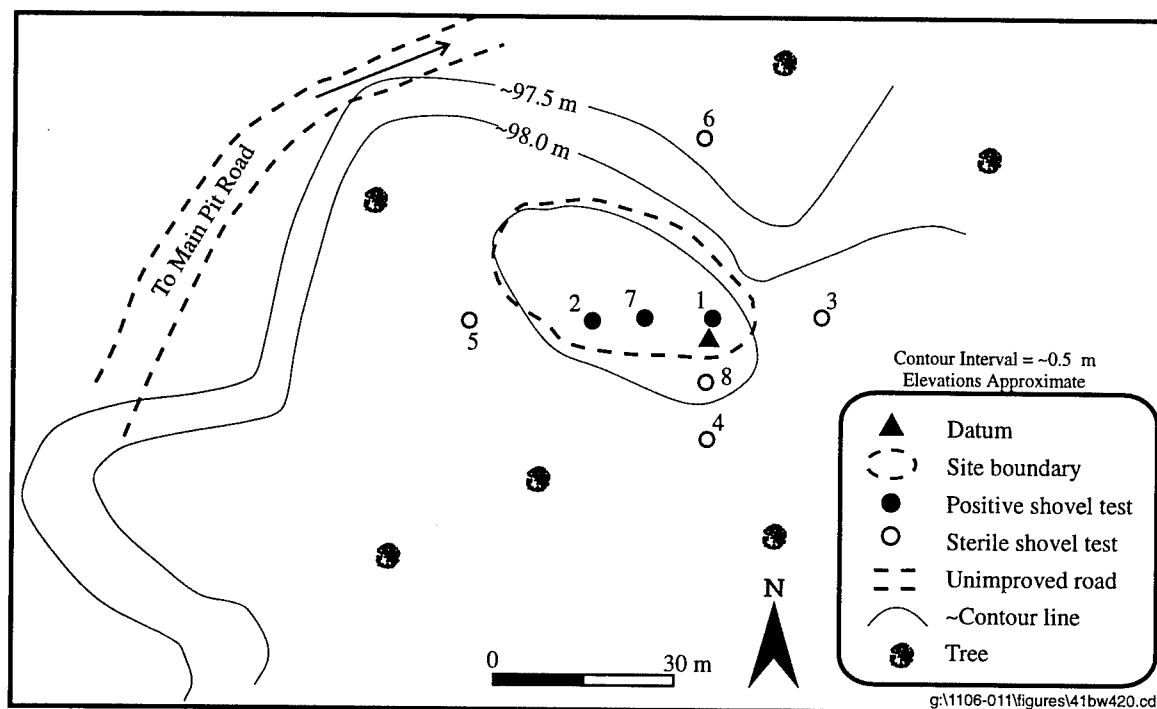


Figure 43. Pace and compass map of site 41BW420.

Table 25
Flake Types and Size Categories for Site 41BW420

Flake Type	Flake Size (mm)						Total
	> 25	25-19	19-12.5	12.5-9.5	9.5-6.3	< 6.3	
Primary Flake	-	-	-	-	-	-	-
Secondary Flake	-	1	2	-	1	-	4
Tertiary Flake	-	-	-	-	1	-	1
Biface Thinning Flake	-	-	-	-	-	-	-
Total	-	1	2	-	2	-	5

Table 26
Lithic Raw Material Types for Site 41BW420

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	2	11.1	-	-	2	11.1
Quartzite	-	-	1	.2	-	-	1	.2
Ogallala Quartzite	-	-	3	34.8	-	-	3	34.8
Total	-	-	6	46.1	-	-	6	46.1

Site 41BW481

Site 41BW481 is a small to medium-sized, low to moderate density prehistoric site located on two low natural rises, or prairie mounds, on a terrace or eroded upland bench adjacent to an unnamed tributary of Elliott Creek in Survey Tract 4 (see Figure 38). The site is at an elevation of about 106 m (350 ft) amsl and covers an estimated 2,000 m² (85-x-30 m). It is mapped as being on Ruston fine sandy loam, 3 to 8 percent slopes, a gently sloping to sloping soil on convex upland terraces. This soil has an A horizon of brown (10YR4/3 to 5/3) fine sandy loam to a depth of 13 cm, which is underlain by yellowish brown (10YR5/4 to 5/8) fine sandy loam to 41 cm. The Bt horizon is a red (2.5YR4/6 to 5/8) sandy clay loam found to 203 cm or more in depth (Fox 1980:26). The site is covered with a mixed pine/hardwood forest. Minimal impacts from timbering and bioturbation were noted at the site, but the majority is believed to retain contextual integrity.

Eight shovel tests were excavated around the site area, with the three positive ones used to define the site limits (Figure 44). A total of nine artifacts was collected from these shovel tests (S.T. 1=5; S.T. 2=2; and S.T. 7=2), for an average of 3.0 artifacts per onsite unit. In all three of the positive shovel tests, artifactual material was recovered down to 40 cm below ground surface. S.T. 1, in the center of the northeastern rise, yielded the most cultural material (44.4 percent). The shovel tests revealed a soil profile consisting of a pale brown (10YR6/3) to light yellowish brown (10YR6/4) loamy sand AE horizon, at least 60 cm thick.

As noted above, nine prehistoric artifacts were recovered from site 41BW481 (see Appendix C). This sample was comprised entirely of unmodified secondary and tertiary flakes (Table 27). The raw material types present are similar to those noted elsewhere, and include chert, quartzite, Bowie Chert, and Ogallala Quartzite (Table 28). Quartzite is the most abundant material present, followed by chert and Ogallala Quartzite.

In summary, site 41BW481 is a small to medium-sized, low to moderate density site of an unknown prehistoric period. Based on the size and subsurface density of the site, as well as the limited range and small quantity of material present, site 41BW481 may be a short-term campsite or a special activity site. Since its contextual integrity is good, it is felt that the site may retain good research potential. Consequently, it is recommended that site 41BW481 be considered to be of unknown eligibility for inclusion in the NRHP, with test excavations being required to better determine the NRHP status of the site. Until such excavations are undertaken, it is further recommended that the site be protected from any disturbances.

Site 41BW482

Site 41BW482 is a small historical site located on a sloping upland surface west of Elliott Creek in Survey Tract 4 (see Figure 38). The site is at an elevation of 116 m (380 ft) amsl and covers an area of 900 m² (40-x-30 m). It is mapped as being on Ruston fine sandy loam, 3 to 8 percent slopes, a gently sloping to sloping soil on convex upland terraces. This soil has an A horizon of brown (10YR4/3 to 5/3) fine sandy loam, 13 cm thick, underlain by yellowish brown (10YR5/4 to 5/8) fine sandy loam to a depth of 41 cm. The Bt horizon is a red (2.5YR4/5 to 5/8) sandy clay loam, 203 cm or more in depth (Fox 1980:26). Vegetation on the site consists of a mixed pine/hardwood forest of yellow pine, red oak, and box elder, with a dense understory of holly, french mulberry, greenbriar, grapevine, poison ivy, and pine saplings. Disturbances noted include extensive bulldozing and some bioturbation. The site appears to have almost no contextual integrity remaining.

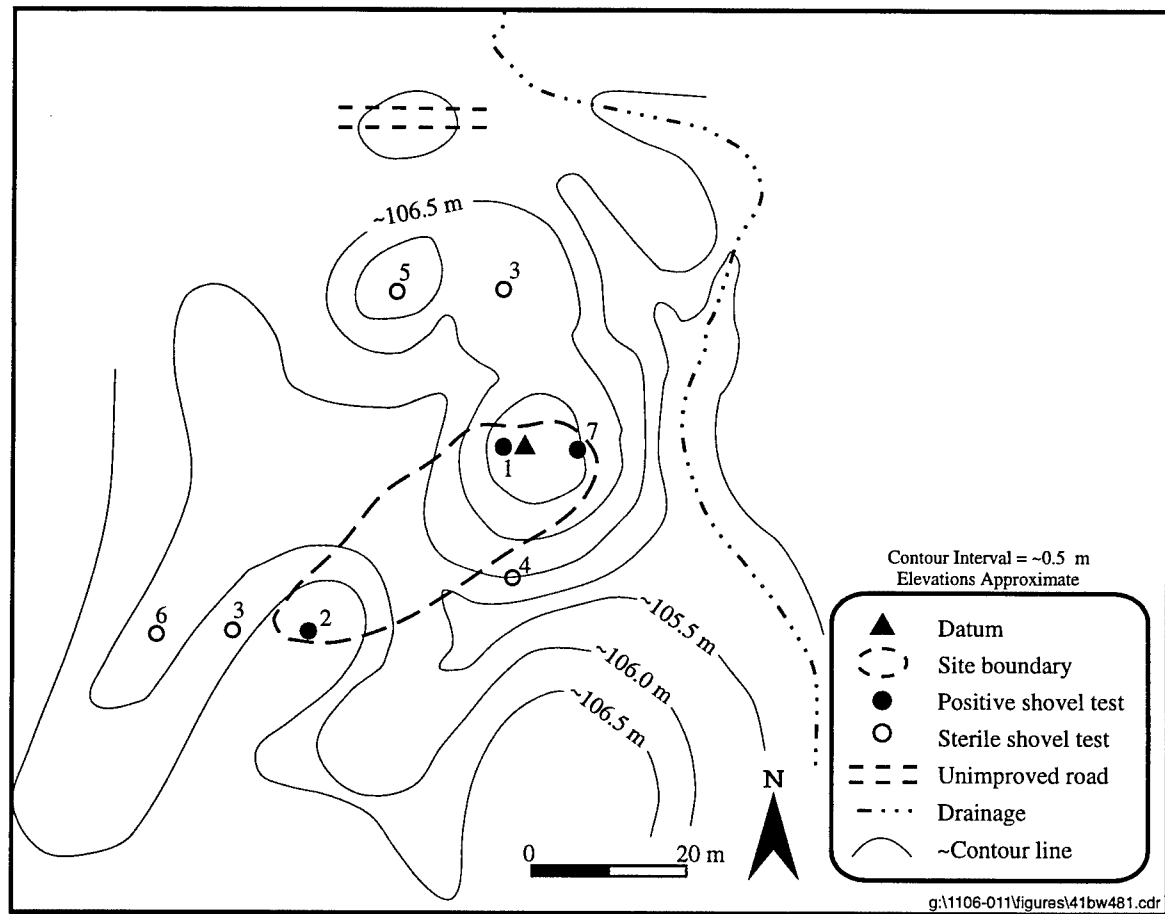


Figure 44. Pace and compass map of site 41BW481.

Table 27
Flake Types and Size Categories for Site 41BW481

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	-	-	-	-	-	-
Secondary Flake	-	-	1	1	1	-	3
Tertiary Flake	-	-	-	2	4	-	6
Biface Thinning Flake	-	-	-	-	-	-	-
Total	-	-	1	3	5	-	9

Table 28
Lithic Raw Material Types for Site 41BW481

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	1	1.5	-	-	1	1.5
Quartzite	-	-	5	3.5	-	-	5	3.5
Bowie Chert	-	-	1	.3	-	-	1	.3
Ogallala Quartzite	-	-	2	1.0	-	-	2	1.0
Total	-	-	9	6.3	-	-	9	6.3

The site was defined on the basis of a surface scatter of historic artifacts, including fragments of reinforced concrete (possibly from a foundation of some sort); two wash basins; a green, pressed-glass pitcher; two metal bomb casings; and corrugated tin sheets. One potential feature was noted at the site, a depression about 3 m in diameter and 1 m deep, lined with tin sheets, in the west central area of the site (Figure 45). The origin of this depression is not known. Although eight shovel tests were excavated at the site, they all proved to be sterile and no subsurface cultural material was found. The soil profile revealed in these shovel tests consisted of a dark brown (10YR3/3 to 4/3) to yellowish brown (10YR5/4 to 5/8) sandy silt to 20 to 40 cm below surface, at which point dense gravels were encountered.

As noted above, no historic artifacts were recovered from shovel testing of site 41BW482. The only artifact recovered was the body portion of a green, depression-era glass pitcher (ca. 1920-1950) collected from the surface of the site (see Appendix D). The bottom and handle of this piece are missing and much of the rim is gone, making it difficult to reconstruct what the original decorative pattern was.

In summary, site 41BW482 is a small historical site located along Main Pit Road west of the Elliott Creek valley. No subsurface cultural remains were located, and the site appears to consist entirely of surface artifactual remains and one possible subsurface feature (a depression) of uncertain origin. The bomb casings and the fragments of reinforced concrete, possibly from a demolished structure, suggest that at least part of the surface remains are the result of the post-1942 military occupation of the area. However, the presence of a depression and the fragmentary pressed glass pitcher also suggest an earlier utilization of the site, possibly dating between 1920 and 1942. The site retains little contextual integrity and, considering the total lack of any subsurface cultural deposits, it is felt to have no research potential. Consequently, it is recommended that site 41BW482 be considered to be ineligible for inclusion in the NRHP and that no further work be required there.

Site 41BW483

Site 41BW483 is a small, low density prehistoric site located on a small knoll or upland bench above an unnamed, intermittent tributary of Elliott Creek in Survey Tract 4 (see Figure 38). The site is at an elevation of about 100 m (330 ft) amsl and occupies an estimated 1,200 m² (60-x-25 m). It is on Ruston fine sandy loam, 3 to 8 percent slopes, a gently sloping to sloping soil on convex upland terraces. This soil has an A horizon of brown (10YR4/3 to 5/3) fine sandy loam, 13 cm thick, underlain by yellowish brown (10YR5/4 to 5/8) fine sandy loam to a depth of 41 cm. The Bt horizon is a red (2.5YR4/6 to 5/8) sandy clay loam down to 203 cm or more (Fox 1980:26). Vegetation observed on site is a mixed pine/hardwood forest of

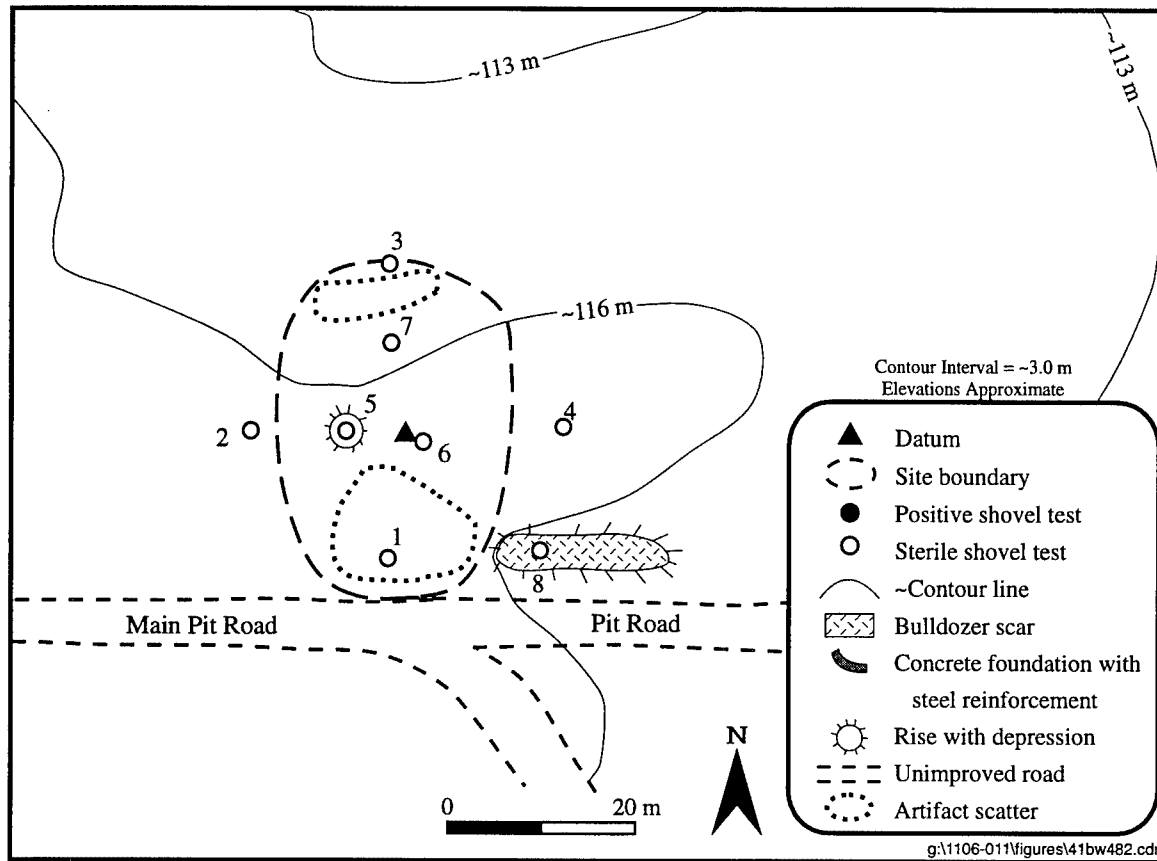


Figure 45. Pace and compass map of site 41BW482.

yellow pine, red oak, white oak, dogwood, sweetgum, and hickory, with an understory of sassafras, maple, french mulberry, holly, greenbriar, poison ivy, and ferns. Disturbance at the site was limited to bioturbation and timbering, with the majority of the site retaining contextual integrity.

Eight shovel tests were dug at site 41BW483, three of which proved to be positive. The site limits were defined on the basis of these three positive tests and included a sterile fourth test (Figure 46). Six flakes were collected from the three positive tests (S.T. 1=3; S.T. 2=1; and S.T. 4=2), for an average of 1.5 artifacts per onsite shovel test (including the sterile fourth test). All of the cultural remains from the positive shovel tests were recovered within 20 cm of the ground surface. Sediments encountered during shovel testing consisted of a pale brown (10YR6/3) to very pale brown (10YR7/3 to 10YR8/4) sandy loam AE or E horizon, at least 60 cm thick. The Bt horizon was not encountered in any shovel tests.

As noted above, only six prehistoric artifacts were recovered from site 41BW483 (see Appendix C). These consisted entirely of unmodified lithic flakes and included all types, despite the small sample of material recovered (Table 29). All of the flakes were of chert.

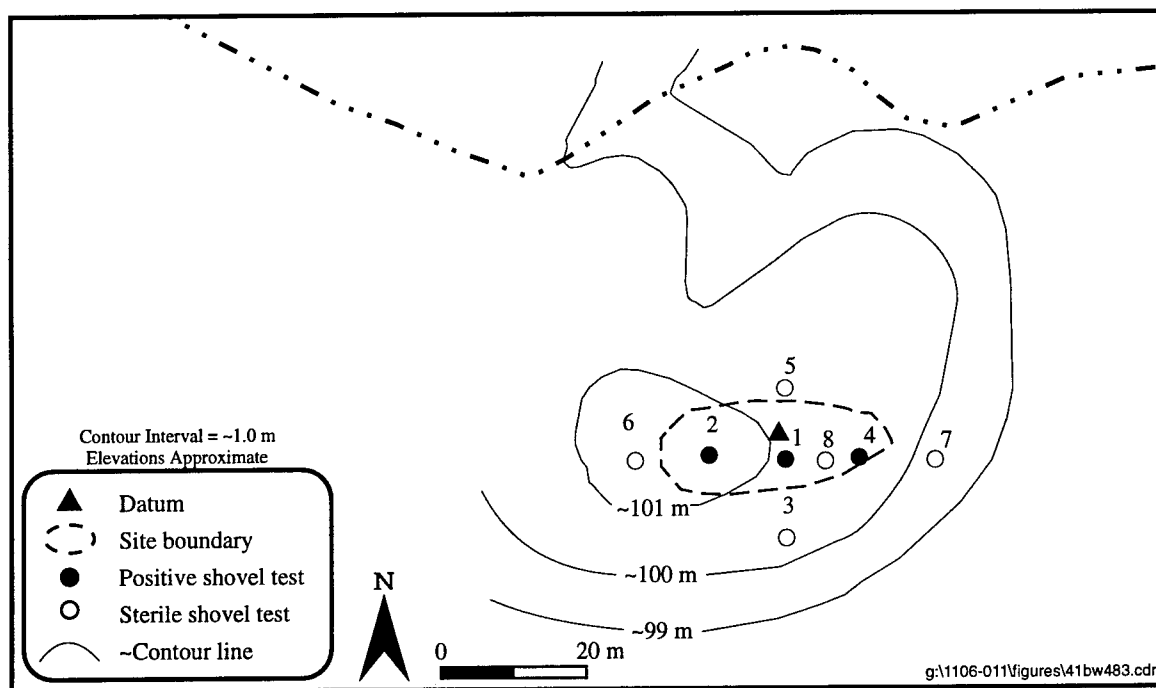


Figure 46. Pace and compass map of site 41BW483.

Table 29
Flake Types and Size Categories for Site 41BW483

Flake Type	Flake Size (mm)						Total
	> 25	25-19	19-12.5	12.5-9.5	9.5-6.3	< 6.3	
Primary Flake	-	-	-	1	-	-	1
Secondary Flake	-	-	-	1	-	1	2
Tertiary Flake	-	-	-	-	-	2	2
Biface Thinning Flake	-	-	-	-	1	-	1
Total	-	-	-	2	1	3	6

In summary, site 41BW483 is a small, low density prehistoric site of an unknown period of occupation. Based on the small size of the site, its low subsurface artifact density, and the limited range of artifacts present, site 41BW483 may be a short-term campsite or a special activity site. Many of the sites recorded by the present survey at the RRAD/LSAAP are essentially similar to site 41BW483. Given the site's good contextual integrity, it is felt that it may have a good research potential. Therefore, it is recommended that site 41BW483 be considered to be of unknown eligibility for inclusion in the NRHP, with test excavations being required to better determine the NRHP status of the site. Until such excavations are undertaken, it is further recommended that the site be protected from any disturbances.

Site 41BW484

Site 41BW484 is a small, moderate density prehistoric site located on a terrace or upland remnant above an unnamed, intermittent tributary of Elliott Creek in Survey Tract 4 (see Figure 38). The site is at an elevation of about 110-111 m (360-365 ft) amsl and covers 950 m² (40-x-30 m). It is mapped as being on Ruston fine sandy loam, 3 to 8 percent slopes, a gently sloping to sloping soil on convex upland terraces. This soil has an A horizon of brown (10YR4/3 to 5/3) fine sandy loam to 13 cm, underlain by yellowish brown (10YR5/4 to 5/8) fine sandy loam to 41 cm. The Bt horizon is a red (2.5YR4/6 to 5/8) sandy clay loam to 203 cm or more (Fox 1980:26). The site is in a mixed pine/hardwood forest consisting predominantly of yellow pine, with some small red oak, white oak, dogwood, sweetgum, holly, and hickory. Limited disturbances from logging and bioturbation were noted at the site.

Nine shovel tests were dug at site 41BW484 with five excavated within the site boundary (Figure 47). The site limits were defined on the basis of four positive shovel tests which contained 17 artifacts (S.T. 1=2; S.T. 2=4; S.T. 6=4; and S.T. 7=7), for an average of 3.4 artifacts per onsite shovel test (including a sterile fifth onsite test). S.T.s 2 and 7, closest to the drainage, yielded the deepest cultural deposits with material down to 60 cm; while S.T. 7 also yielded the most material (41.2 percent). The sediment profiles revealed by the shovel testing consisted of a grayish brown (10YR5/2) to pale brown (10YR6/3) sandy loam A horizon, approximately 20 cm thick, underlain by a light yellowish brown (10YR6/4) to very pale brown (10YR7/3 to 10YR8/4) silt E horizon, from 20 to 80 cm deep. The Bt horizon was not reached in any shovel test.

As noted above, 17 prehistoric artifacts were recovered from site 41BW484 (see Appendix C). These included an arrow point fragment, 13 unmodified flakes, and three burned rock fragments. The projectile point fragment was found in S.T. 6, Level 1. It is made of chert and consists of the distal and medial portions of the blade (Figure 48). Although fragmentary, it has been tentatively identified as a Homan or Colbert point on the basis of its recurved blade edges with minute serrations and prominent barb. The fragment measures 22 mm long, 11 mm wide, and 3 mm thick, and weighs .6 g. Turner and Hester (1985:170, 180) date Colbert points to between A.D. 950 and 1585, and Homan points to between A.D. 1000 and 1300. A similar artifact identified as a Colbert point was recovered from a single component site in Bossier Parish, Louisiana, associated with an AMS date of cal A.D. 789-1047 (Cliff and Peter, eds. 1994b:79).

As with most of the other lithic samples from this phase of survey at the RRAD/LSAAP, the flakes from site 41BW484 include all types (Table 30), with primary and secondary decortification slightly in the majority (n=7; 53.8 percent). The largest flake present (12.5-19 mm) is the single bifacial thinning flake, which is made of White Novaculite, which at the present time is believed not to occur in the Bowie Gravels and which is thought to have originated in Arkansas. Raw material types present for the lithic sample as a whole include chert, quartzite, novaculite, Ogallala Quartzite, and White Novaculite (Table 31). Chert is the most common material for chipped stone use, by both frequency and weight, while quartzite was the most common for burned rock use, making it the most common material overall by weight. The use of both quartzite and chert for burned rock suggests their presence on or close to the site.

In summary, site 41BW484 is a small, moderate density prehistoric site, dating either to the latter part of the Early Ceramic period or the early part of the Caddoan period. Based on its small size, moderate density of subsurface artifacts, and range of artifactual material present, site 41BW484 may be a periodically reoccupied campsite. Although many essentially similar sites have been recorded on the RRAD/LSAAP, site 41BW484 has good contextual integrity and is thought to have fair research potential. Therefore, it is recommended that site 41BW484 be considered to be of unknown eligibility for inclusion on the NRHP until test excavations can be conducted to better determine its NRHP status. Until that time, it is also recommended that the site be protected from any disturbance.

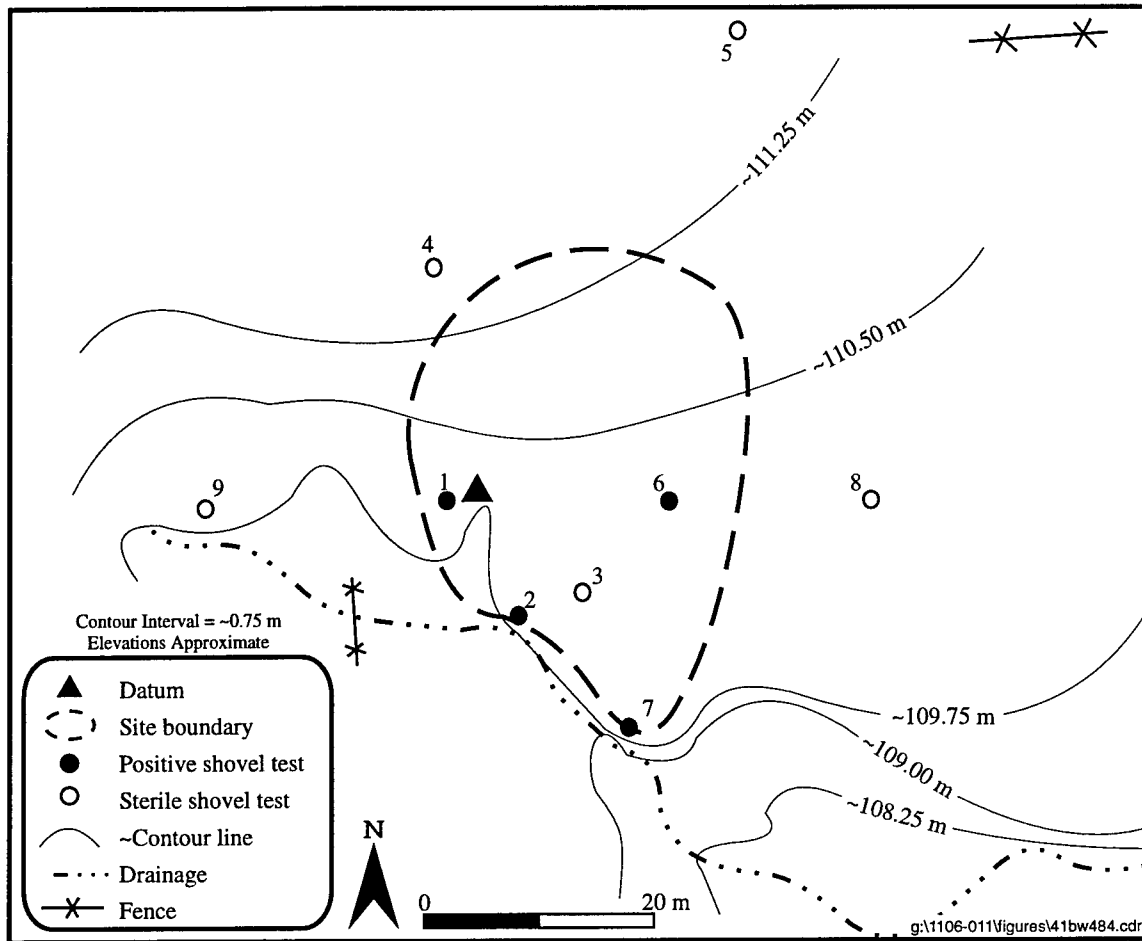


Figure 47. Pace and compass map of site 41BW484.

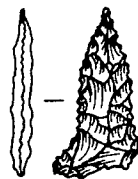


Figure 48. Chert arrow point fragment recovered from site 41BW484, Shovel Test 6, Level 1 (Scale 1:1).

Table 30
Flake Types and Size Categories for Site 41BW484

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	-	-	1	1	-	2
Secondary Flake	-	-	-	1	4	-	5
Tertiary Flake	-	-	-	2	2	1	5
Biface Thinning Flake	-	-	1	-	-	-	1
Total	-	-	1	4	7	1	13

Table 31
Lithic Raw Material Types for Site 41BW484

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	1	.6	8	4.9	2	3.4	8	8.9
Quartzite	-	-	1	.7	1	30.5	2	31.2
Novaculite	-	-	1	.2	-	-	1	.2
Ogallala Quartzite	-	-	2	1.7	-	-	2	1.7
White Novaculite	-	-	1	1.5	-	-	1	1.5
Total	1	.6	13	9.0	3	33.9	17	43.5

Site 41BW485

Site 41BW485 is a medium-sized, low density prehistoric site located on terraces or upland remnants on both sides of an unnamed, intermittent tributary of Elliott Creek in Survey Tract 4 (see Figure 38). The landforms on which the site is located are covered by a number of low natural rises, or prairie mounds, from which cultural material was recovered. The site is at an elevation of about 106 m (350 ft) amsl and covers about 4,500 m² (95-x-60 m). It is mapped as being on Annona loam, 1 to 3 percent slopes, a gently sloping soil on uplands. Annona loam has a typical profile consisting of a very dark grayish brown (10YR4/2) A horizon, 5 cm thick, which is underlain by a brown (10YR4/3 to 5/3) loam, 25 cm thick. The Bt horizon extends to a depth of 203 cm or more and consists of a clay which is mottled red, brown, and gray in the upper part and grayish brown (10YR5/2) in the lower part (Fox 1980:15-16). Vegetation on the site consists of a mixed pine/hardwood forest with yellow pine, red oak, white oak, hickory, sweetgum, dogwood, sassafras, and holly, and an understory of french mulberry, poison ivy, and grapevine. Limited disturbances from bioturbation and logging were noted at the site, but the majority of it appears to be still intact.

Thirteen shovel tests were dug at site 41BW485. Nine of these were located within the site boundary, the limits of which were defined on the basis of the shovel tests and surface topography (Figure 49). Ten

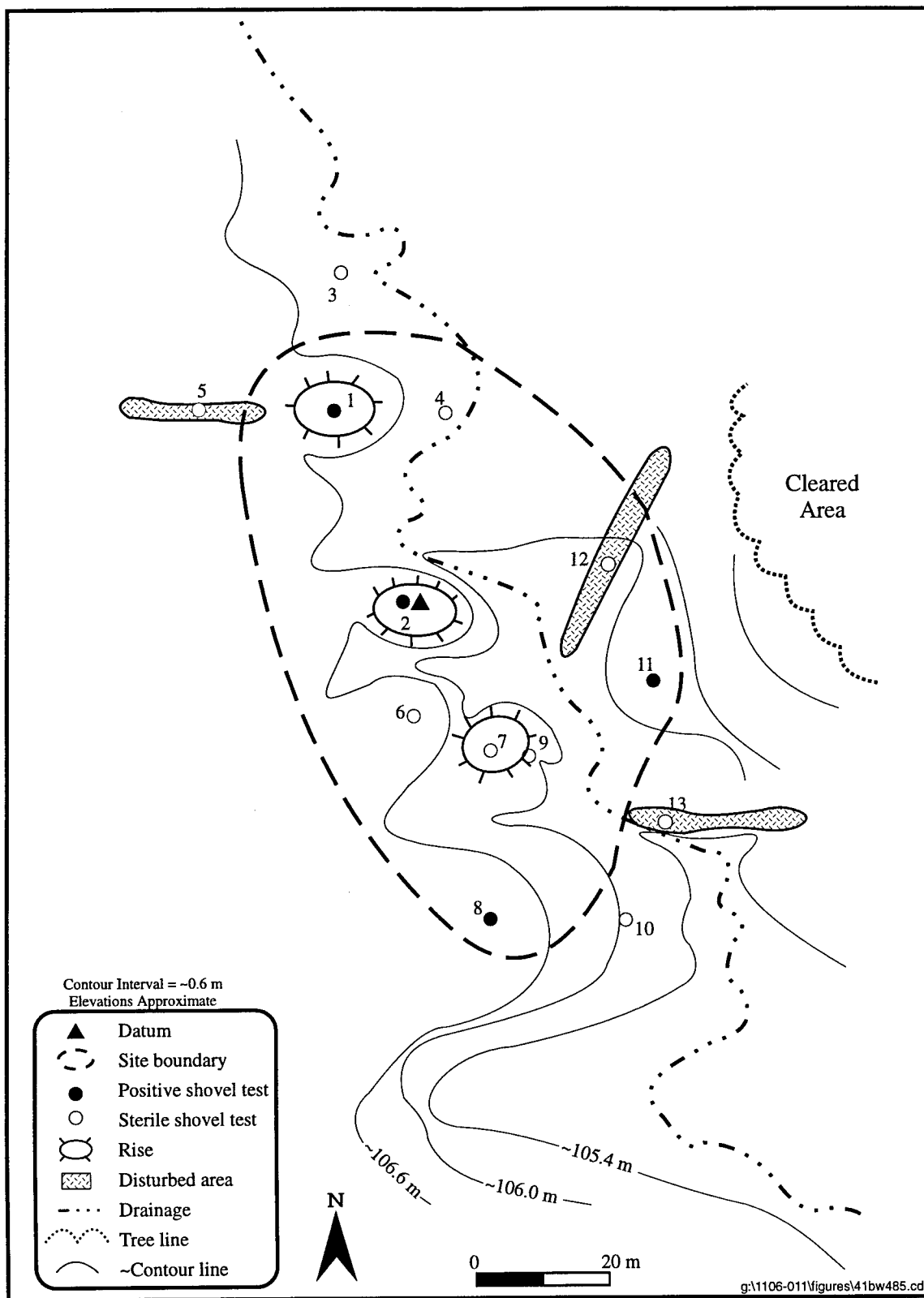


Figure 49. Pace and compass map of site 41BW485.

artifacts were recovered from four of these shovel tests (S.T. 1=3; S.T. 2=4; S.T. 8=2; and S.T. 11=1), for an average of 1.11 artifacts per onsite shovel test (including the five sterile shovel tests within the site limits). All of these remains were recovered within 20 cm of the ground surface. The generalized profile revealed by the shovel tests consisted of a brown (10YR4/3 to 5/3) to pale brown (10YR6/3) sandy loam A horizon, up to 20 cm thick, which was underlain by a very pale brown (10YR7/3 to 10YR8/4) sandy loam E horizon, which also included many gravels. Although units were excavated to a maximum of 60 cm below surface, the Bt horizon was not found in any shovel test. In S.T. 5, west of the site, extensive yellowish red (5YR4/6 to 5/8) clay mottling was noted in the upper 20 cm, possibly the result disturbance from logging in the site area.

As noted above, 10 prehistoric artifacts were recovered from shovel tests at site 41BW485 (see Appendix C). Eight of these are unmodified lithic flakes, while the remaining two are pieces of burned rock. Despite the small sample of flakes recovered, all types are present (Table 32), with primary and secondary decortification flakes being most abundant (n=6, 75 percent). The raw material types present in the sample include chert, quartzite, and novaculite (Table 33). Chert is the most common material for the chipped stone, while quartzite is the only material used for burned rock, and the most common material overall. The use of quartzite for burned rock suggests the presence of this material on or close to the site area.

Table 32
Flake Types and Size Categories for Site 41BW485

Flake Type	Flake Size (mm)						Total
	> 25	25-19	19-12.5	12.5-9.5	9.5-6.3	< 6.3	
Primary Flake	-	-	1	-	-	-	1
Secondary Flake	-	-	-	-	4	1	5
Tertiary Flake	-	-	-	1	-	-	1
Biface Thinning Flake	-	-	-	-	1	-	1
Total	-	-	1	1	5	1	8

Table 33
Lithic Raw Material Types for Site 41BW485

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	7	4.7	-	-	7	4.7
Quartzite	-	-	-	-	2	20.5	2	20.5
Novaculite	-	-	1	.5	-	-	1	.5
Total	-	-	8	5.2	2	20.5	10	25.7

In summary, site 41BW485 is a medium-sized, low density site of an undetermined prehistoric period. Based on the size of the site, the subsurface artifact density, and the limited range of materials recovered, the site may be a short-term campsite or a special activity site. Despite having good contextual integrity, the subsurface artifact density is exceptionally low and is thought to limit the site's research potential. Consequently, it is recommended that site 41BW485 be considered ineligible for inclusion in the NRHP, and that no further work be done there.

Site 41BW492

Site 41BW492 is a medium-sized, moderate density prehistoric site located on a terrace or upland bench south of an unnamed, intermittent tributary of Elliott Creek in Survey Tract 4 (see Figure 38). The site is at an elevation of 105 m (345 ft) amsl and encompasses an estimated 3,900 m² (90-x-55 m). It is mapped as being on Ruston fine sandy loam, 3 to 8 percent slopes, a gently sloping to sloping soil on convex upland terraces. This soil has an A horizon of brown (10YR4/3 to 5/3) fine sandy loam, 13 cm thick, which is underlain by yellowish brown (10YR5/4 to 5/8) fine sandy loam to a depth of 41 cm. The Bt horizon is a red sandy clay loam to 203 cm or more (Fox 1980:26). The site is covered by a mixed pine/hardwood forest of yellow pine, red oak, white oak, hickory, dogwood, sweetgum, sassafras, box elder, and elm, with an understory of french mulberry, bay, muscadine, and poison ivy. Only very limited evidence of disturbance from bioturbation and logging was noted. A seep spring was observed south of the site.

Twelve shovel tests were dug at the site, nine of which contained cultural materials (Figure 50). The site limits were defined on the basis of these positive shovel tests, with no sterile tests noted within the site boundary. Fifty-eight prehistoric artifacts were recovered from these tests (S.T. 1=17; S.T. 2=1; S.T. 4=1; S.T. 6=7; S.T. 7=19; S.T. 8=9; S.T. 9=1; S.T. 10=1; and S.T. 11=2), for an average of 6.44 artifacts per shovel test. The central portion of the site appears to be the densest area of the site, with the deepest deposits. S.T.s 1 and 7 in this area yielded material down to 80 cm b.s.; S.T. 1 contained 29.3 percent of the sample, and S.T. 7 yielded 32.8 percent. S.T.s 2, 4, 6, and 8 yielded material to 40 cm, while the other three tests contained artifacts only within the upper 20 cm of fill. The shovel tests revealed a soil profile consisting of a dark brown (10YR3/3 to 4/3) to pale brown (10YR6/3) loamy sand A horizon, 20 to 40 cm thick, underlain by a very pale brown (10YR7/3 to 10YR8/4) loamy sand E horizon, down to 80 cm below surface. The Bt horizon was reached in only two units (S.T.s 11 and 12), which contained a different soil profile consisting of a dark brown (10YR3/3 to 4/3) to dark grayish brown (10YR4/2) loamy sand A horizon, 20 to 40 cm thick, underlain by a reddish brown (5YR4/3 to 5/4) clay Bt horizon.

As noted above, a relatively large sample of 58 prehistoric artifacts was recovered from site 41BW492 (see Appendix C). This sample consists of one early aborted biface, two tested cobbles, 41 unmodified flakes, one piece of angular shatter, and 13 pieces of burned rock. The biface is chert and measures 41 mm long, 28 mm wide, and 17 mm thick. It weighs 20.7 g. One of the tested cobbles is chert (measuring 39 mm long, 35 mm wide, 13 mm thick, and weighing 20.5 g) while the other is quartzite (measuring 63 mm long, 50 mm wide, 35 mm thick, and weighing 123.3 g). The flake sample is relatively large and includes all flake types (Table 34). Despite the fact that chert was the most frequent material in the lithic sample (n=29), quartzite was the most common material present by weight (182.9 g) for both chipped stone and burned rock (Table 35). Other raw material types present include novaculite, Bowie Chert, Woodford Chert, Ogallala Quartzite, and chalcedony. The use of chert and quartzite for burned rock suggests their presence on, or close to, the site, a conclusion supported by the presence of tested nodules of chert and quartzite. A single tertiary flake of chert shows definite evidence of thermal pretreatment.

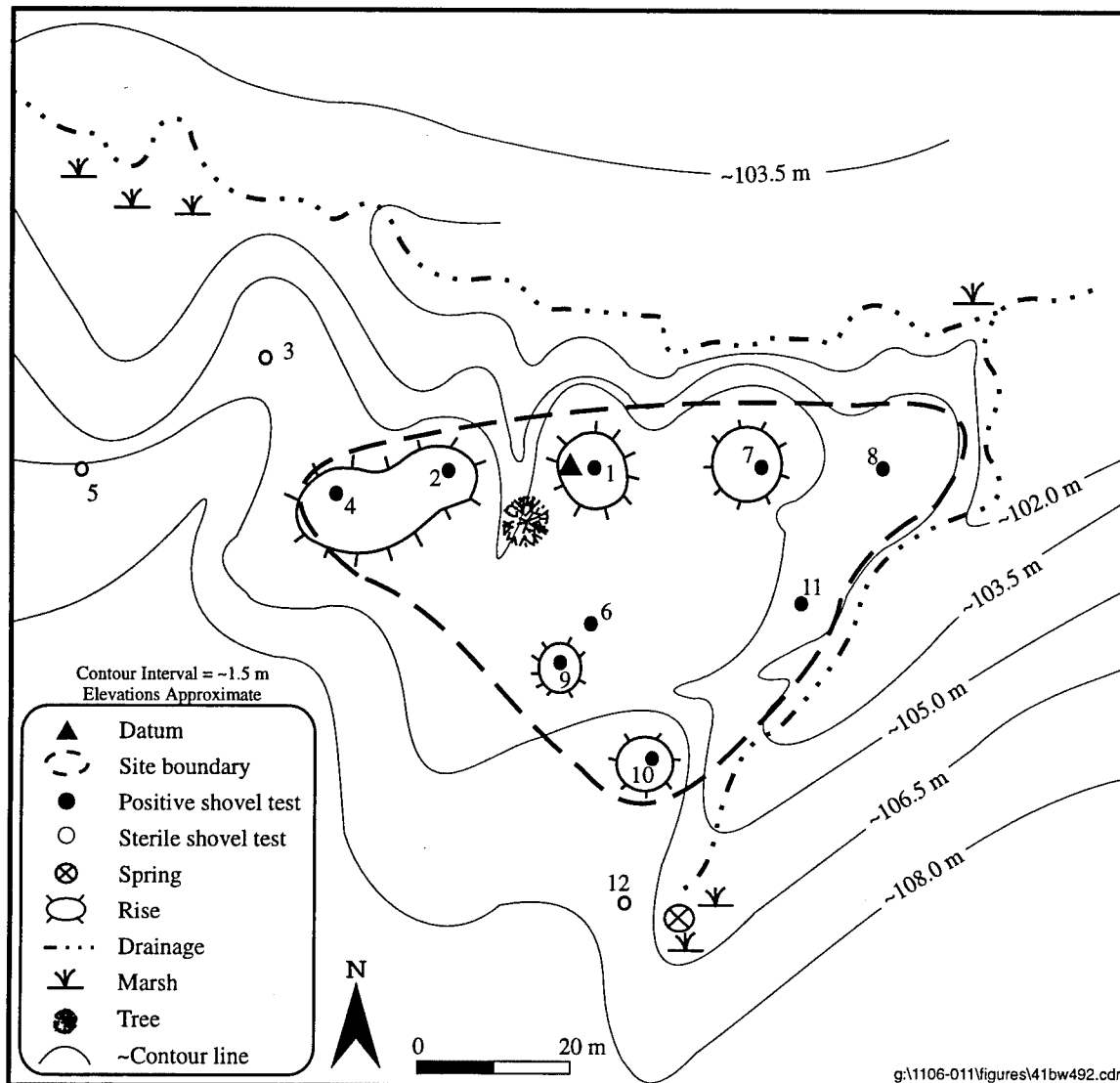


Figure 50. Pace and compass map of site 41BW492.

In summary, site 41BW492 is a medium-sized, moderate density site of an unknown prehistoric period. Based on the size of the site, the average subsurface density of material, and the range of artifacts present, it appears that site 41BW492 may be a periodically reoccupied campsite. This, in combination with the good contextual integrity noted, indicates the site has good research potential. Consequently, it is recommended that site 41BW492 be considered to be of unknown eligibility for inclusion in the NRHP. Test excavation will be required to determine the final NRHP status of the site, and, until that time, it is recommended that the site be protected from any disturbances.

Table 34
Flake Types and Size Categories for Site 41BW492

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	-	1	-	5	-	6
Secondary Flake	-	-	2	6	6	1	15
Tertiary Flake	-	-	-	3	9	6	18
Biface Thinning Flake	-	-	-	2	-	-	2
Total	-	-	3	11	20	7	41

Table 35
Lithic Raw Material Types for Site 41BW492

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	24	55.4	5	18.2	29	73.6
Quartzite	-	-	11	137.4	7	45.5	18	182.9
Novaculite	-	-	1	5.4	-	-	1	5.4
Bowie Chert	-	-	1	.9	-	-	1	.9
Woodford Chert	-	-	1	.7	-	-	1	.7
Ogallala Quartzite	-	-	6	4.0	1	1.5	7	5.5
Chalcedony	-	-	1	.2	-	-	1	.2
Total	-	-	45	204.0	13	65.2	58	269.10

Site 41BW493

Site 41BW493 is a small, low density prehistoric site located on the slope below a large upland knoll, approximately 80 m north of Pit Road 3, in Survey Tract 4 (see Figure 38). The site is at an elevation of about 109 m (358 ft) amsl and covers an estimated area of 450 m² (30-x-20 m). It is mapped as being on McKamie loam, 5 to 12 percent slopes, a sloping to strongly sloping soil found on stream terraces. This map unit has a brown (10YR4/3 to 5/3) loam surface layer, approximately 10 cm thick, which is underlain by the subsoil, a red (2.5YR4/6 to 5/8) clay in the upper part and red sandy clay loam in the lower part, to 137 cm. This is in turn underlain by a yellowish red (5YR4/6 to 5/8) sandy clay loam to 188 cm (Fox 1980:22). The site is covered with a mixed pine/hardwood forest. Some evidence of logging and bioturbation was noted at the site; and its contextual integrity is questionable, as the material may be colluvially redeposited from the top of the highly disturbed upland knoll, 40 m to the southeast (Figure 51).

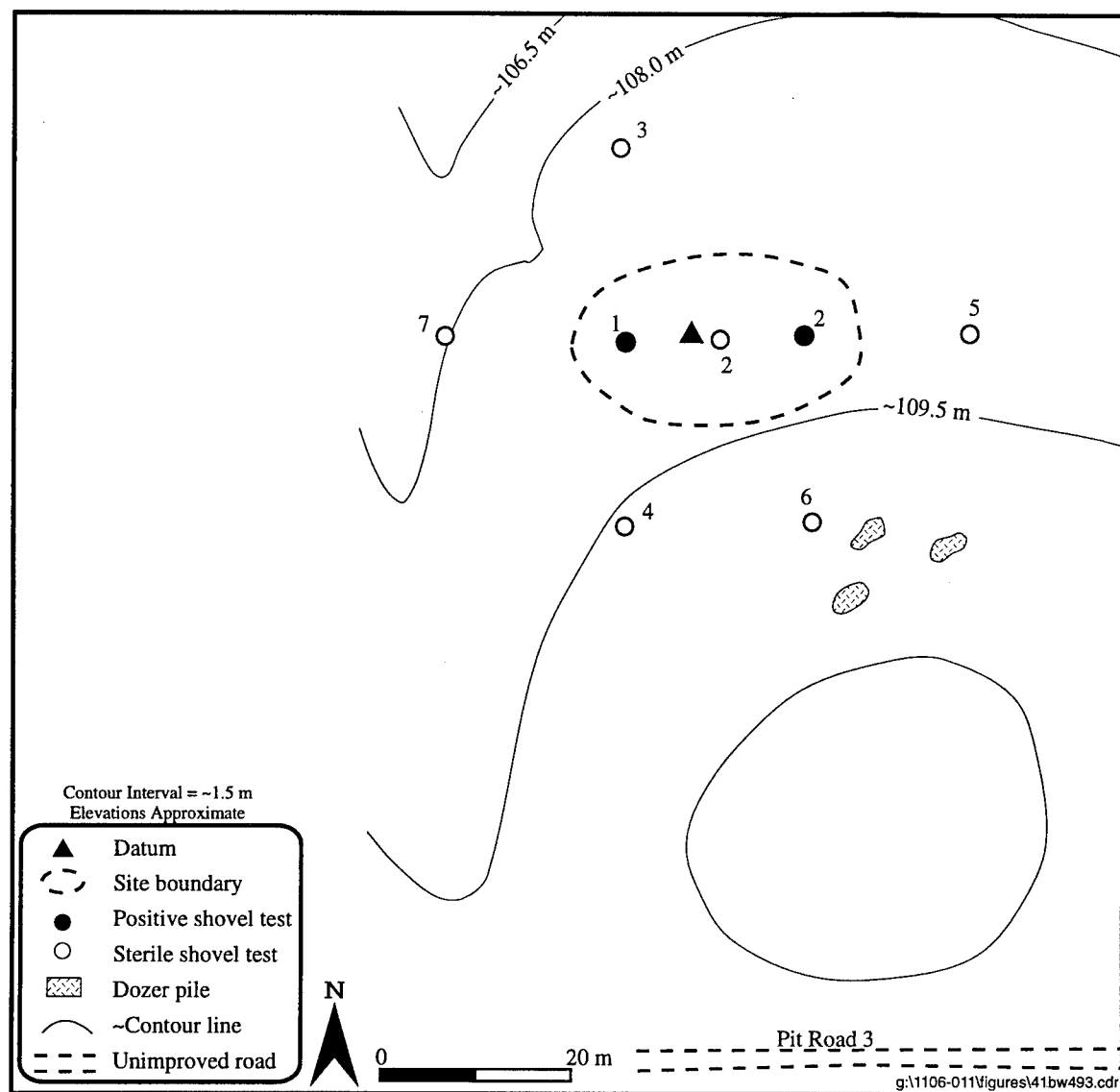


Figure 51. Pace and compass map of site 41BW493.

Eight shovel tests were dug at site 41BW493, only two of which yielded any subsurface cultural remains. The site limits were defined on the basis of these two tests, but included a sterile third test between them. The two positive shovel tests yielded only three flakes (S.T. 1=2 and S.T. 2=1), for an average of 1.0 artifact for each onsite shovel test. All three of these pieces were found within 20 cm of the ground surface. The A horizon revealed in the shovel tests consisted of a dark gray to dark yellowish brown (10YR3/4 to 4/6) silt loam, 12 to 20 cm thick, underlain by a pale brown (10YR6/3) to brownish yellow (10YR6/6 to 6/8) silt loam. The reddish yellow (7.5YR6/6 to 8/6) sandy clay loam Bt horizon was encountered from 30 to 40 cm below surface.

As noted above, only three flakes were collected at site 41BW493 (see Appendix C). One of these is a chert primary flake (19-25 mm across), which appears to have been heat-treated. The remaining two artifacts are both chert tertiary flakes. One measures 6.3 to 9.5 mm in size, while the other was less than 6.3 mm across.

In summary, site 41BW493 is a small, low density prehistoric site of an undetermined date. Based on the limited amount of material collected, nothing can be said regarding the nature of the site's original occupation. Given the site's small size and exceptionally low subsurface density, as well as its questionable contextual integrity, it is felt to have poor research potential. Therefore, it is recommended that site 41BW493 be considered to be ineligible for inclusion in the NRHP and that no further work be required there.

Site 41BW494

Site 41BW494 is a small, low density prehistoric site located on an upland slope south of an unnamed, intermittent tributary of Elliott Creek in Survey Tract 4 (see Figure 38). The site is at an elevation of about 105 m (345 ft) amsl and occupies an estimated area of only 240 m² (30-x-10 m). It is on McKamie loam, 5 to 12 percent slopes, a sloping to strongly sloping soil on stream terraces. This map unit has a brown (10YR4/3 to 5/3) loam surface layer, approximately 10 cm thick, underlain by the subsoil, a red (2.5YR4/6 to 5/8) clay in the upper part and red sandy clay loam in the lower part, to 137 cm. This is in turn underlain by a yellowish red (5YR4/6 to 5/8) sandy clay loam to 188 cm (Fox 1980:22). Onsite vegetation consists of mixed pine and hardwood forest with yellow pine, red oak, white oak, hickory, sweet gum, sassafras, dogwood, box elder, french mulberry, and poison ivy. The site retains a large measure of its contextual integrity, although there appears to have been some impact from bioturbation, logging, and an old two-track road that crosses the eastern portion of the site.

Eight shovel tests were excavated at the site, of which two were reported to contain artifacts (Figure 52). The site limits were defined on the basis of these two positive shovel tests and included no other tests. Three lithic pieces were reportedly recovered from these two tests (S.T. 1=2 and S.T. 2=1), for an average subsurface density of 1.50 artifacts per shovel test. S.T. 1 reportedly yielded a flake down to 40 cm below surface, while S.T. 2 contained material only within 10 cm of ground surface. The generalized soil profile revealed through shovel testing consisted of a yellowish brown (10YR5/4 to 5/8) to light yellowish brown (10YR6/4) loamy sand AE or E horizon, up to 60 cm deep. The Bt horizon was reached in only S.T. 2, which was located on an old logging road.

As noted above, only three artifacts were recovered from site 41BW494. Unfortunately, the material from S.T. 1 (one flake from Level 1 and one flake from Level 2) was subsequently lost, so only the material from S.T. 2 was analyzed (see Appendix C). This consists of a single cobble of Ogallala Quartzite (53.8 g) which showed surface spalling, presumably the result of being heated.

In summary, site 41BW494 is a small, low density prehistoric site of an undetermined date. Based on the small amount of material analyzed, nothing can be said regarding the nature of the site's original occupation. Given the site's small size and its low density of subsurface material, it is felt to have poor research potential. Consequently, it is recommended that site 41BW494 be considered to be ineligible for inclusion in the NRHP and that no further work be required there.

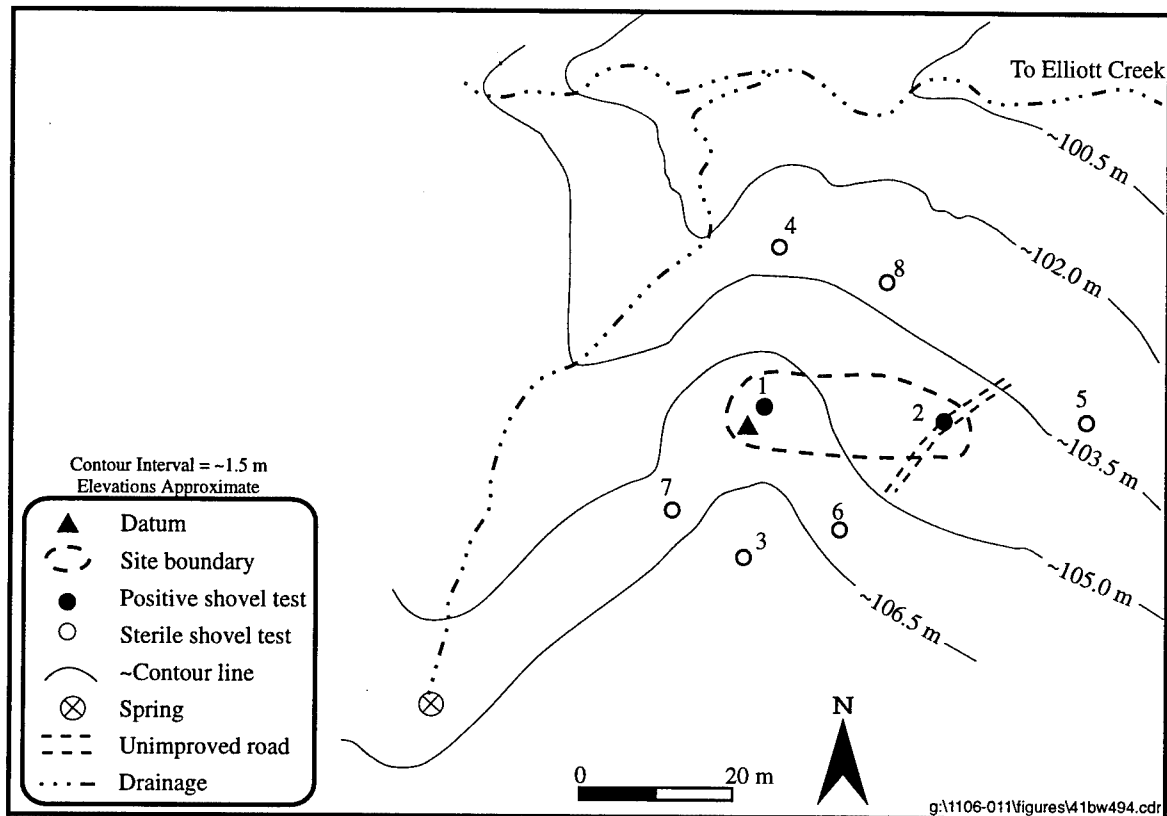


Figure 52. Pace and compass map of site 41BW494.

Site 41BW495

Site 41BW495 is a small, moderate density prehistoric site located on a terrace or upland remnant, 3 to 4 m above the floodplain of Elliott Creek in Survey Tract 4 (see Figure 38). It is about 99 m (325 ft) amsl and covers an estimated area of 1,500 m² (75-x-25 m). The site is mapped as being on Annona loam, 1 to 3 percent slopes, a gently sloping soil found on uplands. Annona loam has a typical profile consisting of a very dark grayish brown (10YR3/1) A horizon, 5 cm thick, which is underlain by a brown (10YR4/3 to 5/3) loam, 25 cm thick. The Bt horizon extends to a depth of 203 cm or more and consists of a clay that is mottled red, brown, and gray in the upper part and grayish brown (10YR5/2) in the lower part (Fox 1980:15-16). Vegetation on the site consists of a mixed pine/hardwood forest containing yellow pine, red oak, white oak, hickory, and sweetgum. Most of the site appears to be intact, although some disturbances from logging and bioturbation were noted.

Eleven shovel tests were excavated while recording site 41BW495, four of which contained artifactual remains and were placed within the site limits (Figure 53). These four units contained a total of 19 artifacts (S.T. 1=8; S.T. 2=3; S.T. 5=3; and S.T. 8=5), for an average of 4.75 artifacts per shovel test. S.T. 1 yielded the most remains (42.1 percent) and appeared to contain the deepest cultural deposits (40 cm deep). None of the other shovel tests contained material any deeper than 20 cm. The soil profile revealed in the onsite shovel tests consisted of a dark brown (10YR3/3 to 4/3) to yellowish brown (10YR5/4 to 5/8) sandy loam A horizon, 15-40 cm thick, which was underlain by a yellowish brown (10YR5/4 to 5/8) to very pale

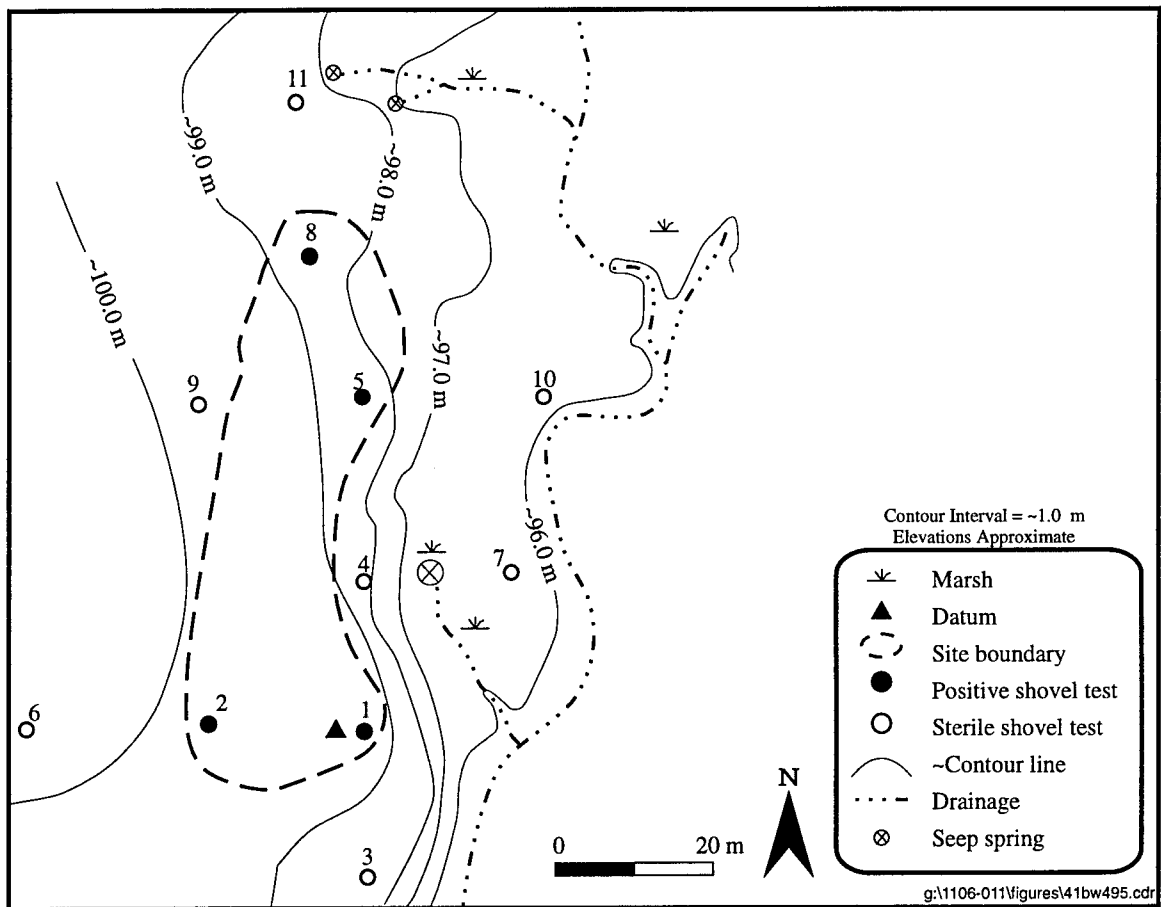


Figure 53. Pace and compass map of site 41BW495.

brown (10YR7/3 to 10YR8/4) loamy sand E horizon, up to 60 cm deep. Many gravels were found across the site. The red (2.5YR4/6 to 5/8) clay Bt horizon was reached only in S.T. 9, at a depth of 20 cm below surface. S.T.s 7 and 10 were dug in the flood plain of Elliott Creek. In S.T. 7, a dark yellowish brown (10YR3/4 to 4/6) silty clay, 20 cm thick, was underlain by a light yellowish brown (10YR6/4) compact sandy loam; while in S.T. 10, homogenous brown (10YR4/3 to 5/3) sandy loam soils were noted to 40 cm.

As noted above, 19 prehistoric artifacts were recovered from the shovel testing at site 41BW495 (see Appendix C). This sample includes one tested cobble and 18 unmodified flakes or flake fragments. The tested cobble is chert; measures 48 mm long, 46 mm wide, and 20 mm thick; and weighs 51.2 g. The sample of flakes includes all types (Table 36). The raw material types present in the sample consisted only of chert, novaculite, and quartzite (Table 37). Chert is overwhelmingly the most abundant material present, based on both frequency and weight, with novaculite second. The presence of a tested chert cobble suggests the presence of this material in the immediate vicinity of the site.

Table 36
Flake Types and Size Categories for Site 41BW495

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	-	-	3	1	1	5
Secondary Flake	-	-	-	2	1	1	4
Tertiary Flake	-	-	-	1	2	4	7
Biface Thinning Flake	-	-	-	-	1	1	2
Total	-	-	-	6	5	7	18

Table 37
Lithic Raw Material Types for Site 41BW495

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	14	58.7	-	-	14	58.7
Quartzite	-	-	2	.4	-	-	2	.4
Novaculite	-	-	3	2.9	-	-	2	2.9
Total	-	-	19	62.0	-	-	19	62.0

In summary, site 41BW495 is a small, moderate density site of an undetermined prehistoric period. Based on the size, estimated subsurface artifact density, and the limited sample present, it may be that site 41BW495 represents a periodically reoccupied campsite. Although many similar sites have been recorded on the RRAD/LSAAP, it is felt that the site's good contextual integrity and moderate subsurface density may give it good research potential. Consequently, it is recommended that site 41BW495 currently be considered to be of unknown eligibility for inclusion in the NRHP. It is further recommended that the site be protected until test excavation can better determine its NRHP status.

Site 41BW496

Site 41BW496 is a medium-sized, high density prehistoric site located on a series of low, natural rises or prairie mounds along a terrace or upland remnant overlooking the confluence of Elliott Creek and an unnamed tributary in Survey Tract 4 (see Figure 38). A seep spring was noted approximately 25 m east of the site datum. The site is at an elevation of 97-100 m (320-330 ft) amsl and covers approximately 4,300 m² (180-x-30 m). It is mapped as being on McKamie loam, 5 to 12 percent slopes, a sloping to strongly sloping soil on stream terraces. This map unit has a brown (10YR4/3 to 5/3) loam surface layer, approximately 10 cm thick, which is underlain by the subsoil, with red (2.5YR4/6 to 5/8) clay in the upper part and red sandy clay loam in the lower part, to 137 cm. This is in turn underlain by a yellowish red (5YR4/6 to 5/8) sandy clay loam to 188 cm (Fox 1980:22). The vegetation covering the site is a mixed pine/hardwood forest. Minimal disturbances from bioturbation and logging were noted.

Thirteen shovel tests were dug at site 41BW496, of which nine were actually within the site boundary, as defined on the basis of the tests and surface topography (Figure 54). A total of 84 artifacts was recovered from these nine shovel tests (S.T. 1=28; S.T. 2=5; S.T. 3=2; S.T. 4=20; S.T. 5=3; S.T. 6=1; S.T. 8=1; S.T. 9=18; and S.T. 12=6), for an average of 9.33 artifacts per onsite shovel test. S.T. 9 yielded artifacts down to 80 cm below surface. S.T.s 1, 2, 4, 5, and 12 all contained material down to 60 cm below surface. S.T. 8 contained an artifact between 20 and 40 cm deep, and the remaining two shovel tests (3 and 6) contained material only in the upper 20 cm of fill. On this basis, there appear to be at least three areas of the site with a high density of material and deep deposits (revealed in S.T.s 1, 4, and 9), suggesting multiple occupations or activity areas. The generalized soil profile revealed by the shovel tests consisted of a brown (10YR4/3 to 5/3) loamy sand A horizon, 20 to 40 cm thick, underlain by a light yellowish brown (10YR6/4) to very pale brown (10YR7/3 to 10YR8/4) sandy loam E horizon. Although units were excavated to a maximum of 80 cm below surface, the Bt horizon was not reached.

The nine shovel tests excavated at site 41BW496 yielded a sample of 84 prehistoric artifacts (see Appendix C). This sample consists of one ceramic sherd and 83 pieces of chipped stone, including one late aborted biface fragment and 82 unmodified flakes. The late aborted biface fragment is chert and consists of what appears to be the distal end of the biface. The extant fragment measures 20 mm long, 27 mm wide, and 5 mm thick, and weighs 2.6 g. The flake sample is quite large and includes all flake types (Table 38). Chert is by far the most abundant raw material type present (Table 39), followed by novaculite and Ogallala Quartzite (by weight). Additional raw material types present include quartzite, Bowie Chert, and chalcedony. One tertiary chert flake appears to be heat-treated.

The single ceramic sherd recovered from the site consists of a body sherd with a single row of tool punctations along one broken edge (Figure 55). The exterior appears well smoothed and has a thin oxidation layer, while the interior is not so well smoothed and is incompletely oxidized. The sherd has a clay-silt paste and is abundantly tempered with medium (.25-.5 mm) pieces of clay (or grog), along with some limestone and hematite fragments. A small amount of very fine (.063-.125 mm) quartzitic sand inclusions are present as well, but not in any great abundance. The sherd is 7 mm thick and weighs 8.3 g. Too little of this sherd is present to allow it to be typed, but it has the overall appearance of having come from a Caddoan utility ware vessel.

In summary, site 41BW496 is a medium-sized, high density prehistoric site, probably dating to sometime in the Caddoan period. The site has a higher density than most other prehistoric sites recorded by the present survey, and the presence of ceramic material is unusual compared to the rest of the prehistoric sample. The spatial organization of the site suggests a pattern of reoccupied campsites; the high artifact density and presence of pottery suggests a habitation site. This, combined with the good contextual integrity observed at the site, seems to give it high research potential. Consequently, it is recommended that the site be considered to be of unknown eligibility for inclusion in the NRHP, pending test excavations designed to determine its NRHP potential. In addition, it is recommended that the site be protected from damage until such excavations can be undertaken.

Site 41BW497

Site 41BW497 is a large, very high density prehistoric site located on a broad terrace or upland remnant on the north side of an unnamed tributary of Elliott Creek in Survey Tract 4 (see Figure 38). It is at an elevation of about 99 m (325 ft) amsl and covers an estimated 13,600 m² (155-x-110 m). The site is mapped as being on McKamie loam, 5 to 12 percent slopes, a sloping to strongly sloping soil on stream terraces. This map unit has a brown (10YR4/3 to 5/3) loam surface layer, approximately 10 cm thick, which is

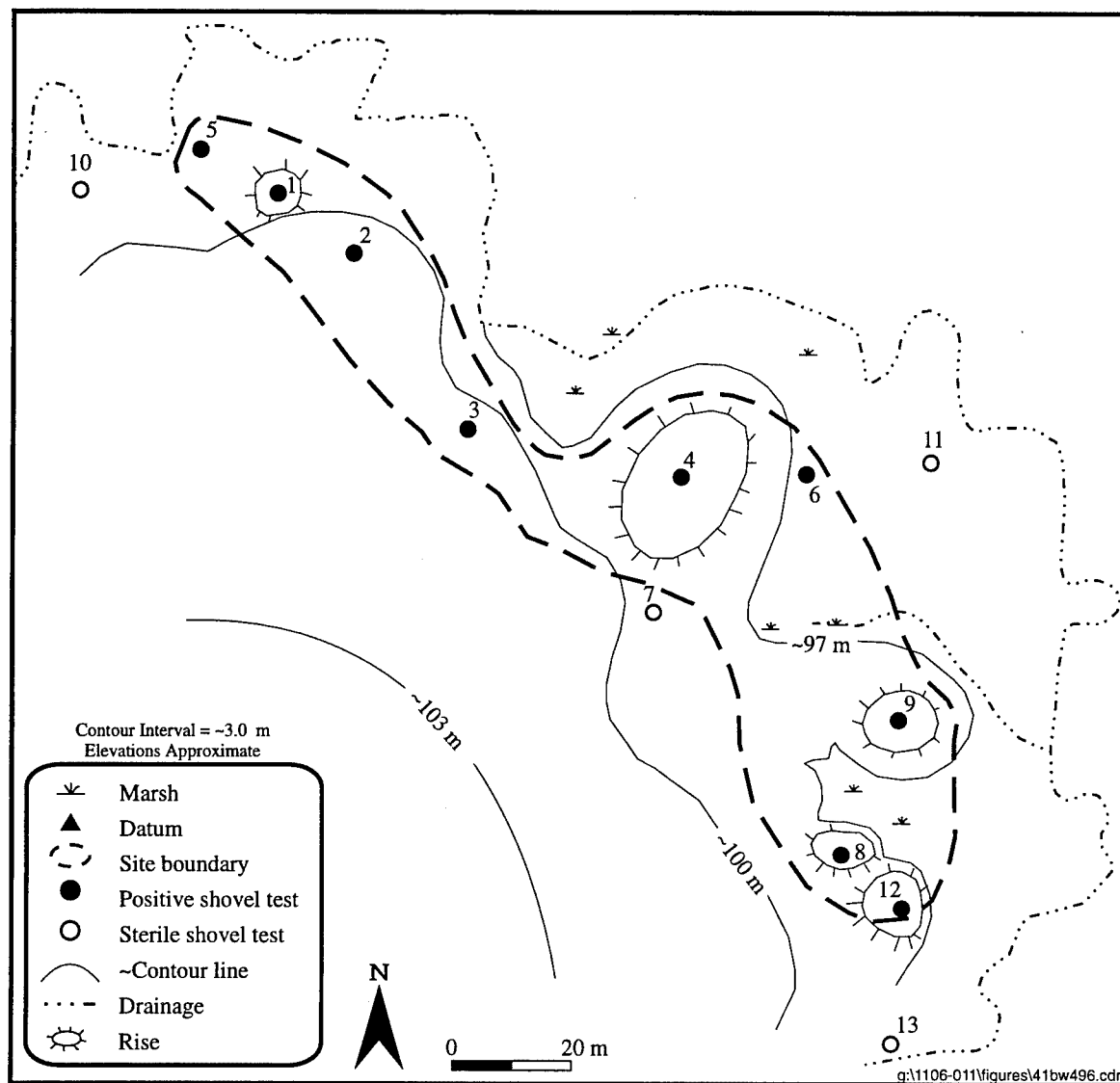


Figure 54. Pace and compass map of site 41BW496.

Table 38
Flake Types and Size Categories for Site 41BW496

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	3	2	6	3	-	14
Secondary Flake	-	1	5	5	6	5	22
Tertiary Flake	-	1	2	6	13	12	34
Biface Thinning Flake	-	-	-	2	9	1	12
Total	-	5	9	19	31	18	82

Table 39
Lithic Raw Material Types for Site 41BW496

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	1	2.6	44	98.3	-	-	45	100.8
Quartzite	-	-	12	5.9	-	-	12	5.9
Novaculite	-	-	11	9.6	-	-	11	9.6
Bowie Chert	-	-	2	2.2	-	-	2	2.2
Ogallala Quartzite	-	-	11	8.6	-	-	11	8.6
Chalcedony	-	-	2	.3	-	-	2	.3
Total	1	2.6	82	124.9	-	-	83	127.5

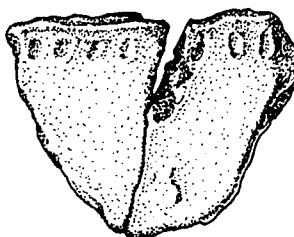


Figure 55. Body sherd recovered from site 41BW496, Shovel Test 1, Level 3 (Scale 1:1).

underlain by the subsoil, with red (2.5YR4/6 to 5/8) clay in the upper part and red sandy clay loam in the lower part, to 137 cm. This is in turn underlain by a yellowish red (5YR4/6 to 5/8) sandy clay loam to 188 cm (Fox 1980:22). The site is covered with a mixed pine/hardwood forest containing yellow pine, red oak, white oak, sweetgum, and hickory, with a dense understory of french mulberry, poison ivy, and grapevine. The site appears to have good contextual integrity, with only minimal impacts from logging and bioturbation and with the major disturbance noted being the construction of Pit Road 2.

Fifteen shovel tests were excavated in the vicinity of site 41BW497, 11 of which were positive and were used to define the site boundary (Figure 56). One-hundred-and-ninety-nine (199) artifacts were recovered (S.T. 1=23; S.T. 2=7; S.T. 3=2; S.T. 4=7; S.T. 6=19; S.T. 7=8; S.T. 8=20; S.T. 10=109; S.T. 11=1; S.T. 12=1; and S.T. 13=2), for an average of 18.09 artifacts per shovel test. The densest and deepest portion of the site appears to be located on a slight rise in the southeastern area of the site, where S.T. 10 yielded 109 pieces of chipped stone in 80 cm of deposit. Other tests with a high density of material included S.T. 1 (23 artifacts in 20 cm), S.T. 6 (19 artifacts in 40 cm), and S.T. 8 (20 artifacts in 40 cm). These four units accounted for 85.9 percent of the artifacts from the site, with S.T. 10 alone containing 53.8 percent of the material. The site has an AE or E horizon of pale brown (10YR6/3) to light yellowish brown (10YR6/4) sandy loam, except on the S.T. 10 rise, which had a dark yellowish brown (10YR3/4 to 4/6) A horizon and a light yellowish brown (10YR6/4) to pale brown (10YR6/3) E horizon. The sandy clay loam Bt horizon was reached in two units (S.T.s 5 and 15) at 40 to 50 cm below surface.

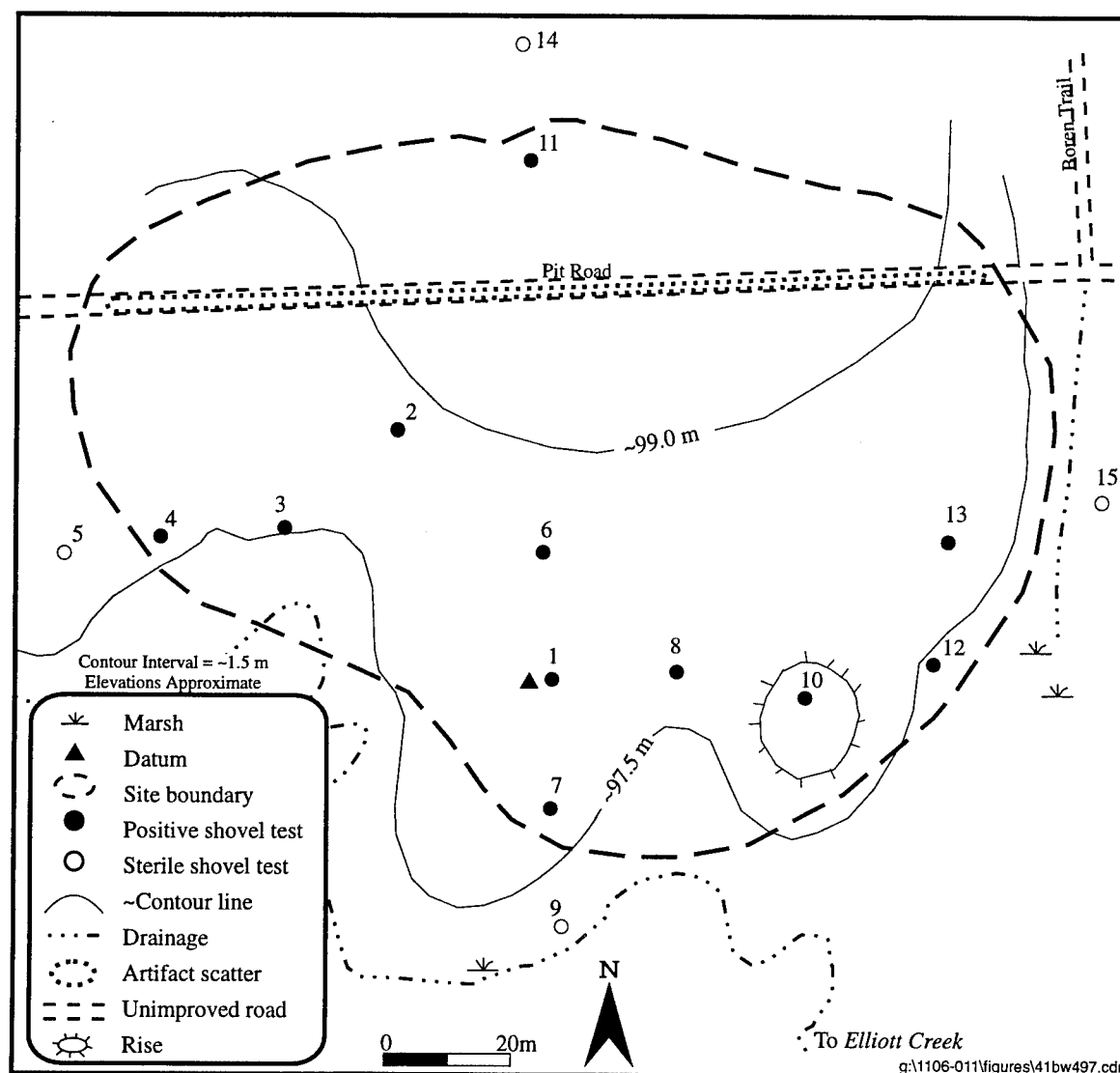


Figure 56. Pace and compass map of site 41BW497.

As noted above, a large sample of 199 prehistoric artifacts was recovered from the shovel tests at site 41BW497 (see Appendix C). This collection consists of one arrow point fragment, two fragments of burned rock, and 196 unmodified flakes. The arrow point fragment is from S.T. 10, Level 2, and consists of the distal and medial portion of the point (Figure 57). It is made of Ogallala Quartzite; measures 20 mm long, 20 mm wide, and 3 mm thick; and weighs .9 g. The blade is triangular, with deeply concave edges and with wide, squared barbs. Despite the fact that the base is gone, the point can be typed as a Catahoula. Bell (1960:16) dates Catahoula points between A.D. 1200 and 1600, although Turner and Hester (1985:168) place them earlier, around A.D. 700-1100. A virtually identical blade fragment was recovered from a single component site in Bossier Parish, Louisiana, associated with an AMS date of cal A.D. 789-1047 (Cliff and Peter, eds. 1994b:Figure 17).



Figure 57. Arrow point fragment recovered from site 41BW497, Shovel Test 10, Level 2 (Scale 1:1).

The remainder of the chipped stone sample from site 41BW497 consists of unmodified flakes, with primary and secondary decortification flakes being slightly in the majority (Table 40). As expected, the increased sample of lithic material results in an increase in the types of raw materials present (Table 41). Ogallala Quartzite is the most abundant type used for chipped stone tools, followed by chert, quartzite, and novaculite. In contrast, quartzite and sandstone appear in equal frequency for burned rock, although the greater size of the quartzite piece gives this type greater weight. In addition to sandstone for burned rock, siltstone and petrified wood also appear in the chipped stone sample, although they are not common elsewhere.

Table 40
Flake Types and Size Categories for Site 41BW497

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	2	3	8	14	2	29
Secondary Flake	1	3	6	18	31	11	70
Tertiary Flake	-	1	11	25	16	-	53
Biface Thinning Flake	-	-	5	10	17	12	44
Total	1	6	25	61	78	25	196

Table 41
Lithic Raw Material Types for Site 41BW497

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	85	45.7	-	-	85	45.7
Quartzite	-	-	25	41.6	1	63.8	25	105.4
Petrified Wood	-	-	1	1.2	-	-	1	1.2
Siltstone	-	-	1	.9	-	-	1	.9
Sandstone	-	-	-	-	1	6.2	1	6.2
Novaculite	-	-	22	39.7	-	-	22	39.7
Bowie Chert	-	-	7	6.5	-	-	7	6.5
Ogallala Quartzite	1	.9	55	69.2	-	-	56	70.1
Total	1	.9	196	204.8	2	70.0	199	275.7

In summary, site 41BW397 is a large, very high density prehistoric site, probably dating to the latter part of the Early Ceramic or the early part of the Caddoan period. Based on the size of the site, the density of subsurface artifacts, and the materials collected, site 41BW397 may be an intensively utilized, or frequently reoccupied, campsite at which lithic raw material collection and initial reduction was an important activity. Contextual integrity appears to be good and, coupled with the high density of material present, it is felt the site has good research potential. Consequently, it is recommended that site 41BW397 be considered to be of unknown eligibility for inclusion in the NRHP until test excavations designed to determine its NRHP status can be conducted. In addition, it is also recommended that the site be protected from further disturbance, until such time as testing can be undertaken.

Site 41BW498

Site 41BW498 is a medium-sized, low density prehistoric site located on a terrace or upland remnant above an unnamed tributary of Aiken Creek in Survey Tract 5 (see Figure 38). The site is at an elevation of about 97.5 m (320 ft) amsl and covers an estimated 2,500 m² (90-x-35 m). It is mapped as being on Thenas fine sandy loam, frequently flooded, a nearly level soil on flood plains. Thenas soil typically consists of a dark brown (10YR3/3 to 4/3) fine sandy loam surface layer, approximately 25 cm thick, which is underlain to a depth of 140 cm by the subsoil. The upper 86 cm of the subsoil horizon is a fine sandy loam, dark brown (10YR3/3 to 4/3) in the upper part and dark yellowish brown (10YR3/4 to 4/6) in the lower part. Below 86 cm, it consists of a yellowish brown (10YR5/4 to 5/8) loamy fine sand. Underlying this stratum is a light yellowish brown (10YR6/4) loamy fine sand, stratified with loamy and sandy layers (Fox 1980:32). Vegetation on the site is a mixed pine/hardwood forest of elm, red oak, pin oak, french mulberry, sumac, wild cherry, hickory, yellow pine, sweetgum, honeysuckle, and juniper. Contextual integrity was very good with no signs of disturbance noted.

Eight shovel tests were dug in the vicinity of site 41BW498, with three yielding cultural remains (Figure 58). The site limits were defined on the basis of these three units, with the creek marking the southern boundary. Five flakes were collected from these shovel tests, as well as one apparently unmodified cobble (S.T. 1=1; S.T. 2=3; and S.T. 3=2), for an average of 2.0 artifacts for each onsite shovel test. S.T. 2 yielded the most material, as well as the deepest (40 cm). The other two tests contained no material deeper than 20 cm below ground surface. The generalized soil profile revealed through shovel testing consisted of a yellowish brown (10YR5/4 to 5/8) to light yellowish brown (10YR6/4) loamy sand combined AE or E horizon, 40 to 60 cm thick. A Bt horizon was not reported from any unit.

As noted above, six artifacts were collected from site 41BW498, consisting of five unmodified flakes and one unmodified hematite cobble (see Appendix C). The flake sample consisted of three secondary flakes (one measuring 12.5-19 mm, one 9.5-12.5 mm, and one 6.3-9.5 mm) and two bifacial thinning flakes (both measuring 12.5-19 mm). Raw material types present in this sample included chert (n=2; 7.2 g), quartzite (n=1; 4.2 g), and Ogallala Quartzite (n=2; 2.6 g). Superficially, there is little to set this sample apart from the majority of the others recovered during this phase of survey, despite the location of the site in a different survey area along a different drainage.

In summary, site 41BW498 is a medium-sized, low density site of an unknown prehistoric period. Based on the limited amount of material collected, nothing definite can be said regarding the nature of the site's original occupation, although there is nothing to set it apart from sites with larger samples elsewhere in the RRAD/LSAAP that have been suggested to be short-term or periodically reoccupied campsites. Based on its good contextual integrity, the site may have a good research potential. Therefore, it is recommended that site 41BW498 be considered to be of unknown eligibility for inclusion in the NRHP, with test excavations being required to better determine the NRHP status of the site. Until such excavations are undertaken, it is further recommended that the site be protected from any disturbances.

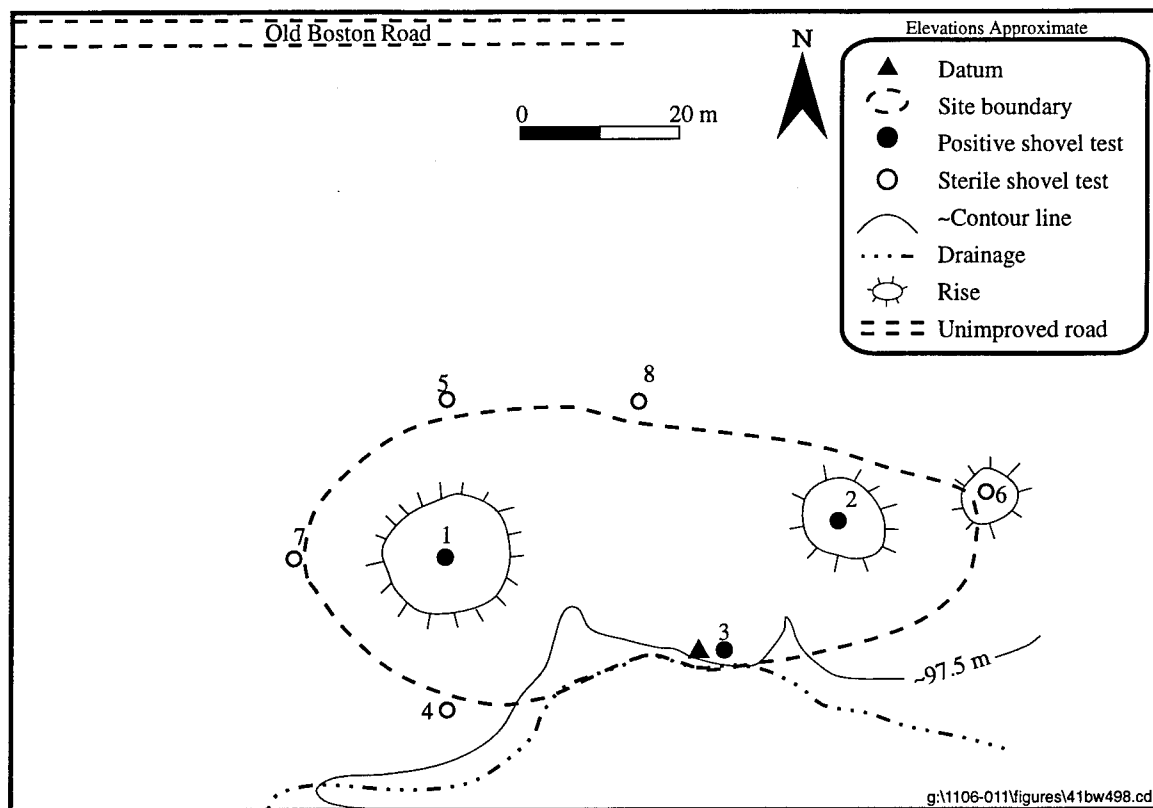


Figure 58. Pace and compass map of site 41BW498.

Site 41BW499

Site 41BW499 is a small, low density prehistoric site located on a terrace or upland remnant immediately north of a small unnamed tributary of Aiken Creek in Survey Tract 5 (see Figure 38). The site is at an elevation of about 96 m (315 ft) amsl and covers an estimated 700 m² (35-x-25 m). It is mapped as being on Thenas fine sandy loam, frequently flooded, a nearly level soil on flood plains. Thenas soil typically consists of a dark brown (10YR3/3 to 4/3) fine sandy loam surface layer, approximately 25 cm thick, which is underlain to a depth of 140 cm by the subsoil. The upper 86 cm of the subsoil horizon is a fine sandy loam, dark brown (10YR3/3 to 4/3) in the upper part and dark yellowish brown (10YR3/4 to 4/6) in the lower part. Below 86 cm, it consists of a yellowish brown (10YR5/4 to 5/8) loamy fine sand. Underlying this stratum is a light yellowish brown (10YR6/4) loamy fine sand stratified with loamy and sandy layers (Fox 1980:32). Onsite vegetation includes dogwood, yellow pine, red oak, white oak, hickory, sassafras, elm, maple, sweetgum, french mulberry, grapevine, box elder, and poison ivy. Very limited bioturbation was noted at the site.

Nine shovel tests were excavated at the site, but only two were found to contain any cultural materials (Figure 59). The site limits were defined on the basis of these two positive tests, and they were the only ones within the site boundary. A total of five prehistoric artifacts were collected from these shovel tests (S.T. 1=3 and S.T. 2=2), for an average of 2.5 artifacts per onsite shovel test. S.T. 1 yielded material down to 60 cm below surface, while S.T. 2 contained nothing below 20 cm. The generalized soil profile was a dark

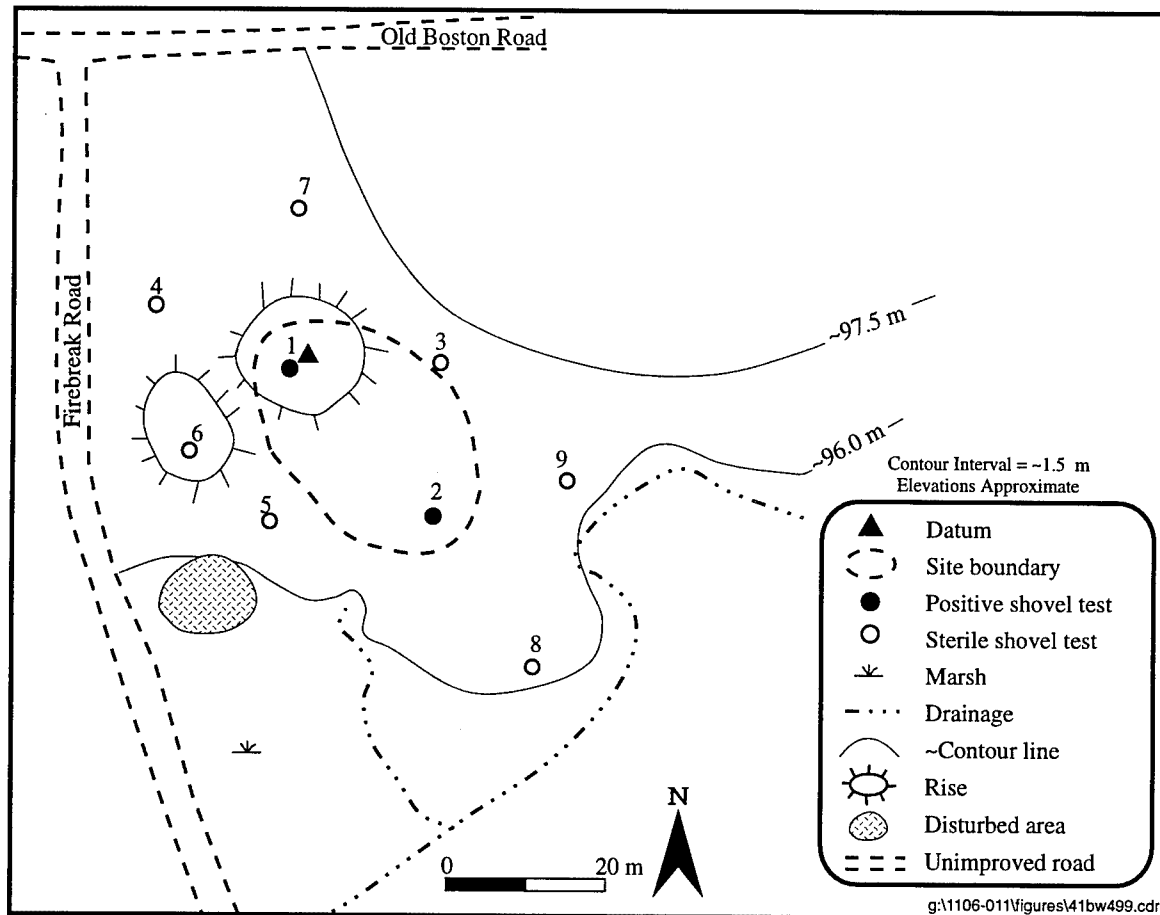


Figure 59. Pace and compass map of site 41BW499.

yellowish brown (10YR3/4 to 4/6) to yellowish brown (10YR5/4 to 5/8) sandy loam A horizon, 20 to 40 cm thick, which was underlain by a brownish yellow (10YR6/6 to 6/8) silt loam E or EB horizon. A strong brown (7.5YR4/6 to 5/8) sandy clay loam Bt horizon was found in a few units from 25 to 60 cm below surface.

The five prehistoric artifacts collected from site 41BW499 include four unmodified flakes and one piece of burned rock (see Appendix C). The unmodified flakes include two primary (one measuring 9.5-12.5 mm, the other 6.3-9.5 mm) and two secondary flakes (one measuring 9.5-12.5 mm, the other 6.3-9.5 mm). The raw material types present include chert (n=1; 1.0 g), quartzite (n=2; .5 g), and Woodford Chert (n=1; 3.4 g). The piece of burned rock is quartzite and weighs 82.3 g.

In summary, site 41BW499 is a small, low density site of an unknown prehistoric period. Based on the limited amount of material collected, nothing definite can be said regarding the nature of the site's original occupation. Given the small sample recovered, there is nothing to set site 41BW499 apart from sites with larger samples elsewhere in the RRAD/LSAAP that have been suggested to be short-term campsites or special activity sites. Based on its apparent good contextual integrity, the site may have good research potential. Therefore, it is recommended that site 41BW499 be considered to be of unknown eligibility for

inclusion in the NRHP, with test excavations being required to better determine the NRHP status of the site. Until such excavations are undertaken, it is further recommended that the site be protected from any disturbances.

Site 41BW500

Site 41BW500 is a medium-sized, moderate density prehistoric site located immediately north of an unnamed, intermittent tributary of Aiken Creek in Survey Tract 5 (see Figure 38). The site is at an elevation of about 96 m (315 ft) amsl and covers an estimated 3,000 m² (75-x-50 m). It is mapped as being on Thenas fine sandy loam, frequently flooded, a nearly level soil on flood plains. Thenas soil typically consists of a dark brown (10YR3/3 to 4/3) fine sandy loam surface layer, approximately 25 cm thick, which is underlain to a depth of 140 cm by the subsoil. The upper 86 cm of this subsoil is a fine sandy loam, dark brown (10YR3/3 to 4/3) in the upper part and dark yellowish brown (10YR3/4 to 4/6) in the lower part. Below 86 cm, it consists of a yellowish brown (10YR5/4 to 5/8) loamy fine sand. Underlying this stratum is a light yellowish brown (10YR6/4) loamy fine sand, stratified with loamy and sandy layers (Fox 1980:32). The vegetation covering the site is mixed pine/hardwood forest. The site is still virtually intact, although minimal disturbances were noted from bioturbation and logging.

Nine shovel tests were excavated at the site, with five found to contain cultural remains (Figure 60). The site limits were defined largely on the basis of these five sites, with the southwestern boundary coinciding with the small drainage. Thirty-four artifacts were recovered from these five shovel tests (S.T. 1=5; S.T. 2=10; S.T. 3=1; S.T. 4=17; and S.T. 5=1), for an average of 6.8 artifacts per shovel test. Half of this material was recovered from S.T. 4, which contained artifacts to a depth of 60 cm. A lesser amount of material was present in S.T. 2, although artifacts were found to 80 cm in this unit. S.T. 5 also yielded material down to 40 cm below ground surface, while neither of the other two tests contained anything deeper than 20 cm. Soil profiles present in the shovel tests consisted of a dark brown (10YR3/3 to 4/3) to yellowish brown (10YR5/4 to 5/8) sandy loam A horizon, extending to 40 cm below surface, underlain by a yellow sandy loam. Although the positive shovel tests were dug to 60-80 cm below surface, the Bt horizon was never reached.

It was noted above that 34 artifacts were recovered from the shovel tests at site 41BW500. Unfortunately, the flake from S.T. 5, Level 1, was lost in the field, leaving an analyzed sample of 33 artifacts (see Appendix C). This collection consists of one dart point fragment, 31 unmodified flakes, and one piece of angular shatter. The dart point fragment was found in S.T. 1, Level 2. It appears to consist of the base or proximal end of a Gary point, based on the contracting and rounded stem. The point may not have been entirely completed when it was broken, because the sides of the stem are still sinuous and lack fine retouch. The extant fragment is of white chalcedony; measures 19 mm long, 20 mm wide, and 7 mm thick; and weighs 2.4 g.

The sample of unmodified flakes recovered from site 41BW500 includes all four flake types (Table 42), with primary and secondary decortification flakes being in the majority. The raw material types present include chert, quartzite, novaculite, Ogallala Quartzite, and chalcedony (Table 43). Quartzite is the most abundant material present by weight, although not by frequency, followed by chert and novaculite.

In summary, site 41BW500 is a medium-sized, moderate density prehistoric site, possibly dating to the early part of the Early Ceramic period. Based on the site's size, density of subsurface material, and limited artifact sample, this site may represent a periodically reoccupied campsite. In light of its good contextual integrity, its moderate artifact density, and its location along the easternmost drainage in the RRAD/LSAAP, site

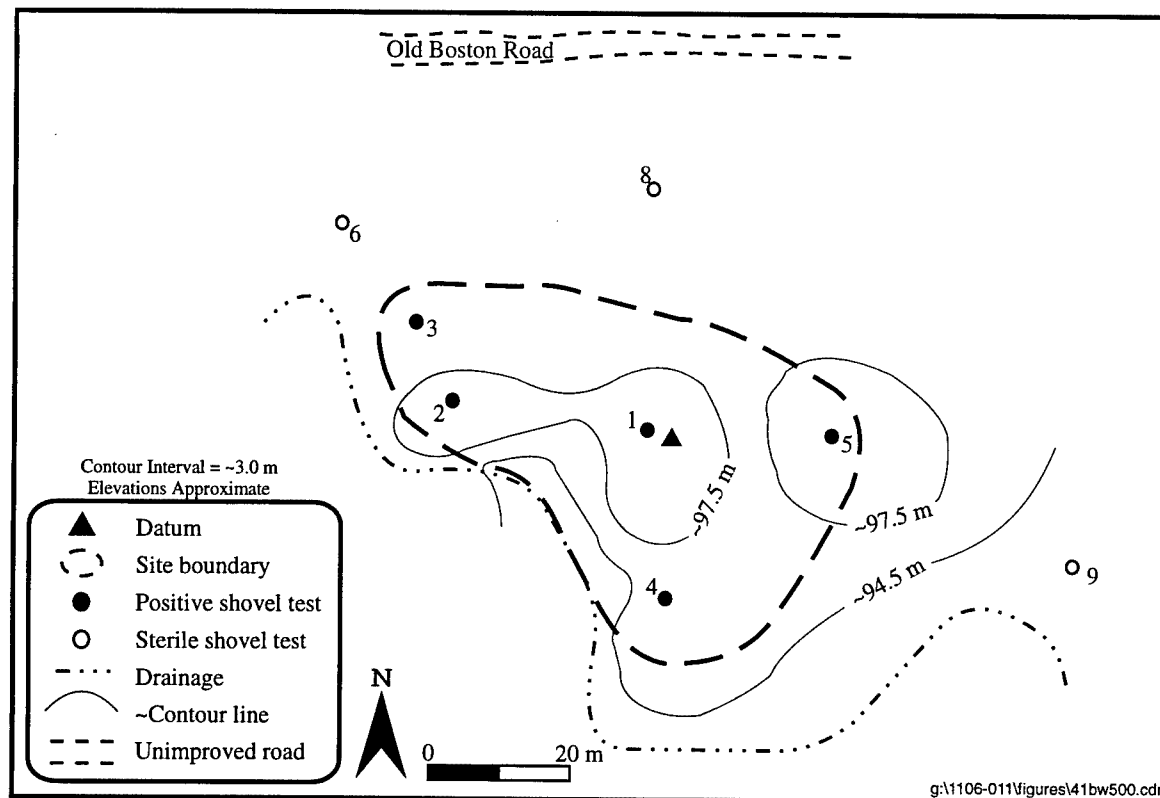


Figure 60. Pace and compass map of site 41BW500.

Table 42
Flake Types and Size Categories for Site 41BW500

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	-	4	2	1	-	7
Secondary Flake	-	2	2	5	4	-	13
Tertiary Flake	-	-	-	-	4	1	5
Biface Thinning Flake	-	-	1	2	3	-	6
Total	-	2	7	9	12	1	31

41BW500 is felt to have good research potential. Consequently, it is recommended that the site be considered to be of unknown eligibility for inclusion in the NRHP pending test excavations to determine its NRHP status. It is further recommended that the site be protected from disturbance, until such a testing program can be undertaken.

Table 43
Lithic Raw Material Types for Site 41BW500

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	16	19.7	-	-	16	19.7
Quartzite	-	-	10	75.4	-	-	10	75.4
Novaculite	-	-	4	7.7	-	-	4	7.7
Ogallala Quartzite	-	-	2	1.1	-	-	2	1.1
Chalcedony	1	2.4	-	-	-	-	1	2.4
Total	1	2.4	32	103.9	-	-	33	106.3

Site 41BW530

Site 41BW530 is a small, very high density prehistoric site located on a sandy knoll adjacent to an unnamed, intermittent tributary of Elliott Creek in Survey Tract 4 (see Figure 38). The site is at an elevation of about 96.5 m (317 ft) amsl and covers an estimated area of 1,300 m² (30-x-50 m). It is mapped as being on Sawyer silt loam, 0 to 3 percent slopes, a nearly level to gently sloping soil on uplands. The Sawyer map unit has a typical profile of a dark grayish brown silt loam A horizon, 15 cm thick, directly underlain by the Bt horizon, which extends to 203 cm or more and consists of a yellowish brown (10YR5/4 to 5/8) silty clay loam in the upper 23 cm, yellowish brown (10YR5/4 to 5/8) clay loam with grayish and reddish mottles in the next 28 cm, and mottled gray, red, and strong brown clay in the lower part (Fox 1980:28-29). The site is covered with a mixed pine/hardwood forest consisting of moderately dense pine, walnut, hickory, white oak, and cedar, with an understory of sweetgum, mulberry, greenbriar, and dogwood. The majority of the site retains good contextual integrity, although limited disturbances from erosion, timbering, and bioturbation were noted.

Eight shovel tests were excavated at the site, four of which were found to contain cultural remains (Figure 61). These four positive shovel tests were located on the eastern side of the knoll and it is on this basis that the site limits were defined. A total of 56 artifacts was collected from these four shovel tests (S.T. 1=7; S.T. 5=1; S.T. 6=35; and S.T. 7=13), for an average of 16.5 artifacts per unit. S.T. 6, located in the approximate center of the site, proved to have the deepest cultural deposits (80 cm below surface), as well as the densest. S.T.s 1 and 7 yielded material down to 60 cm, but S.T. 5 contained nothing below 20 cm. The shovel tests revealed a soil profile comprised of a dark brown (10YR3/3 to 4/3) sandy silt humus layer, up to 5 cm thick, underlain by a yellowish brown (10YR5/4 to 5/8) sandy loam AE or E horizon, which reached the Bt horizon at depths varying from 15 to 80+ cm, with the shovel tests within the site boundaries having the deeper deposits.

A possible feature, consisting largely of a charcoal concentration, was encountered in S.T. 7. This unit revealed a radically different soil profile consisting of a dark yellowish brown (10YR3/4 to 4/6) sandy loam down to 22 cm below surface; a very dark grayish brown (10YR3/1) sandy loam from 22 to 48 cm, associated with a large amount of charcoal and ash; and a yellowish brown (10YR5/4 to 5/8) sandy loam from 48 to 60 cm. At 60 cm the Bt horizon appeared. This area of darker loam and charcoal yielded almost no artifacts, so it is difficult to interpret this as a midden. Possibly it is a buried hearth or ash pit.

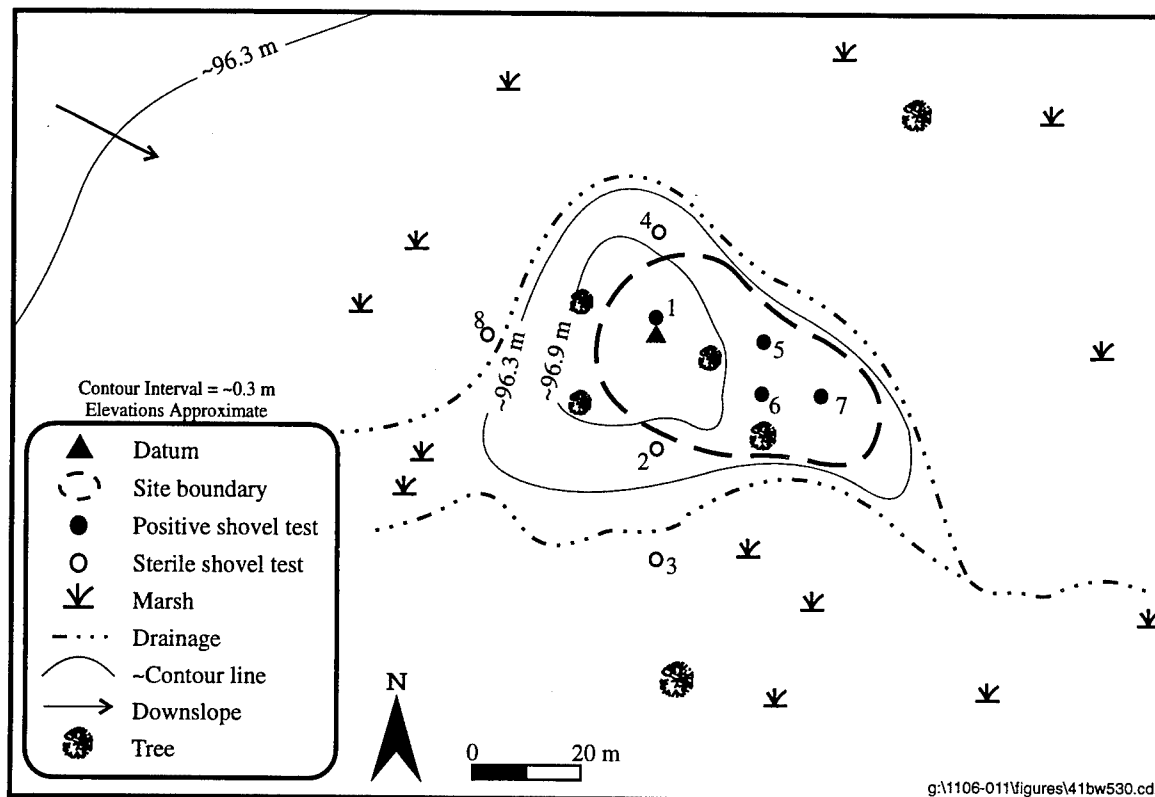


Figure 61. Pace and compass map of site 41BW530.

As noted above, a sample of 56 prehistoric artifacts was recovered from site 41BW530 (see Appendix C). This material includes 42 unmodified flakes and 14 pieces of burned rock. The sample of flakes from the site contains all four flake types (Table 44), with interior and biface thinning flakes in the majority (52.4 percent). Raw material types present in the sample include chert, quartzite, novaculite, and Ogallala Quartzite (Table 45). Although chert was the most abundant chipped stone material by frequency, quartzite was most abundant by weight. All of the burned rock fragments were quartzite, as well, suggesting that this raw material occurred on or close to the site.

Table 44
Flake Types and Size Categories for Site 41BW530

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	1	1	-	4	-	6
Secondary Flake	-	-	2	3	8	1	14
Tertiary Flake	-	-	-	2	7	3	12
Biface Thinning Flake	-	-	-	1	8	1	10
Total	-	1	3	6	27	5	42

Table 45
Lithic Raw Material Types for Site 41BW530

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	19	6.4	-	-	19	6.4
Quartzite	-	-	13	13.6	14	312.3	27	325.9
Novaculite	-	-	3	2.2	-	-	3	2.2
Ogallala Quartzite	-	-	7	3.9	-	-	7	3.9
Total	-	-	42	26.1	14	312.3	56	338.4

In summary, site 41BW530 is a small, very high density prehistoric site of an undetermined date. In S.T. 7, an anomalous layer of darker sediment with abundant charcoal flecks and some ash was found between 22 and 48 cm below surface. A dearth of associated artifacts precludes the use of the term midden to describe this deposit, but it may be a hearth or ash pit. Otherwise, the small size of the site, its high density of subsurface artifacts, and the limited range of artifact types present suggest a periodically reoccupied campsite. In light of the fact that it appears to have good contextual integrity, a high density of subsurface artifactual remains, and at least one possible feature, site 41BW530 is felt to have high research potential. Consequently, it is recommended that the site be considered to be of unknown eligibility for inclusion in the NRHP. Furthermore, it is recommended that the site be protected from any disturbances until test excavations can be undertaken to determine its NRHP status more accurately.

Site 41BW531

Site 41BW531 is a small, low density prehistoric site located on a terrace or upland remnant south of an unnamed, intermittent tributary of Elliott Creek in Survey Tract 4 (see Figure 38). The site is at an elevation of about 97 m (320 ft) amsl and covers an estimated area of 1,000 m² (50-x-40 m). It is mapped as being on the boundary between Ruston fine sandy loam, 3 to 8 percent slopes, a gently sloping to sloping soil on convex upland terraces (Fox 1980:26), and Sawyer silt loam, 0 to 3 percent slopes, a nearly level to gently sloping soil on uplands (Fox 1980:28-29). The Sawyer map unit has a typical profile consisting of a dark grayish brown (10YR4/2) silt loam A horizon, 15 cm thick, directly underlain by the Bt horizon. The Bt horizon extends to a depth of 203 cm or more and consists of a yellowish brown (10YR5/4 to 5/8) silty clay loam in the upper 23 cm, yellowish brown (10YR5/4 to 5/8) clay loam with grayish and reddish mottles in the next 28 cm, and mottled gray, red, and strong brown clay in the lower part (Fox 1980:28). Ruston soil has an A horizon of brown (10YR4/3 to 5/3) fine sandy loam, 13 cm thick, which is underlain by yellowish brown (10YR5/4 to 5/8) fine sandy loam to a depth of 41 cm. The Bt horizon is a red (2.5YR4/6 to 5/8) sandy clay loam to 203 cm or more (Fox 1980:26). The site is covered with a mixed pine/hardwood forest containing moderate densities of pine, red oak, and dogwood and a moderately dense understory of greenbrier, mulberry, sweetgum, and maple saplings. Bowen Trail, a dirt road, forms the western boundary of the site and may have destroyed part of it. Additional sources of disturbance include minimal erosion and timbering.

Eight shovel tests were excavated at the site, four of which were found to contain cultural materials and on which the site limits were defined (Figure 62). Eleven prehistoric artifacts were collected from these four shovel tests (S.T. 1=3; S.T. 2=3; S.T. 3=1; and S.T. 4=4), for an average of 2.75 artifacts per unit within the site boundaries. S.T. 4 also yielded a single historic artifact, but this was not used to calculate average prehistoric subsurface density. None of the shovel tests yielded any artifacts deeper than 20 cm below ground surface. The shovel tests revealed soil profiles consisting of a light yellowish brown (10YR6/4) AE or E horizon, from 24 to 40 cm thick, underlain by a brownish yellow (10YR6/6 to 6/8) sandy clay loam EB or Bt horizon. In two units (S.T.s 1 and 7) excavation was terminated at around 20 cm below surface due to dense gravel lenses.

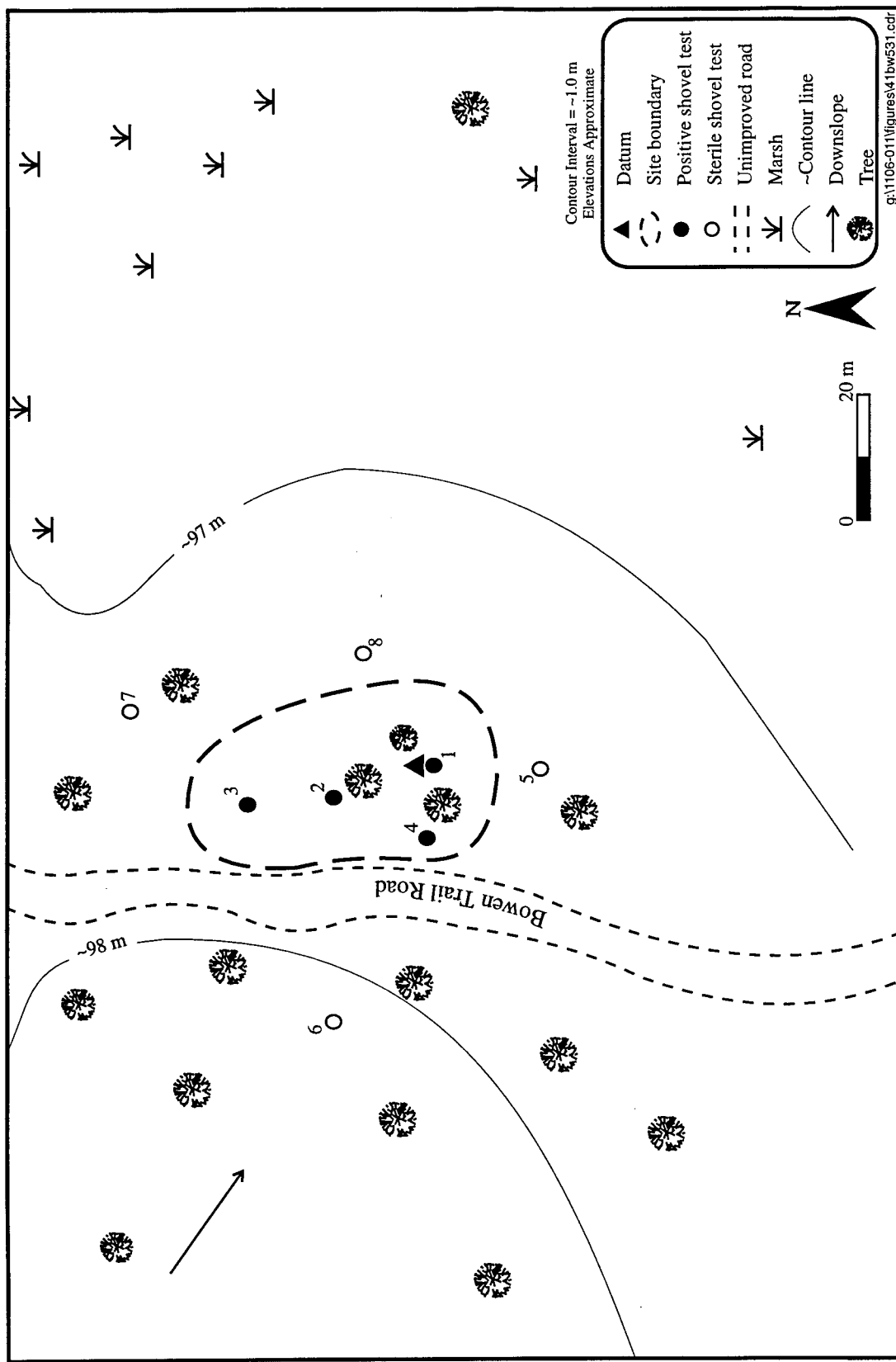
As noted above, a sample of 11 prehistoric artifacts was recovered from site 41BW531 (see Appendix C). This material consisted of 10 unmodified flakes and one piece of angular shatter. All four flake types are present in this sample (Table 46), with primary and secondary decortification flakes being most abundant. The only types of raw material present are chert (n=8; 9.3 g), quartzite (n=1; .3 g), and novaculite (n=2; .7 g).

In addition to the prehistoric remains, a single historic artifact was recovered from site 41BW531 (see Appendix D). This was a piece of manganese decolorized bottle glass (1880-1920) recovered from S.T. 4, Level 1. No known historical sites are close to site 41BW531 and the presence of this artifact on the site may be the result of chance discard.

In summary, site 41BW531 is a small, low density site of an undetermined prehistoric period. Based on the site size, the density of subsurface material, and the limited artifact inventory and quantity of material recovered, site 41BW531 may be a short-term campsite or a special activity site. Although site 41BW531 is felt to have only fair contextual integrity, it is believed that it may possibly retain good research potential, and it is recommended that the site be considered to be of unknown eligibility for inclusion in the NRHP, with test excavations being required to better determine the NRHP status of the site. Until such excavations are undertaken, it is further recommended that the site be protected from any disturbances.

Site 41BW532

Site 41BW532 is a large, moderate density prehistoric site located on a series of low, floodplain rises (possibly terrace or upland remnants) immediately west of an unnamed, intermittent tributary of Elliott Creek in Survey Tract 4 (see Figure 38). The site is at an elevation of about 96-97 m (316-318 ft) amsl and covers an estimated area of 5,600 m² (120-x-170 m). It is mapped as being near the boundary between Sawyer silt loam, 0 to 3 percent slopes, a nearly level to gently sloping soil on uplands (Fox 1980:28-29), and Thenas fine sandy loam, frequently flooded, a nearly level soil found on flood plains (Fox 1980:32). The Sawyer map unit has a typical profile consisting of a dark grayish brown (10YR4/2) silt loam A horizon, 15 cm thick, directly underlain by the Bt horizon. The Bt horizon extends to a depth of 203 cm or more and consists of a yellowish brown (10YR5/4 to 5/8) silty clay loam in the upper 23 cm, yellowish brown (10YR5/4 to 5/8) clay loam with grayish and reddish mottles in the next 28 cm, and mottled gray, red, and strong brown clay in the lower part (Fox 1980:28). Thenas soil typically consists of a dark brown (10YR3/3 to 4/3) fine sandy loam surface layer, approximately 25 cm thick, underlain to a depth of 140 cm by the subsoil. The upper 86 cm of the subsoil is a fine sandy loam, dark brown (10YR3/3 to 4/3) in the upper part and dark yellowish brown (10YR3/4 to 4/6) in the lower part. Below 86 cm, it consists of a yellowish brown (10YR5/4 to 5/8) loamy fine sand. Underlying this stratum is a light yellowish brown (10YR6/4) loamy fine sand, stratified with loamy and sandy layers (Fox 1980:32). The site is covered with a mixed pine/hardwood forest consisting of moderate densities of pine, white oak, red oak, and elm and a low density understory of greenbrier, sassafras, and french mulberry. Contextual integrity of the site is good, with the only disturbance being limited to bioturbation.



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Figure 62. Pace and compass map of site 41BW531.

Table 46
Flake Types and Size Categories for Site 41BW531

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	-	1	-	1	-	2
Secondary Flake	-	-	-	1	3	1	5
Tertiary Flake	-	-	-	1	1	-	2
Biface Thinning Flake	-	-	-	-	1	-	1
Total	-	-	1	2	6	1	10

Seven of the 12 shovel tests excavated at site 41BW532 contained cultural materials and, along with surface topography, were used to define the site limits (Figure 63). A total of 42 artifacts was recovered through shovel testing at the site (S.T. 1=12; S.T. 2=6; S.T. 3=12; S.T. 4=2; S.T. 5=3; S.T. 6=1; and S.T. 7=6), for an average of 6.0 artifacts per shovel test. The deepest cultural deposits were identified in S.T. 3 (80 cm) and in S.T. 1 (60 cm). All of the other shovel tests yielded material down to 40 cm below surface. The onsite shovel tests revealed a generalized profile consisting of a brown to dark brown (10YR3/3 to 4/4) sandy loam, 10 to 40 cm thick, underlain by a light yellowish brown (10YR5/4 to 6/4) sandy loam, 30 to 60 cm thick, which was in turn underlain by a very pale brown (10YR6/4 to 7/3) silty clay loam. The upper dark horizon was not present in S.T.s 2 or 6, and in S.T.s 4 and 5, it was overlain by 20 cm of nearly sterile light yellowish brown (10YR6/4) sandy loam. The lower zone of silty clay loam was only reached in S.T.s 1 and 2, where it appeared about 60 to 70 cm below surface. In addition to the artifacts collected from the shovel tests, one tested nodule was collected from the surface adjacent to S.T. 7.

The inventory of 43 prehistoric artifacts from site 41BW532 includes six ceramic sherds, a dart point fragment, a utilized flake, three cores, 28 unmodified flakes, and four fragments of burned rock (see Appendix C). The ceramic sample from site 41BW532 consists of three plain sherds and three decorated sherds (Table 47). The plain sherds include one rim sherd and two body sherds (Figure 64a); while the decorated sherds consist of one punctated neck (Figure 64b), one parallel brushed or incised body sherd (Figure 64c), and one diagonal incised rim sherd (Figure 64d). The sample is about evenly divided between clay-silt and grit paste types (see Winchell and Cliff 1995, for a discussion of these paste distinctions), while all of the sherds have grog as the primary aplastic, or tempering, inclusion. Several also have very minor amounts of hematite grit, while one has a minor amount of bone. The only sherd which can be tentatively typed is the diagonally incised rim sherd, which belongs to the Canton/Dunkin Incised class. Several vessel forms appear to be present, including an apparent bowl from S.T. 1, Level 1, and two probable jars from S.T. 2, Level 1, and S.T. 7, Level 1. A minimum of six vessels is estimated to be present, all of which appear to be utility wares.

The dart point fragment from site 41BW532 consists of the base, and a bit of the blade, of a Gary point recovered from S.T. 1, Level 1. It is made of White Novaculite, and the extant piece measures 27 mm long, 16 mm wide, and 6 mm thick. It weighs 3.0 g. The utilized flake was collected from S.T. 1, Level 3. It is Ogallala Quartzite; measures 43 mm long, 17 mm wide, and 9 mm thick; and weighs 5.9 g. It is a steep-sided bladelike secondary flake, with fine retouch on both lateral dorsal edges. One utilized lateral edge is straight, the other consists of two concordant concave areas. The three cores consist of two tested nodules and one multidirectional core. The first tested nodule is a novaculite cobble, which was split in half and from

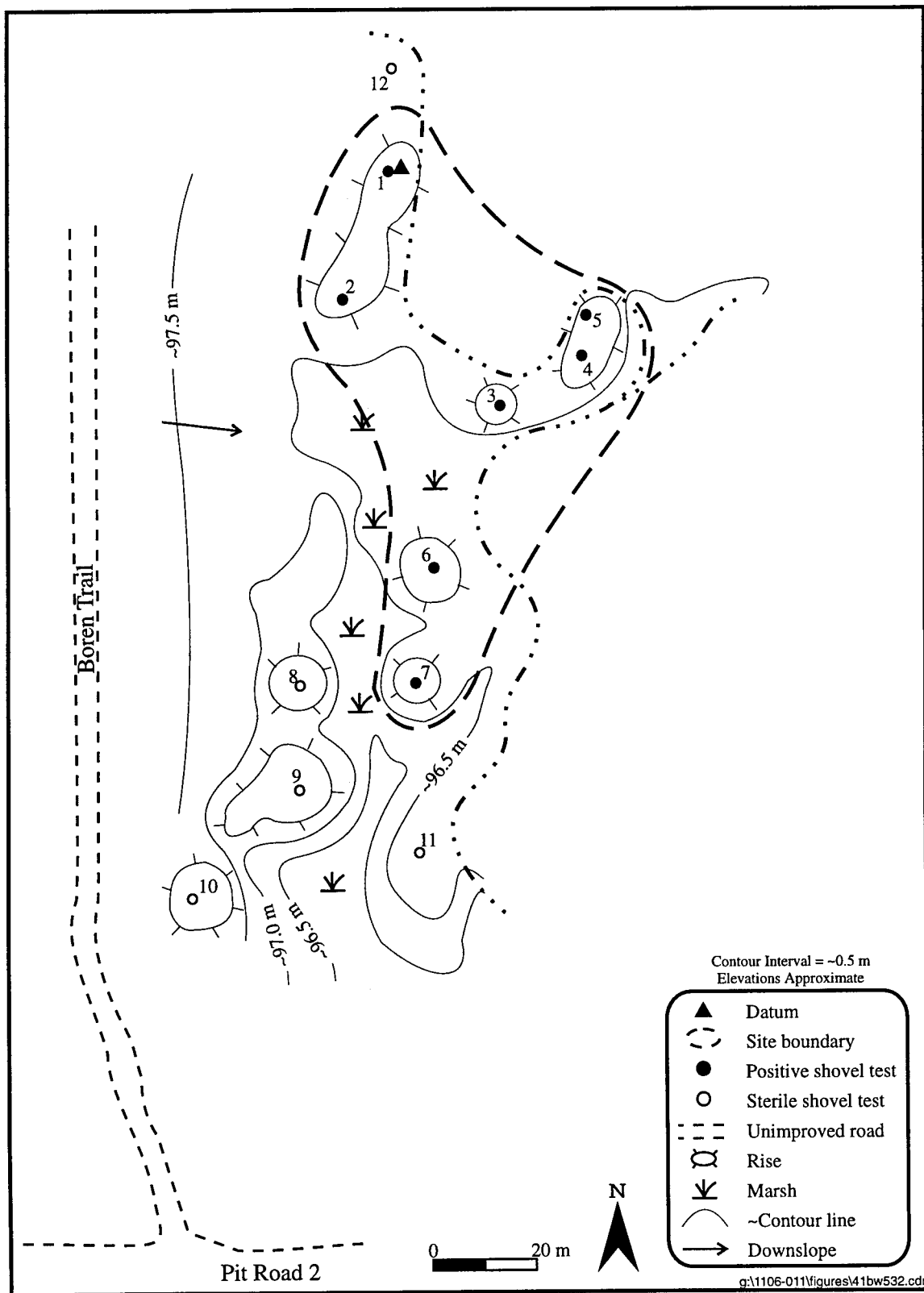


Figure 63. Pace and compass map of site 41BW532.

Table 47
Ceramics Collected from Site 41BW532

Unit No.	Level No.	Sherd No.	Thickness (mm)	Weight (g)	Paste Type	Aplastic Inclusions	Decorative Modes	Suggested Type Designation
S.T. 1	1	1	10	10.7	Grit	Grog (.5-.25 mm); Hematite (1.0-.5 mm)	Plain, smoothed exterior; Plain, very well-smoothed to floated interior	Unidentified
S.T. 1	1	2	5	2.5	Clay-silt	Grog (.5-.25 mm); Hematite (1.0-.5 mm)	Plain, smoothed exterior; Plain, smoothed interior	Unidentified
S.T. 1	2	1	7	1.7	Clay-silt	Grog (.5-.25 mm); Hematite (.5-.25 mm)	Parallel brushed or incised lines on exterior; Plain, smoothed interior	Unidentified
S.T. 2	1	1	7	8.8	Clay-silt	Grog (1.0-.25 mm); Hematite (1.0-.5 mm)	Constricted neck; Plain exterior with tool punctuations at base of neck; Plain, smoothed interior	Unidentified
S.T. 3	3	1	6	2.2	Grit	Grog (.5-.25 mm); Bone (.5-.25 mm)	Direct rim; Interiorly thinned, rounded lip; Plain, well-smoothed exterior; Plain, smoothed interior	Unidentified
S.T. 7	1	1	7	2.6	Grit	Grog (1.0-.5 mm)	Direct, slightly outflared rim; Rounded lip; Diagonal, incised parallel lines on exterior of rim; Plain, smoothed interior	Canton/Dunkin Incised

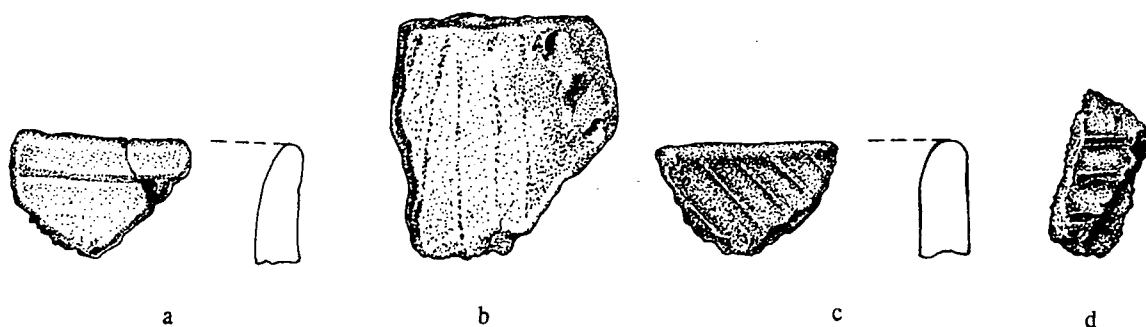


Figure 64. Ceramic sherds recovered from site 41BW532: (a) plain rim sherd, Shovel Test 3, Level 3; (b) punctated neck sherd, Shovel Test 2, Level 1; (c) parallel brushed or incised body sherd, Shovel Test 1, Level 2; (d) diagonal incised rim sherd, Shovel Test 7, Level 1 (Scale 1:1).

which several unidirectional flakes were removed using the split face as a platform. This piece measures 58 mm long, 37 mm wide, and 24 mm thick, and weighs 59.7 g. The second tested nodule consists of a large battered cobble of Bowie Chert, measuring 68 mm long, 65 mm wide, and 47 mm thick and weighing 250.7 g. The multidirectional core consists of a small, rectanguloid chert nodule, with flakes removed from two directions on one face, and from a third direction on the other. This core measures 29 mm long, 29 mm wide, and 15 mm thick, and weighs 12.7 g.

The relatively large flake sample from site 41BW532 includes all four flake types (Table 48), with tertiary and biface thinning flakes slightly in the majority (53.6 percent). It should also be noted that almost all of the decortification flakes consist of secondary flakes, with only one primary flake in the sample. Raw material types present in this sample include chert, quartzite, novaculite, Bowie Chert, White Novaculite, Woodford Chert, and Ogallala Quartzite (Table 49). Chert is the most abundant material by frequency, while both novaculite and Bowie Chert have high weights due to the presence of tested nodules of this material in the sample. Quartzite is the most abundant material used for burned rock, suggesting it occurs in the site vicinity.

Table 48
Flake Types and Size Categories for Site 41BW532

Flake Type	Flake Size (mm)						Total
	>25	25-19	19-12.5	12.5-9.5	9.5-6.3	<6.3	
Primary Flake	-	-	-	1	-	-	1
Secondary Flake	-	-	3	4	4	1	12
Tertiary Flake	-	-	-	-	4	2	6
Biface Thinning Flake	-	-	3	1	5	-	9
Total	-	-	6	6	13	3	28

Table 49
Lithic Raw Material Types for Site 41BW532

Raw Material Type	Tools		Debris		Burned Rock		Total	
	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)	Freq.	Wt. (g)
Chert	-	-	13	34.5	-	-	13	34.5
Quartzite	-	-	7	11.6	4	32.9	11	44.5
Novaculite	-	-	4	62.3	-	-	4	62.3
Bowie Chert	-	-	2	250.8	-	-	2	250.8
White Novaculite	1	3.0	-	-	-	-	1	3.0
Woodford Chert	-	-	1	5.6	-	-	1	5.6
Ogallala Quartzite	1	5.9	4	2.3	-	-	5	8.2
Total	2	8.9	31	367.1	4	32.9	37	408.9

In summary, site 41BW532 is a large, moderate density prehistoric site located on a series of natural rises immediately west of an unnamed tributary of Elliott Creek. The presence of ceramic material suggests an occupation sometime in the latter part of the Early Ceramic or the subsequent Caddoan period, while a sherd of possible Canton/Maydelle Incised indicates an Early Caddoan (A.D. 1000-1200) date. A single dart point base, tentatively identified as a Gary, *var. unidentified*, supports an Early Ceramic occupation as well. The size of the site, the moderate subsurface artifact density, and the spatial organization of the site, with the cultural deposits apparently located on separate, spatially distinct low rises, suggest a periodically reoccupied campsite. The artifact sample, however, differs somewhat from other samples recovered by this project in having an appreciably larger amount of pottery, several tools, and a higher frequency of interior and biface thinning flakes. This would suggest a more substantial occupation, possibly a habitation site, although the lack of ceramic fine wares and the location would argue against this. Of course, given the site's probably multiple occupations, a shift in function through time should not be unexpected.

In light of its good contextual integrity, the evidence for multiple occupations, and the differences in artifact content, intensity of occupation, and activities relative to the other sites recorded in the RRAD/LSAAP by the present survey, site 41BW532 is felt to have very good research potential. As a result, it is recommended that the site be considered to be of unknown eligibility for inclusion in the NRHP pending test excavations designed to better determine its NRHP status. Furthermore, it is also recommended that the site be protected from further impacts until such test excavations can be undertaken.

Site 41BW546

Site 41BW546 is a medium-sized, medium density prehistoric site located on a terrace or upland remnant to the south of an unnamed intermittent tributary of Aiken Creek in Survey Tract 5 (see Figure 38). It is at an elevation of about 94 m (310 ft) amsl and covers an area of 2,400 m² (60-x-50 m). It is reportedly on Thenas fine sandy loam, frequently flooded, a nearly level soil on flood plains. Thenas soil typically consists of a dark brown (10YR3/3 to 4/3) fine sandy loam surface layer, approximately 25 cm thick, underlain to a depth of 140 cm by the subsoil. The upper 86 cm of the subsoil is a fine sandy loam, dark brown (10YR3/3 to 4/3) in the upper part and dark yellowish brown (10YR3/4 to 4/6) in the lower part. Below 86 cm, it consists

of a yellowish brown (10YR5/4 to 5/8) loamy fine sand. Underlying this stratum is a light yellowish brown (10YR6/4) loamy fine sand, stratified with loamy and sandy layers (Fox 1980:32). The vegetation covering the site includes french mulberry, white oak, dogwood, pin oak, yellow pine, elm, sweetgum, redbud, hickory, muscadine, greenbriar, and wild cherry. Minimal disturbances were noted from bioturbation and logging, but the site remains virtually intact.

Eight shovel tests were excavated in the vicinity of the site, but only three were found to contain any cultural remains and were included within the site boundary (Figure 65). Ten artifacts were collected from these three shovel tests (S.T. 1=5; S.T. 2=1; and S.T. 3=4), for an average of 3.33 artifacts per test. S.T. 1, on top of the rise in the center of the site, contained the most cultural material and yielded artifacts to the greatest depth (60 cm below surface). The other two shovel tests yielded nothing below 40 cm. The soil profile revealed by the shovel testing consisted of a relatively homogenous dark yellowish brown (10YR3/4 to 4/6) to yellowish brown silty sand AE horizon, up to 68 cm deep. A Bt horizon was not found in any of the units.

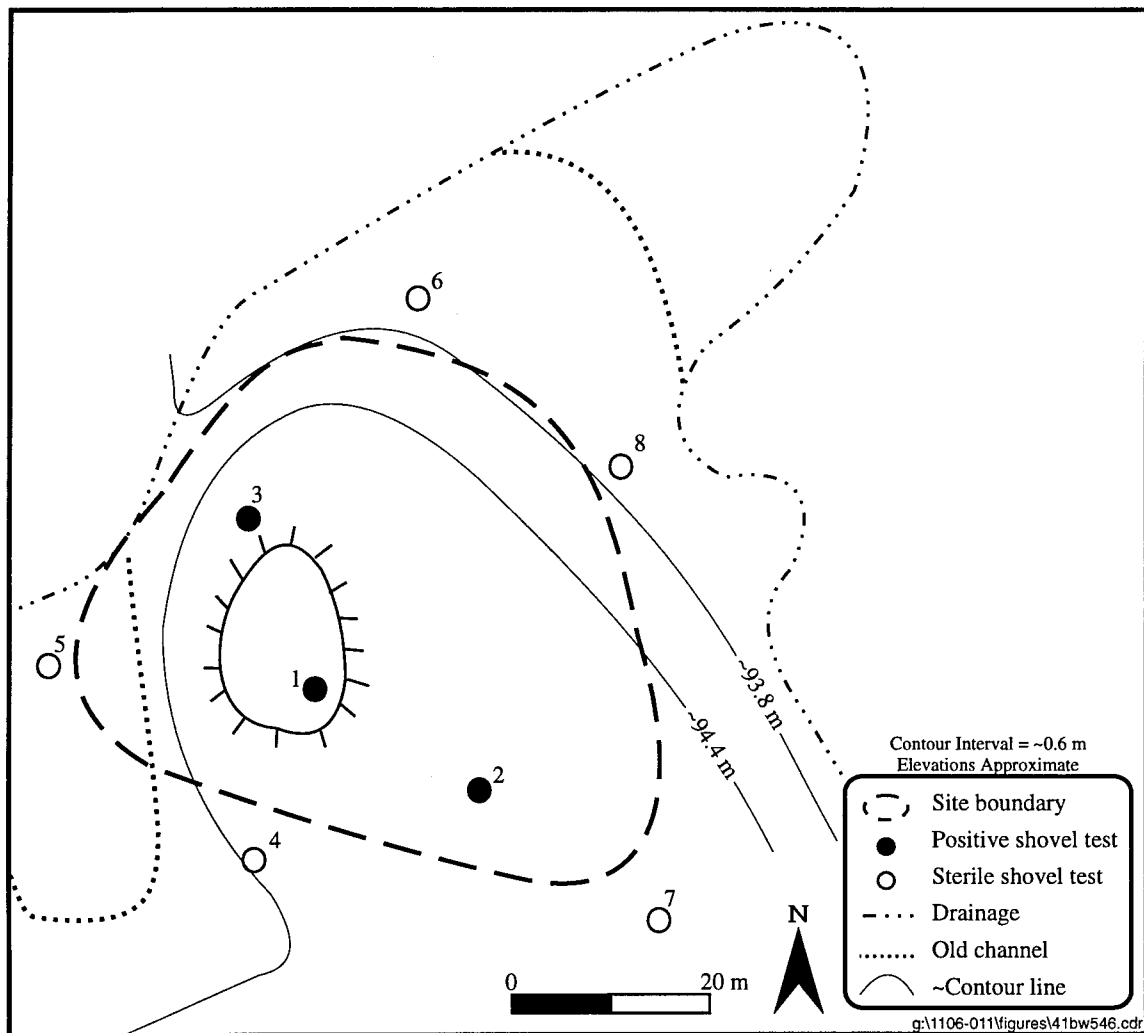


Figure 65. Pace and compass map of site 41BW546.

As noted above, 10 prehistoric artifacts were recovered from site 41BW546 (see Appendix C). This sample consists of one core and nine unmodified flakes. The core is a novaculite cobble that has had several large percussion flakes removed from several edges. The presence of several areas of force fractures and crushing suggests that a hammer and anvil technique was used to initiate flake removal. The core measures 62 mm long, 49 mm wide, and 28 mm thick, and weighs 86.7 g. The unmodified flake sample includes all flake types (Table 50), with primary and secondary decortification flakes being in the majority. Lithic raw material types present include only chert (n=7; 4.5 g), quartzite (n=1; 4.1 g), and novaculite (n=2; 86.9 g). The preponderance of novaculite by weight is due to the presence of the core (86.7 g). Disregarding this single core, chert and quartzite are preponderant, with chert slightly more abundant by weight.

Table 50
Flake Types and Size Categories for Site 41BW546

Flake Type	Flake Size (mm)						Total
	> 25	25-19	19-12.5	12.5-9.5	9.5-6.3	< 6.3	
Primary Flake	-	-	-	2	1	-	3
Secondary Flake	-	-	1	1	1	-	3
Tertiary Flake	-	-	-	-	1	-	1
Biface Thinning Flake	-	-	-	-	2	-	2
Total	-	-	1	3	5	-	9

In summary, site 41BW546 is a medium-sized, moderate density site of an undetermined prehistoric period. Based on its size, subsurface artifact density, and limited artifact sample, the site may be a periodically reoccupied campsite. Many similar sites have been recorded on the facility, but site 41BW546 has good contextual integrity, which is thought to give the site good research potential. Consequently, it is recommended that site 41BW546 be considered to be of unknown eligibility for inclusion in the NRHP. Until test excavations designed to definitively determine the NRHP status of the site are conducted, it is further recommended that the site be protected from disturbance.

LSAAP LOCALITY DESCRIPTIONS

Locality 1

Locality 1 is on a low natural rise, or prairie mound, along a terrace or remnant upland bench above an unnamed tributary of Elliott Creek in Survey Tract 4 (Figure 66). Three prehistoric artifacts were found in a shovel test on this rise, within 20 cm of the ground surface. These consist of a chert tertiary flake (6.3-9.5 mm), a quartzite biface thinning flake (9.5-12.5 mm), and a unifacial novaculite spokeshave (32 mm long, 20 mm wide, 7 mm thick; 4.7 g). Four additional shovel tests were excavated at 20-m intervals in this area, but all proved to be sterile.

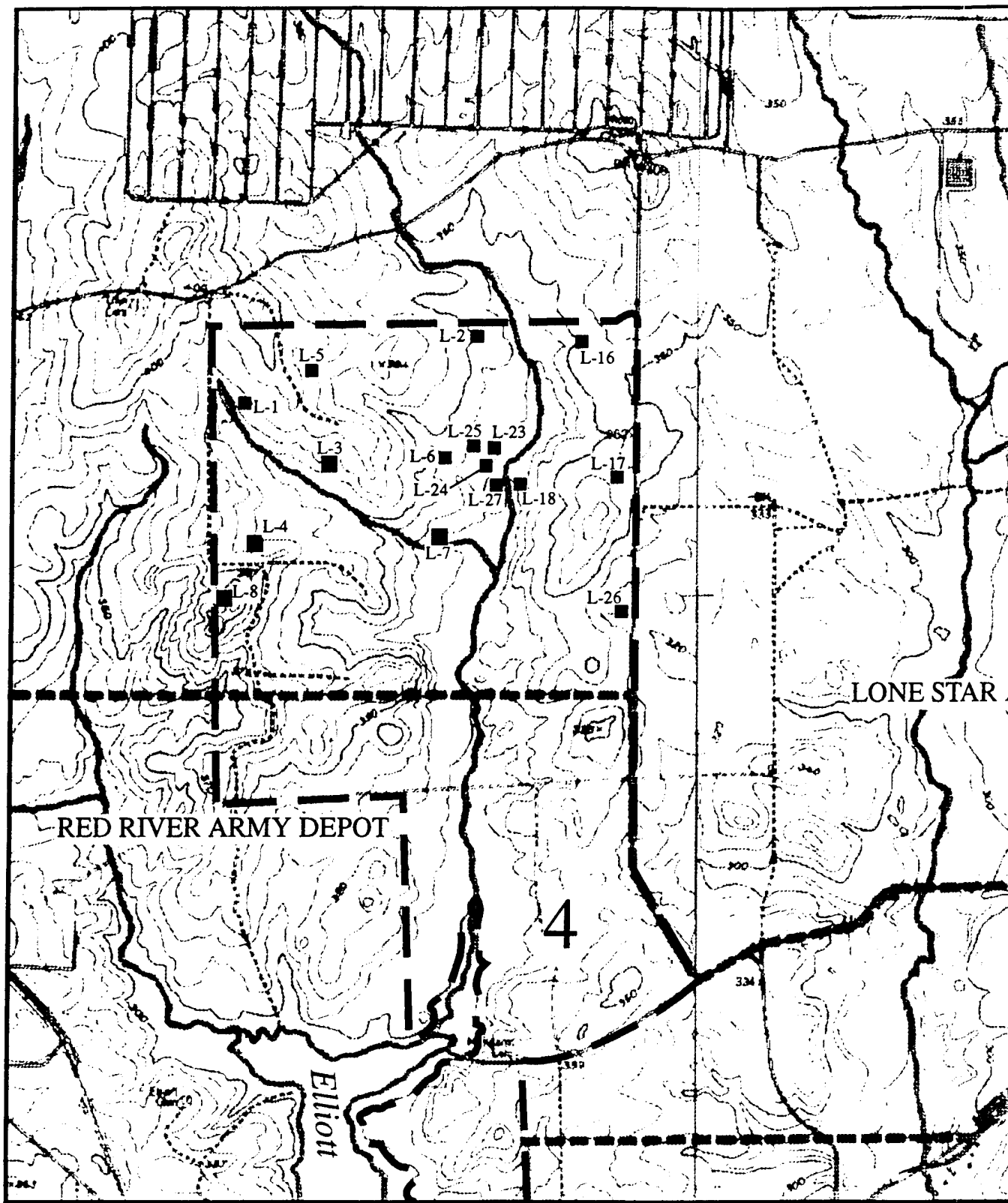
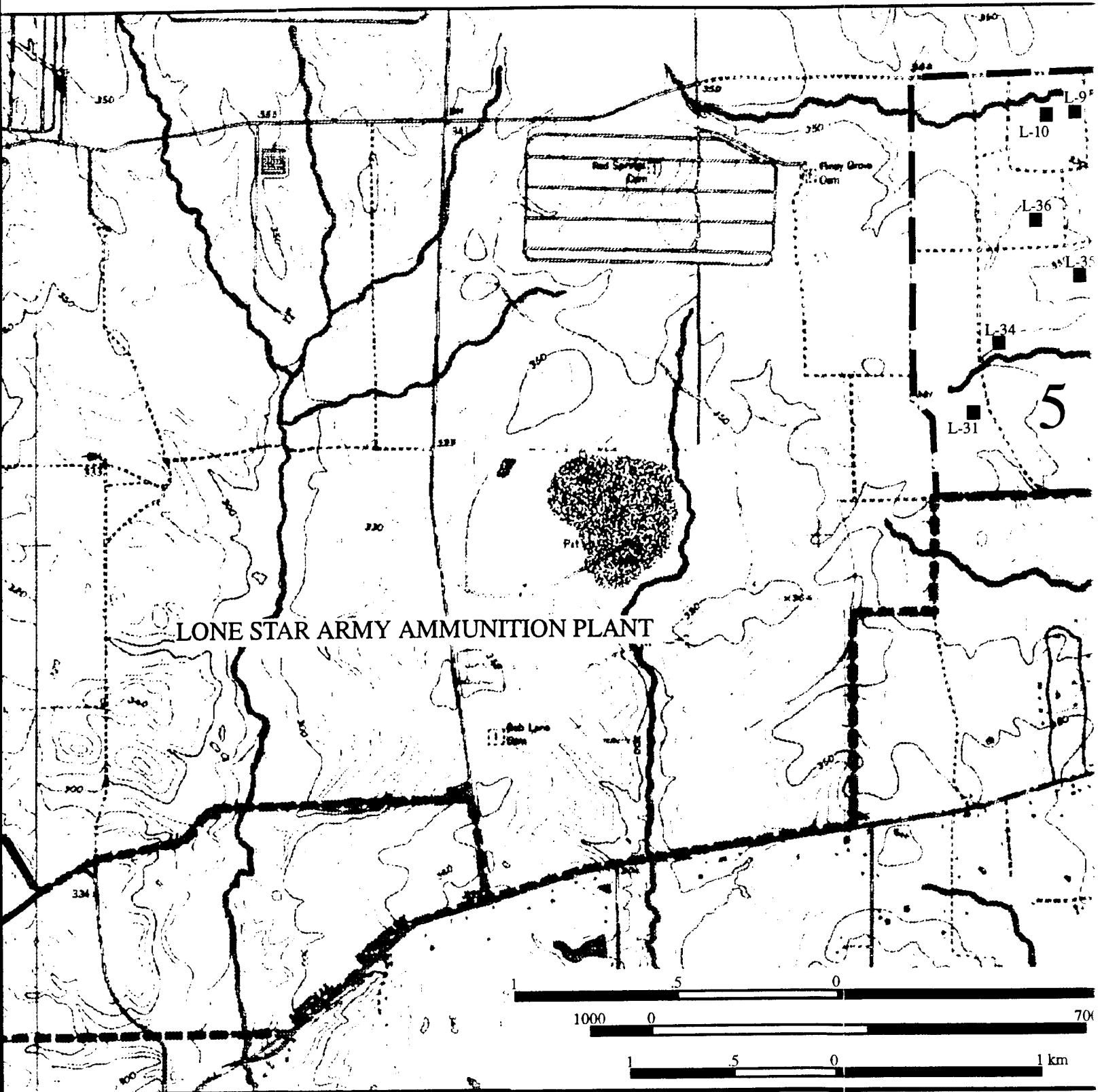


Figure 66. Localities recorded on the Lone Star Army Ammunition Plant during the 1993 RRAD/LSAAP survey.



Locality 2

Locality 2 is on a low natural rise, or prairie mound, on a terrace or upland remnant west of Elliott Creek in Survey Tract 4. One secondary flake and two biface thinning flakes were recovered from within 40 cm of the ground surface in a survey shovel test. Three raw material types are represented (chert, quartzite, and Ogallala Quartzite), while the material came in two size ranges, with two flakes from 12.5-19 mm in size and one from 9.5-12.5 mm in size. Four additional shovel tests were excavated in the vicinity, but no further artifacts were recovered.

Locality 3

Locality 3 was identified when a novaculite secondary flake (9.5-12.5 mm in size) was recovered within the upper 20 cm in a survey shovel test. The locality is at the base of an upland slope north of an unnamed, intermittent tributary of Elliott Creek in Survey Tract 4. Another four shovel tests were excavated at approximately 20-m intervals around the original unit, but these tests were sterile.

Locality 4

Locality 4 consists of the surface find of a severely pitted and rusted axe head and a piece of painted ceramic west of Elliott Creek in Survey Tract 4. These remains were found on a small, flat upland bench between sites 41BW354 and 41BW482. Five shovel tests were excavated on the bench but all were sterile. As both sites 41BW354 and 41BW482 are historical in date, Locality 4 could be associated with either one.

Locality 5

Locality 5 consists of several prehistoric artifacts found in a survey shovel test placed on a low natural rise, or prairie mound, along a terrace bench or upland remnant north of an unnamed tributary of Elliott Creek in Survey Tract 4. Artifactual material collected included two flakes and a chert burned rock fragment (7.1 g). The flakes consist of a chert secondary flake and a quartzite biface thinning flake, both of which were between 9.5 and 12.5 mm in size. Seven more shovel tests were excavated around the initial productive one at approximately 20-m intervals, but no additional cultural materials were located.

Locality 6

Locality 6 is southwest of the intersection of Pit Road 2 and Boren Road, west of Elliott Creek in Survey Tract 4. A single quartzite biface thinning flake (9.5-12.5 mm in size) was found in a survey shovel test approximately 30 m north of a small, unnamed tributary of Elliott Creek. An additional five shovel tests were excavated at approximately 20-m intervals around the original unit, but no further cultural materials were found.

Locality 7

Locality 7 consists of several prehistoric artifacts recovered from a shovel test on a low natural rise, or prairie mound, along an unnamed tributary of Elliott Creek in Survey Tract 4. This locality is also about

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15 m west of Boren Trail. A survey shovel test placed in this rise contained a secondary flake and two biface thinning flakes within 20 cm of the ground surface. Raw material types present include chert, novaculite, and Ogallala Quartzite. One flake fell in the 9.5-12.5 mm size range and the remaining two were between 6.3 and 9.5 mm in size. Another six shovel tests were excavated in the vicinity, but no further cultural materials were found.

Locality 8

Locality 8 consisted of a surface find of a piece of manganese glass, perhaps the base of a drinking glass or vase. No shovel tests were dug in the vicinity as the locality is on a steeply sloping upland surface. The hilltop above the locality had been stripped of top soil by bulldozing. The artifact may have originated in this area and was subsequently redeposited due to the bulldozing, but no historic artifacts were found in the bulldozed area to support this.

Locality 9

Locality 9 consists of several prehistoric artifacts recovered from a survey shovel test on a low natural rise, or prairie mound, located on a terrace bench or upland remnant south of an unnamed, intermittent tributary of Aiken Creek in Survey Tract 5. This shovel test contained a quartzite primary flake (19-25 mm in size) and a chert secondary flake (12.5-19 mm in size) within the upper 20 cm of deposit. Six additional shovel tests were excavated in the vicinity, but all of these units proved to be sterile.

Locality 10

Locality 10 is on a terrace bench or upland remnant south of an unnamed, intermittent tributary of Aiken Creek in Survey Tract 5. One survey shovel test in this area was found to contain three flakes within the upper 20 cm of deposit. The flakes consist of a chert secondary flake (12.5-19 mm in size), a chert tertiary flake (6.3-9.5 mm), and a quartzite bifacial thinning flake (9.5-12.5 mm in size). Five extra shovel tests were excavated around the original unit, but no other cultural materials were found.

Locality 16

Locality 16 is on a low natural rise, or prairie mound, on an upland slope east of Elliott Creek in Survey Tract 4. Five shovel tests were excavated at this locality, only one of which contained any cultural material. This consisted of a quartzite early aborted biface recovered from the upper 20 cm of the shovel test. The artifact measures 32 mm long, 30 mm wide, and 11 mm thick, and weighs 10.0 g.

Locality 17

Locality 17 is on a small natural rise, or prairie mound, on an upland ridge east of Elliott Creek in Survey Tract 4. Five shovel tests were excavated at this locality, one of which was found to contain a chert tertiary flake (less than 6.3 mm in size) within 20 cm of the ground surface.

Locality 18

Locality 18 is in a mixed pine/hardwood forest at the edge of a terrace or upland remnant east of Elliott Creek in Survey Tract 4. Four shovel tests were excavated at this locality, with the central unit yielding a single chert secondary flake (12.5-19 mm in size) within 20 cm of ground surface.

Locality 23

Locality 23 is on a low natural rise, or prairie mound, on a terrace or upland remnant west of Elliott Creek in Survey Tract 4. Two secondary flakes were found within 20 cm of the ground surface in a single survey shovel test in this area. One of these flakes is chert and is 12.5-19 mm in size, while the other is Ogallala Quartzite and is 6.3-9.5 mm in size. Four more shovel tests were excavated in the area, but these units proved to be sterile.

Locality 24

Locality 24 is on a low natural rise, or prairie mound, on a terrace or upland remnant west of Elliott Creek in Survey Tract 4. A single piece of quartzite shatter (12.5-19 mm in size) was recovered from between 20 and 40 cm down in a survey shovel test in this area. An additional four sterile shovel tests were excavated in the vicinity.

Locality 25

Locality 25 is on a low natural rise, or prairie mound, on an upland slope west of Elliott Creek in Survey Tract 4. Five shovel tests were excavated at this locality, one of which was found to contain three flakes within the upper 20 cm of deposit. These three artifacts consist of tertiary flakes of quartzite, Ogallala Quartzite, and Woodford Chert. All flakes were from 12.5-19 mm in size.

Locality 26

Locality 26 is a historic artifact surface scatter, probably a dump, located near the intersection of Pit Road 2 and Concord Road near the eastern edge of Survey Tract 4. The artifact scatter is in a minor drainage, oriented northwest to southeast, near the road and no shovel tests were excavated in the vicinity because it was in a drainage. Artifacts observed on the surface include a child's pedal car (ca. 1930), a broken crock, a broken bottle, sheet metal, a riveted two-gallon boiler, and a crushed pan or can.

Locality 27

Locality 27 is in the flood plain of Elliott Creek, immediately west of the cutbank of the creek, in Survey Tract 4. Five shovel tests were excavated at this locality, but only one was found to contain a single chert secondary flake, between 19 and 25 mm in size, within 5 cm of the ground surface.

Locality 31

Locality 31 consists of a single prehistoric artifact recovered from a low natural rise, or prairie mound, on an upland ridge near the southern edge of Survey Tract 5. This artifact was a novaculite biface thinning flake, 9.5-12.5 mm in size, and was recovered within 20 cm of the ground surface. An additional four shovel tests were excavated at this locality, but all were sterile.

Locality 32

Locality 32 consists of a historic artifact surface scatter on the edge of a drainage in the southern portion of Survey Tract 5. Artifacts observed in this scatter included a metal bucket, a graniteware dish pan, crockery, glass, and bottles. Five sterile shovel tests were dug in and around the scatter.

Locality 33

Locality 33 is on a low natural rise, or prairie mound, on the south side of a small, intermittent tributary of Aiken Creek in Survey Tract 5. A single shovel test on this rise yielded one chert biface thinning flake, 6.3-9.5 mm in size, between 20 and 40 cm below ground surface. Four additional shovel tests excavated at this locality were sterile.

Locality 34

Locality 34 is on a low natural rise, or prairie mound, on the north side of an unnamed intermittent tributary of Aiken Creek in Survey Tract 5. A survey shovel test excavated in this rise contained a single chert secondary flake (9.5-12.5 mm in size) within 20 cm of the ground surface. An additional four shovel tests excavated in the vicinity of this positive test failed to yield any additional cultural remains.

Locality 35

Locality 35 is on a low natural rise, or prairie mound, along the edge of an upland slope in the central portion of Survey Tract 5. A survey shovel test in this area yielded a chert secondary flake (6.3-9.5 mm in size) between 0 and 20 cm below surface. Four more shovel tests were excavated at the locality, but no additional cultural remains were uncovered.

Locality 36

Locality 36 refers to a metal harrow or rake found on the surface of an upland knoll, near an old fence line in the central portion of Survey Tract 5. The area is covered by a predominantly hardwood forest. Extensive shovel testing was conducting in the vicinity, but no further cultural material was found.

Locality 37

Locality 37 consists of three flakes recovered from a shovel test in a low natural rise, or prairie mound, south of an unnamed tributary of Aiken Creek in Survey Tract 5. This material included two secondary and one tertiary flakes, two of which were Ogallala Quartzite while the other was chert. Two flakes were between 9.5 and 12.5 mm in size, with the remaining piece from 6.3 to 9.5 mm in size. Although an additional four shovel tests were excavated at this locality, none contained any additional cultural materials.

Locality 38

Locality 38 is on a terrace or upland remnant adjacent to an unnamed tributary of Aiken Creek in Survey Tract 5. A survey shovel test in this area yielded a secondary flake of Ogallala Quartzite (12.5-19 mm in size) within 20 cm of the ground surface. An additional four shovel tests were excavated at this locality, but no other cultural remains were located.

CHAPTER 7

SUMMARY AND RECOMMENDATIONS

by
Maynard B. Cliff and Duane E. Peter

A discussion and assessment of the National Register of Historic Places (NRHP) eligibility of each cultural property recorded during the 1993 survey of portions of the Red River Army Depot and the Lone Star Army Ammunition Plant (RRAD/LSAAP) were presented along with the description of the property in Chapters 5 and 6. The present chapter is intended to present a more detailed discussion of the NRHP criteria and a summary of the assessments of all of the identified cultural properties in relation to their potential for fulfilling these criteria. In addition, the recommendations for the future treatment of these resources, initially presented in the two previous chapters, are summarized.

COMMENTS ON NRHP ELIGIBILITY CRITERIA

Full assessment of NRHP potential is admittedly preliminary during this phase of investigations, but each property may be evaluated in relation to the criteria set forth in 36 CFR 60.4. Of particular importance is the requirement that an archeological property nominated to the NRHP be capable of yielding information important to our understanding of prehistory or history. In order to identify the types of information which may be considered important for this purpose, a project-specific research design was developed for the RRAD/LSAAP area (Peter et al. 1989). In that document, a series of research problems specific to the RRAD/LSAAP, at the regional, local, and project-specific level, was set forth. These included:

- Site Detection,
- Paleoenvironmental Reconstruction,
- Culture History,
- Prehistoric Settlement-Subsistence Systems,
- Prehistoric Lithic Raw Material Use Patterns,
- Prehistoric Technology,
- Historic Period Native American Sites,
- Upland and Lowland South Settlement-Subsistence Patterns during the Historic Period,
- The Historic Lumber Industry,
- Historic Community Patterning, and
- The Role of Transportation Systems during the Historic Period.

In addition, the Department of Antiquities Protection (DAP) of the Texas Historical Commission (THC) has identified five broad, regional contexts, or research themes, as having priority for prehistoric studies in Northeast Texas (Kenmotsu and Perttula 1993). These are:

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- Environmental Change during the Holocene,
- The Emergence of Sedentism,
- Changes in Hunter/Gatherer Mobility,
- The Development of Agriculture Prior to A.D. 1600, and
- The Effect of European Contact on Native and Immigrant Indians.

At the same time, the Advisory Committee to the National Register Programs Committee has identified nine broad state historic contexts, or research themes, for the historic period throughout Texas as a whole (Jones 1990). These include:

- Agriculture (1680-1945),
- Arts (1680-1945),
- Community and Regional Development (1680-1945),
- Exploration and Settlement (ca. 1533-1945),
- Military (1533-1945),
- Natural Resources Exploitation and Development (1628-1945),
- Politics and Government (1680-1945),
- Transportation (1533-1945), and
- Education (1680-1945).

Thus, the first criteria of significance for any archeological property in the RRAD/LSAAP is its capability to yield information relevant to one of these research themes. In addition, the following criteria have also been applied to facilitate the evaluation of cultural resources within the RRAD/LSAAP:

1. potential for interpretation of culture history or local sequences;
2. potential for interpretation of intersite or intrasite patterning;
3. potential for interpretation of technology or primitive industries; and/or
4. existence as an example of a unique or rare site type.

Whether or not specific properties exhibit such potential or contain data relevant to any particular research theme is dependent upon a precondition of contextual integrity of the archeological deposits. For example, a prehistoric site which was buried by sediment within the flood plain of a creek or river has a far greater potential for containing undisturbed deposits than one located on a nonaggrading upland surface. However, the nature of contextual integrity, as it affects research potential of a property, must also be viewed as relative, since different research problems have different data requirements.

The RRAD/LSAAP survey methodology was designed to provide a preliminary assessment of:

1. the *content* of the cultural deposits (i.e., the range of artifactual and feature information available);
2. the *integrity* of the deposits (i.e., is the site undisturbed, bioturbated, deflated, etc.); and
3. the *context* of the cultural deposits, in relation to both the natural and cultural environment of the appropriate time period.

The fundamental information derived from the survey was used to evaluate the sites and their potential for increasing our knowledge of past lifeways, contributing to the resolution of regionally pertinent research questions, or containing information relevant to any of the above research themes or problems. The research themes which seem most relevant to the prehistoric properties recorded by the 1993 RRAD/LSAAP survey are:

1. Culture History,
2. Prehistoric Settlement-Subsistence Systems,
3. Prehistoric Lithic Raw Material Use Patterns, and
4. Prehistoric Technology.

The only research themes which seem relevant to the historical components are:

5. Upland and Lowland South Settlement-Subsistence Patterns during the Historic Period,
6. The Role of Transportation Systems during the Historic Period, and
7. Historic Community Patterning.

Pertinent research questions for the prehistoric period include:

- What sociocultural trends can be identified during the long Archaic period in Northeast Texas?
- Can the time frame for localized developments, such as the beginning of incipient agriculture and the development of sedentism, be refined through the use of radiocarbon dates, cultural stratification, single component deposits, horizontal separation of components, or other methods of chronological control?
- Can in situ archeological deposits dating to the Paleo-Indian, Archaic, Early Ceramic, and Caddoan periods which can provide data for the reconstruction of settlement-subsistence patterns (e.g., topographic and environmental parameters, variety and abundance of food residue, functional variability of tool and ceramic samples, intersite variability of subsistence-related features and ceremonial structures, mortuary patterns, and bioarcheological data) be located?
- Does the Early Ceramic occupation of the Sulphur-Red River divide actually include small components located in the uplands, as has been suggested (see Perttula 1988a)?
- What is the relationship between Early Ceramic period sites within the uplands of the Sulphur-Red River divide and sites in other parts of the Great Bend area, in regard to the complex social developments and interregional exchange systems which were operative elsewhere in the Caddoan area?
- Do the late prehistoric sites in the RRAD/LSAAP survey area represent a permanent Caddoan population residing in the upland portions of the Red and Sulphur River drainages or only temporary visits for resource extraction?
- Can interpretable patterns in changes in the frequency of local versus nonlocal lithic sources used in the production of stone tools be identified for all prehistoric periods present within the RRAD/LSAAP?
- Can temporal developments and influences from external sources within the region be recognized in the lithic technological variability from the RRAD/LSAAP?
- Can the apparently small ceramic samples present at sites within the RRAD/LSAAP be used to supplement a local ceramic chronology, and can they provide data on technological and stylistic variability which can in turn result in temporal and formal frameworks and regional synthetic research efforts?

Research questions relevant to the historic period sites include:

- Can sites associated with the two farming systems known to have been present in the RRAD/LSAAP area during the Antebellum period (i.e., Upper South yeoman farmers and Lower South plantations) be identified in the archeological record?
- Did the two farming systems participate similarly within the same market economy?
- Were site location factors the same or different for the two systems?

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- Did the plantation system provide greater access to status items and nonutilitarian goods than the yeoman farm system?
- Did the reliance upon wild versus domestic food products in the diet differ between the two systems?
- How did the development of waterways and roads affect settlement patterns?
- Which system was quicker to adopt innovations related to preparation and storage of subsistence items or the production of cash crops?
- Did the two systems participate within the same or separate social communities?
- What was the nature of local industries and were kilns, saltworks, breweries, sawmills, etc., developed locally or were such manufactured goods imported during this period?
- What was the social and economic relationship of the two systems to rural villages?
- How did the changing focus of the agricultural economy during the latter part of the nineteenth century affect the economic conditions and material life of white and black tenant farmers in the RRAD/LSAAP?
- Did the focus of production on a cash crop affect land-use practices in this part of Bowie County during the late nineteenth/early twentieth century?
- How did the change from an antebellum plantation system based on slave labor to the late nineteenth century system based on tenant farmers and sharecroppers change the pattern of rural community settlement?
- How does the material culture of the three socioeconomic communities present in the area (large landholders, small landholders, and tenants or sharecroppers) change in response to the national and regional economic conditions of the late nineteenth and early twentieth centuries?
- Is there a distinctive community patterning in the archeological record which is recognizable for each of the three socioeconomic groups present in the area?
- Is the black community as a sociocultural group recognizable archeologically within the larger community?
- What effect did rural industrialization (such as the development of the lumber industry) after 1870 have on the economy, settlement pattern, and patterns of consumption of the various ethnic groups residing within the RRAD/LSAAP?

ARCHEOLOGICAL RESULTS OF THE 1993 RRAD/LSAAP SURVEY

As a result of the 1993 RRAD/LSAAP survey, 44 cultural resources sites were located and recorded, with 31 prehistoric and 13 historical occupations being identified. Most of these sites appear to represent single component occupations. A total of 22 sites was recorded on the RRAD (Table 51) and 22 on the LSAAP (Table 52).

In addition to the cultural resources sites recorded by the 1993 RRAD/LSAAP survey, 50 nonsite localities were noted. Seventeen of these contained historical remains, including isolated or scattered surface artifacts or dumps, single shovel tests containing subsurface material, or miscellaneous evidence of historic activity. Thirty-three localities contained prehistoric remains, largely consisting of isolated survey shovel tests containing subsurface artifacts. Some of these localities are relatively close to identified cultural resources sites and may be associated with these occupations, while others may be the remains of bulldozed or eroded sites. None of these localities is believed to have any research potential, and it is recommended that they all be considered ineligible for inclusion in the NRHP.

Table 51
Summary of Cultural Resources Sites Recorded on the Red River Army Depot by the 1993 RRAD/LSAAP Survey

Site Number	Period of Occupation	Drainage	Estimated Site Area (m ²)	Subsurface Artifact Frequency	Total Number of Shovel Tests	Number of Onsite Shovel Tests	Average Artifact Density per Onsite Shovel Test
41BW421	Historic	Elliott Creek	4,600	8	8	4	2.00
41BW529	Prehistoric	Elliott Creek	1,900	27	8	7	3.85
41BW533	Historic	Nettles Creek	1,800	13	8	3	4.33
41BW534	Historic	Nettles Creek	3,400	3	8	5	.60
41BW535	Historic	Elliott Creek	2,400	4	8	3	1.33
41BW536	Prehistoric	Elliott Creek	54,000	319	34	27	11.81
41BW537	Prehistoric	Elliott Creek	1,950	9	8	4	2.25
41BW538	Prehistoric	Nettles Creek	6,050	61	9	5	12.20
41BW539	Prehistoric	Nettles Creek	1,300	3	8	2	1.50
41BW540	Prehistoric	Elliott Creek	1,200	8	8	4	2.00
41BW541	Prehistoric	Elliott Creek	900	3	8	2	1.50
41BW542	Historic	Nettles Creek	3,350	16	8	4	4.00
41BW543	Historic	Elliott Creek	3,500	30	8	4	7.50
41BW544	Historic	Caney Creek	5,800	8	8	6	1.33
41BW545	Prehistoric	Caney Creek	1,200	5	8	2	2.50
41BW547	Prehistoric	Caney Creek	3,000	10	8	3	3.33
41BW548	Historic	Caney Creek	5,700	13	9	6	2.17
41BW549	Historic	Caney Creek	5,000	8	9	6	1.33
41BW559	McAdams Cemetery	*	484	*	*	*	*
41BW560	Elliott Cemetery	*	1,050	*	*	*	*
41BW561	Historic	Caney Creek	3,600	10	8	6	1.67
41BW562	Prehistoric	Caney Creek	3,600	45	9	5	9.00

Table 52
Summary of Cultural Resources Sites Recorded on the Lone Star Army Ammunition Plant by the 1993 RRAD/LSAAP Survey

Site Number	Period of Occupation	Drainage	Estimated Site Area (m ²)	Subsurface Artifact Frequency	Total Number of Shovel Tests	Number of Onsite Shovel Tests	Average Artifact Density per Onsite Shovel Test
41BW417	Prehistoric	Elliott Creek	3,350	13	11	6	2.17
41BW418	Prehistoric	Elliott Creek	1,200	32	8	4	8.00
41BW419	Prehistoric	Elliott Creek	900	11	8	4	2.75
41BW420	Prehistoric	Elliott Creek	900	6	8	3	2.00
41BW481	Prehistoric	Elliott Creek	2,000	9	8	3	3.00
41BW482	Historic	Elliott Creek	900	0	8	4	-
41BW483	Prehistoric	Elliott Creek	1,200	6	8	4	1.50
41BW484	Prehistoric	Elliott Creek	950	17	9	5	3.40
41BW485	Prehistoric	Elliott Creek	4,500	10	13	9	1.11
41BW492	Prehistoric	Elliott Creek	3,900	58	12	9	6.44
41BW493	Prehistoric	Elliott Creek	450	3	8	3	1.00
41BW494	Prehistoric	Elliott Creek	240	3	8	2	1.50
41BW495	Prehistoric	Elliott Creek	1,500	19	11	4	4.75
41BW496	Prehistoric	Elliott Creek	4,300	84	13	9	9.33
41BW497	Prehistoric	Elliott Creek	13,600	199	15	11	18.09
41BW498	Prehistoric	Aiken Creek	2,500	6	8	3	2.00
41BW499	Prehistoric	Aiken Creek	700	5	9	2	2.50
41BW500	Prehistoric	Aiken Creek	3,000	34	9	5	6.80
41BW530	Prehistoric	Elliott Creek	1,300	66	8	4	16.50
41BW531	Prehistoric	Elliott Creek	1,000	11	8	4	2.75
41BW532	Prehistoric	Elliott Creek	5,600	42	12	7	6.00
41BW546	Prehistoric	Aiken Creek	2,400	10	8	3	3.33

Prehistoric Settlement in the RRAD/LSAAP Area

The majority of the 31 prehistoric sites recorded by the 1993 RRAD/LSAAP survey are of unknown age (n=23), since the samples recovered from them lack any diagnostic artifacts. Of the remaining eight sites, three (41BW500, 41BW529, and 41BW536) may be of Late Archaic/Early Ceramic affiliation based on the presence of Gary dart points in aceramic artifact samples; three (41BW417, 41BW484, and 41BW497) may be either Early Ceramic or Caddoan based on the occurrence of arrow points in aceramic samples; one (41BW496) may be of Caddoan affiliation based on the presence of decorated ceramics; and another one (41BW532) may have both Early Ceramic and Early Caddoan occupations, based on the occurrence of a Gary point in association with both plain and decorated ceramics (Tables 53 and 54).

Table 53
Estimated Dates of Occupation and Site Types for Cultural Resources Properties
Recorded on the Red River Army Depot, 1993 RRAD/LSAAP Survey

Site Number	Estimated Date of Occupation	Suggested Site Function
41BW421	1910-1941	Domestic Residence
41BW529	Late Archaic/Early Ceramic	Short-term Campsite
41BW533	ca. 1890-1941	Domestic Residence
41BW534	ca. 1885-1941?	Domestic Residence
41BW535	Post-1900?	Domestic Residence?
41BW536	Late Archaic/Early Ceramic	Reoccupied Campsite
41BW537	Unknown prehistoric	Short-term Campsite
41BW538	Unknown prehistoric	Reoccupied Campsite
41BW539	Unknown prehistoric	Short-term Campsite
41BW540	Unknown prehistoric	Short-term Campsite
41BW541	Unknown prehistoric	Short-term Campsite
41BW542	ca. 1900-1941	Domestic Residence?
41BW543	ca. 1890-1930	Nonhabitation site?
41BW544	ca. 1900-1941	Domestic Residence
41BW545	Unknown prehistoric	Short-term Campsite
41BW547	Unknown prehistoric	Short-term Campsite
41BW548	ca. 1890-1941	Domestic Residence
41BW549	ca. 1900-1941	Domestic Residence
41BW559	pre-1942	McAdams Cemetery
41BW560	pre-1942	Elliott Cemetery
41BW561	ca. 1900-1941?	Nonhabitation site?
41BW562	Unknown prehistoric	Reoccupied Campsite

Table 54
Estimated Dates of Occupation and Site Types for Cultural Resources Properties Recorded
on the Lone Star Army Ammunition Plant, 1993 RRAD/LSAAP Survey

Site Number	Estimated Date of Occupation	Suggested Site Function
41BW417	Early Ceramic/Caddoan	Reoccupied Campsite
41BW418	Unknown prehistoric	Reoccupied Campsite
41BW419	Unknown prehistoric	Short-term Campsite
41BW420	Unknown prehistoric	Short-term Campsite
41BW481	Unknown prehistoric	Short-term Campsite
41BW482	ca. 1920-1941	Domestic Residence?
41BW483	Unknown prehistoric	Short-term Campsite
41BW484	Early Ceramic/Caddoan	Reoccupied Campsite
41BW485	Unknown prehistoric	Short-term Campsite
41BW492	Unknown prehistoric	Reoccupied Campsite
41BW493	Unknown prehistoric	Short-term Campsite?
41BW494	Unknown prehistoric	Short-term Campsite?
41BW495	Unknown prehistoric	Reoccupied Campsite
41BW496	Caddoan	Reoccupied Campsite
41BW497	Early Ceramic/Caddoan	Reoccupied Campsite
41BW498	Unknown prehistoric	Short-term Campsite?
41BW499	Unknown prehistoric	Short-term Campsite?
41BW500	Late Archaic/Early Ceramic	Reoccupied Campsite
41BW530	Unknown prehistoric	Reoccupied Campsite
41BW531	Unknown prehistoric	Short-term Campsite
41BW532	Early Ceramic/Early Caddoan	Reoccupied Campsite
41BW546	Unknown prehistoric	Reoccupied Campsite

Most of these prehistoric sites are believed to probably have been campsites, occupied by small nuclear or extended family groups for a relatively short period of time (perhaps a season or less). In the site descriptions in Chapters 5 and 6, a distinction was made between "short-term campsites" and "periodically reoccupied campsites" on the basis of perceived differences in the intensity of utilization, with the latter sites being larger and having a higher density of subsurface artifacts. In general, it is believed that these differences are reflective of increased length of occupation, greater intensity of occupation, and greater consistency of reoccupation.

An examination of the distribution of these prehistoric sites across the landscape of the RRAD/LSAAP shows that they conform to the distributional pattern which was identified subsequent to the initial survey of portions of the RRAD/LSAAP (Peter and Cliff, eds. 1990a):

The majority of the prehistoric sites are located . . . along one of the five major drainage basins which originate within the RRAD/LSAAP area. . . . Big Creek, Rock Creek, Caney Creek, Elliott Creek, and the East Fork of Elliott Creek [Peter and Cliff, eds. 1990a:281].

Based on the results of this first survey, it appeared that the sites had "an almost even distribution except for the slightly higher number of sites in the Caney Creek Basin," the latter of which was hypothesized to be solely the result of a cluster of upland sites around the headwaters of that creek (Peter and Cliff, eds. 1990a:281).

The present survey identified three additional prehistoric sites within the Caney Creek basin, 24 sites within the Nettles-Elliott Creek basin, and four within the Aiken Creek basin. The sites along Nettles-Elliott creeks are generally well within the primary drainage basin. However, the sites along Caney and Aiken creeks are in the upper reaches of their respective drainage basins.

Based on the present survey, coupled with the results of the three previous surveys (Peter and Cliff, eds. 1990a, 1990b; Cliff and Peter, eds. 1994a), Elliott Creek appears to have been the most intensively utilized part of the RRAD/LSAAP during the prehistoric period by a narrow margin, with a total of 42 sites recorded along it (34.4 percent of the total sample of 122 sites). The total known sites for all of the major creek systems within the RRAD/LSAAP are:

Big Creek - 9 (7.4 percent);
Rock Creek - 9 (7.4 percent);
Caney Creek - 39 (32.0 percent);
Elliott Creek - 42 (34.4 percent);
East Fork of Elliott Creek - 15 (12.3 percent);
Aiken Creek - 6 (4.9 percent);
Jones Creek - 1 (.8 percent); and
an unnamed drainage east of East Fork/Elliott Creek - 1 (.8 percent).

All of these creeks flow south into the Sulphur River, with the exception of Jones Creek, which flows north into the Red River. Jones and Aiken creeks both only have headwaters located within the RRAD/LSAAP area. Additional sites along Big, Caney, Nettles, and Elliott creeks were almost certainly destroyed by the Caney Creek and Elliott Creek reservoirs and other construction associated with the two government facilities.

The high density of sites now known to be located along Caney and Elliott creeks (66.4 percent of all prehistoric sites in the RRAD/LSAAP) has been difficult to explain in the past, even taking into account sampling error. Now, however, it is becoming increasingly clear that Elliott Creek, and probably Nettles and the east branch of Caney Creek to a lesser degree, is associated with a valuable resource in the form of upland lag gravels which include sizable quantities of high quality stone for knapping. Circumstantial evidence suggests that these lag gravels contain material ultimately derived from southwestern Arkansas and southeastern Oklahoma, including various types of chert, novaculite, and quartzite. The collections recovered from the sample of prehistoric sites recorded within the RRAD/LSAAP during this phase of survey indicates that primary and secondary decortification were important activities at all of these sites, and it may not be out of line to refer to them as lithic procurement sites, although it is felt likely that other activities

were carried out at all of these sites as well. The existence and use of these upland lag gravels as lithic raw material sources also explains why there appears to be a significantly higher density of prehistoric sites along the peripheral drainages of Caney and Nettles/Elliott creeks in comparison to other drainage systems (cf. Cliff and Peter, eds. 1994a:Table 10).

Historic Settlement in the RRAD/LSAAP Area

Thirteen sites with historical components were located by the 1993 RRAD/LSAAP survey. These sites appear to consist largely of domestic residence sites (n=9), while two sites may be ancillary nonhabitation sites (i.e., farm outbuilding locations) and two are historical cemeteries. Seven of the sites are estimated to be entirely twentieth century in age (41BW421, 41BW482, 41BW535, 41BW542, 41BW544, 41BW549, and 41BW561); four may have been initially utilized or occupied in the late nineteenth century (41BW533, 41BW534, 41BW543, and 41BW548); and the two cemeteries (41BW559 and 41BW560) are of unknown age but are presumed to precede the construction of the RRAD/LSAAP in 1942.

The addition of this new data to the results obtained by previous research within the RRAD and the LSAAP (Cliff and Peter, eds. 1988, 1994a; Peter and Cliff, eds. 1990a, 1990b) does little to change the conclusions presented earlier (Cliff and Peter, eds. 1994a:225-231). With the sample of historical sites now known from this area at 190 (the age of about 95 percent of which can be estimated), the pattern of slow growth and low settlement density which was suggested to characterize the period from 1840 to 1860 remains unchanged (cf. Cliff and Peter, eds. 1994a:225). Likewise, the decade from 1860 to 1870 continues to appear to be one of settlement stability with little or no growth, which was followed by rapid growth beginning in the post-war decade from 1870 to 1880 and continuing in the subsequent decade.

Based on the previous data, the decade from 1890 to 1900 appears to have witnessed only moderate growth, with more rapid growth during the subsequent 10 years. The new data available from the present survey only serve to reinforce this pattern, with an increased sample of sites occupied beginning around 1900 and continuing up to 1941. The most intensive period of occupation still seems to have been from 1900 to 1910, with a decrease of occupation after 1910 which appears even more gradual than originally thought. It now appears, however, that by the early 1940s, when domestic occupation of the RRAD/LSAAP area ceased, occupation levels had not fallen to pre-1890 levels as originally thought, and had not even fallen to pre-1900 levels.

The distribution of estimated initial occupation dates continues to mirror these trends, with slow growth in the area prior to 1860; a period of slowed growth, or decrease in new occupations, during the decade of the Civil War; and two decades of new growth from 1870 to 1890. The new data set increases the number of initial occupations identified during the closing decades of the nineteenth century, as well as increasing those for the first several decades of the twentieth century. This latter increase, however, is not sufficient to change the previously perceived pattern of a drop in new occupations between 1890 and 1900, followed by another but less spectacular surge in settlement after 1900. Thus, the radical decrease in new occupations following 1910 continues to appear in the settlement data. Finally, the increased data set for the RRAD/LSAAP area continues to suggest that the Civil War, World War I, and the post-war economy and subsequent depression had negative effects on the growth of rural settlement in Northeast Texas. Conversely, population movements in the period following the end of the Civil War and the improved transportation and regional development which accompanied the railroad both seem to have had positive effects on rural growth in the area.

RECOMMENDATIONS

Of the 44 cultural resources properties located and recorded by the 1993 RRAD/LSAAP survey, it is recommended that 18 be considered to be ineligible for inclusion in the NRHP and that no further work be done at them (Tables 55 and 56). All of these sites are felt to have very limited potential to contribute significant data important to our understanding of the prehistoric or historical periods in Northeast Texas. In the case of 11 of these sites (41BW482, 41BW493, 41BW534, 41BW535, 41BW540, 41BW542, 41BW543, 41BW544, 41BW548, 41BW549, and 41BW561), this is due to the fact that the site appears to have poor contextual integrity, having been severely impacted by recent historical or natural activities and suffering destruction or severe disturbance of the soil deposits in which any archeological remains might be found. The other seven sites (41BW421, 41BW485, 41BW494, 41BW537, 41BW539, 41BW541, and 41BW545) do show some contextual integrity, but are recommended to be ineligible, based on their low artifact densities and generally small size which, it is believed, limits their potential for significantly increasing our knowledge of the prehistoric and historic periods of Northeast Texas. Based on the shovel testing conducted during the site recording process, these sites simply appear to contain too little data to properly address pertinent and appropriate research questions.

Of the remaining 26 recorded sites (41BW417, 41BW418, 41BW419, 41BW420, 41BW481, 41BW483, 41BW484, 41BW492, 41BW495, 41BW496, 41BW497, 41BW498, 41BW499, 41BW500, 41BW529, 41BW530, 41BW531, 41BW532, 41BW533, 41BW536, 41BW538, 41BW546, 41BW547, 41BW559, 41BW560, and 41BW562), all are recommended to be considered to have the status of "eligibility unknown." The status of "eligibility unknown" is based upon the perceived need for further evaluation of the archeological deposits and/or the research potential present at these sites. Out of these 26 properties, 23 (41BW417, 41BW418, 41BW419, 41BW420, 41BW481, 41BW483, 41BW484, 41BW492, 41BW495, 41BW496, 41BW497, 41BW498, 41BW499, 41BW500, 41BW529, 41BW530, 41BW531, 41BW532, 41BW536, 41BW538, 41BW546, 41BW547, and 41BW562) are felt to have good research potential based on their prehistoric occupations, while the other three (41BW533, 41BW559, and 41BW560) may have good research potential because of their historical remains. All of these sites are felt to potentially contain significant archeological deposits dating to the prehistoric and historic periods, with a potential for increasing our knowledge and understanding of various lifestyles of these periods. Taken together, these sites could provide a valuable cross section of prehistoric and historic lifestyles within this portion of the Sulphur River-Red River divide, and may possess the contextual integrity required to address some of the research themes noted above.

Based on the data collected by the 1993 RRAD/LSAAP survey and the assessment of the research potential for each site, a series of recommendations has been made for each cultural property. The preferred treatment for all significant cultural properties within the RRAD/LSAAP is preservation and protection, but it is recognized that this may not always be possible. For some sites preservation presents no problems. However, other sites may be in the path of planned or future developments on the RRAD or LSAAP. At the present time, the activity with the most immediate possibility of impact for these cultural resources sites is timber harvesting.

The Cultural Resources Management Plan (CRMP) developed for the RRAD/LSAAP (Peter et al. 1991) states that

[t]imber harvesting is potentially damaging to cultural resources properties if skid trails or loading and logistical staging areas are placed on or near the site. Similarly, the removal of trees from a site in wet weather with a skid loader will leave ruts and generally disturb the site context [Peter et al. 1991:VI-3].

Table 55
National Register of Historic Places Assessment of Cultural Resources Properties
Recorded on the Red River Army Depot, 1993 RRAD/LSAAP Survey

Site Number	Site Size ¹	Density of Material ²	Contextual Integrity ³	NRHP Assessment	Recommendations
41BW421	Medium	Low	Fair	Ineligible	No further work
41BW529	Small	Moderate	Good	Unknown	Test
41BW533	Small	Moderate	Good	Unknown	Test
41BW534	Medium	Low	Poor	Ineligible	No further work
41BW535	Medium	Low	Poor	Ineligible	No further work
41BW536	Very Large	Very high	Good	Unknown	Test
41BW537	Small	Low	Fair	Ineligible	No further work
41BW538	Large	Very high	Fair	Unknown	Test
41BW539	Small	Low	Good	Ineligible	No further work
41BW540	Small	Low	Poor	Ineligible	No further work
41BW541	Small	Low	Fair	Ineligible	No further work
41BW542	Medium	Moderate	Poor	Ineligible	No further work
41BW543	Medium	Moderate	Poor	Ineligible	No further work
41BW544	Large	Low	Poor	Ineligible	No further work
41BW545	Small	Low	Fair	Ineligible	No further work
41BW547	Medium	Moderate	Good	Unknown	Test
41BW548	Large	Low	Poor	Ineligible	No further work
41BW549	Large	Low	Poor	Ineligible	No further work
41BW559	Small	*	McAdams Cemetery	Unknown	Protect and Preserve
41BW560	Small	*	Elliott Cemetery	Unknown	Protect and Preserve
41BW561	Medium	Low	Poor	Ineligible	No further work
41BW562	Medium	High	Good	Unknown	Test

Footnotes:

1 Criteria for site size categories:

Very Large = Estimated site area of more than 15,000 m².

Large = Estimated site area of between 5,000 and 15,000 m².

Medium = Estimated site area of between 2,000 and 5,000 m².

Small = Estimated site area of less than 2,000 m².

2 Criteria for density categories:

Very High = Average subsurface density greater than 12 artifacts per shovel test.

High = Average subsurface artifact density within the site area equals more than 8 artifacts per shovel test.

Medium = Average subsurface artifact density ranges from 3 to 8 artifacts per shovel test.

Low = Average subsurface artifact density is less than 3 artifacts per shovel test.

3 Criteria for levels of contextual integrity:

Excellent = Site judged to be largely intact; identifiable well preserved archeological features or deposits, with faunal preservation, buried stratified deposits, and/or intact spatial artifact patterning; minimal disturbance limited to bioturbation, peripheral erosion, or very limited human disturbance.

Good = Site judged to be largely intact; only identifiable disturbances due to bioturbation, erosion, and localized or limited cultural activity; possible intact artifact patterning; no evidence for features, faunal remains, or buried deposits.

Fair = Site judged to be only partially intact; several types of limited cultural disturbances may be present, including light-duty roads, fences, possible machine disturbance, erosion and deflation, and bioturbation.

Poor = Site judged to be only minimally intact; evidence of heavy disturbance or destruction of the site, due to bulldozing, earthmoving, erosion, or other processes.

Table 56
National Register of Historic Places Assessment of Cultural Resources Properties
Recorded on the Lone Star Army Ammunition Plant, 1993 RRAD/LSAAP Survey

Site Number	Site Size ¹	Density of Material ²	Contextual Integrity ³	NRHP Assessment	Recommendations
41BW417	Medium	Low	Good	Unknown	Test
41BW418	Small	High	Good	Unknown	Test
41BW419	Small	Low	Good	Unknown	Test
41BW420	Small	Low	Good	Unknown	Test
41BW481	Medium	Moderate	Good	Unknown	Test
41BW482	Small	-	Poor	Ineligible	No further work
41BW483	Small	Low	Good	Unknown	Test
41BW484	Small	Moderate	Good	Unknown	Test
41BW485	Medium	Low	Good	Ineligible	No further work
41BW492	Medium	Moderate	Good	Unknown	Test
41BW493	Small	Low	Poor	Ineligible	No further work
41BW494	Small	Low	Fair	Ineligible	No further work
41BW495	Small	Moderate	Good	Unknown	Test
41BW496	Medium	High	Good	Unknown	Test
41BW497	Large	Very High	Good	Unknown	Test
41BW498	Medium	Low	Good	Unknown	Test
41BW499	Small	Low	Good	Unknown	Test
41BW500	Medium	Moderate	Good	Unknown	Test
41BW530	Small	Very High	Good to Excellent	Unknown	Test
41BW531	Small	Low	Fair	Unknown	Test
41BW532	Large	Moderate	Good	Unknown	Test
41BW546	Medium	Moderate	Good	Unknown	Test

Footnotes:

1 Criteria for site size categories:

Very Large = Estimated site area of more than 15,000 m².*Large* = Estimated site area of between 5,000 and 15,000 m².*Medium* = Estimated site area of between 2,000 and 5,000 m².*Small* = Estimated site area of less than 2,000 m².

2 Criteria for density categories:

Very High = Average subsurface density greater than 12 artifacts per shovel test.*High* = Average subsurface artifact density within the site area equals more than 8 artifacts per shovel test.*Medium* = Average subsurface artifact density ranges from 3 to 8 artifacts per shovel test.*Low* = Average subsurface artifact density is less than 3 artifacts per shovel test.

3 Criteria for levels of contextual integrity:

Excellent = Site judged to be largely intact; identifiable well preserved archeological features or deposits, with faunal preservation, buried stratified deposits, and/or intact spatial artifact patterning; minimal disturbance limited to bioturbation, peripheral erosion, or very limited human disturbance.*Good* = Site judged to be largely intact; only identifiable disturbances due to bioturbation, erosion, and localized or limited cultural activity; possible intact artifact patterning; no evidence for features, faunal remains, or buried deposits.*Fair* = Site judged to be only partially intact; several types of limited cultural disturbances may be present, including light-duty roads, fences, possible machine disturbance, erosion and deflation, and bioturbation.*Poor* = Site judged to be only minimally intact; evidence of heavy disturbance or destruction of the site, due to bulldozing, earthmoving, erosion, or other processes.

Cultural Resources Survey: Red River Army Depot and Lone Star Army Ammunition Plant, Texas

Most of the cultural resources sites of unknown eligibility on the RRAD/LSAAP have the potential of being disturbed by timber harvesting. Therefore, the procedures contained in the RRAD/LSAAP CRMP should be stringently followed to avoid damage to these sites until the evaluation procedure can be completed:

- avoidance of [these] cultural resources by ensuring that skid trails and loading and logistical staging areas are placed at least 50 feet from their marked boundaries, and
- avoidance of [these] cultural resources by prohibiting use of tracked vehicles on their surfaces, and use of any vehicle during wet soil conditions. Downed trees will be removed from these properties with rubber tired vehicles when the soil matrix is relatively dry and firm (Peter et al. 1991:VI-3).

Other activities which potentially may have long-term impacts on the cultural resources sites present within the RRAD/LSAAP include:

1. nonexplosive vibrosis/seismic surveys,
2. excessing lands to another federal agency,
3. National Guard or other training activities,
4. plowing of existing fire lanes,
5. lateral expansion of existing borrow pits,
6. mowing and controlled burning,
7. unauthorized surface collection,
8. facility construction,
9. right-of-way easements,
10. new borrow pit excavations,
11. environmental remediation,
12. tree plantation development,
13. oil and gas leases,
14. excessing lands to a non-federal agency or individual, and
15. archeological site vandalism.

Definitions of each of these specific activities, as well as standard operating procedures for managing the cultural resources in each instance, are detailed in *Section VI, Subsections B and D* of the CRMP for the RRAD/LSAAP (Peter et al. 1991).

In light of the future potential for these types of impacts to the cultural resources properties within the RRAD/LSAAP, it is recommended that the NRHP evaluation process be completed for those sites which are determined to be of unknown eligibility. The completion of the evaluation process for most of these sites should involve test excavations as a means of evaluating the actual potential of each site to contribute to our understanding of prehistoric or historic lifeways in Northeast Texas and of providing information for the development of a preservation plan with the concurrence of the Texas State Historic Preservation Officer (SHPO). Following this, those sites which can be recognized as being eligible for inclusion on the NRHP should be nominated and protected from any further impacts. Determination of eligibility of the two historical cemeteries recorded by the present survey on the RRAD (the McAdams Cemetery, 41BW559, and the Elliott Cemetery, 41BW560) will require archival research, and possibly informant interviewing, to identify the age of each cemetery as well as the identity, ethnic affiliation, and socioeconomic background of the occupants. This information will allow a judgment regarding the likelihood of either cemetery being associated with any significant historical personage or event, or having the potential to yield "important information not available in extant documentary evidence" (USDI, NPS 1991).

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APPENDIX A

DEFINITIONS OF PREHISTORIC ARTIFACT CLASSES

INTRODUCTION

As was noted previously, the major classes of chipped stone artifacts recognized by this analysis consist of: (1) finished bifacial tools; (2) unfinished bifaces; (3) unifaces or unifacial tools; (4) unmodified lithic debitage; (5) utilized flakes or debitage; and (6) cores. Additional classes of non-chipped stone artifacts include (7) ground/pecked/battered stone tools and (8) unworked stone. The ninth major artifact class recognized in this analysis consisted of ceramics/baked clay. Each of these artifacts classes is described separately below.

GROUP 1: LITHICS

Class 1: Finished Bifacial Tools

Finished bifacial tools are those finely worked pieces in which the manufacturing process has been apparently brought to completion, as evidenced by secondary retouch, edge straightening, hafting preparation, notching, and similar characteristics. A minimum of 11 tool types is recognized: (1) dart point; (2) arrow point; (3) indeterminate point; (4) axe; (5) thinned biface (knife); (6) chopper; (7) drill; (8) adze/gouge; (9) marginal bifacial retouch; (10) graver; and (11) indeterminate biface.

These tools are further classified on the basis of their completeness: (1) complete; (2) tip; (3) mid-section; (4) base/stem; (5) longitudinal fracture; (6) tang; (7) blade; (8) proximal/medial (all but tip); (9) distal/medial (all but base); and (10) indeterminate fragment.

Dart Points, Arrow Points, and Indeterminate Points

Dart points, arrow points, and indeterminate points include all varieties of projectile points — defined as bifacial tools formed by fine secondary retouch with basal modification in the form of notching, stemming, or thinning of the proximal end for purposes of hafting. Dart points are presumed to have been employed to tip hand-held spears or atlatl darts; arrow points are presumed to have been used to tip arrows; and indeterminate points are, as the name implies, of uncertain usage. Distinctions between dart and arrow points are somewhat subjective in actual practice, although many dart points are made on bifacial cores or large flakes using full bifacial reduction; while many arrow points are made on smaller, thinner flakes with bifacial reduction limited to edge modification. All projectile points are assigned to recognized and defined types whenever possible.

Axe

Axes are bifacially worked, generally rectangular to subrectangular or trapezoidal tools which exhibit modification along all edges. The modification has produced relatively straight to convex ends. Indications of hafting may be present in the form of lateral edge grinding or surface polishing or faceting on either one or both surfaces. The broad distal end may show signs of use in the form of fine step fracture flake scars.

Thinned Biface (Knife)

Thinned bifaces are sufficiently whole, bifacially worked blanks which exhibit biconvex symmetry, the presence of at least one edge formed by fine secondary retouch, and an absence of cortex except for the proximal end. These artifacts are commonly referred to as knives in the literature.

Chopper

Choppers are cobbles which have been modified, usually bifacially, into a teardrop shape by the removal of several flakes from one end. The opposite cortical, rounded end is unmodified, providing a handgrip during utilization.

Drill

Drills are bifacial tools characterized by a long, tapered, bifacially flaked bit on the distal end, which is diamond shaped in cross-section. During the Archaic period, the distal ends of projectile points were often reworked to produce this form, which resulted in a fully formed tool with a stemmed or notched proximal end. Drills from later periods tend to be smaller and were often fashioned from flakes, with the proximal end consisting simply of a retouched circular or oval handle.

Adze/Gouge

These bifacial chisel-like tools are assumed to be for woodworking. They are generally triangular, subtriangular, or sharply trapezoidal in shape and are worked along the wide distal end to produce a steep, beveled working edge which may be straight to convex. In cross section, these tools usually appear to be plano-convex to pyramidal. The proximal end was narrower and may have been socketed in a haft, or bound to an acutely angled handle. The tool itself was probably hafted perpendicular to the handle. Indications of hafting may be present in the form of lateral edge grinding or surface polishing or facetting on either one or both surfaces. The distal end may show signs of use in the form of fine step fracture flake scars on the dorsal face of the working edge.

Marginal Bifacial Retouch

These specimens, usually modified flakes, exhibit limited but deliberate modification on both faces along a portion of one or more edges. They are very similar to marginally modified/retouched unifaces except that the retouch is bifacial instead of unifacial. Their function is unknown.

Bifacial Graver

Bifacial gravers are similar to unifacial borers or gravers in that they are small, drill-like tools that are characterized by the presence of two adjacent concavities formed along an edge through the removal of small flakes, resulting in a sharp, prominent protrusion or spur that was presumably used for perforating. In the case of bifacial gravers, this graver spur was formed by bifacial retouch along both edges of the spur.

Indeterminate Biface

An indeterminate biface is a finished bifacial tool whose morphological form does not fit with any of the previously defined tool types and whose original function remains uncertain.

Class 2: Unfinished Bifaces

Unfinished bifaces are those in which the manufacturing process has not been brought to completion. These artifacts usually tend to be somewhat crude, lacking the fine workmanship of finished tools. Five types of unfinished bifaces are recognized: (1) aborted, Early; (2) aborted, Late; (3) arrow point preform; (4) dart point preform; and (5) indeterminate fragment.

These types are further subdivided on the basis of whether they are complete or fragmentary.

Aborted, Early

Aborted bifaces in general are bifacially worked artifacts that appear to have been rejected prior to the completion of the bifacial reduction process. The early aborted biface specimens usually lack symmetry and exhibit sinuous edges formed by the removal of large, thick flakes. Cortex is usually present on at least one surface and areas of step or hinge fracturing may be evident.

Aborted, Late

Late aborted biface specimens usually exhibit biconvex symmetry and straight or well-formed edges. Generally, all cortex will have been removed, but the fine, pressure retouch characteristic of a thinned biface is not present.

Arrow Point and Dart Point Preforms

These specimens are bifacially worked blanks with indications of fine edge retouch from pressure flaking along both lateral edges. The proximal ends of the blanks lack the necessary modification that would facilitate hafting. Some specimens retain portions of the original striking platform. Most arrow point preforms can be identified on the basis of the blank used — small, thin flakes which receive only moderate (or even minimal) bifacial modification to form the final tool. Otherwise, dart and arrow point preforms can also be distinguished based on overall dimensions.

Indeterminate Fragment

These specimens are bifacially worked pieces that cannot be placed in a more specific class because of their fragmentary nature.

Class 3: Unifaces

Unifaces or unifacial tools are formal lithic tools made by modification of only one face, as opposed to bifacial tools that are modified on both faces. As a result, unifacial tools exhibit flake scars on one side only. This retouch is usually on the dorsal side, but it is not unusual to have unifacial ventral retouched tools. Fourteen basic types of unifacial tool have been defined: (1) marginally modified/retouched uniface; (2) borer; (3) burin; (4) denticulate; (5) end scraper; (6) side scraper; (7) scraper with graver spur; (8) unifacial graver; (9) notch; (10) burin spall; (11) unifacial adze/gouge; (12) backed flake/blade; (13) transverse side scraper; and (14) circular scraper.

These types are further subdivided on the basis of whether the specimen is complete or fragmentary.

Marginally Modified/Retouched Unifaces

These are presumed to be deliberately retouched pieces, usually flakes, that are characterized by a single row of relatively small flake scars (often less than 2 mm in width) forming a working edge with an angle of less than 50°. One or more edges may have been modified in this fashion. In the Old World, similar tools are known as *raclettes*. Their function is unknown.

Borer

Borers are small, drill-like unifacial tools that are similar to gravers but are distinguished by alternating edge retouch. These pieces are characterized by two adjacent concavities formed along an edge through the removal of small flakes, resulting in a sharp, prominent spur that was used for perforating. On borers, one side of the spur is formed by unifacial retouch from the dorsal face, while the other side of the spur is formed by unifacial retouch from the ventral face.

Burin

A burin is a tool with a wedge-shaped, chisel-like edge which has been produced by the removal of a long, narrow sliver or spall, often perpendicular to the axis of the specimen. The specialized flake removed as a result of the burin technique is called a burin blade or spall (see blow).

Denticulate

This type of unifacial tool is formed by the removal of small flakes along one lateral edge of a flake or other lithic piece in order to form a working edge that is multiply notched or serrated.

End Scraper

These are unifacial tools with the retouch restricted to either the distal or proximal end of the blank, which is usually a blade or an elongated flake, generally producing a steep, convex working edge. Marginal retouch may appear along the lateral edges of the blank, but this is easily distinguishable from the working edge. The opposing end of the piece may bear some minimal retouch that was performed in order to facilitate hafting.

Side Scraper

These are unifacial tools with steep scraper retouch present on one or both lateral edges of the blank, which is usually a flake or blade. The working edge may be straight to convex or concave.

Scraper with Graver Spur

These tools consist of unifacial scrapers, either end or side scrapers, with an additional carefully flaked, prominent, sharp spur or protrusion formed by the creation of adjacent shallow unifacial concavities.

Graver

Gravers are similar to borers, except that both sides of the protrusion or graver spur are formed by unifacial retouch from the same one side. Presumably, these tools were used for the purposes of scoring and engraving.

Notch

This type of unifacial tool is formed when small flakes are removed along one lateral edge of a piece in order to form a working edge along a single, relatively deep concave area. In some cases, a large percussion flake scar forms the concave edge, which is then finely retouched to form the working edge.

Burin Spall

A burin spall is the small elongated flake or sliver that is removed to produce the chisel-like edge of a burin. Burin spalls often show minimal retouch along one edge, and in some cases may have been used for engraving.

Unifacial Adze/Gouge

These pieces are identical to bifacial adze/gouges, except that they have been modified unifacially.

Backed Flake/Blade

This is a blade or flake with an apparently intentionally dulled edge formed by the removal of flakes from one lateral margin opposite a sharp edge. In some cases the backing is naturally formed by cortex.

Transverse Side Scraper

These are unifacial tools with steep scraper retouch present on either the proximal or distal end of a wide flake. The working edge may be straight to convex or concave.

Circular Scraper

These are unifacial tools characterized by scraper retouch around at least three sides of the tool, giving a circular shape. They are generally manufactured on flakes and have been classified elsewhere as combined double side scrapers and end scrapers.

Class 4: Unmodified Debitage

Unmodified lithic debitage is the unused residue resulting from lithic reduction practices. It usually takes the form of flakes that exhibit a platform and a bulb of percussion, flake fragments, and nondiagnostic or angular shatter. Debitage may be further distinguished by the amount of cortex remaining on the piece. Five types of debitage are recognized: (1) primary decortication flakes; (2) secondary decortication flakes; (3) tertiary flakes; (4) bifacial thinning flakes; and (5) angular shatter. These categories are further subdivided

on the basis of overall size (sorting is done by using a series of nested U.S.A. Standard Testing Sieves): (1) > 25 mm; (2) 25 - 19 mm; (3) 19 - 12.5 mm; (4) 12.5 - 9.5 mm; (5) 9.5 - 6.3 mm; and (6) < 6.3 mm.

Primary Decortication Flake

Generally, these are flakes that were removed during the initial stages of cobble reduction. They are characterized by the retention of cortex on a minimum of 75 percent of their dorsal surfaces.

Secondary Decortication Flake

These are flakes that are presumed to have been removed during the initial and intermediate stages of cobble reduction. They are characterized by the retention of cortex on less than 75 percent of their dorsal surfaces.

Tertiary Flakes

These are flakes which are presumed to have been removed following cobble decortication and initial reduction. They are also known as interior flakes, lack any dorsal cortex, and are derived entirely from the interior of the cobble.

Bifacial Thinning Flakes

Bifacial thinning flakes are presumed to be the product of the final stages of bifacial reduction. They are distinctive flakes that are presumed to have been produced by softhammer reduction or pressure flaking to thin the biface for artifact manufacture. They are often small, and are usually characterized by diffuse bulbs of percussion, lipped striking platforms, and a curved longitudinal cross-section.

Angular Shatter

The term angular shatter refers to those irregular fragments that do not express the characteristics of a typical flake. Many are unrecognizable flake fragments, while others are simply lithic chunks that were unintentionally produced during the lithic reduction process, as for example when a flake removal failed catastrophically or the striking platform was crushed by an ill-placed blow.

Class 5: Utilized Flakes or Debitage

Utilized flakes ordebitage are lithic pieces that exhibit discontinuous, unsystematic, or marginal retouch of one or more edges, which presumably reflects use-wear of an informal or expedient nature, rather than intentional modification. Utilized flakes are classified on the basis of whether one or both faces show wear (i.e., unifacial, bifacial, or multiple unifacial/bifacial edges) and which side shows the wear (i.e., dorsal, ventral, or multiple dorsal/ventral edges). The form of the utilized blank includes the same flake types and size categories as for the unmodifieddebitage (see above), as well as recycled tools, aborted bifaces, and cores.

Class 6: Cores

A core is a cobble or mass of lithic material from which a number of flakes or blades have been removed, leaving negative flake scars. Six basic types of cores are recognized: (1) tested nodule/pebble; (2) unidirectional core; (3) bidirectional/bipolar core; (4) multidirectional core; (5) discoidal core; and (6) indeterminate.

Cores are further subdivided on the basis of platform type (i.e., single cortex, double opposed cortex, double perpendicular cortex, multiple cortex, prepared, bifacial, and multiple) and whether they are complete or fragmentary.

Tested Nodule/Pebble

These may be considered embryonic cores, since they consist of nodules or cobbles with one or very few flakes removed. These specimens presumably represent discards from an early material selection stage of the core reduction process.

Unidirectional

These are cores or cobbles with flakes removed from a single platform edge, struck in one direction. They are often deliberately prepared cores from which debitage flakes have been removed to preform the core. Mesoamerican polyhedral blade cores are an extreme form of unidirectional cores.

Bidirectional/Bipolar

These are cores or cobbles with flakes removed from two platform edges, either opposite one another or perpendicular to one another. Bipolar cores are a special type of bidirectional cores and are characteristically lozenge-, wedge-, or pillow-shaped, and result from the use of an anvil to rest the core against when striking it with a hammer. They usually show indications of impact fractures on two opposing faces.

Multidirectional

These are cores or cobbles from which flakes have been removed from three or more platform edges, in more than two directions. They usually do not show any degree of preparation or preforming and may simply result from the flint-knapper's use of whatever suitable striking platform is available. In this sense, they may be thought of as expedient or random-reduction cores.

Discoidal

These are cores or cobbles which have been bifacially reduced so that a disc-shaped core remains. They may be an early stage in a bifacial reduction sequence and to some extent their recognition may be an artificial product of initial raw material form, since bifacial reduction of an elongated cobble would probably yield an artifact classified as an early stage biface, while bifacial reduction of a circular or discoidal cobble would probably yield an artifact classified as a discoidal core.

Indeterminate

These are cores or cobbles which either do not fit into any of the previously identified core types, or which are broken and too fragmentary for identification of original core type.

Class 7: Ground/Pecked/Battered Stone

This artifact class includes those lithic specimens that have been modified by grinding, pecking, or battering as opposed to chipping. A minimum of 15 tool types, further subdivided on the basis of completeness, is recognized: (1) abrader; (2) anvil; (3) celt; (4) hammerstone; (5) incised stone; (6) mano; (7) mano/hammerstone; (8) metate/grinding slab; (9) pendant/gorget; (10) polished stone; (11) smoothed stone; (12) sinker (fishing weight); (13) bead; (14) multipurpose; and (15) atlatl weight/bannerstone.

Abrader

These specimens are usually limestone or sandstone fragments that exhibit longitudinal, V-shaped grooves presumably resulting from their use as a polishing, smoothing, and/or sharpening stone employed in the production of bone or lithic tools.

Anvil

Anvils are cobbles with small circular indentions in the center of one face, which were presumably used as a base in the processing of nuts and/or grains or possibly as anvils in a bipolar, hammer-and-anvil reduction technique.

Celt

These pieces are axe-like tools, round or oval in cross section, that were produced by extensive pecking and grinding. These tools may be grooved or ungrooved. Like adze/gouges, they have a steeply angled bit on one end.

Hammerstone

A hammerstone is a hard nodule of lithic material, usually quartzite, which has presumably been used for direct fracturing of stone during lithic reduction. These pieces may exhibit extreme battering on one or more ends, resulting from utilization during the lithic reduction process.

Incised Stone

Incised stones are plano-convex cobbles, usually of limestone, that exhibit a series of three or more incised parallel lines near the center of the specimen. These pieces often exhibit the characteristics of having been thermally altered and presumably were used in the shaft-straightening process for darts or arrows.

Mano

A mano is an ovate-shaped nodule of quartzite or sandstone with one or more surfaces smoothed through grinding.

Mano/Hammerstone

These multiuse tools exhibit at least one flattened, ground face and one end that has been battered as the result of use as a hammerstone.

Metate/Grinding Slab

These specimens are large, thick slabs, usually of sandstone, that have been ground smooth on one or both surfaces. These surfaces may be flat or basin-shaped.

Pendant/Gorget

These pieces are ground, smoothed and polished stones, often of an exotic, nonlocal material, that exhibit one or two drilled perforations. They were presumably worn or utilized as decorative ornaments.

Polished Stone

Polished stones are small pebbles that have been ground and smoothed through purposeful modification, as opposed to modification through utilization.

Smoothed Stone

These are small pebbles, such as ocher or limestone, that have been modified and shaped entirely through utilization.

Sinker (Fishing Weight)

These are medium-sized, usually water-worn pebbles with notches worked into opposite ends; they presumably were used as fishing net sinkers, although an alternative possibility is that they were used as bola stones.

Bead

Beads are small cylindrical or round pieces through which a hole has been bored. They were presumably strung with similar pieces and worn for decorative purposes.

Multipurpose

Multipurpose tools are those, such as mano/hammerstones, that were modified and/or utilized for a variety of tasks, such as grinding, polishing, abrading, etc.

Atlatl Weight/Bannerstone

The function of these relatively rare artifacts remains a matter of debate, but they appear to be atlatl weights, tools used as counterweight on spear-throwers in order to obtain greater range and accuracy from the darts. These artifacts may be winged or hourglass-shaped (similar in shape to a double-bladed executioner's axe), and most are drilled through the center, presumably to facilitate their attachment to an atlatl.

Class 8: Unworked Stone

Unworked stone refers to those materials at a site that, though they have not been formally or directly modified, have nevertheless been impacted by human activity. Two formal types are recognized: (1) cobble (manuport); and (2) burned rock.

Cobble (Manuport)

Included in this artifact class are those nodules or cobbles that are not a natural part of the site context and that were presumably brought onto the site by human activity. Despite their lack of apparent modification, they may have been used in such a way as not to leave traces for archeological identification, such as a bola stone, in plant processing, or as construction material.

Burned Rock

Burned rock includes those cobbles or rock fragments that exhibit angular fractures, crazing, pot lid fractures, or discoloration as a result of being heated. These rocks may have been used as boiling stones, griddles, or linings for earth ovens. The raw material may be limestone, sandstone, quartzite, or some other material. The term "fire cracked rock" or the acronym "FCR" is also used for describing burned rock.

GROUP 2: PREHISTORIC CERAMICS

Class 9: Ceramics/Baked Clay

The class of ceramics/baked clay artifacts includes any artifact of prehistoric origin which resulted from the burning, firing, or baking of earth or clay, either deliberately or accidentally. The types of ceramics/baked clay artifacts include: (1) ceramic vessel or vessel fragment; (2) bead; (3) pipe or pipe fragment; (4) figurine; (5) waster; (6) impressed daub; (7) baked clay — unimpressed; and (8) sherdlet.

Ceramic Vessel or Vessel Fragment

Ceramic vessel fragments, or sherds, are usually the most common type of ceramic/baked clay artifact on a prehistoric site and are simply the remains of fired clay vessels or containers (i.e., pots). Sherds are subdivided on the basis of where on the vessel they originate—rim, neck, shoulder, waist, body, base, support, handle, or flange/lug.

Bead

These are small cylindrical or round artifacts of fired clay which were originally formed with a central perforation, or through which a hole has been drilled. They were presumably strung with similar artifacts of fired clay and worn for decorative purposes.

Pipe or Pipe Fragment

These are complete or fragmentary prehistoric smoking implements made of fired clay. They are subdivided on the basis of whether or not they are complete or fragmentary, and whether or not they consist of stem or bowl fragments.

Figurine

These are modeled images of people or animals in fire clay. They are classified as either complete or fragmentary.

Waster

Wasters are vessels or sherds from vessels damaged in the manufacturing process, especially in firing. Wasters can result from overfiring, underfiring, warping, or bloating.

Impressed Daub

These are fragments of baked clay which show identifiable impression of something pressed into the clay before it was fired. These may include fragments of burned wattle-and-daub structure walls which show the impression of matting or wall coverings, or even simply evidence of the original wiping and wall smoothing, from the wall exteriors; or impressions of interior wall uprights, wattles, or lashing against which the daub was plastered. This category also includes fired mud dauber wasp's nests, the presence of which in archeological context in East Texas is presumed to indicate a former structure location.

Baked Clay—Unimpressed

These are fragments of baked clay which show no impressions or indications of origin. They may be wall daub from burned wattle-and-daub structures, they may be fired clay surfaces from hearths or ovens, or they could be of some other origin.

Sherdlet

These are small fragments of ceramics vessels, or sherds, which are less than 12.5 mm in diameter.

APPENDIX B

FRAMEWORK FOR HISTORICAL ARTIFACT ANALYSIS

INTRODUCTION

As was discussed in the main body of the report, the analysis of the historical material made use of four major analytical categories or classes of artifacts, consisting of:

1. Domestic,
2. Architectural,
3. Personal, and
4. Activities.

Unidentified metal fragments and ceramic or glass sherds which were unclassifiable as to category were placed in a separate, indeterminate category. Although the use of these artifact categories may perpetuate ideas about functional classifications, it is felt that, at the survey level of research, such an analytical framework is the most efficient way to handle the artifactual data.

Major artifact categories were sorted into various subcategories, including tableware, food storage, and furnishings. These were then sorted into various classes, types, and subtypes, depending on the type of subcategory and material type. In the case of ceramics and glass, these subtypes were associated with manufacture or use dates whenever possible. The general nature of each of the major artifact categories is discussed below.

DOMESTIC ARTIFACTS

The domestic category includes artifacts related to food service (i.e., tableware) and food storage (including food preparation). The tableware subcategory subsumes some ceramic, glass, and metal artifact types. Ceramic tablewares include stoneware, refined earthenware, coarse earthenware, and porcelain types. Particular items are identified as to types and subtypes, based on temporally sensitive technological (e.g., white/white ware, light blue tint white ware, blue tint white ware, blue tint ironstone, high-fired ironstone, ironstone/white ware, transitional white ware), decorative (e.g., decalcomania, flow blue, blue shell edge), and/or other attributes (e.g., nonvitrified, vitrified, molded), and are assigned dates of production on this basis.

Food storage items or storagewares are also subdivided as to whether they were ceramic (stoneware), glass, or metal. The stoneware items are further subdivided into types and subtypes using technological and decorative attributes, such as paste (e.g., colored) and various combinations of exterior treatment (e.g., gray bodied, bristol, cobalt, slipped, Albany slip, natural slip) and interior treatment (e.g., blue gray, Bristol, slipped, Albany slip, unglazed). These attributes form the basis for assigning production dates to individual specimens.

Glass storageware is subdivided on the basis of color (e.g., clear, manganese solarized, ash tint, amber, light amber, brown/amber, opaque, cobalt blue, blue, aqua, light green, ruby); form (generally bottle); and either decorative characteristics (e.g., etched, embossed, stippled base), manufacturing attributes (e.g., mold-made, machine-made, press-molded), or sometimes function (e.g., soda, beer/liquor, canning seal, depression glass, extract bottle). Individual items are given artifact-specific dates based on the production dates for each of its various attributes, in combination.

Finally, an unidentified domestic category subsumes the remainder of the food-related items (such as bone and shell). This material is counted but is not analyzed further. It should be noted that not all ceramics or glass artifacts fall within the domestic category. In some cases, artifacts of these materials belong within the architectural or activities categories.

The furnishings subcategory includes all nonfood service or food storage-related household items, such as furniture, stoves, and lamp glass. The furnishings subcategory often comprises only a small proportion of the total identifiable historical artifact assemblage from rural sites and the actual recovered items may vary greatly. In many cases, the majority of the artifacts classified as furnishings consist of fragments of lamp glass.

ARCHITECTURAL ARTIFACTS

The architectural category includes all items which could be related to buildings or structures. Subcategories of architectural items include such things as window glass, nails, brick, mortar and/or plaster, ceramic tile or pipe, and electrical items. Nails are further subdivided as to whether they are wrought, cut, or wire; while the brick is distinguished as to whether it is handmade, machine-made, or high-fired.

PERSONAL ARTIFACTS

The personal item category includes items of individual use, such as clothing, buttons, shoes, doll parts, cosmetic bottles, snuff bottles (identified on the basis of characteristics such as glass color, bottle shape, and lip shape), musical instruments, and smoking pipes. Usually, artifacts which can be classified in this category are rare, making this the least frequently represented category at most historical archeological sites.

ACTIVITIES ARTIFACTS

The final analytical category of historical artifacts relates to what have been called activities items. This category includes all nonhousehold items, such as those associated with transportation activities and farm-related equipment. As with personal items, this category often makes up only a small proportion of the overall assemblage of identifiable historical artifacts from a site. Activity category items include truck or tractor parts, harness buckles, fence staples, fence wire, horseshoes or horseshoe nails, and firearms cartridges. Subcategories for activities items include tools, harness and equipment, transportation, machinery, farm-related, weapons, and coal.

APPENDIX C

SUMMARY OF PREHISTORIC ARTIFACTS RECOVERED FROM THE 1993 RED RIVER ARMY DEPOT/LONE STAR ARMY AMMUNITION PLANT SURVEY

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BW417 Unit: S.T. 1 Lev: 1								
2	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.9	2	
Site: 41BW417 Unit: S.T. 1 Lev: 2								
3	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.2	1	
Site: 41BW417 Unit: S.T. 3 Lev: 1								
4	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	0.9	1	
Site: 41BW417 Unit: S.T. 4 Lev: 2								
5	Unmodified Debitage	Secondary Flake	N/A	Woodford Chert	6.3-9.5mm	0.7	1	
Site: 41BW417 Unit: S.T. 7 Lev: 1								
6	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.1	1	
6	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.5	1	
Site: 41BW417 Unit: S.T. 7 Lev: 2								
7	Finished Biface Tool	Arrow Point	Distal/Medial	Chert	L21 W9 T2	0.4	1	
7	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.2	1	
7	Unmodified Debitage	Bifacial Thin. Flake	N/A	Bowie Novaculite	6.3-9.5mm	0.2	1	
Site: 41BW417 Unit: S.T. 8 Lev: 2								
8	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	1.2	1	
8	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.7	1	
Site: 41BW417 Unit: S.T. 11 Lev: 2								
9	Unmodified Debitage	Primary Flake	N/A	Chert	12.5-19mm	1.5	1	
Site: 41BW418 Unit: S.T. 1 Lev: 1								
12	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.3	1	
12	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.2	1	

Bag Art	No.	No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BW418	13		Unit: S.T. 1 Lev: 2 Unmodified Debitage Secondary Flake	N/A	Ogallala Quartzite	<6.3mm	0.4	1		
				Bifacial Thin. Flake N/A	Chert	6.3-9.5mm	0.3	1		
	14		Unit: S.T. 1 Lev: 3 Unmodified Debitage Primary Flake	N/A	Chert	12.5-19mm	2.3	1		
	15		Unit: S.T. 1 Lev: 4 Unmodified Debitage Tertiary Flake	N/A	Quartzite	6.3-9.5mm	0.3	1		
				Tertiary Flake N/A	Novaculite	9.5-12.5mm	1.0	1		
Site: 41BW418	16		Unit: S.T. 2 Lev: 1 Unmodified Debitage Secondary Flake	N/A	Novaculite	6.3-9.5mm	0.5	1		
				Bifacial Thin. Flake N/A	Ogallala Quartzite	6.3-9.5mm	0.4	1		
	17		Unit: S.T. 2 Lev: 2 Unmodified Debitage Primary Flake	N/A	Chert	6.3-9.5mm	1.8	1		
				Tertiary Flake N/A	Chert	6.3-9.5mm	0.3	1		
	18		Unit: S.T. 2 Lev: 3 Unmodified Debitage Primary Flake	N/A	Chert	<6.3mm	0.4	1		
				Bifacial Thin. Flake N/A	Chert	6.3-9.5mm	0.1	1		
Site: 41BW418	19		Unit: S.T. 2 Lev: 4 Unmodified Debitage Secondary Flake	N/A	Novaculite	12.5-19mm	3.5	1		
				Secondary Flake N/A	Novaculite	9.5-12.5mm	1.0	1		
	19		Unit: S.T. 2 Lev: 4 Unmodified Debitage Tertiary Flake	N/A	Chert	<6.3mm	0.2	1		
				Bifacial Thin. Flake N/A	Chert	12.5-19mm	2.4	1		
	19		Unit: S.T. 2 Lev: 4 Unmodified Debitage Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.2	1		
				Burned Rock N/A	Quartzite		157.2	6		
Site: 41BW418			Unit: S.T. 5 Lev: 1							

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
20	Unmodified Debitage	Primary Flake	N/A	Quartzite	6.3-9.5mm	0.7	1	
20	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	<6.3mm	0.1	1	
20	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	<6.3mm	0.1	1	
Site: 41BW418 Unit: S.T. 5 Lev: 2								
21	Unmodified Debitage	Secondary Flake	N/A	Woodford Chert	6.3-9.5mm	0.6	1	
21	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.4	1	
Site: 41BW418 Unit: S.T. 5 Lev: 3								
22	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	1.0	1	
22	Unworked Stone	Burned Rock	N/A	Chert		20.8	1	
22	Unworked Stone	Burned Rock	N/A	Quartzite		198.8	1	
Site: 41BW419 Unit: S.T. 1 Lev: 1								
23	Unmodified Debitage	Primary Flake	N/A	Chert	6.3-9.5mm	1.3	1	
23	Unmodified Debitage	Primary Flake	N/A	Quartzite	19-25mm	7.6	1	
23	Unmodified Debitage	Primary Flake	N/A	Bowie Novaculite	6.3-9.5mm	0.8	1	
23	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.2	1	
Site: 41BW419 Unit: S.T. 2 Lev: 1								
24	Unmodified Debitage	Primary Flake	N/A	Quartzite	6.3-9.5mm	0.5	1	
24	Unmodified Debitage	Angular Shatter	N/A	Quartzite	9.5-12.5mm	2.3	1	
Site: 41BW419 Unit: S.T. 2 Lev: 2								
25	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	3.2	1	
25	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.3	1	
25	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	2.3	1	
25	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	9.5-12.5mm	1.3	1	
Site: 41BW419 Unit: S.T. 7 Lev: 1								
26	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.2	1	

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41B420 Unit: S.T. 1 Lev: 1							
27 Unmodified Debitage	Secondary Flake	N/A	Chert	12.5-19mm	2.1	1	
27 Unmodified Debitage	Secondary Flake	N/A	Chert	19-25mm	9.0	1	
27 Unmodified Debitage	Secondary Flake	N/A	Quartzite	6.3-9.5mm	0.2	1	
Site: 41B420 Unit: S.T. 1 Lev: 2							
28 Core	Tested nodule/pebble	N/A	Ogallala Quartzite	L49 W47 T23	32.7	1	
Site: 41B420 Unit: S.T. 2 Lev: 1							
29 Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	12.5-19mm	1.8	1	
Site: 41B420 Unit: S.T. 7 Lev: 1							
30 Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.3	1	
Site: 41B481 Unit: S.T. 1 Lev: 1							
205 Unmodified Debitage	Secondary Flake	N/A	Chert	12.5-19mm	1.5	1	
205 Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	1.2	1	
205 Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.5	1	
205 Unmodified Debitage	Tertiary Flake	N/A	Bowie Novaculite	6.3-9.5mm	0.3	1	
Site: 41B481 Unit: S.T. 1 Lev: 2							
206 Unmodified Debitage	Tertiary Flake	N/A	Quartzite	6.3-9.5mm	0.5	1	
Site: 41B481 Unit: S.T. 2 Lev: 1							
207 Unmodified Debitage	Tertiary Flake	N/A	Quartzite	9.5-12.5mm	0.7	1	
Site: 41B481 Unit: S.T. 2 Lev: 2							
208 Unmodified Debitage	Tertiary Flake	N/A	Quartzite	9.5-12.5mm	0.8	1	
Site: 41B481 Unit: S.T. 7 Lev: 2							
209 Unmodified Debitage	Tertiary Flake	N/A	Quartzite	6.3-9.5mm	0.3	1	
209 Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.5	1	

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BW483 Unit: S.T. 1 Lev: 1							
210	Unmodified Debitage	Secondary Flake	N/A				
210	Unmodified Debitage	Tertiary Flake	N/A				
210	Unmodified Debitage	Bifacial Thin. Flake	N/A				
			Chert	9.5-12.5mm	0.5	1	
			Chert	<6.3mm	0.2	1	
			Chert	6.3-9.5mm	0.5	1	
Site: 41BW483 Unit: S.T. 2 Lev: 1							
211	Unmodified Debitage	Primary Flake	N/A				
			Chert	9.5-12.5mm	0.7	1	
Site: 41BW483 Unit: S.T. 4 Lev: 1							
212	Unmodified Debitage	Secondary Flake	N/A				
212	Unmodified Debitage	Tertiary Flake	N/A				
			Chert	<6.3mm	0.3	1	
			Chert	<6.3mm	0.1	1	
Site: 41BW484 Unit: S.T. 1 Lev: 1							
213	Unmodified Debitage	Tertiary Flake	N/A				
213	Unworked Stone	Burned Rock	N/A				
			Chert	6.3-9.5mm	0.5	1	
			Quartzite		30.5	1	
Site: 41BW484 Unit: S.T. 2 Lev: 2							
214	Unmodified Debitage	Secondary Flake	N/A				
214	Unmodified Debitage	Secondary Flake	N/A				
214	Unmodified Debitage	Tertiary Flake	N/A				
			Chert	6.3-9.5mm	0.2	1	
			Ogallala Quartzite	9.5-12.5mm	0.8	1	
			Ogallala Quartzite	9.5-12.5mm	0.9	1	
Site: 41BW484 Unit: S.T. 2 Lev: 3							
215	Unmodified Debitage	Secondary Flake	N/A				
			Quartzite	6.3-9.5mm	0.7	1	
Site: 41BW484 Unit: S.T. 6 Lev: 1							
216	Finished Biface Tool	Arrow Point	Distal/Medial				
216	Unmodified Debitage	Secondary Flake	N/A				
216	Unmodified Debitage	Tertiary Flake	N/A				
216	Unmodified Debitage	Tertiary Flake	N/A				
			Novaculite	6.3-9.5mm	0.2	1	
Site: 41BW484 Unit: S.T. 7 Lev: 1							
			Chert	L22 W11 T3	0.6	1	Probable Homan
			Chert	6.3-9.5mm	0.5	1	
			Chert	9.5-12.5mm	0.9	1	
			Novaculite	6.3-9.5mm	0.2	1	

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
217	Unmodified Debitage	Primary Flake	N/A	Chert	6.3-9.5mm	0.7	1	
217	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ark. Novaculite	12.5-19mm	1.5	1	
Site: 41BW484 Unit: S.T. 7 Lev: 2								
218	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	1.2	1	
218	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.1	1	
218	Unworked Stone	Burned Rock	N/A	Chert		2.5	1	
Site: 41BW484 Unit: S.T. 7 Lev: 3								
219	Unmodified Debitage	Angular Shatter	N/A	Chert	6.3-9.5mm	0.8	1	
219	Unworked Stone	Burned Rock	N/A	Chert		0.9	1	
Site: 41BW485 Unit: S.T. 1 Lev: 1								
220	Unmodified Debitage	Primary Flake	N/A	Chert	12.5-19mm	2.2	1	
220	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.5	1	
220	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	9.5-12.5mm	0.5	1	
Site: 41BW485 Unit: S.T. 2 Lev: 1								
221	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.3	1	
221	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.5	1	
221	Unworked Stone	Burned Rock	N/A	Quartzite		20.5	2	
Site: 41BW485 Unit: S.T. 8 Lev: 1								
223	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.8	2	
Site: 41BW485 Unit: S.T. 11 Lev: 1								
222	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.4	1	
Site: 41BW492 Unit: S.T. 1 Lev: 2								
224	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	1.7	1	
224	Unmodified Debitage	Tertiary Flake	N/A	Woodford Chert	6.3-9.5mm	0.7	1	
224	Unmodified Debitage	Angular Shatter	N/A	Chert	9.5-12.5mm	1.0	1	

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
224	Unworked Stone	Burned Rock	N/A	Quartzite		2.7	2	
Site: 41BW492 Unit: S.T. 1 Lev: 3								
225	Unmodified Debitage	Primary Flake	N/A	Quartzite	6.3-9.5mm	0.3	1	
225	Core	Tested nodule/pebble	Blade	Quartzite	L63 W50 T35	128.3	1	
225	Unworked Stone	Burned Rock	N/A	Ogallala Quartzite		1.5	1	
Site: 41BW492 Unit: S.T. 1 Lev: 4								
226	Unfinished Biface	Aborted, Early	Complete	Chert	L41 W28 T17	20.7	1	
226	Unmodified Debitage	Primary Flake	N/A	Chert	6.3-9.5mm	0.4	1	
226	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	0.8	1	
226	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.4	1	
226	Core	Tested nodule/pebble	N/A	Chert	L39 W35 T13	20.5	1	
226	Unworked Stone	Burned Rock	N/A	Quartzite		7.8	4	
Site: 41BW492 Unit: S.T. 2 Lev: 2								
227	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.2	1	
Site: 41BW492 Unit: S.T. 4 Lev: 2								
228	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	1.0	1	
Site: 41BW492 Unit: S.T. 6 Lev: 1								
229	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.9	2	
229	Unmodified Debitage	Secondary Flake	N/A	Bowie Novaculite	6.3-9.5mm	0.9	1	
229	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.4	1	
229	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.7	1	
Site: 41BW492 Unit: S.T. 6 Lev: 2								
230	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	6.3-9.5mm	0.7	1	
230	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.2	1	
Site: 41BW492 Unit: S.T. 7 Lev: 1								

Prehistoric Artifact Data

Bag Art		Type		Other	Material	Size	Weight	Qty.	Type Name
No. No.	Class								
231	Unmodified Debitage	Primary Flake	N/A		Chert	6.3-9.5mm	1.0	1	
231	Unmodified Debitage	Secondary Flake	N/A		Chert	9.5-12.5mm	1.1	1	
231	Unmodified Debitage	Secondary Flake	N/A		Quartzite	6.3-9.5mm	0.3	1	
Site: 41BW492 Unit: S.T. 7 Lev: 2									
232	Unmodified Debitage	Secondary Flake	N/A		Quartzite	9.5-12.5mm	1.3	1	
232	Unmodified Debitage	Bifacial Thin. Flake	N/A		Chert	9.5-12.5mm	0.5	1	
232	Unworked Stone	Burned Rock	N/A		Quartzite		34.9	1	
Site: 41BW492 Unit: S.T. 7 Lev: 3									
233	Unmodified Debitage	Secondary Flake	N/A		Quartzite	12.5-19mm	3.5	1	
233	Unmodified Debitage	Tertiary Flake	N/A		Chert	<6.3mm	0.4	1	
233	Unmodified Debitage	Tertiary Flake	N/A		Quartzite	6.3-9.5mm	0.4	1	
233	Unmodified Debitage	Tertiary Flake	N/A		Quartzite	<6.3mm	0.3	1	
233	Unmodified Debitage	Tertiary Flake	N/A		Chalcedony	<6.3mm	0.2	1	
Site: 41BW492 Unit: S.T. 7 Lev: 4									
234	Unmodified Debitage	Secondary Flake	N/A		Chert	9.5-12.5mm	2.5	1	
234	Unmodified Debitage	Tertiary Flake	N/A		Chert	6.3-9.5mm	0.2	1	
234	Unmodified Debitage	Tertiary Flake	N/A		Ogallala Quartzite	9.5-12.5mm	0.3	1	
234	Unworked Stone	Burned Rock	N/A		Chert		18.2	5	
Site: 41BW492 Unit: S.T. 8 Lev: 1									
235	Unmodified Debitage	Primary Flake	N/A		Novaculite	12.5-19mm	5.4	1	
235	Unmodified Debitage	Tertiary Flake	N/A		Chert	6.3-9.5mm	1.1	2	
235	Unmodified Debitage	Tertiary Flake	N/A		Quartzite	<6.3mm	0.1	1	
Site: 41BW492 Unit: S.T. 8 Lev: 2									
236	Unmodified Debitage	Primary Flake	N/A		Chert	6.3-9.5mm	0.8	2	
236	Unmodified Debitage	Secondary Flake	N/A		Ogallala Quartzite	12.5-19mm	2.0	1	
236	Unmodified Debitage	Secondary Flake	N/A		Ogallala Quartzite	6.3-9.5mm	0.5	1	
236	Unmodified Debitage	Secondary Flake	N/A		Ogallala Quartzite	<6.3mm	0.3	1	

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41B4492 Unit: S.T. 9 Lev: 1								
237	Unmodified Debitage	Tertiary Flake	N/A	Chert	9.5-12.5mm	0.5	1	
Site: 41B4492 Unit: S.T. 10 Lev: 1								
238	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.3	1	
Site: 41B4492 Unit: S.T. 11 Lev: 1								
239	Unmodified Debitage	Secondary Flake	N/A	Quartzite	6.3-9.5mm	0.5	1	
239	Unmodified Debitage	Tertiary Flake	N/A	Chert	9.5-12.5mm	0.7	1	
Site: 41B4493 Unit: S.T. 1 Lev: 1								
240	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.4	1	
240	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.1	1	
Site: 41B4493 Unit: S.T. 2 Lev: 1								
241	Unmodified Debitage	Primary Flake	N/A	Chert	19-25mm	7.7	1	
Site: 41B4494 Unit: S.T. 2 Lev: 1								
244	Unworked Stone	Burned Rock	N/A	Ogallala Quartzite		53.8	1	
Site: 41B4495 Unit: S.T. 1 Lev: 1								
245	Unmodified Debitage	Secondary Flake	N/A	Novaculite	<6.3mm	0.4	1	
245	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.1	1	
245	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	<6.3mm	0.4	2	
Site: 41B4495 Unit: S.T. 1 Lev: 2								
246	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	1.0	1	
246	Unmodified Debitage	Primary Flake	N/A	Chert	<6.3mm	0.1	1	
246	Unmodified Debitage	Tertiary Flake	N/A	Chert	9.5-12.5mm	0.7	1	
246	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.3	1	

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41B4495 Unit: S.T. 2 Lev: 1							
247	Unmodified Debitage	Primary Flake	N/A	6.3-9.5mm	0.3	1	
247	Unmodified Debitage	Tertiary Flake	N/A	<6.3mm	0.3	1	
247	Unmodified Debitage	Bifacial Thin. Flake	N/A	<6.3mm	0.1	1	
Site: 41B4495 Unit: S.T. 5 Lev: 1							
248	Unmodified Debitage	Primary Flake	Novaculite	9.5-12.5mm	1.5	1	
248	Unmodified Debitage	Secondary Flake	Chert	9.5-12.5mm	1.3	1	
248 1	Core	Tested nodule/pebble	Chert	L48 W46 T20	51.2	1	
Site: 41B4495 Unit: S.T. 8 Lev: 1							
249	Unmodified Debitage	Primary Flake	Chert	9.5-12.5mm	0.7	1	
249	Unmodified Debitage	Secondary Flake	Chert	6.3-9.5mm	0.9	1	
249	Unmodified Debitage	Secondary Flake	Chert	9.5-12.5mm	1.0	1	
249	Unmodified Debitage	Tertiary Flake	Chert	6.3-9.5mm	0.7	1	
249	Unmodified Debitage	Tertiary Flake	Novaculite	6.3-9.5mm	1.0	1	
Site: 41B4496 Unit: S.T. 1 Lev: 1							
250	Unmodified Debitage	Primary Flake	Chert	6.3-9.5mm	0.5	2	
250	Unmodified Debitage	Primary Flake	Chert	9.5-12.5mm	7.1	2	
250	Unmodified Debitage	Secondary Flake	Chert	12.5-19mm	3.4	1	
250	Unmodified Debitage	Secondary Flake	Chert	<6.3mm	0.5	1	
250	Unmodified Debitage	Secondary Flake	Quartzite	<6.3mm	0.5	2	
250	Unmodified Debitage	Tertiary Flake	Chert	6.3-9.5mm	0.5	2	
250	Unmodified Debitage	Tertiary Flake	Chert	<6.3mm	0.5	1	
250	Unmodified Debitage	Tertiary Flake	Quartzite	6.3-9.5mm	0.2	1	
Site: 41B4496 Unit: S.T. 1 Lev: 2							
251	Unmodified Debitage	Primary Flake	Chert	19-25mm	3.3	1	
251	Unmodified Debitage	Primary Flake	Chert	6.3-9.5mm	1.0	1	
251	Unmodified Debitage	Secondary Flake	Ogallala Quartzite	6.3-9.5mm	0.2	1	
251	Unmodified Debitage	Tertiary Flake	Novaculite	9.5-12.5mm	1.6	1	

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	qty.	Type Name
251	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.2	1	
251	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	9.5-12.5mm	1.0	1	
251	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.8	1	
Site: 41BW496 Unit: S.T. 1 Lev: 3								
252	Unmodified Debitage	Primary Flake	N/A	Chert	19-25mm	14.3	1	
252	Unmodified Debitage	Primary Flake	N/A	Bowie Novaculite	12.5-19mm	2.0	1	
252	Unmodified Debitage	Tertiary Flake	N/A	Chert	19-25mm	3.2	1	
252	Unmodified Debitage	Tertiary Flake	N/A	Chert	9.5-12.5mm	0.9	1	
252	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	4.6	3	
252	Unmodified Debitage	Tertiary Flake	N/A	Bowie Novaculite	6.3-9.5mm	0.2	1	
336 1	Ceramics/Clay	Vessel/container	Body	N/A	L39 W29 T7	8.3	1	
Site: 41BW496 Unit: S.T. 2 Lev: 2								
253	Unmodified Debitage	Secondary Flake	N/A	Quartzite	6.3-9.5mm	0.4	1	
253	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	6.3-9.5mm	0.4	1	
Site: 41BW496 Unit: S.T. 2 Lev: 3								
254	Unmodified Debitage	Primary Flake	N/A	Quartzite	9.5-12.5mm	0.6	1	
254	Unmodified Debitage	Tertiary Flake	N/A	Chalcedony	<6.3mm	0.1	1	
254	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.7	1	
Site: 41BW496 Unit: S.T. 3 Lev: 1								
255	Unmodified Debitage	Secondary Flake	N/A	Chert	12.5-19mm	3.5	2	
Site: 41BW496 Unit: S.T. 4 Lev: 1								
256	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	4.3	2	
256	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.8	1	
256	Unmodified Debitage	Tertiary Flake	N/A	Chert	9.5-12.5mm	1.2	1	
256	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.5	1	
256	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	6.3-9.5mm	0.8	1	
256	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.5	1	

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BW496 Unit: S.T. 4 Lev: 2								
257	Unmodified Debitage	Primary Flake	N/A	Chert	12.5-19mm	0.8	1	
257	Unmodified Debitage	Secondary Flake	N/A	Chert	12.5-19mm	3.5	1	
257	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	0.7	1	
257	Unmodified Debitage	Tertiary Flake	N/A	Chert	12.5-19mm	4.6	1	
257	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.3	1	
257	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	9.5-12.5mm	1.6	2	
257	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	<6.3mm	0.2	1	
257	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	12.5-19mm	4.1	1	
257	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.4	1	
257	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	6.3-9.5mm	0.4	1	
Site: 41BW496 Unit: S.T. 4 Lev: 3								
258	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	9.5-12.5mm	0.5	1	
258	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	<6.3mm	0.1	1	
Site: 41BW496 Unit: S.T. 5 Lev: 1								
259	Unmodified Debitage	Primary Flake	N/A	Quartzite	9.5-12.5mm	1.2	1	
259	Unmodified Debitage	Secondary Flake	N/A	Chert	19-25mm	18.8	1	
Site: 41BW496 Unit: S.T. 5 Lev: 3								
260	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	1.8	1	
Site: 41BW496 Unit: S.T. 6 Lev: 1								
261	Unmodified Debitage	Secondary Flake	N/A	Novaculite	<6.3mm	0.4	1	
Site: 41BW496 Unit: S.T. 8 Lev: 2								
262	Unmodified Debitage	Primary Flake	N/A	Chert	19-25mm	12.8	1	
Site: 41BW496 Unit: S.T. 9 Lev: 1								
263	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.4	2	

Prehistoric Artifact Data

Bag Art								
No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BW496 Unit: S.T. 9 Lev: 2								
264	Unfinished Biface	Aborted, Late	Fragment	Chert	L20 W27 T5	2.6	1	
264	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	0.5	1	
264	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.3	1	
264	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.1	1	
Site: 41BW496 Unit: S.T. 9 Lev: 3								
265	Unmodified Debitage	Secondary Flake	N/A	Chert	12.5-19mm	3.3	1	
265	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	1.6	1	
265	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	<6.3mm	0.1	1	
265	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.2	1	
265	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	<6.3mm	0.2	1	
Site: 41BW496 Unit: S.T. 9 Lev: 4								
266	Unmodified Debitage	Primary Flake	N/A	Quartzite	9.5-12.5mm	0.8	1	
266	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.1	1	
266	Unmodified Debitage	Secondary Flake	N/A	Novaculite	9.5-12.5mm	0.2	1	
266	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	1.2	1	
266	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.4	1	
266	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.2	1	
266	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	6.3-9.5mm	0.1	1	
Site: 41BW496 Unit: S.T. 12 Lev: 1								
267	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	9.5-12.5mm	1.8	1	
Site: 41BW496 Unit: S.T. 12 Lev: 2								
268	Unmodified Debitage	Secondary Flake	N/A	Quartzite	6.3-9.5mm	0.3	1	
268	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	<6.3mm	0.1	1	
Site: 41BW496 Unit: S.T. 12 Lev: 3								
269	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.2	1	

Prehistoric Artifact Data

Bag Art							
No. No.	Class	Type	Other	Material	Size	Weight	Qty. Type Name
269	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.1	1
269	Unmodified Debitage	Tertiary Flake	N/A	Chalcedony	<6.3mm	0.2	1
Site: 41BW497 Unit: S.T. 1 Lev: 1							
270	Unmodified Debitage	Primary Flake	N/A	Chert	12.5-19mm	1.3	1
270	Unmodified Debitage	Primary Flake	N/A	Chert	6.3-9.5mm	0.3	1
270	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	1.4	4
270	Unmodified Debitage	Secondary Flake	N/A	Quartzite	12.5-19mm	2.7	1
270	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.5	1
270	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	1.5	4
270	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.3	1
270	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	<6.3mm	0.3	2
270	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.4	1
270	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	<6.3mm	0.7	2
270	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.3	1
270	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	9.5-12.5mm	1.0	1
270	Unmodified Debitage	Bifacial Thin. Flake	N/A	Quartzite	9.5-12.5mm	2.7	1
270	Unworked Stone	Burned Rock	N/A	Quartzite		63.8	1
270	Unworked Stone	Burned Rock	N/A	Sandstone		6.2	1
Site: 41BW497 Unit: S.T. 2 Lev: 1							
271	Unmodified Debitage	Primary Flake	N/A	Novaculite	6.3-9.5mm	0.2	1
271	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.3	1
271	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	<6.3mm	0.2	1
271	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.2	1
271	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	6.3-9.5mm	0.6	1
271	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.3	1
Site: 41BW497 Unit: S.T. 2 Lev: 2							
272	Unmodified Debitage	Secondary Flake	N/A	Novaculite	6.3-9.5mm	0.3	1
Site: 41BW497 Unit: S.T. 3 Lev: 1							

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
273	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.5	1
273	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	9.5-12.5mm	0.4	1
Site: 41B4497 Unit: S.T. 4 Lev: 1							
274	Unmodified Debitage	Primary Flake	N/A	Chert	6.3-9.5mm	0.1	1
274	Unmodified Debitage	Primary Flake	N/A	Quartzite	6.3-9.5mm	0.8	1
274	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.2	1
274	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	9.5-12.5mm	0.4	1
274	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	<6.3mm	0.1	1
274	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	<6.3mm	0.2	1
274	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	<6.3mm	0.1	1
Site: 41B4497 Unit: S.T. 6 Lev: 1							
275	Unmodified Debitage	Primary Flake	N/A	Quartzite	9.5-12.5mm	1.2	1
275	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.4	1
275	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	2.4	2
275	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.7	1
275	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.9	1
275	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	9.5-12.5mm	1.0	1
275	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.5	1
275	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.5	1
275	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	<6.3mm	0.1	1
275	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	12.5-19mm	2.0	1
Site: 41B4497 Unit: S.T. 6 Lev: 2							
276	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	0.9	1
276	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.3	1
276	Unmodified Debitage	Secondary Flake	N/A	Quartzite	6.3-9.5mm	0.7	1
276	Unmodified Debitage	Secondary Flake	N/A	Novaculite	9.5-12.5mm	1.4	1
276	Unmodified Debitage	Secondary Flake	N/A	Novaculite	<6.3mm	0.2	1
276	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	<6.3mm	0.1	1
276	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	12.5-19mm	1.7	1

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
276	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.3	1
Site: 418W497 Unit: S.T. 7 Lev: 1							
277	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	1.2	1
277	Unmodified Debitage	Primary Flake	N/A	Chert	<6.3mm	0.5	2
277	Unmodified Debitage	Primary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.0	1
277	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.5	1
277	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	9.5-12.5mm	0.5	1
277	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	<6.3mm	0.1	1
277	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	<6.3mm	0.3	1
Site: 418W497 Unit: S.T. 8 Lev: 1							
278	Unmodified Debitage	Primary Flake	N/A	Chert	6.3-9.5mm	0.3	1
278	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	1.4	1
278	Unmodified Debitage	Primary Flake	N/A	Ogallala Quartzite	12.5-19mm	2.8	1
278	Unmodified Debitage	Primary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.4	1
278	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	1.4	2
278	Unmodified Debitage	Secondary Flake	N/A	Quartzite	6.3-9.5mm	0.6	2
278	Unmodified Debitage	Secondary Flake	N/A	Bowie Novaculite	9.5-12.5mm	2.1	1
278	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.1	1
278	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	9.5-12.5mm	0.8	1
278	Unmodified Debitage	Tertiary Flake	N/A	Bowie Novaculite	6.3-9.5mm	0.4	1
278	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.1	1
278	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	<6.3mm	0.1	1
278	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.8	2
278	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.3	1
278	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.2	1
Site: 418W497 Unit: S.T. 8 Lev: 2							
279	Unmodified Debitage	Secondary Flake	N/A	Bowie Novaculite	6.3-9.5mm	0.2	1
279	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	19-25mm	7.2	1

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Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
281	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	0.8	1	
281	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.2	1	
281	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	2.6	3	
281	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	<6.3mm	0.2	1	
281	Unmodified Debitage	Tertiary Flake	N/A	Chert	9.5-12.5mm	1.0	1	
281	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	6.3-9.5mm	0.4	1	
281	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	<6.3mm	0.2	1	
281	Unmodified Debitage	Tertiary Flake	N/A	Petrified Wood	9.5-12.5mm	1.2	1	
281	Unmodified Debitage	Tertiary Flake	N/A	Siltstone	9.5-12.5mm	0.9	1	
281	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	6.3-9.5mm	0.9	3	
281	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	1.0	2	
281	Unmodified Debitage	Bifacial Thin. Flake	N/A	Quartzite	12.5-19mm	0.9	1	
281	Unmodified Debitage	Bifacial Thin. Flake	N/A	Quartzite	6.3-9.5mm	0.5	1	
281	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	6.3-9.5mm	0.3	1	
281	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	9.5-12.5mm	0.5	1	
281	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.8	2	
281	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.2	2	
281	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	<6.3mm	0.2	1	
Site: 41BW497 Unit: S.T. 10 Lev: 3								
282	Unmodified Debitage	Primary Flake	N/A	Chert	6.3-9.5mm	1.9	4	
282	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	2.4	1	
282	Unmodified Debitage	Primary Flake	N/A	Quartzite	6.3-9.5mm	0.6	1	
282	Unmodified Debitage	Primary Flake	N/A	Novaculite	19-25mm	25.9	1	
282	Unmodified Debitage	Primary Flake	N/A	Ogallala Quartzite	19-25mm	12.2	1	
282	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	2.1	3	
282	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	0.6	1	
282	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.2	1	
282	Unmodified Debitage	Secondary Flake	N/A	Novaculite	12.5-19mm	0.2	1	
282	Unmodified Debitage	Secondary Flake	N/A	Novaculite	9.5-12.5mm	1.6	1	
282	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	1.6	3	
282	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.2	1	

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	qty.	Type Name
282	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.5	3
282	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	6.3-9.5mm	0.3	1
282	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	1.1	2
282	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	2.0	2
282	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.4	1
282	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	<6.3mm	0.4	2
282	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	12.5-19mm	2.0	1
282	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.7	1
Site: 41BW497 Unit: S.T. 10 Lev: 4							
283	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	1.2	1
283	Unmodified Debitage	Secondary Flake	N/A	Quartzite	12.5-19mm	3.6	2
283	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.4	1
283	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	2.3	1
283	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.3	1
283	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	19-25mm	7.9	1
283	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.6	1
283	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	<6.3mm	0.1	1
283	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	12.5-19mm	0.4	1
283	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.4	1
Site: 41BW497 Unit: S.T. 11 Lev: 1							
284	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	2.0	1
Site: 41BW497 Unit: S.T. 12 Lev: 1							
285	Unmodified Debitage	Secondary Flake	N/A	Bowie Novaculite	9.5-12.5mm	2.0	1
Site: 41BW497 Unit: S.T. 13 Lev: 2							
286	Unmodified Debitage	Primary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.6	1
286	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.3	1
Site: 41BW498 Unit: S.T. 1 Lev: 1							

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
287	Unmodified Debitage	Bifacial Thin. Flake	N/A				
	Unit: S.T. 2 Lev: 1			12.5-19mm	1.0	1	
Site: 41B498							
288	Unmodified Debitage	Secondary Flake	N/A				
	Unit: S.T. 2 Lev: 1			12.5-19mm	6.2	1	
Site: 41B498							
289	Unmodified Debitage	Bifacial Thin. Flake	N/A				
	Unit: S.T. 2 Lev: 2			12.5-19mm	4.2	1	
Site: 41B498							
290	Unmodified Debitage	Secondary Flake	N/A				
	Unit: S.T. 3 Lev: 1			6.3-9.5mm	0.6	1	
Site: 41B498							
291	Unmodified Debitage	Secondary Flake	N/A				
	Unit: S.T. 3 Lev: 1			9.5-12.5mm	2.0	1	
Site: 41B499							
292	Unmodified Debitage	Cobble	N/A				
	Unit: S.T. 1 Lev: 1			9.5-12.5mm	27.6	1	
Site: 41B499							
293	Unmodified Debitage	Secondary Flake	N/A				
	Unit: S.T. 1 Lev: 3			9.5-12.5mm	0.3	1	
Site: 41B499							
294	Unmodified Debitage	Primary Flake	N/A				
	Unit: S.T. 2 Lev: 1			<6.3mm	0.2	1	
Site: 41B499							
295	Unmodified Debitage	Primary Flake	N/A				
	Unit: S.T. 2 Lev: 1			9.5-12.5mm	3.4	1	
Site: 41B499							
296	Unmodified Debitage	Secondary Flake	N/A				
	Unit: S.T. 2 Lev: 1			6.3-9.5mm	1.0	1	
Site: 41B499							
297	Unmodified Debitage	Burned Rock	N/A				
	Unit: S.T. 1 Lev: 1			6.3-9.5mm	82.3	1	
Site: 41B499							
298	Unmodified Debitage	Tertiary Flake	N/A				
	Unit: S.T. 1 Lev: 1			<6.3mm	0.1	1	
Site: 41B499							
299	Unmodified Debitage	Bifacial Thin. Flake	N/A				
	Unit: S.T. 1 Lev: 2			6.3-9.5mm	0.6	1	
Site: 41B499							
300	Unmodified Debitage	Dart Point	Base/Stem				
	Unit: S.T. 1 Lev: 2			L19 W20 T7	2.4	1	
Site: 41B499							
301	Unmodified Debitage	Secondary Flake	N/A				
	Unit: S.T. 1 Lev: 1			9.5-12.5mm	1.0	1	
Site: 41B499							
302	Unmodified Debitage	Tertiary Flake	N/A				
	Unit: S.T. 1 Lev: 1			6.3-9.5mm	0.2	1	
Site: 41B499							

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BW500 Unit: S.T. 2 Lev: 2							
296	Unmodified Debitage	Primary Flake	N/A				
296	Unmodified Debitage	Secondary Flake	N/A				
296	Unmodified Debitage	Bifacial Thin. Flake	N/A				
296	Unmodified Debitage	Bifacial Thin. Flake	N/A				
Site: 41BW500 Unit: S.T. 2 Lev: 3							
297	Unmodified Debitage	Primary Flake	N/A				
297	Unmodified Debitage	Primary Flake	N/A				
297	Unmodified Debitage	Tertiary Flake	N/A				
297	Unmodified Debitage	Tertiary Flake	N/A				
Site: 41BW500 Unit: S.T. 2 Lev: 4							
298	Unmodified Debitage	Primary Flake	N/A				
298	Unmodified Debitage	Secondary Flake	N/A				
Site: 41BW500 Unit: S.T. 3 Lev: 2							
299	Unmodified Debitage	Secondary Flake	N/A				
Site: 41BW500 Unit: S.T. 4 Lev: 1							
300	Unmodified Debitage	Secondary Flake	N/A				
300	Unmodified Debitage	Tertiary Flake	N/A				
300	Unmodified Debitage	Bifacial Thin. Flake	N/A				
300	Unmodified Debitage	Bifacial Thin. Flake	N/A				
Site: 41BW500 Unit: S.T. 4 Lev: 2							
301	Unmodified Debitage	Primary Flake	N/A				
301	Unmodified Debitage	Secondary Flake	N/A				
Site: 41BW500 Unit: S.T. 4 Lev: 3							
302	Unmodified Debitage	Primary Flake	N/A				

Prehistoric Artifact Data

Bag Art								
No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
302	Unmodified Debitage	Primary Flake	N/A	Novaculite	12.5-19mm	5.4	1	
302	Unmodified Debitage	Secondary Flake	N/A	Chert	19-25mm	9.4	1	
302	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	1.1	2	
302	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	2.4	3	
302	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	1.0	1	
302	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.7	1	
302	Unmodified Debitage	Angular Shatter	N/A	Quartzite	>25mm	52.3	1	
Site: 41BW529 Unit: S.T. 1 Lev: 1								
38	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	1.0	1	
38	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.5	1	
Site: 41BW529 Unit: S.T. 1 Lev: 2								
39	Unmodified Debitage	Secondary Flake	N/A	Chert	12.5-19mm	4.1	1	
39	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	9.5-12.5mm	0.7	1	
Site: 41BW529 Unit: S.T. 1 Lev: 3								
40	Unmodified Debitage	Tertiary Flake	N/A	Chert	12.5-19mm	2.9	1	
40	Unworked Stone	Burned Rock	N/A	Sandstone		58.7	1	
Site: 41BW529 Unit: S.T. 1 Lev: 4								
41 2	Finished Biface Tool	Dart Point	Complete	Chert	L48 W23 T11	8.0	1	GARY-PANNA MARIA VAR.
41 1	Unfinished Biface	Aborted, Early	Complete	Chert	L31 W23 T8	5.9	1	
41	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.6	1	
41	Unworked Stone	Burned Rock	N/A	Quartzite		45.5	2	
Site: 41BW529 Unit: S.T. 2 Lev: 1								
42	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.5	1	
42	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.2	1	
42	Unworked Stone	Burned Rock	N/A	Quartzite		68.5	1	

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BW529 Unit: S.T. 2 Lev: 2							
43	Unmodified Debitage	Tertiary Flake	N/A	Petrified Wood	12.5-19mm	4.7	1
Site: 41BW529 Unit: S.T. 3 Lev: 1							
44	Unmodified Debitage	Secondary Flake	N/A	Woodford Chert	19-25mm	7.2	1
Site: 41BW529 Unit: S.T. 4 Lev: 2							
45	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	12.5-19mm	0.6	1
45	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.2	1
Site: 41BW529 Unit: S.T. 5 Lev: 1							
46	Unmodified Debitage	Secondary Flake	N/A	Novaculite	6.3-9.5mm	0.4	1
46	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	<6.3mm	0.1	1
Site: 41BW529 Unit: S.T. 5 Lev: 3							
47	Unmodified Debitage	Primary Flake	N/A	Novaculite	6.3-9.5mm	0.4	1
47	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	9.5-12.5mm	1.4	1
47	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	<6.3mm	0.6	1
47	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	<6.3mm	0.2	1
Site: 41BW529 Unit: S.T. 7 Lev: 1							
48	Unmodified Debitage	Primary Flake	N/A	Quartzite	6.3-9.5mm	0.4	1
48	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.1	1
Site: 41BW529 Unit: S.T. 7 Lev: 2							
49	Unmodified Debitage	Primary Flake	N/A	Chert	12.5-19mm	3.9	1
Site: 41BW530 Unit: S.T. 1 Lev: 2							
54	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.9	2
54	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	9.5-12.5mm	1.4	1
54	Unworked Stone	Burned Rock	N/A	Quartzite		1.9	1

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BW530 Unit: S.T. 1 Lev: 3							
55	Unmodified Debitage	N/A	Chert	6.3-9.5mm	0.2	1	
55	Unmodified Debitage	N/A	Chert	6.3-9.5mm	0.5	2	
Site: 41BW530 Unit: S.T. 5 Lev: 1							
56	Unmodified Debitage	N/A	Chert	6.3-9.5mm	0.4	1	
Site: 41BW530 Unit: S.T. 6 Lev: 1							
57	Unmodified Debitage	N/A	Quartzite	6.3-9.5mm	1.1	2	
57	Unmodified Debitage	N/A	Novaculite	6.3-9.5mm	0.3	1	
57	Unmodified Debitage	N/A	Chert	6.3-9.5mm	0.3	1	
57	Unmodified Debitage	N/A	Quartzite	<6.3mm	0.2	1	
57	Unmodified Debitage	N/A	Chert	6.3-9.5mm	0.2	1	
Site: 41BW530 Unit: S.T. 6 Lev: 2							
58	Unmodified Debitage	N/A	Quartzite	6.3-9.5mm	0.2	1	
58	Unmodified Debitage	N/A	Quartzite	12.5-19mm	3.1	1	
58	Unmodified Debitage	N/A	Ogallala Quartzite	9.5-12.5mm	0.9	1	
58	Unmodified Debitage	N/A	Ogallala Quartzite	<6.3mm	0.3	1	
58	Unmodified Debitage	N/A	Quartzite	6.3-9.5mm	0.2	1	
58	Unmodified Debitage	N/A	Novaculite	9.5-12.5mm	0.5	1	
58	Unmodified Debitage	N/A	Chert	6.3-9.5mm	0.2	2	
Site: 41BW530 Unit: S.T. 6 Lev: 3							
59	Unmodified Debitage	N/A	Quartzite	12.5-19mm	2.0	1	
59	Unmodified Debitage	N/A	Quartzite	19-25mm	4.3	1	
59	Unmodified Debitage	N/A	Chert	9.5-12.5mm	1.1	1	
59	Unmodified Debitage	N/A	Quartzite	6.3-9.5mm	0.2	1	
59	Unmodified Debitage	N/A	Chert	6.3-9.5mm	1.0	3	
59	Unworked Stone	N/A	Quartzite		258.9	6	

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BW530 Unit: S.T. 6 Lev: 4							
60	Unmodified Debitage	Secondary Flake	N/A				
60	Unworked Stone	Burned Rock	N/A				
Site: 41BW530 Unit: S.T. 7 Lev: 1							
61	Unmodified Debitage	Primary Flake	N/A				
61	Unmodified Debitage	Primary Flake	N/A				
61	Unmodified Debitage	Secondary Flake	N/A				
61	Unmodified Debitage	Secondary Flake	N/A				
61	Unmodified Debitage	Secondary Flake	N/A				
61	Unmodified Debitage	Tertiary Flake	N/A				
61	Unmodified Debitage	Tertiary Flake	N/A				
61	Unmodified Debitage	Tertiary Flake	N/A				
61	Unmodified Debitage	Bifacial Thin. Flake	N/A				
61	Unmodified Debitage	Bifacial Thin. Flake	N/A				
Site: 41BW530 Unit: S.T. 7 Lev: 2							
62	Unmodified Debitage	Primary Flake	N/A				
62	Unmodified Debitage	Bifacial Thin. Flake	N/A				
Site: 41BW530 Unit: S.T. 7 Lev: 3							
63	Unmodified Debitage	Tertiary Flake	N/A				
Site: 41BW531 Unit: S.T. 1 Lev: 1							
64	Unmodified Debitage	Secondary Flake	N/A				
64	Unmodified Debitage	Tertiary Flake	N/A				
Site: 41BW531 Unit: S.T. 2 Lev: 1							
65	Unmodified Debitage	Primary Flake	N/A				
65	Unmodified Debitage	Secondary Flake	N/A				
65	Unmodified Debitage	Angular Shatter	N/A				

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41W531 Unit: S.T. 3 Lev: 1							
66	Unmodified Debitage	Secondary Flake	N/A	Quartzite	<6.3mm	0.3	1
Site: 41W531 Unit: S.T. 4 Lev: 1							
67	Unmodified Debitage	Primary Flake	N/A	Chert	12.5-19mm	5.2	1
67	Unmodified Debitage	Secondary Flake	N/A	Novaculite	6.3-9.5mm	0.5	1
67	Unmodified Debitage	Tertiary Flake	N/A	Chert	9.5-12.5mm	0.6	1
67	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	6.3-9.5mm	0.2	1
Site: 41W532 Unit: S.T. 1 Lev: 1							
69	2 Ceramics/Clay	Vessel/container	Body	N/A	L22 W20 T5	2.5	1
69	1 Ceramics/Clay	Vessel/container	Body	N/A	L34 W31 T10	10.7	1
362	1 Finished Biface Tool	Dart Point	Proximal/Medial	Ark. Novaculite	L27 W16 T6	3.0	1
362	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	<6.3mm	0.2	1
Site: 41W532 Unit: S.T. 1 Lev: 2							
70	Unmodified Debitage	Bifacial Thin. Flake	N/A	Quartzite	6.3-9.5mm	0.6	1
70	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	12.5-19mm	1.6	1
363	1 Ceramics/Clay	Vessel/container	Body	N/A	L21 W11 T7	1.7	1
Site: 41W532 Unit: S.T. 1 Lev: 3							
71	Unmodified Debitage	Secondary Flake	N/A	Chert	12.5-19mm	9.8	1
71	Unmodified Debitage	Bifacial Thin. Flake	N/A	Quartzite	12.5-19mm	2.3	1
71	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.5	1
71	1 Utilized flakes	Secondary Flake	N/A	Ogallala Quartzite	L43 W17 T9	5.9	1
71	Unworked Stone	Burned Rock	N/A	Quartzite		25.4	1
Site: 41W532 Unit: S.T. 2 Lev: 1							
72	Unmodified Debitage	Secondary Flake	N/A	Woodford Chert	9.5-12.5mm	5.6	1
72	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.1	1
72	Unmodified Debitage	Bifacial Thin. Flake	N/A	Quartzite	12.5-19mm	3.9	1
365	1 Ceramics/Clay	Vessel/container	Body	N/A	L30 W32 T7	8.8	1

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BW532 Unit: S.T. 2 Lev: 2							
73	Unmodified Debitage	N/A	Chert	9.5-12.5mm	2.0	1	
73	Unworked Stone	N/A	Quartzite	19-25mm	4.7	1	
Site: 41BW532 Unit: S.T. 3 Lev: 1							
74	Unmodified Debitage	N/A	Chert	9.5-12.5mm	1.1	1	
74	Unmodified Debitage	N/A	Quartzite	6.3-9.5mm	1.7	1	
74	Unmodified Debitage	N/A	Chert	6.3-9.5mm	1.1	2	
74	Unworked Stone	N/A	Quartzite		2.8	2	
Site: 41BW532 Unit: S.T. 3 Lev: 2							
75	Unmodified Debitage	N/A	Chert	12.5-19mm	4.1	1	
75	Unmodified Debitage	N/A	Chert	6.3-9.5mm	0.9	1	
75	Unmodified Debitage	N/A	Chert	6.3-9.5mm	0.3	1	
Site: 41BW532 Unit: S.T. 3 Lev: 3							
76	Ceramics/Clay	Rim	N/A	L24 W16 T6	2.2	1	
364	Unmodified Debitage	N/A	Chert	9.5-12.5mm	1.4	1	
Site: 41BW532 Unit: S.T. 3 Lev: 4							
77	Unmodified Debitage	N/A	Novaculite	9.5-12.5mm	1.2	1	
Site: 41BW532 Unit: S.T. 4 Lev: 2							
78	Core	Tested nodule/pebble	Novaculite	L58 W37 T24	59.7	1	
78	Core	Complete Core	Chert	L29 W29 T15	12.7	1	
Site: 41BW532 Unit: S.T. 5 Lev: 1							
79	Unmodified Debitage	Bifacial Thin. Flake	Chert	6.3-9.5mm	0.2	1	
Site: 41BW532 Unit: S.T. 5 Lev: 2							
80	Unmodified Debitage	Secondary Flake	Quartzite	<6.3mm	0.2	1	

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
80	Unmodified Debitage	Tertiary Flake	N/A	Bowie Novaculite	<6.3mm	0.1	1
Site: 41BW532 Unit: S.T. 6 Lev: 2							
81	Unmodified Debitage	Secondary Flake	N/A	Quartzite	12.5-19mm	2.7	1
Site: 41BW532 Unit: S.T. 7 Lev: 1							
82	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.7	1
82	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.1	1
82	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.2	1
350 1	Ceramics/Clay	Vessel/container	Rim	N/A	L24 W15 T7	2.6	1
Site: 41BW532 Unit: S.T. 7 Lev: 2							
83	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	6.3-9.5mm	0.6	1
83	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	9.5-12.5mm	0.8	1
Site: 41BW532 Unit: SURF Lev: 1							
68 1	Core	Tested nodule/pebble	N/A	Bowie Novaculite	L68 W65 T47	250.7	1
Site: 41BW536 Unit: S.T. 1 Lev: 2							
94	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.4	1
Site: 41BW536 Unit: S.T. 4 Lev: 1							
95	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	6.3-9.5mm	0.3	1
95	Unmodified Debitage	Bifacial Thin. Flake	N/A	Bowie Novaculite	9.5-12.5mm	0.8	1
Site: 41BW536 Unit: S.T. 5 Lev: 1							
96	Unmodified Debitage	Primary Flake	N/A	Chert	6.3-9.5mm	0.4	1
96	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.3	1
Site: 41BW536 Unit: S.T. 6 Lev: 1							
97	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	1.1	2
97	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	<6.3mm	0.1	1

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BW536 Unit: S.T. 6 Lev: 2							
98	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.4	1
Site: 41BW536 Unit: S.T. 11 Lev: 1							
99	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.3	1
99	Unmodified Debitage	Secondary Flake	N/A	Novaculite	12.5-19mm	1.4	1
99	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.1	1
99	Unworked Stone	Burned Rock	N/A	Quartzite		17.2	2
Site: 41BW536 Unit: S.T. 11 Lev: 2							
100	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	1.4	1
100	Unmodified Debitage	Secondary Flake	N/A	Quartzite	19-25mm	10.5	1
100	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	6.3-9.5mm	0.5	1
Site: 41BW536 Unit: S.T. 13 Lev: 1							
101	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	0.2	1
101	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.9	1
Site: 41BW536 Unit: S.T. 14 Lev: 1							
102	Unmodified Debitage	Secondary Flake	N/A	Chert	12.5-19mm	2.6	1
102	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.2	1
102	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	0.9	1
102	Unmodified Debitage	Secondary Flake	N/A	Petrified Wood	12.5-19mm	1.5	1
102	Unmodified Debitage	Secondary Flake	N/A	Novaculite	6.3-9.5mm	0.6	1
102	Unmodified Debitage	Secondary Flake	N/A	Novaculite	<6.3mm	0.2	1
102	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.7	1
102	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.4	1
102	Unmodified Debitage	Tertiary Flake	N/A	Chert	9.5-12.5mm	0.4	1
102	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	6.3-9.5mm	0.2	1
102	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	<6.3mm	0.4	2
102	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	<6.3mm	0.6	1

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
102	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.4	1	
102	Unmodified Debitage	Bifacial Thin. Flake	N/A	Quartzite	12.5-19mm	2.1	1	
102	Unworked Stone	Burned Rock	N/A	Chert		2.2	1	
102	Unworked Stone	Burned Rock	N/A	Quartzite		33.7	4	
Site: 41BW536 Unit: S.T. 14 Lev: 2								
103	Uniface	Side Scraper	Complete	Novaculite	L40 W15 T5	2.7	1	
103	Unmodified Debitage	Primary Flake	N/A	Quartzite	19-25mm	10.1	1	
103	Unmodified Debitage	Primary Flake	N/A	Quartzite	6.3-9.5mm	0.3	1	
103	Unmodified Debitage	Secondary Flake	N/A	Chert	12.5-19mm	3.9	1	
103	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.6	1	
103	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	1.7	2	
103	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	0.7	1	
103	Unmodified Debitage	Secondary Flake	N/A	Novaculite	6.3-9.5mm	0.5	1	
103	Unmodified Debitage	Secondary Flake	N/A	Novaculite	9.5-12.5mm	1.4	1	
103	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.4	1	
103	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.2	1	
103	Unmodified Debitage	Tertiary Flake	N/A	Petrified Wood	9.5-12.5mm	0.3	1	
103	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	9.5-12.5mm	0.9	1	
103	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.6	1	
103	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.2	1	
103	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	9.5-12.5mm	0.5	1	
103	Unmodified Debitage	Bifacial Thin. Flake	N/A	Quartzite	9.5-12.5mm	0.7	1	
103	Unmodified Debitage	Bifacial Thin. Flake	N/A	Bowie Novaculite	6.3-9.5mm	0.4	1	
103	Unworked Stone	Burned Rock	N/A	Chert		7.5	2	
103	Unworked Stone	Burned Rock	N/A	Quartzite		29.8	6	
103	Unworked Stone	Burned Rock	N/A	Sandstone		86.9	2	
Site: 41BW536 Unit: S.T. 14 Lev: 3								
104	Finished Biface Tool	Dart Point	Base/Stem	Chert	L25 W21 T8	4.3	1	
104	Unmodified Debitage	Primary Flake	N/A	Chert	12.5-19mm	2.9	1	
104	Unmodified Debitage	Primary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.8	1	

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
104	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.3	1	
104	Unmodified Debitage	Secondary Flake	N/A	Novaculite	9.5-12.5mm	1.1	1	
104	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	12.5-19mm	6.2	2	
104	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	1.1	2	
104	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	2.2	1	
104	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	<6.3mm	0.1	1	
104	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	19-25mm	17.2	1	
104	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	6.3-9.5mm	0.5	1	
104	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.9	1	
104	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.3	1	
104	Unworked Stone	Burned Rock	N/A	Quartzite		87.0	14	
Site: 41BW536 Unit: S.T. 15 Lev: 1								
106	Unmodified Debitage	Primary Flake	N/A	Chert	12.5-19mm	1.1	1	
106	Unmodified Debitage	Primary Flake	N/A	Quartzite	6.3-9.5mm	0.5	1	
106	Unmodified Debitage	Primary Flake	N/A	Novaculite	<6.3mm	0.2	1	
106	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.2	1	
106	Unmodified Debitage	Secondary Flake	N/A	Quartzite	12.5-19mm	1.2	1	
106	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	1.2	1	
106	Unmodified Debitage	Secondary Flake	N/A	Novaculite	6.3-9.5mm	0.7	1	
106	Unmodified Debitage	Secondary Flake	N/A	Bowie Novaculite	6.3-9.5mm	0.1	1	
106	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.3	1	
106	Unmodified Debitage	Tertiary Flake	N/A	Chert	12.5-19mm	1.7	1	
106	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.1	1	
106	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	6.3-9.5mm	0.3	1	
106	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	9.5-12.5mm	0.8	1	
106	Unmodified Debitage	Tertiary Flake	N/A	Quartz	<6.3mm	0.2	1	
106	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.3	1	
106	Unmodified Debitage	Bifacial Thin. Flake	N/A	Quartzite	6.3-9.5mm	1.2	3	
106	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	12.5-19mm	0.4	1	
106	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.1	1	

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BW536 Unit: S.T. 15 Lev: 2							
107	Unmodified Debitage	Secondary Flake	N/A				
107	Unmodified Debitage	Secondary Flake	N/A				
107	Unmodified Debitage	Secondary Flake	N/A				
107	Unmodified Debitage	Tertiary Flake	N/A				
107	Unmodified Debitage	Tertiary Flake	N/A				
107	Unmodified Debitage	Bifacial Thin. Flake	N/A				
358 1	Ceramics/Clay	Vessel/container	Body				
Site: 41BW536 Unit: S.T. 16 Lev: 1							
108	Unmodified Debitage	Secondary Flake	N/A				
108	Unmodified Debitage	Bifacial Thin. Flake	N/A				
108	Unmodified Debitage	Bifacial Thin. Flake	N/A				
108	Unmodified Debitage	Bifacial Thin. Flake	N/A				
108	Unmodified Debitage	Bifacial Thin. Flake	N/A				
108	Unworked Stone	Burned Rock	N/A				
Site: 41BW536 Unit: S.T. 16 Lev: 2							
109	Unmodified Debitage	Tertiary Flake	N/A				
109	Unmodified Debitage	Tertiary Flake	N/A				
109	Unmodified Debitage	Bifacial Thin. Flake	N/A				
Site: 41BW536 Unit: S.T. 17 Lev: 1							
110	Unmodified Debitage	Primary Flake	N/A				
110	Unmodified Debitage	Secondary Flake	N/A				
110	Unmodified Debitage	Secondary Flake	N/A				
110	Unmodified Debitage	Secondary Flake	N/A				
110	Unmodified Debitage	Tertiary Flake	N/A				
Site: 41BW536 Unit: S.T. 17 Lev: 2							
111	Unmodified Debitage	Primary Flake	N/A				
111	Unmodified Debitage	Secondary Flake	N/A				

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
111	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	3.0	2	
111	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.3	1	
111	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.9	1	
111	Unmodified Debitage	Tertiary Flake	N/A	Chert	12.5-19mm	1.0	1	
111	Unmodified Debitage	Tertiary Flake	N/A	Bowie Novaculite	<6.3mm	0.1	1	
111	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.3	1	
Site: 41BW536 Unit: S.T. 18 Lev: 2								
112	Unmodified Debitage	Primary Flake	N/A	Quartzite	6.3-9.5mm	0.6	1	
112	Unmodified Debitage	Primary Flake	N/A	Quartzite	9.5-12.5mm	0.9	1	
112	Unmodified Debitage	Primary Flake	N/A	Quartzite	<6.3mm	0.2	1	
112	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.4	1	
112	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.3	1	
112	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	<6.3mm	0.1	1	
112	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.1	1	
112	Unmodified Debitage	Bifacial Thin. Flake	N/A	Quartzite	6.3-9.5mm	0.2	1	
112	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	<6.3mm	0.2	2	
Site: 41BW536 Unit: S.T. 19 Lev: 1								
113	Unmodified Debitage	Primary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	1.0	1	
113	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	12.5-19mm	3.9	1	
113	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	<6.3mm	0.1	1	
113	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.3	1	
Site: 41BW536 Unit: S.T. 19 Lev: 2								
114	Unmodified Debitage	Primary Flake	N/A	Quartzite	9.5-12.5mm	2.3	1	
114	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	3.2	1	
114	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	12.5-19mm	1.7	1	
114	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.1	1	
114	Unworked Stone	Burned Rock	N/A	Quartzite		6.8	1	
Site: 41BW536 Unit: S.T. 20 Lev: 1								

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
115	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.4	1	
115	Unmodified Debitage	Secondary Flake	N/A	Quartzite	6.3-9.5mm	0.5	1	
115	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.8	1	
115	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	6.3-9.5mm	0.2	1	
115	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	<6.3mm	0.1	1	
115	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	12.5-19mm	1.3	1	
115	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	<6.3mm	0.2	1	
Site: 41B4536 Unit: S.T. 20 Lev: 2								
116	Unmodified Debitage	Secondary Flake	N/A	Chert	12.5-19mm	1.5	1	
116	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	1.1	1	
116	Unmodified Debitage	Secondary Flake	N/A	Novaculite	6.3-9.5mm	0.4	1	
116	Unmodified Debitage	Secondary Flake	N/A	Bowie Novaculite	9.5-12.5mm	2.1	1	
116	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.3	1	
116	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.2	1	
Site: 41B4536 Unit: S.T. 20 Lev: 3								
117	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	1.0	1	
117	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	<6.3mm	0.1	1	
117	Unworked Stone	Burned Rock	N/A	Chert		10.6	1	
117	Unworked Stone	Burned Rock	N/A	Quartzite		1.0	1	
Site: 41B4536 Unit: S.T. 20 Lev: 4								
118	Unfinished Biface	Aborted, Early	Complete	Ogallala Quartzite	L49 W34 T13	18.2	1	
118	Unmodified Debitage	Primary Flake	N/A	Chert	12.5-19mm	9.9	2	
118	Unmodified Debitage	Primary Flake	N/A	Chert	19-25mm	4.1	1	
118	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	1.6	1	
118	Unmodified Debitage	Primary Flake	N/A	Quartzite	12.5-19mm	10.6	2	
118	Unmodified Debitage	Primary Flake	N/A	Quartzite	19-25mm	31.0	2	
118	Unmodified Debitage	Primary Flake	N/A	Quartzite	9.5-12.5mm	2.0	2	
118	Unmodified Debitage	Primary Flake	N/A	Bowie Novaculite	6.3-9.5mm	1.0	1	
118	Unmodified Debitage	Primary Flake	N/A	Ogallala Quartzite	12.5-19mm	6.8	2	

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
118	Unmodified Debitage	Secondary Flake	N/A	Chert	19-25mm	7.5	1	
118	Unmodified Debitage	Secondary Flake	N/A	Quartzite	12.5-19mm	16.3	3	
118	Unmodified Debitage	Secondary Flake	N/A	Quartzite	6.3-9.5mm	2.9	3	
118	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	2.4	1	
118	Unmodified Debitage	Secondary Flake	N/A	Bowie Novaculite	9.5-12.5mm	1.8	1	
118	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	12.5-19mm	8.6	1	
118	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.6	1	
118	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	6.3-9.5mm	0.5	2	
118	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	6.3-9.5mm	0.5	1	
118	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	12.5-19mm	3.6	2	
118	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.4	1	
118	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.8	1	
118	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	9.5-12.5mm	2.2	1	
Site: 41BW536 Unit: S.T. 21 Lev: 1								
119	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	0.7	1	
119	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.3	1	
119	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	9.5-12.5mm	1.5	1	
Site: 41BW536 Unit: S.T. 21 Lev: 2								
120	Unmodified Debitage	Primary Flake	N/A	Quartzite	12.5-19mm	2.8	1	
120	Unmodified Debitage	Secondary Flake	N/A	Quartzite	12.5-19mm	3.8	2	
120	Unmodified Debitage	Secondary Flake	N/A	Quartzite	6.3-9.5mm	1.2	2	
120	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	2.3	2	
120	Unmodified Debitage	Secondary Flake	N/A	Novaculite	<6.3mm	0.2	1	
120	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	12.5-19mm	6.9	1	
120	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.8	1	
120	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.4	1	
120	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	12.5-19mm	2.6	1	
120	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	12.5-19mm	1.8	1	

Prehistoric Artifact Data

Bag Art	No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41B4536 Unit: S.T. 21 Lev: 3									
121	Unmodified Debitage	Bifacial Thin. Flake	N/A		Quartzite	12.5-19mm	2.9	1	
121	Unmodified Debitage	Angular Shatter	N/A		Chert	6.3-9.5mm	0.5	1	
Site: 41B4536 Unit: S.T. 22 Lev: 2									
122	Unmodified Debitage	Bifacial Thin. Flake	N/A		Novaculite	12.5-19mm	2.2	1	
Site: 41B4536 Unit: S.T. 22 Lev: 3									
123	2	Finished Biface Tool	Dart Point	Complete	Ogallala Quartzite	L30 W21 T6	4.0	1	GARY-HOBSON VAR.
123	1	Unfinished Biface	Aborted, Early	Complete	Chert	L47 W15 T14	5.7	1	
123	Unmodified Debitage	Primary Flake	N/A		Quartzite	12.5-19mm	7.2	1	
123	Unmodified Debitage	Primary Flake	N/A		Ogallala Quartzite	6.3-9.5mm	0.6	1	
123	Unmodified Debitage	Secondary Flake	N/A		Chert	12.5-19mm	9.4	3	
123	Unmodified Debitage	Secondary Flake	N/A		Chert	6.3-9.5mm	0.5	1	
123	Unmodified Debitage	Secondary Flake	N/A		Chert	9.5-12.5mm	4.0	2	
123	Unmodified Debitage	Secondary Flake	N/A		Quartzite	12.5-19mm	2.4	1	
123	Unmodified Debitage	Secondary Flake	N/A		Quartzite	19-25mm	4.8	1	
123	Unmodified Debitage	Secondary Flake	N/A		Ogallala Quartzite	12.5-19mm	3.9	1	
123	Unmodified Debitage	Secondary Flake	N/A		Ogallala Quartzite	6.3-9.5mm	0.7	1	
123	Unmodified Debitage	Secondary Flake	N/A		Ogallala Quartzite	9.5-12.5mm	1.1	1	
123	Unmodified Debitage	Tertiary Flake	N/A		Chert	9.5-12.5mm	0.4	1	
123	Unmodified Debitage	Tertiary Flake	N/A		Chert	<6.3mm	0.1	1	
123	Unmodified Debitage	Tertiary Flake	N/A		Quartzite	6.3-9.5mm	0.2	1	
123	Unmodified Debitage	Tertiary Flake	N/A		Ogallala Quartzite	6.3-9.5mm	0.6	1	
123	Unmodified Debitage	Bifacial Thin. Flake	N/A		Quartzite	12.5-19mm	3.3	1	
123	Unmodified Debitage	Bifacial Thin. Flake	N/A		Quartzite	6.3-9.5mm	0.5	1	
123	Unmodified Debitage	Bifacial Thin. Flake	N/A		Quartzite	9.5-12.5mm	0.9	1	
123	Unworked Stone	Burned Rock	N/A		Chert		30.0	4	
123	Unworked Stone	Burned Rock	N/A		Quartzite		122.7	13	
Site: 41B4536 Unit: S.T. 23 Lev: 1									
124	Unmodified Debitage	Secondary Flake	N/A		Chert	9.5-12.5mm	0.7	1	

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BW536 Unit: S.T. 23 Lev: 2							
125	Unmodified Debitage	Tertiary Flake	N/A				
			Novaculite	6.3-9.5mm	0.9	1	
Site: 41BW536 Unit: S.T. 24 Lev: 1							
126	Unmodified Debitage	Primary Flake	N/A				
			Quartzite	9.5-12.5mm	1.0	1	
126	Unmodified Debitage	Angular Shatter	N/A				
			Chert	6.3-9.5mm	1.2	1	
Site: 41BW536 Unit: S.T. 25 Lev: 1							
127	Unmodified Debitage	Secondary Flake	N/A				
			Ogallala Quartzite	6.3-9.5mm	0.2	1	
127	Unmodified Debitage	Secondary Flake	N/A				
			Ogallala Quartzite	9.5-12.5mm	1.5	1	
Site: 41BW536 Unit: S.T. 26 Lev: 1							
128	Unmodified Debitage	Tertiary Flake	N/A				
			Quartzite	9.5-12.5mm	0.7	1	
128	Unmodified Debitage	Bifacial Thin. Flake	N/A				
			Quartzite	6.3-9.5mm	0.6	1	
Site: 41BW536 Unit: S.T. 27 Lev: 1							
129	Unmodified Debitage	Secondary Flake	N/A				
			Ogallala Quartzite	<6.3mm	0.2	1	
129	Unmodified Debitage	Bifacial Thin. Flake	N/A				
			Quartzite	6.3-9.5mm	0.2	1	
Site: 41BW536 Unit: S.T. 27 Lev: 2							
130	Unmodified Debitage	Secondary Flake	N/A				
			Chert	6.3-9.5mm	0.5	1	
130	Unmodified Debitage	Tertiary Flake	N/A				
			Chert	<6.3mm	0.1	1	
130	Unmodified Debitage	Tertiary Flake	N/A				
			Bowie Novaculite	<6.3mm	0.1	1	
Site: 41BW536 Unit: S.T. 27 Lev: 3							
131	Unmodified Debitage	Angular Shatter	N/A				
			Chert	9.5-12.5mm	1.6	1	
Site: 41BW536 Unit: S.T. 28 Lev: 1							
132	Unmodified Debitage	Secondary Flake	N/A				
			Chert	6.3-9.5mm	0.7	1	
132	Unmodified Debitage	Tertiary Flake	N/A				
			Quartzite	6.3-9.5mm	0.9	1	

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41B4536 Unit: S.T. 28 Lev: 2							
133	Unmodified Debitage	Secondary Flake	N/A				
133	Unmodified Debitage	Secondary Flake	N/A				
133	Unmodified Debitage	Tertiary Flake	N/A				
Site: 41B4536 Unit: S.T. 28 Lev: 3							
134	Unmodified Debitage	Secondary Flake	N/A				
134	Unmodified Debitage	Tertiary Flake	N/A				
134	Unworked Stone	Burned Rock	N/A				
Site: 41B4536 Unit: S.T. 29 Lev: 1							
135	Unmodified Debitage	Primary Flake	N/A				
Site: 41B4536 Unit: S.T. 30 Lev: 1							
136	Unmodified Debitage	Secondary Flake	N/A				
136	Unmodified Debitage	Tertiary Flake	N/A				
136	Unmodified Debitage	Tertiary Flake	N/A				
136	Unmodified Debitage	Tertiary Flake	N/A				
136	Core	Tested nodule/pebble	N/A				
Site: 41B4536 Unit: S.T. 30 Lev: 2							
137	Unmodified Debitage	Secondary Flake	N/A				
137	Unmodified Debitage	Secondary Flake	N/A				
137	Unmodified Debitage	Secondary Flake	N/A				
137	Unmodified Debitage	Tertiary Flake	N/A				
137	Unmodified Debitage	Tertiary Flake	N/A				
137	Unmodified Debitage	Bifacial Thin. Flake	N/A				
137	Unmodified Debitage	Bifacial Thin. Flake	N/A				
Site: 41B4536 Unit: S.T. 31 Lev: 1							
138	Unmodified Debitage	Secondary Flake	N/A				
138	Unmodified Debitage	Secondary Flake	N/A				

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
138	Unmodified Debitage	Secondary Flake	N/A	Novaculite	12.5-19mm	4.2	1	
138	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	6.3-9.5mm	0.8	1	
138	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.3	1	
Site: 41BW536 Unit: S.T. 32 Lev: 1								
139	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	0.8	1	
139	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.7	1	
139	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.4	1	
Site: 41BW536 Unit: SURF Lev:								
105	Unmodified Debitage	Tertiary Flake	N/A	Bowie Novaculite	<6.3mm	0.1	1	
105	Unmodified Debitage	Bifacial Thin. Flake	N/A	Bowie Novaculite	6.3-9.5mm	0.2	1	
105	Unworked Stone	Burned Rock	N/A	Quartzite		13.4	2	
140	Unworked Stone	Burned Rock	N/A	Novaculite		52.9	1	
Site: 41BW537 Unit: S.T. 1 Lev: 1								
154	Unfinished Biface	Unident Fragment	Fragment	Chert	L12 W21 T6	1.1	1	
Site: 41BW537 Unit: S.T. 2 Lev: 1								
155	Unmodified Debitage	Primary Flake	N/A	Quartzite	12.5-19mm	3.3	1	
155	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	12.5-19mm	1.7	1	
155	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.3	1	
Site: 41BW537 Unit: S.T. 2 Lev: 2								
156	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.2	1	
156	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	6.3-9.5mm	0.6	1	
Site: 41BW537 Unit: S.T. 4 Lev: 3								
157	Unmodified Debitage	Primary Flake	N/A	Novaculite	<6.3mm	0.2	1	
157	Unmodified Debitage	Bifacial Thin. Flake	N/A	Bowie Novaculite	6.3-9.5mm	0.6	1	
Site: 41BW537 Unit: S.T. 6 Lev: 3								

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
158	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	12.5-19mm	5.0	1
Site: 41B4538 Unit: S.T. 1 Lev: 1							
159	Unmodified Debitage	Primary Flake	N/A	Quartzite	9.5-12.5mm	1.1	1
159	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.4	2
159	Unmodified Debitage	Secondary Flake	N/A	Quartzite	12.5-19mm	1.8	1
159	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.3	1
159	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.8	1
159	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.2	1
159	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	<6.3mm	0.3	1
Site: 41B4538 Unit: S.T. 1 Lev: 2							
160	Unmodified Debitage	Primary Flake	N/A	Ogallala Quartzite	<6.3mm	0.2	1
160	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	1.0	2
160	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	6.3-9.5mm	0.2	1
Site: 41B4538 Unit: S.T. 1 Lev: 3							
161	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.3	1
161	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.3	1
Site: 41B4538 Unit: S.T. 1 Lev: 4							
162	Unmodified Debitage	Secondary Flake	N/A	Quartzite	12.5-19mm	3.9	1
162	Unmodified Debitage	Secondary Flake	N/A	Quartzite	6.3-9.5mm	1.0	1
162	Unmodified Debitage	Secondary Flake	N/A	Quartzite	<6.3mm	0.3	1
162	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.2	1
162	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	12.5-19mm	2.0	1
162	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	19-25mm	2.3	1
162	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.0	1
Site: 41B4538 Unit: S.T. 2 Lev: 1							
163	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	2.4	1
163	Unmodified Debitage	Secondary Flake	N/A	Quartzite	6.3-9.5mm	0.4	1

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
163	Unmodified Debitage	Secondary Flake	N/A	Quartzite	9.5-12.5mm	0.8	1
163	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.5	1
163	Unmodified Debitage	Tertiary Flake	N/A	Chert	9.5-12.5mm	1.6	1
163	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	<6.3mm	0.1	1
Site: 41B4538 Unit: S.T. 2 Lev: 2							
164	Unmodified Debitage	Primary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.5	1
Site: 41B4538 Unit: S.T. 2 Lev: 3							
165	Unmodified Debitage	Primary Flake	N/A	Quartzite	6.3-9.5mm	0.6	1
Site: 41B4538 Unit: S.T. 3 Lev: 1							
166	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	0.7	1
166	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.4	1
166	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.5	1
166	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	<6.3mm	0.2	1
Site: 41B4538 Unit: S.T. 3 Lev: 2							
167	Unmodified Debitage	Primary Flake	N/A	Chert	6.3-9.5mm	0.2	1
167	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	2.4	1
167	Unmodified Debitage	Primary Flake	N/A	Quartzite	6.3-9.5mm	0.5	1
167	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	1.0	1
167	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.2	1
Site: 41B4538 Unit: S.T. 3 Lev: 3							
168	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	1.1	1
168	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.3	1
168	Unmodified Debitage	Bifacial Thin. Flake	N/A	Quartzite	6.3-9.5mm	0.3	1
168	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chalcedony	6.3-9.5mm	0.3	1
168	Unmodified Debitage	Angular Shatter	N/A	Novaculite	6.3-9.5mm	0.5	1
168	Unworked Stone	Burned Rock	N/A	Quartzite		5.6	1

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41BWS38 Unit: S.T. 3 Lev: 4							
169	Unmodified Debitage	Secondary Flake	N/A	12.5-19mm	2.6	1	Chert
169	Unmodified Debitage	Tertiary Flake	N/A	<6.3mm	0.3	1	Novaculite
169	Unworked Stone	Burned Rock	N/A		84.0	1	Chert
Site: 41BWS38 Unit: S.T. 5 Lev: 1							
170	Unmodified Debitage	Primary Flake	N/A	6.3-9.5mm	0.5	1	Chert
170	Unmodified Debitage	Secondary Flake	N/A	<6.3mm	0.3	1	Quartzite
Site: 41BWS38 Unit: S.T. 5 Lev: 2							
171	Unmodified Debitage	Tertiary Flake	N/A	6.3-9.5mm	0.5	1	Chert
Site: 41BWS38 Unit: S.T. 8 Lev: 1							
172	Unmodified Debitage	Secondary Flake	N/A	6.3-9.5mm	0.3	1	Bowie Novaculite
172	Unmodified Debitage	Secondary Flake	N/A	9.5-12.5mm	1.0	1	Ogallala Quartzite
172	Unmodified Debitage	Bifacial Thin. Flake	N/A	9.5-12.5mm	0.4	1	Ogallala Quartzite
Site: 41BWS38 Unit: S.T. 8 Lev: 2							
173	Unmodified Debitage	Secondary Flake	N/A	6.3-9.5mm	0.4	1	Chert
173	Unmodified Debitage	Tertiary Flake	N/A	6.3-9.5mm	0.4	1	Quartzite
173	Unmodified Debitage	Bifacial Thin. Flake	N/A	6.3-9.5mm	0.2	1	Chert
173	Unmodified Debitage	Bifacial Thin. Flake	N/A	<6.3mm	0.1	1	Quartzite
173	Unmodified Debitage	Bifacial Thin. Flake	N/A	6.3-9.5mm	0.8	2	Ogallala Quartzite
Site: 41BWS38 Unit: S.T. 8 Lev: 3							
174	Unmodified Debitage	Primary Flake	N/A	6.3-9.5mm	0.3	1	Chert
174	Unmodified Debitage	Secondary Flake	N/A	6.3-9.5mm	0.6	1	Novaculite
Site: 41BWS39 Unit: S.T. 1 Lev: 1							
175	Unmodified Debitage	Tertiary Flake	N/A	6.3-9.5mm	0.2	1	Bowie Novaculite
Site: 41BWS39 Unit: S.T. 2 Lev: 2							

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
176	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	9.5-12.5mm	0.6	1	
Site: 41BW539 Unit: S.T. 2 Lev: 3								
177	Unmodified Debitage	Secondary Flake	N/A	Quartzite	19-25mm	7.7	1	
Site: 41BW540 Unit: S.T. 1 Lev: 1								
178	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.5	1	
178	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.7	1	
178	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	<6.3mm	0.1	1	
Site: 41BW540 Unit: S.T. 2 Lev: 1								
179	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.3	1	
Site: 41BW540 Unit: S.T. 3 Lev: 1								
180	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.7	1	
180	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	6.3-9.5mm	0.1	1	
180	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	<6.3mm	0.2	1	
Site: 41BW540 Unit: S.T. 8 Lev: 1								
181	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.3	1	
Site: 41BW541 Unit: S.T. 1 Lev: 1								
182	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.1	1	
182	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	<6.3mm	0.2	1	
Site: 41BW541 Unit: S.T. 2 Lev: 1								
183	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	12.5-19mm	4.0	1	
Site: 41BW543 Unit: SURF Lev:								
189	Finished Biface Tool	Dart Point	Complete	Quartzite	L52 W33 T10	12.0	1	GARY-KAUFMAN VARIETY
Site: 41BW545 Unit: S.T. 1 Lev: 1								

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
199	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.5	1	
199	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.3	1	
199	Unmodified Debitage	Angular Shatter	N/A	Chert	<6.3mm	0.2	1	
Site: 41BW545 Unit: S.T. 2 Lev: 1								
200	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.1	1	
200	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	<6.3mm	0.1	1	
Site: 41BW546 Unit: S.T. 1 Lev: 1								
304	Unmodified Debitage	Primary Flake	N/A	Chert	6.3-9.5mm	0.7	1	
304	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.5	1	
304	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	6.3-9.5mm	0.2	1	
Site: 41BW546 Unit: S.T. 1 Lev: 2								
305	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.2	1	
Site: 41BW546 Unit: S.T. 1 Lev: 3								
306	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	1.1	1	
Site: 41BW546 Unit: S.T. 2 Lev: 2								
307	Unmodified Debitage	Secondary Flake	N/A	Quartzite	12.5-19mm	4.1	1	
Site: 41BW546 Unit: S.T. 3 Lev: 2								
308	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	1.4	1	
308	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.2	1	
308	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.4	1	
308 1	Core	Complete Core	Bipolar	Novaculite	L62 W49 T28	86.7	1	
Site: 41BW547 Unit: S.T. 1 Lev: 1								
309	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	9.5-12.5mm	1.4	1	
Site: 41BW547 Unit: S.T. 2 Lev: 1								

Prehistoric Artifact Data

Bag Art							
No. No.	Class	Type	Other	Material	Size	Weight	Qty. Type Name
310	Unmodified Debitage	Primary Flake	N/A	Chert	19-25mm	0.8	1
310	Unmodified Debitage	Secondary Flake	N/A	Quartzite	<6.3mm	0.1	1
310	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.1	1
310	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	6.3-9.5mm	0.3	1
310	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.2	1
310	Unmodified Debitage	Bifacial Thin. Flake	N/A	Bowie Novaculite	6.3-9.5mm	0.2	1
Site: 41BW547 Unit: S.T. 4 Lev: 1							
311	Unmodified Debitage	Primary Flake	N/A	Novaculite	6.3-9.5mm	1.0	1
311	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.2	1
311	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.2	1
Site: 41BW562 Unit: S.T. 1 Lev: 2							
326	Unmodified Debitage	Secondary Flake	N/A	Novaculite	9.5-12.5mm	1.3	1
326	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.2	1
326	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	9.5-12.5mm	1.3	1
326	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	<6.3mm	0.1	1
326	Unmodified Debitage	Angular Shatter	N/A	Novaculite	9.5-12.5mm	1.7	1
Site: 41BW562 Unit: S.T. 1 Lev: 3							
327	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.2	1
327	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chalcedony	9.5-12.5mm	0.5	1
Site: 41BW562 Unit: S.T. 2 Lev: 2							
328	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.2	1
Site: 41BW562 Unit: S.T. 3 Lev: 1							
329	Unmodified Debitage	Primary Flake	N/A	Chert	9.5-12.5mm	0.5	1
329	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	2.3	2
329	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.4	1
329	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	<6.3mm	0.2	1
329	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.2	1

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
329	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	<6.3mm	1.0	1
Site: 418W562 Unit: S.T. 3 Lev: 2							
330	Unmodified Debitage	Primary Flake	N/A	Chert	6.3-9.5mm	0.2	1
330	Unmodified Debitage	Primary Flake	N/A	Quartzite	6.3-9.5mm	0.5	1
330	Unmodified Debitage	Primary Flake	N/A	Novaculite	6.3-9.5mm	0.6	1
330	Unmodified Debitage	Primary Flake	N/A	Novaculite	9.5-12.5mm	1.0	1
330	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	1.4	2
330	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.5	3
330	Unmodified Debitage	Secondary Flake	N/A	Quartzite	12.5-19mm	0.9	1
330	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.2	1
Site: 418W562 Unit: S.T. 3 Lev: 3							
331	Unmodified Debitage	Primary Flake	N/A	Quartzite	12.5-19mm	1.0	1
331	Unmodified Debitage	Primary Flake	N/A	Quartzite	<6.3mm	0.3	1
331	Unmodified Debitage	Primary Flake	N/A	Novaculite	6.3-9.5mm	0.4	1
331	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	1.0	1
331	Unmodified Debitage	Secondary Flake	N/A	Chert	<6.3mm	0.1	1
331	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	0.8	1
331	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.4	1
331	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.5	2
Site: 418W562 Unit: S.T. 3 Lev: 4							
332	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.1	1
332	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	6.3-9.5mm	0.4	1
332	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.2	1
Site: 418W562 Unit: S.T. 4 Lev: 2							
333	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.2	1
333	Unmodified Debitage	Tertiary Flake	N/A	Chert	<6.3mm	0.2	1
333	Unmodified Debitage	Tertiary Flake	N/A	Novaculite	<6.3mm	0.1	1

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: 41W562 Unit: S.T. 4 Lev: 3							
334	Unmodified Debitage	Secondary Flake	N/A				
334	Unmodified Debitage	Tertiary Flake	N/A				
			Chert	<6.3mm	0.1	1	
			Chert	<6.3mm	0.3	1	
Site: 41W562 Unit: S.T. 5 Lev: 2							
335	Unmodified Debitage	Secondary Flake	N/A				
335	Unmodified Debitage	Tertiary Flake	N/A				
			Quartzite	9.5-12.5mm	1.7	1	
			Chert	9.5-12.5mm	1.0	1	
Site: LOC 01 Unit: S.T. 1 Lev: 1							
377	Uniface	Notch	Complete				
377	Unmodified Debitage	Tertiary Flake	N/A				
377	Unmodified Debitage	Bifacial Thin. Flake	N/A				
			Novaculite	L32 W20 T7	4.7	1	
			Chert	6.3-9.5mm	0.7	1	
			Quartzite	9.5-12.5mm	0.9	1	
Site: LOC 02 Unit: S.T. 1 Lev: 1							
384	Unmodified Debitage	Bifacial Thin. Flake	N/A				
			Chert	12.5-19mm	3.0	1	
Site: LOC 02 Unit: S.T. 1 Lev: 2							
378	Unmodified Debitage	Secondary Flake	N/A				
378	Unmodified Debitage	Bifacial Thin. Flake	N/A				
			Ogallala Quartzite	12.5-19mm	2.5	1	
			Quartzite	9.5-12.5mm	1.2	1	
Site: LOC 03 Unit: S.T. 1 Lev: 1							
375	Unmodified Debitage	Secondary Flake	N/A				
			Novaculite	9.5-12.5mm	0.8	1	
Site: LOC 05 Unit: S.T. 1 Lev: 1							
374	Unmodified Debitage	Bifacial Thin. Flake	N/A				
			Chert	6.3-9.5mm	0.3	1	
Site: LOC 05 Unit: S.T. 1 Lev: 2							
373	Unmodified Debitage	Secondary Flake	N/A				
373	Unworked Stone	Burned Rock	N/A				
			Chert	9.5-12.5mm	1.0	1	
			Chert	12.5-19mm	7.1	1	
Site: LOC 06 Unit: S.T. 1 Lev: 2							
376	Unmodified Debitage	Bifacial Thin. Flake	N/A				
			Quartzite	9.5-12.5mm	1.0	1	

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: LOC 07 Unit: S.T. 1 Lev: 2							
379	Unmodified Debitage	Secondary Flake	N/A				
379	Unmodified Debitage	Bifacial Thin. Flake	N/A				
379	Unmodified Debitage	Bifacial Thin. Flake	N/A				
			Novaculite	6.3-9.5mm	0.3	1	
			Chert	6.3-9.5mm	0.2	1	
			Ogallala Quartzite	9.5-12.5mm	2.3	1	
Site: LOC 09 Unit: S.T. 1 Lev: 1							
382	Unmodified Debitage	Primary Flake	N/A				
382	Unmodified Debitage	Secondary Flake	N/A				
			Quartzite	19-25mm	11.8	1	
			Chert	12.5-19mm	3.2	1	
Site: LOC 10 Unit: S.T. 1 Lev: 1							
380	Unmodified Debitage	Secondary Flake	N/A				
380	Unmodified Debitage	Tertiary Flake	N/A				
380	Unmodified Debitage	Bifacial Thin. Flake	N/A				
			Chert	12.5-19mm	0.2	1	
			Chert	6.3-9.5mm	0.3	1	
			Quartzite	9.5-12.5mm	0.3	1	
Site: LOC 11 Unit: S.T. 1 Lev: 1							
381	Unmodified Debitage	Tertiary Flake	N/A				
			Chert	12.5-19mm	0.3	1	
Site: LOC 14 Unit: S.T. 1 Lev: 1							
201	Unmodified Debitage	Secondary Flake	N/A				
201	Unmodified Debitage	Secondary Flake	N/A				
			Chert	9.5-12.5mm	0.9	1	
			Novaculite	9.5-12.5mm	0.9	1	
Site: LOC 15 Unit: S.T. 1 Lev: 1							
204	Unmodified Debitage	Primary Flake	N/A				
204	Unmodified Debitage	Secondary Flake	N/A				
			Chert	9.5-12.5mm	1.9	1	
			Chert	6.3-9.5mm	0.5	1	
Site: LOC 16 Unit: S.T. 1 Lev: 1							
1	Unfinished Biface	Aborted, Early	Fragment				
			Quartzite	L32 W30 T11	10.0	1	
Site: LOC 17 Unit: S.T. 1 Lev: 1							
10	Unmodified Debitage	Tertiary Flake	N/A				
			Chert	<6.3mm	0.2	1	

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
Site: LOC 18	Unit: S.T. 1	Lev: 1						
11	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	0.9	1	
Site: LOC 22	Unit: S.T. 1	Lev: 1						
37	Unmodified Debitage	Primary Flake	N/A	Chert	6.3-9.5mm	0.4	1	
37	Unmodified Debitage	Primary Flake	N/A	Chert	<6.3mm	0.1	1	
Site: LOC 23	Unit: S.T. 1	Lev: 1						
50	Unmodified Debitage	Secondary Flake	N/A	Chert	12.5-19mm	3.3	1	
50	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.4	1	
Site: LOC 24	Unit: S.T. 1	Lev: 2						
51	Unmodified Debitage	Angular Shatter	N/A	Quartzite	12.5-19mm	10.5	1	
Site: LOC 25	Unit: S.T. 1	Lev: 1						
52	Unmodified Debitage	Tertiary Flake	N/A	Quartzite	6.3-9.5mm	0.5	1	
52	Unmodified Debitage	Tertiary Flake	N/A	Woodford Chert	6.3-9.5mm	0.5	1	
52	Unmodified Debitage	Bifacial Thin. Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.4	1	
Site: LOC 27	Unit: S.T. 1	Lev: 1						
53	Unmodified Debitage	Secondary Flake	N/A	Chert	19-25mm	4.3	1	
Site: LOC 28	Unit: S.T. 1	Lev: 1						
89	Unmodified Debitage	Tertiary Flake	N/A	Chert	9.5-12.5mm	0.7	1	
Site: LOC 29	Unit: S.T. 1	Lev: 1						
93	Unmodified Debitage	Primary Flake	N/A	Chert	19-25mm	5.8	1	
Site: LOC 31	Unit: S.T. 1	Lev: 1						
141	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	9.5-12.5mm	0.9	1	
Site: LOC 33	Unit: S.T. 1	Lev: 1						

Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Material	Size	Weight	Qty.	Type Name
142	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chert	6.3-9.5mm	0.3	1
Site: LOC 34	Unit: S.T. 1 Lev: 2						
143	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	1.5	1
Site: LOC 35	Unit: S.T. 1 Lev: 1						
144	Unmodified Debitage	Secondary Flake	N/A	Chert	6.3-9.5mm	0.5	1
Site: LOC 37	Unit: S.T. 1 Lev: 1						
145	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	9.5-12.5mm	1.2	1
Site: LOC 37	Unit: S.T. 1 Lev: 2						
146	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	0.8	1
146	Unmodified Debitage	Tertiary Flake	N/A	Ogallala Quartzite	6.3-9.5mm	0.4	1
Site: LOC 38	Unit: S.T. 1 Lev: 1						
147	Unmodified Debitage	Secondary Flake	N/A	Ogallala Quartzite	12.5-19mm	1.1	1
Site: LOC 39	Unit: S.T. 1 Lev: 1						
148	Unmodified Debitage	Bifacial Thin. Flake	N/A	Novaculite	9.5-12.5mm	1.1	1
Site: LOC 40	Unit: S.T. 1 Lev: 1						
149	Unmodified Debitage	Secondary Flake	N/A	Chert	9.5-12.5mm	0.5	1
149	Unmodified Debitage	Tertiary Flake	N/A	Chert	6.3-9.5mm	0.2	1
Site: LOC 43	Unit: S.T. 1 Lev: 2						
152	Unmodified Debitage	Secondary Flake	N/A	Quartzite	6.3-9.5mm	0.2	1
Site: LOC 44	Unit: S.T. 1 Lev: 1						
153 1	Core	Complete Core	Blade	Chert	L61 W40 T25	67.5	1
Site: LOC 48	Unit: S.T. 1 Lev: 1						

Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Material	Size	Weight	Qty.	Type Name
194	Unmodified Debitage	Tertiary Flake	N/A	Chert	9.5-12.5mm	0.3	1	
Site: LOC 49 Unit: S.T. 1 Lev: 1								
198	Unmodified Debitage	Secondary Flake	N/A	Novaculite	12.5-19mm	1.1	1	
198	Unmodified Debitage	Bifacial Thin. Flake	N/A	Chalcedony	6.3-9.5mm	0.3	1	

APPENDIX D

SUMMARY OF HISTORIC ARTIFACTS RECOVERED FROM THE 1993 RED RIVER ARMY DEPOT/LONE STAR ARMY AMMUNITION PLANT SURVEY

Historic Artifact Data

Rec No.	Bag No.	Art Class	Type	Other	Dates	Qty.	Family	Analysis Comment
41BW421	3	Unit: S.T. 1	Lev: 1					
	32	1 BLDG MAT	Mortar			1	Architectural	
	1	343 1 METAL	Iron	Wire nail	1880-1994	1	Architectural	Broken
	2	343 2 METAL	Iron	Wire nail	1880-1994	1	Architectural	Whole; 7.0cm
41BW421	4	Unit: S.T. 1	Lev: 2					
	33	1 GLASS	Clear	Bottle	1910-1994	1	Domestic	ABM
	5	33 2 CERAMIC	Whiteware	Light blue tinted	1880-1930	1	Domestic	Undecorated
41BW421	7	Unit: S.T. 2	Lev: 1					
	34	1 CERAMIC	Whiteware	Light blue tinted	1880-1930	2	Domestic	Undecorated rim sherds; different vessels.
	6	346 1 GLASS	Aqua	Bottle		1	Domestic	Pre-1910
41BW421	8	Unit: SURF	Lev:					
	31	1 BLDG MAT	Brick	Handmade	Pre-1890	1	Architectural	
	9	366 1 CERAMIC	Stoneware	Natural clay slipped	1875-1900	1	Domestic	Base
	10	366 2 CERAMIC	Ironstone	Blue tinted	1850-1910	1	Domestic	Molded
	11	366 3 CERAMIC	Ironstone	White, decorated	1840-1910	1	Domestic	Rim sherd; Black floral transfer print
	12	367 1 BLDG MAT	Concrete/Cement	Cement		1	Architectural	
	13	368 1 GLASS	Clear	Bottle	1945-1960	1	Domestic	Fairmont Glass Works Inc, Indianapolis, IN; three d lip finish; (see form)
41BW482	26	Unit: SURF	Lev:					
	385	1 GLASS	Depression Era	Green	1920-1950	1	Domestic	Large pitcher
41BW531	14	Unit: S.T. 4	Lev: 1					
	369	1 GLASS	Mang/Solar	Bottle	1880-1920	1	Domestic	
41BW533		Unit: S.T. 1	Lev: 1					

Historic Artifact Data

Rec No.	Bag No.	Art Class	Type	Other	Dates	Qty.	Family	Analysis Comment
15	84	1 GLASS	Lt. Tint	Window		1	Architectural	2.0mm thick
16	84	2 GLASS	Clear	Lamp		1	Domestic	
41BW533	Unit: S.T.	2	Lev: 1					
17	85	1 BLDG MAT	Brick	Machine pressed	1903-1994	1	Architectural	Gray
18	344	1 GLASS	Lt. Tint	Window		1	Architectural	1.9mm thick
19	344	2 GLASS	Ash Tint	Bottle	1915-1994	1	Domestic	ABM; neck
20	345	1 CERAMIC	Stoneware	Bristol glazed int./ext.	1900-1994	1	Domestic	
41BW533	Unit: S.T.	3	Lev: 1					
21	86	1 METAL	Iron	Wire nail	1880-1994	1	Architectural	Whole; 10.8cm
22	86	2 METAL	Iron	Cut nails	1840-1880	3	Architectural	Broken
23	86	3 METAL	Iron	Cut nail	1840-1880	1	Architectural	Whole; 7.6cm (10d)
24	86	4 METAL	Iron	Cut nail	1840-1880	1	Architectural	Whole; 10.2cm (20d)
25	86	5 METAL	Iron	Cut nail	1840-1880	1	Architectural	Whole; 5.7cm
41BW534	Unit: S.T.	5	Lev: 1					
27	88	1 GLASS	Lt. Tint	Window		1	Architectural	2.7mm thick
41BW534	Unit: SURF		Lev:					
34	87	1 BLDG MAT	Brick	Handmade	Pre-1890	1	Architectural	
29	351	1 GLASS	Mang/Solar	Indeterminate	1880-1920	1	Domestic	Melted
28	352	1 METAL	Iron	Cut Nails	1840-1880	3	Architectural	Large spikes; broken
30	353	1 CERAMIC	Porcelain	Gray tinted	1895-1950	1	Domestic	Polychrome floral decalcomania, pink & green; molded rim
31	353	2 CERAMIC	Ironstone	White	1840-1910	1	Domestic	Slightly molded rim
32	353	3 CERAMIC	Ironstone	White, undecorated	1850-1910	1	Domestic	High fired vitrified rim sherd
33	353	4 CERAMIC	Ironstone	White, undecorated	1850-1910	1	Domestic	High vitrified base w/maker's mark "Royal Ironstone" w/lion &

Historic Artifact Data

Rec No.	Bag No.	Art Class	Type	Other	Dates	Qty.	Family	Analysis Comment
41BW535	35	90	Unit: S.T. 1 GLASS Lt. Tint	Window		1	Architectural	1.9mm thick
41BW535	36	91	Unit: S.T. 2 GLASS Clear	Bottle	1910-1994	1	Domestic	ABM
41BW535	37	92	Unit: S.T. 3 GLASS Lt. Tint	Window		1	Architectural	1.9mm thick
41BW535	38	92	GLASS Lt. Tint	Window		1	Architectural	2.3mm thick
41BW542	39	185	Unit: S.T. 1 GLASS Aqua	Fruit jar		1	Domestic	
41BW542	40	186	Unit: S.T. 3 CERAMIC Whiteware	Light blue tinted	1880-1930	1	Domestic	Undecorated
41BW542	42	187	Unit: S.T. 4 BLDG MAT Brick	Trasitioned	ca.1876-1903	1	Architectural	
41BW542	43	359	METAL Tin	Tin can	1900-1994	6	Domestic	
41BW542	44	360	GLASS Mang/Solar	Bottle	1880-1920	1	Domestic	
41BW542	45	360	GLASS Clear	Bottle	1910-1994	2	Domestic	ABM
41BW542	46	360	GLASS Aqua	Bottle	1910-1994	1	Domestic	ABM
41BW542	47	360	GLASS Aqua	Fruit jar		1	Domestic	
41BW542	41	361	CERAMIC Porcelain	White		1	Furnishing	Furniture caster
41BW542	48	188	Unit: S.T. 5 GLASS Ash Tint	Table	1915-1994	1	Domestic	Heavy mug
41BW543	49	190	Unit: S.T. 1 GLASS Amber/Brown	Bottle	1910-1994	1	Domestic	ABM

unicorn

Historic Artifact Data

Rec No.	Bag Art No.	Class	Type	Other	Dates	Qty.	Family	Analysis Comment
50	190	2 GLASS	Mang/Solar	Bottle	1880-1920	18	Domestic	Slightly solarized
51	354	1 CERAMIC	White ware	White, undecorated	1890-1994	2	Domestic	Highly stained
41BW543	Unit: S.T. 1	Lev: 2						
53	347	1 GLASS	Mang/Solar	Bottle	1880-1920	1	Domestic	
52	348	1 CERAMIC	White ware	White, undecorated	1890-1994	1	Domestic	
41BW543	Unit: S.T. 2	Lev: 1						
54	192	1 METAL	Iron	Cut nail	1840-1880	1	Architectural	Whole; 7.6cm (10d)
41BW543	Unit: S.T. 3	Lev: 1						
56	193	1 GLASS	Lt. Green	Plate		2	Architectural	6.4mm thick
57	193	2 GLASS	Lt. Green	Plate		3	Architectural	6.5mm thick
55	355	1 METAL	Iron	Indeterminate		1	Activities	"2" Pipe (sewer??)
41BW544	Unit: S.T. 1	Lev: 1						
59	195	1 GLASS	Clear	Lamp		1	Domestic	
60	195	2 GLASS	Mang/Solar	Bottle	1880-1920	1	Domestic	
61	195	3 GLASS	Amber/Brown	Bottle		2	Activities	Snuff
58	356	1 CERAMIC	White ware	White, undecorated	1890-1994	1	Domestic	
41BW544	Unit: S.T. 2	Lev: 1						
62	196	1 CERAMIC	Ironstone	White	1840-1910	2	Domestic	Frost fractured; stained
41BW544	Unit: S.T. 8	Lev: 2						
63	197	1 METAL	Iron	Barbed wire		1	Activities	
41BW548	Unit: S.T. 1	Lev: 1						
66	313	1 METAL	Tin	Tin can	1900-1994	4	Domestic	
67	313	2 METAL	Iron	Wire nails	1880-1994	4	Architectural	Broken
64	342	1 GLASS	Mang/Solar	Bottle	1880-1920	1	Domestic	
65	342	2 GLASS	Amber/Brown	Bottle	1920-1994	1	Domestic	ABM, snuff

Historic Artifact Data

Rec No.	Bag Art No.	Class	Type	Other	Dates	Qty.	Family	Analysis Comment
41BW548	Unit: S.T. 5	Lev: 1						
68	314	1 GLASS	Clear	Bottle	1910-1994	1	Domestic	ABM
41BW548	Unit: S.T. 6	Lev: 1						
69	315	1 CERAMIC	Stoneware	Bristol slipped int/ext	1900-1994	1	Domestic	
41BW548	Unit: S.T. 8	Lev: 1						
70	316	1 GLASS	Aqua	Bottle	Pre-1940	1	Domestic	
41BW548	Unit: SURF	Lev:						
73	312	1 GLASS	Amber/Brown	Bottle	1920-1994	5	Domestic	ABM; snuff
74	312	2 GLASS	Amber/Brown	Bottle	1920-1994	1	Domestic	Lip; snuff
75	312	3 GLASS	Clear	Bottle	1929-1954	1	Domestic	Owen's ring; ABM; Owens Illinois; embossed "12/14.. Glass Co. Toledo, OH"
76	312	4 GLASS	Clear	Bottle	1910-1994	1	Domestic	
77	312	5 GLASS	Milk Glass	Translucent	1920-1950	1	Domestic	Acid etched; tableware
78	312	6 GLASS	Milk Glass	Opaque		2	Domestic	Saucer base, tableware
79	312	7 GLASS	Milk Glass	Opaque	Pre-1950	1	Domestic	Fruit jar inset cap
80	312	8 GLASS	Aqua	Fruit jar	ca.1890-1920	3	Domestic	
81	339	1 CERAMIC	Porcelain	White		1	Architectural	Door knob
82	339	2 CERAMIC	Stoneware	Bristol slipped int/ext	1900-1994	1	Domestic	
83	339	3 CERAMIC	Ironstone	White, undecorated	1840-1910	2	Domestic	High fired, vitrified
84	339	4 CERAMIC	Ironstone	White, undecorated	1840-1910	2	Domestic	
85	339	5 CERAMIC	Ironstone	Blue tinted	1850-1910	1	Domestic	Undecorated
86	339	6 CERAMIC	Whiteware	Light blue tinted	1880-1930	1	Domestic	Undecorated
72	340	1 METAL	Brass/Copper	Centerfire cartridge		1	Activities	"L/C/7/4" .223 or 5.56mm
71	341	1 OTHER/MISC	Graphite	Battery core	1900-1940	1	Activities	
41BW549	Unit: S.T. 1	Lev: 1						

Historic Artifact Data

Rec No.	Bag No.	Art Class	Type	Other	Dates	Qty.	Family	Analysis Comment
87	317	1 METAL	Iron	Cut nail	1840-1880	1	Architectural	
88	317	2 METAL	Tin	Tin can	1900-1994	1	Domestic	
41BW549	Unit: S.T.	2 GLASS	Lev: 1 Ash Tint	Bottle	1920-1964	1	Domestic	Embossed makers mark; Hazel-Atlas Glass Co, Wheeling W.Va. (see form)
89	370	1 CERAMIC	Whiteware	White, decorated	1890-1950	1	Domestic	Polychrome (light green & pink) floral decalcomania
41BW549	Unit: S.T.	4 GLASS	Lev: 1 Clear	Bottle	1910-1994	1	Domestic	ABM
41BW549	Unit: S.T.	5 GLASS	Lev: 1 Ash Tint	Table	1915-1994	1	Domestic	
41BW549	Unit: S.T.	8 GLASS	Lev: 1 Depression Era Whiteware	Pink, table White, undecorated	1920-1950 1890-1994	1 1	Domestic Domestic	Pressed
41BW561	Unit: S.T.	3 METAL	Lev: 1 Tin	Tin can	1900-1994	7	Domestic	
96	324	1 GLASS	Mang/Solar	Lamp	1880-1920	1	Domestic	Pressed; base
41BW561	Unit: S.T.	7 GLASS	Lev: 1 Amber/Brown	Bottle	1910-1994	2	Domestic	ABM
41BW561	Unit: SURF	Lev: Stoneware		Bristol int/ext w/cobalt	post 1915	1	Domestic	Molded pitcher w/attached strap handle
112	323	1 CERAMIC		ivory tint	post 1920	1	Domestic	
113	323	2 CERAMIC	Whiteware					

Historic Artifact Data

Rec No.	Bag No.	Art Class	Type	Other	Dates	Qty.	Family	Analysis Comment
114	323	3 GLASS	Mang/Solar	table	1880-1920	1	Domestic	Pressed base to pedestal vessel; heavy glass-heavy ware paneled condiment bottle; 20cm high; screw top lip; makers mark (see form)
115	323	4 GLASS	Clear	bottle	1929-1954	1	Domestic	
LOC 4	Unit: SURF	Lev:						
98	383	1 CERAMIC	Whiteware	Ivory tinted, decorated	1920-1950	1	Domestic	Polychrome (lightgreen, pink, orange) floral decalcomania
99	383	2 METAL	Iron	Axe head		1	Activities	Single bit
LOC 8	Unit: SURF	Lev:						
105	372	1 GLASS	Mang/Solar	Bottle	1880-1920	1	Domestic	Thick base
LOC 19	Unit: S.T.	1 Lev:						
101	35	1 METAL	Iron	Wire nail	1880-1994	1	Architectural	Broken
102	35	2 METAL	Tin	Tin can	1900-1994	1	Domestic	Seam
103	35	3 METAL	Iron	Bracket		1	Activities	
100	349	1 GLASS	Amber/Brown	Bottle	1910-1994	1	Activities	ABM; probable snuff
LOC 20	Unit: S.T.	1 Lev:						
104	36	1 GLASS	Clear	Window		1	Architectural	2.2mm thick
LOC 41	Unit: S.T.	1 Lev:						
106	150	1 METAL	Iron	Fence staple		1	Activities	
LOC 42	Unit: S.T.	1 Lev:						
107	151	1 GLASS	Clear	Bottle		1	Domestic	

Historic Artifact Data

Rec No.	Bag Art No.	Class	Type	Other	Dates	Qty.	Family	Analysis Comment
LOC 45	108	Unit: S.T. 1 CERAMIC	Lev: 1 Whiteware	White, undecorated	1890-1994	1	Domestic	Stained, early ca. Pre-1950
LOC 50	110	Unit: S.T. 1 METAL	Lev: 1 Iron	Indeterminate		1	Indeterminate	
	202	GLASS	Mang/Solar	Bottle	1880-1920	1	Domestic	
LOC 50	111	Unit: S.T. 1 GLASS	Lev: 2 Amber/Brown	Bottle	1910-1994	1	Domestic	Early ABM

APPENDIX E

**CURATED MATERIAL FROM THE 1993 RED RIVER ARMY
DEPOT/LONE STAR ARMY AMMUNITION PLANT SURVEY**

CURATED MATERIALS

The materials generated by this investigation were sent to Naval Support Activity (NAVSUPACT), West Bank, New Orleans, Louisiana. The following list of items enumerate the materials sent to this facility under Contract No. DACW63-90-D-0006, Delivery Order No. 011 with the U.S. Army Corps of Engineers, Fort Worth District:

1. One copy of the Scope of Work
2. One copy of the Final Report
3. The original field notes, maps, and records
4. One acid free copy of all field notes, maps, and records
5. One acid free copy of each site form
6. Black-and-white contact sheets, negatives, and photo data sheets
7. Color Slides and photo data sheets
8. The original artifact analysis data sheets
9. Acid free copies of the original artifact analysis data sheets
10. Computer disk(s) containing the dBASE IV files for the artifact analysis data
11. One printout of each dBASE file, and a code book for deciphering each database
12. Laboratory and Field Inventories for all collected materials
13. All collected artifacts and samples