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ARCHAEOLOGICAL TESTINGS

AT

BACHELOR CREEK,

TERRELL, TEXAS

Texas Antiquities Permit 3768

Jesse E. Todd, MS, MA

Submitted to:

FREESE AND NICHOLS, INC.

4055 International Plaza, Suite 200

Fort Worth, Texas 76109

Prepared by:

AR CONSULTANTS, INC.

P.O. Box 820727

Dallas, Texas 75382

Cultural Resources Report 2005-10

May 16, 2005

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ABSTRACT

On May 12, 2005, AR Consultants, Inc. conducted an archaeological survey and testing of two crossings of Bachelor Creek by a proposed pipeline route. The survey was done for Freese and Nichols, Inc. who are acting as agent for the City of Terrell in Kaufman County, Texas which is making improvements of its water delivery system. The survey was necessitated because Terrell is a political entity of the State of Texas. Although in an upland setting, Fred Wendorf, in his 1940 archaeological investigations in the area, recorded numerous sites adjacent to the proposed pipeline route. However, no cultural materials were found during the intensive pedestrian survey or in 18 shovel tests.

Consequently, AR Consultants Inc. recommends that further cultural resource investigations are unwarranted in conjunction with this project. However, if buried cultural materials are encountered, work in that area should stop immediately and the Archeology Division of the Texas Historical Commission and the Fort Worth District of the U.S. Army Corps of Engineers should be notified. Work should not continue until the proper investigations have been carried out after consultation with the regulatory authorities.

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INTRODUCTION

The City of Terrell, which is located in Kaufman County, Texas, intends to improve its water system by the addition of approximately 9.25 miles of pipe. The project is titled the City of Terrell Proposed Water Systems Improvements. The proposed pipeline route is to cross Bachelor Creek at two locations. After consultation with the Archeology Division of the Texas Historical Commission, it was decided that the proposed pipeline route at the two crossings needed to be investigated. On May 12, AR Consultants, Inc. conducted an intensive pedestrian archaeological survey of the two proposed creek crossings. The purpose of the survey was to determine if cultural materials were present, their significance and how they might be impacted by construction of the pipeline route. The survey was done for Freese and Nichols, Inc. which is acting as agent for the City of Terrell. Since the city is a political entity of the State of Texas, an Antiquities Permit was required and Permit Number 3768 was issued for the survey. The southern crossing is located approximately 1900 feet west of FM 148 and 2,500 feet south of SH 80 and the northern crossing is approximately 400 feet east of FM 205 and 1700 feet south of Colquitt Road (Figure 1).

Since Bachelor Creek is involved, relevant federal legislation includes the National Historic Preservation Act of 1966, as amended (PL-96-515), the National Environmental Policy Act of 1969, as amended (PL-90-190), the Archaeological and Historical Preservation Act of 1974, as amended (PL-93-291), Executive Order No. 11593, "Protection and Enhancement of the Cultural Environment" and Procedures for the Protection of Historic and Cultural Properties (36CFR800).

This report has been written in accordance with the report guidelines prepared by the Council of Texas Archeologists (ND) and adopted by the Archeology Division of the Texas Historical Commission. The following report presents a brief description of the natural and cultural environment of the area. This is followed by a description of the research design and methodology. The results of the investigation follow and constitute the body of the report. The last chapter presents recommendations that arise from the study. A list of references cited concludes the report.

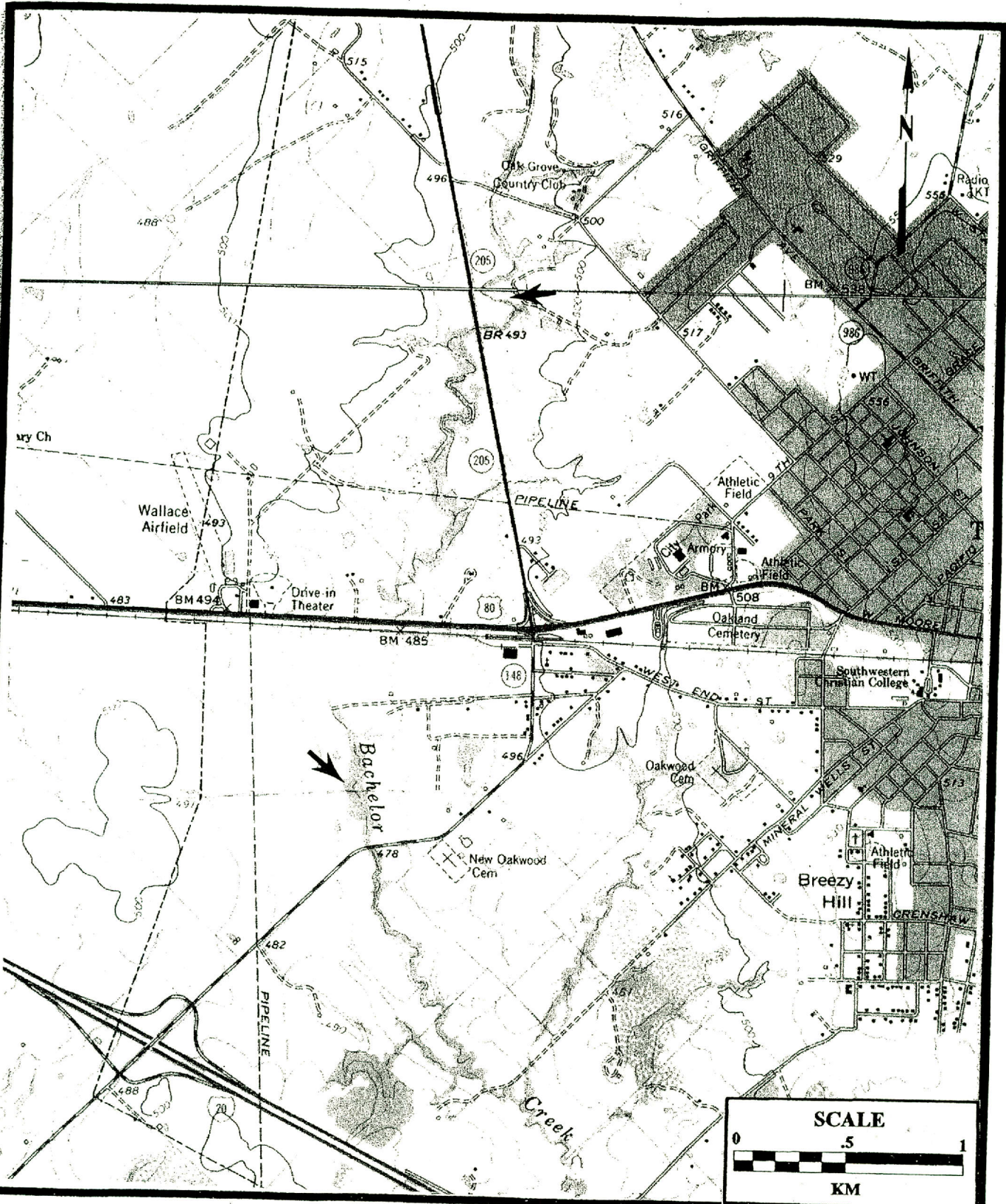


Figure 1. The proposed pipeline route crossings of Bachelor Creek shown by arrows on portions of the Terrell South and North, Texas 7.5' USGS maps.

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Administrative Information:

Sponsor: City of Terrell, Texas with Freese and Nichols, Inc. acting
as agent
Review Agency: The Texas Historical Commission, Archeology Division
Principal Investigator: Jesse Todd, MS, MA
Field Crew: Jeff Craver and Todd
Date: May 12, 2005
Acres Evaluated: approximately 4.5
Sites Recorded: None

NATURAL ENVIRONMENT

Kaufman County consists of predominantly level to gently undulating terrain. It is on the divide between East Fork of the Trinity and Sabine Rivers. Nearly all of the county is drained by the Trinity River, but the eastern half is drained by Cedar Creek which also drains into the Trinity River. A small portion of the north central part of the county drains into the Sabine River. The slightly acidic soils consist of loams with clayey subsoils (Hart 2004:1).

The underlying geology of the study area is the undivided Upper Cretaceous-aged Nacatoch Sand. Quaternary alluvium is mapped as being present in Bachelor Creek's channel (Bureau of Economic Geology 1972).

The association is Crockett-Mabank which are deep, nearly level to strongly sloping prairie soils. The noncalcareous loams have a clayey subsoil. (Pringle 1977:General Soil Map). The soil along the west bank is mapped as Wilson silt loam with 0 to 1 percent slopes and the east bank Mabank fine sandy loam with 1 to 3 percent slopes. Bachelor Creek's channel is mapped as frequently flooded Kemp loam. Soils east and west of the banks include Wilson silt loam with 1 to 3 degree slopes, eroded Wilson clay loam with 2 to 5 percent slopes and Lufkin-Radar complex (Pringle 1977:Sheet 25). The deepest subsoil along the bank is described as being 7 inches below the ground surface and for the channel 37 inches (Pringle 1977:19 and 29).

Bachelor Creek is shown as intermittent on both the Terrell South and North 7.5' USGS maps and the Soil Conservation Service map.

The study area is located in the Blackland Prairie vegetative area of Texas. Kuchler (1966) classified the prairie as being dominated by *Andropogon-Sipa* grasses. Various other grasses are present as well. The prairie environment is one of low biotic diversity. The Texan biotic zone (Blair 1950:Figure 1) also includes the study area. This prairie savannah zone contains 47 species of mammals, 41 reptiles, and 35 amphibians. The area averages 38.67 inches of rainfall per year; ranging from an average of 2.11 inches in July to 4.99 inches in April.

Paleoenvironmental change is not well documented, but it is summarized by Prikryl (1993:192-193). Prior to 12,000 B.C., the climate of north central Texas was cooler and moister than at present. Between 12,000 and 8,000 B.C., the climate became warmer and this continued to the present, but with brief mesic periods. It is suggested that the presence of high grass pollen and low arboreal pollen between 5550 and 1050 B.C. show a drying with a return of arboreal pollen after 1050 B.C. The later change is similar to today's environment. High grass pollen also occurs at approximately A.D. 450 and from A.D. 1550 to 1650, and this also indicates drier periods. The presence of paleosols between A.D. 1 and 1000 suggest an increase in moisture during this period with a return to drier conditions after A.D. 1000.

CULTURE HISTORY

Introduction

The prairie lands of North Central Texas have been occupied for many thousands of years and the history of the prehistoric peoples who have left behind evidence of their occupation is known to many of the residents who inhabit the area today. At the same time, a thorough understanding of these people and their use of the land during this lengthy occupation is lacking due to the vastness of the area, the ephemeral evidence of some of this occupation, and the limited and scattered studies that have been carried out. Virtually no major cultural resources studies have been conducted in Kaufman County and the following discussion draws on information presented by Smith (1969), Skinner (1972), Peter and McGregor (1988), Prikryl (1990 and 1993), and other sources. The Prehistoric period spans a long time period and for convenience has been divided into three major periods, Paleo-Indian, Archaic, and Late Prehistoric.

Culture History

There has been no conclusive evidence of pre-Paleo-Indian occupation in the State of Texas. Two discoveries have been attributed to this period. The first was the report of stone boulders found near the community of Malakoff in Henderson County that had been carved with a likeness of human heads and have been reported as the Malakoff Heads or Malakoff Man (Sellards 1941). The three boulders are late Pliocene or early Pleistocene age gravels which are considered to be more than a million years old (Menzer and Slaughter 1971) and this is well outside the recognized time period of human occupation in the Americas. In addition, no independent evidence in the form of artifacts, fauna or features was found with the heads and the discovery of the heads was not adequately documented. Later examination of two of the heads by Guderjan (1991) determined that one head was made at the site using metal tools and the other was an ecofact.

The Paleo-Indian culture (11,000 to 8,000 BP) had been described as relying on an economy of hunting and gathering, with primary emphasis being on the hunting and processing of megafauna (mammoth and bison). The Lewisville site (Crook and Harris 1957) and the Aubrey site (Ferring 2001) are good examples of sites dated to this period. Both sites are campsites and both were deeply buried, and thus preserved, under the sediments of the present floodplains of the Elm Fork of the Trinity River. Surface artifacts dating to this period have been reported from the Kaufman County area (Meltzer and Bever 1995:Table 1), but no Paleo-Indian sites have been investigated.

There is little evidence of Paleo-Indian occupation in the area of the proposed project although projectile points such as Clovis, Folsom, Meserve, Plainview, San Patrice, Scottsbluff, and Eden have been found on the surface of sites throughout the region. A Folsom point was found at 41KF47. Fragments of Folsom and Scottsbluff or Eden points were found at the Wild Bull site at Cedar Creek Lake (Story 1965:188-190), but they were not in a primary context and were associated with later age Archaic materials. Little

is known about the lifeways of these early peoples who are believed to have populated eastern Texas (Shafer 1977).

The Archaic culture period follows the Paleo-Indian and lasts from 6,000 BC to possibly as late as AD 600. Hunting and gathering continued to be the means by which the people supported their groups. This adaptation was more diversified than that of the earlier period and there is limited evidence that the population increased in size during the course of this period of time. Archaic sites are more common, although there is little evidence of Early Archaic occupation in the area. The Middle Archaic period has been termed the La Harpe Aspect in East Texas (Johnson 1962:269), while the term Trinity Aspect (Crook and Harris 1952) has been used in the Trinity River Basin. Prikryl (1990:73) has questioned the value of the Trinity Aspect and prefers the use of time period terminology since there are questions about the primary contexts of the assemblages from the sites used to define the Aspect.

By the Late Archaic, there is sufficient information to describe the presence of several site types. These include midden sites, shell lens sites, artifact scatters, and upland edge scatters (Richner and Bagot 1978:146). The majority of these sites are known to occur along the major drainages where studies have been conducted, but the few upland surveys have demonstrated that scattered occupation sites are present away from the main drainages in such areas as the Big Rock area in north-central Henderson County north of Athens (Guderjan 1981).

A transition to the Late Prehistoric/Caddoan period is signaled by the presence of a crude form of generally plain brown pottery known as Williams Plain that occurs at sites where dart points dominate the assemblages. This pottery type was found at the Gossett Bottoms, Lacy, and Wild Bull sites at Cedar Creek Lake (Story 1965). Very little is known about this transition period.

The beginning of the Late Prehistoric is signaled by the appearance of finer ceramics and arrowpoints in the first millennium AD. The Late Prehistoric I period (ca. A.D. 600-1200) is also signaled by the appearance of houses and corn horticulture. Locally made pottery appears to be copies of Caddoan Alto and Sanders phase types. Evidence for corn horticulture was noted at the Cobb-Pool site at Lake Joe Pool (Peter and McGregor 1988). Late Prehistoric II dates from AD 1200-1600 and is characterized by the appearance of a Plains Village-like artifact assemblage. Harahey knives, thumbnail scrapers, and flake drills are frequently found with triangular-shaped and Perdiz arrow points. In some cases, these artifacts have been found with bison kills and in other cases bison scapulas had been used to make hoe blades. Nocona Plain, a shell-tempered pottery, occurs during this prehistoric period and is believed to be locally made.

The protohistoric period of North Central Texas begins with the entrance of the Spanish about AD 1541. At about this same time, immigrant Native American groups moved into the same area and either displaced the prehistoric inhabitants or moved into areas that had previously been abandoned. The beginning of this period was marked by limited and sporadic contact between European explorers and the native occupants. The introduction

and adoption of the horse, and ultimately firearms, resulted in a shift from a more sedentary seasonal round to emphasis on bison hunting.

A wide variety of historic Indian groups inhabited this part of Texas. There are very few sites attributed to historic Indians in this region (Skinner 1988), but sites are known in surrounding areas where historic Wichita sites are reported from near Waco, Mexia, Emory, and Spanish Fort.

The historic period (Fox 1983) overlaps with the protohistoric, but is best known in the area for the period from the Civil War to the present. During this period, the indigenous population was eliminated or removed from the area. The invading Europeans focused on farming and ranching.

The Anglo-American history of the Upper Trinity River Basin has been divided into the Frontier, Initial cash crop, Tenant Farming, and Agribusiness periods by Richner and Lee (1976:125-133). The Frontier period lasted from about 1820 to 1850 and was followed by the Initial Cash Crop period which lasted until 1870. Tenant Farming began at 1870 and continued to about 1940. Agribusiness began after the Great Depression and continues to this date.

What today is Kaufman County was settled in 1840 when Mississippian immigrants constructed King's Fort and named it after their leader, William P. King. When the territory was organized, Kaufman County was a part of Henderson County, but the county was organized in February, 1848. From its inception, Kaufman County was a rural and agricultural county. Corn was the major crop and both dairy and beef cattle were raised in the county. The construction of the Texas and Pacific Railway in 1873 and the Texas-Midland Railroad in mid-1890s provided a much needed impetus to the growth of the county. Industry came to the county in 1892 which resulted in growth until the 1930s. During the 1930s and 1940s, the Great Depression and World War II, the number of farms decreased, but governmental agencies provided stable employment during the hard times. From the 1950s to the 1970s agriculture continued to dominate the economy although manufacturing companies existed. Numerous economic pursuits continued to increase in number and further commercial development grew with the construction of Interstate Highway 20. Today, besides agriculture and manufacturing, Cedar Creek Reservoir and Lake Ray Hubbard provide recreational opportunities for a growing tourist trade (Hart 2004:1-4).

Terrell, Texas was founded in 1873 adjacent to the Texas and Pacific Railway. By the mid-1880s, it had a population of 3,000 people, two banks, two hotels, three cotton gins and flour mills, nine churches and three weekly newspapers. What is today Terrell State Hospital was opened in 1885. Interestingly, during World War I, British pilots trained at the municipal airport. Terrell continues to grow utilizing an economy based on not only agriculture but manufacturing as well (Stoltz 2005).

Previous Investigations

Investigations in the Cedar Creek Lake/Big Rock area have been mentioned above. An archaeological survey of the Cedar Creek Lake area was conducted for the National Park Service in 1961 (Davis 1961). Several sites were recorded, and in 1964, the Texas Archeological Salvage Project from The University of Texas at Austin excavated at three sites that are now under the lake (Story 1965). The area from Cedar Creek Lake west is included in Prikryl's (1993) *Prairie-Savannah Region of Texas*.

Investigations in the Forest Grove/Big Rock area began in 1974 with a literature search (Bagot and Skinner 1974), and continued with a survey of the Forest Grove Lake area which recorded five prehistoric and two historic sites as well as the community of Forest Grove (Richner and Lee 1976). Additional survey was done in 1978 by Richner (1978). Further site survey work was done in the mine area in 1980 (Guderjan 1981), and this resulted in the recording of twelve previously unrecorded prehistoric and fifty previously unrecorded historic sites. The Big Rock Shelter was tested as part of this investigation.

Since the 1970s, numerous small-scale cultural resources surveys were conducted of transmission corridors, pipelines, and Soil Conservation Service floodwater retarding structures throughout Kaufman County (Ferring 1975; Lynott and Banks 1977). The overall impression from these studies is that historic and prehistoric cultural resources are present, but are widely scattered and sites are small in size and frequently are surface deposits in the upland. Using Lynott's (1977) model for prehistoric occupation, only three of his site types were recorded in the Upper Cedar Creek Watershed (Lynott and Banks 1975:45). Of note is the fact that lithic procurement sites are found in upland areas where metaquartzite gravels occur. Habitation sites are reported to be near available water sources. A similar pattern is noted by Richner (1978:6) in the Forest Grove Lake area north of Athens.

According to the *Texas Archeological Sites Atlas* (2005), Fred Wendorf recorded several surface sites along or near Bachelor Creek in 1940. Most of these sites were surface lithic scatters. Two sites, 41KF29 and 109, are located close to the proposed pipeline crossings. Site 41KF29 is located on the flank of a north-south ridge approximately 550 feet east of Bachelor Creek. Wendorf records the site as a Caddoan workshop and collected two points from it. Site 41KF109 is located in a similar situation approximately 675 feet northwest of the creek. The record of the *Texas Archeological Sites Atlas* does not indicate what type of site it is.

RESEARCH DESIGN AND METHODOLOGY

Research Design

The following research design was created so that it might provide information about not only the study area, but Kaufman County and the State of Texas generally.

The first hypothesis was,

Prehistoric archaeological site deposits would be found based upon the number of sites recorded along Bachelor Creek by Wendorf in 1940.

The second hypothesis was that archaeological evidence of historic occupation(s) might be found because the study area is adjacent to transportation routes.

The more basic to every study in archaeology is simply stated,

How did the people utilize the area, what affect did they have on the area and what record of their presence did they leave behind?

Small scale surveys and testing, such as the one described in this report, can provide information to the above questions.

Methodology

The proposed pipeline is to be buried approximately 6 feet beneath the surface and the right-of-way is 50 feet wide. The route was flagged and vegetation was cut so that the surveyors could see the flags. Bachelor Creek and an existing sewer pipeline east of FM 148 will be bored beneath east of the creek. The northern crossing of the creek will be open cut. The surveyors armed with USGS maps, walked along the proposed pipeline route for approximately 300 meters where possible to the crossings at Bachelor Creek. Since so many archaeological sites have been recorded, shovel testing was done at least at 50 m intervals although this is an upland setting, and a degrading environment, and shovel testing in such settings is recommended on a judgmental basis by the Council of Texas Archeologists (2002). Shovel tests were excavated to approximately 50 cm below the surface because the area is a degrading environment and the sites Wendorf recorded were found on the surface. However, shovel tests were supplemented by augering on the creek banks. The loamy matrices were screened and the pit walls were visually examined for cultural materials. The drainage bank walls were examined also. In addition, notes on the terrain and vegetation were taken as were photographs. No backhoe trenching was done because of the shallow depth to the subsoil. The deepest subsoil encountered was within depths uncovered by the shovel testing supplemented with augering.

RESULTS

This chapter is divided into various parts. The archaeological survey of the southern crossing of Bachelor Creek is discussed and followed by a description of the northern crossing. Conclusions end the chapter. Shovel test information is discussed generally in the text and specific information is provided in Table 1. Shovel test locations for the southern crossing are shown on Figure 2 and the northern crossing on Figure 3.

The Southern Crossing

Survey began approximately 1,000 feet (330 m) west of Bachelor Creek and north of a golf range and went east toward FM 148. The terrain at the beginning of the survey is level and then slopes moderately to the creek and then rises gently east where the survey terminated adjacent to Lawson's Nursery. The land is in unimproved pasture. Both sides of Bachelor Creek contain forests. Ground visibility west of the creek was approximately 10 percent and averaged 40 percent east of the creek. Eye-height visibility ranged from excellent to less than 5 m in forested areas. Trees include mesquite, hackberry, elm, eastern red cedar and winged elm. Understory vegetation include Johnson grass, native prairie grasses, saw greenbriar, grape vines and blackberry vines.

Shovel test (hereafter ST) 1 was placed near the beginning point of the survey and uncovered 26 cm of clayey loam that overlies clay subsoil that extends to 34+ cm below the surface. Shovel test 2 was placed 100 m east of ST 1 uncovered 33 cm of sandy loam overlying mottled sandy clay subsoil that extended to 54+ cm below the surface. At 250 m east of the beginning point, ground visibility was 100 percent and no ST was excavated. Shovel test 3 was placed 100 m east of ST 2 and uncovered 36 cm of sandy, clayey loam overlying clay subsoil that extended to 57+ cm below the surface. Fifty m east of ST 4 uncovered 32 cm of clayey loam overlying 55+ cm of clay subsoil. Shovel test 5 was placed approximately 5 m from the west bank of the creek. This shovel test was supplemented by augering. The ST uncovered 26 cm of clayey loam overlying sandy loam subsoil that extended to 174+ cm below the surface. The variety of topsoils and subsoils in STs 1 through 4 is in the Lufkin-Rader complex which combines a variety of soil types. No cultural materials were found during the pedestrian survey or in the shovel tests west of the creek.

Bachelor Creek is approximately 3 m wide and deep. The walls are vertical. The substrate is clay and the muddy water was ponded and about a meter deep at the time of the visit. No fish were seen in the water or mussels along the bank. No cultural materials were found in the walls of the banks. The eastern end of an existing sewer pipeline is located approximately 30 m east of the creek. From the west bank of the creek to approximately 10 m east of the existing sewer pipeline will be bored.

Shovel test 6 was placed at the eastern boundary of the sewer pipeline and uncovered 22 cm of clay overlying sandy loam subsoil that extended to 57+ cm below the surface. The same clay was encountered in ST 7 to 12 cm below the surface and sandy, loamy clay

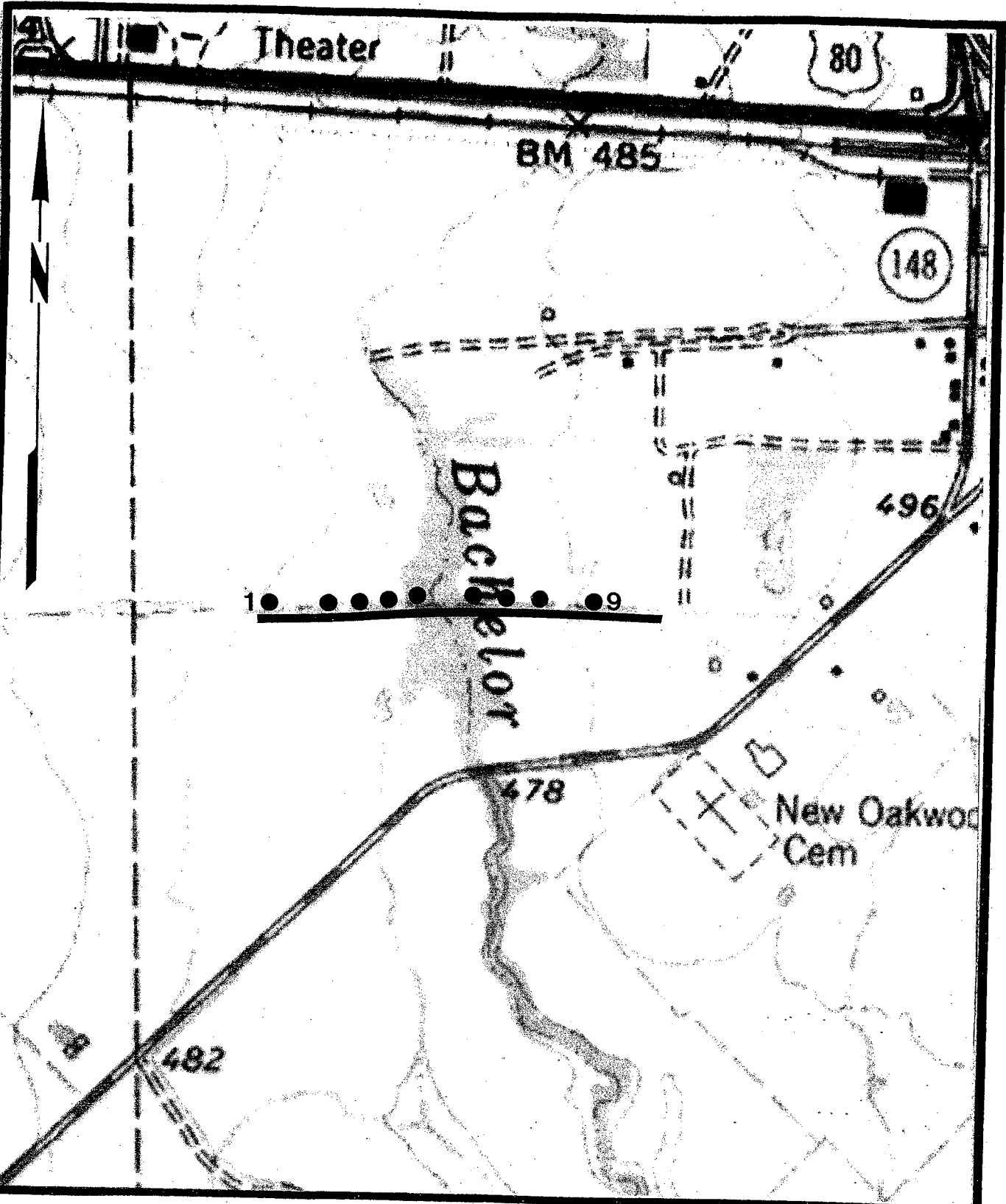


Figure 2. Pipeline route surveyed and shovel test locations for the southern crossing of Bachelor Creek plotted on an enlarged (300%) portion of the Terrell South, Texas USGS map.

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subsoil underlay the clay to 46+ cm below the surface. Fifty meters east of ST 7 was a pond that had been filled in with trash and no shovel test was excavated. Shovel test 8 was placed 50 m east of ST 7 and uncovered the same soils as ST 7 but the contact was at 15 cm and the ST was terminated at 43 cm below the surface. Shovel test 9 was excavated 100 m east of ST 8 and uncovered 66 cm of sandy loam with some clay. The boundary fence for Lawson's Nursery is approximately 130 east of ST 9. No shovel test was placed in the area because of disturbance from building the nursery and the good ground visibility. No cultural materials were found during the pedestrian survey or in the shovel tests from Bachelor Creek to Lawson's Nursery. The survey of the southern crossing of the creek was terminated at Lawson's Nursery.

The Northern Crossing

Survey began at the intersection of Colquitt Road and Lovers Lane and went southwest and terminated approximately 1,000 feet (330 m) southwest of FM 205. The vegetation was similar to the southern crossing but there were fewer mesquite trees. Unimproved pastures are present but both sides of the creek and its tributary are forested. The terrain is fairly level and then drops at about a 45 degree angle to Bachelor Creek and then rises rather steeply to FM 205. From FM 205 to the tributary to Bachelor Creek, the land is undulating and on the southwest side of the tributary the land rises at about a 45 degree angle. Ground visibility averaged 40 percent.

The land has been disturbed for approximately 850 feet (285 m) southwest of the intersection of the Colquitt Road and Lovers Lane. An asphalt and gravel two-track road goes to a residence that has been modified into a barn and is outside the survey area. In addition, the ground has been bulldozed and push piles and trash piles are present as shown in Figure 4. Due to the disturbance and the good ground visibility, no shovel tests were excavated in this immediate area.

Shovel test 10 was placed on a knoll approximately 290 m southwest of the intersection of the roads and prior to the land sloping downward and uncovered 35 cm of clayey loam that overlay the loamy clay subsoil that extended to 54+ cm below the surface. Shovel test 11 was placed approximately 100 m from ST 10 and encountered 41 cm of sandy loam overlying clay subsoil that extended to 52+ cm below the surface. Approximately 50 m from ST 11, there is a knoll on the edge of Bachelor Creek's narrow floodplain. Shovel test 12 was placed in the center of the knoll. The 12 cm of sandy loam was followed by a clay subsoil that extended to 58 cm below the surface. Below the clay was sandy clay that extended to 96+ cm. Shovel test 13 was placed approximately 8 m northeast of the east bank of the creek and uncovered the two upper soils found in ST 12 but the contacts were at 22 and 56 cm below the surface. The third soil was a different colored clay that extended to 116 cm and overlaid another colored clay that extended to 170+ cm below the surface.

Bachelor Creek is approximately 3 m wide and 1.5 m deep. The walls are vertical and the substrate is clay. Water was not present at the time of the survey. The bank walls did not contain any cultural materials and this crossing of the creek will be open cut.

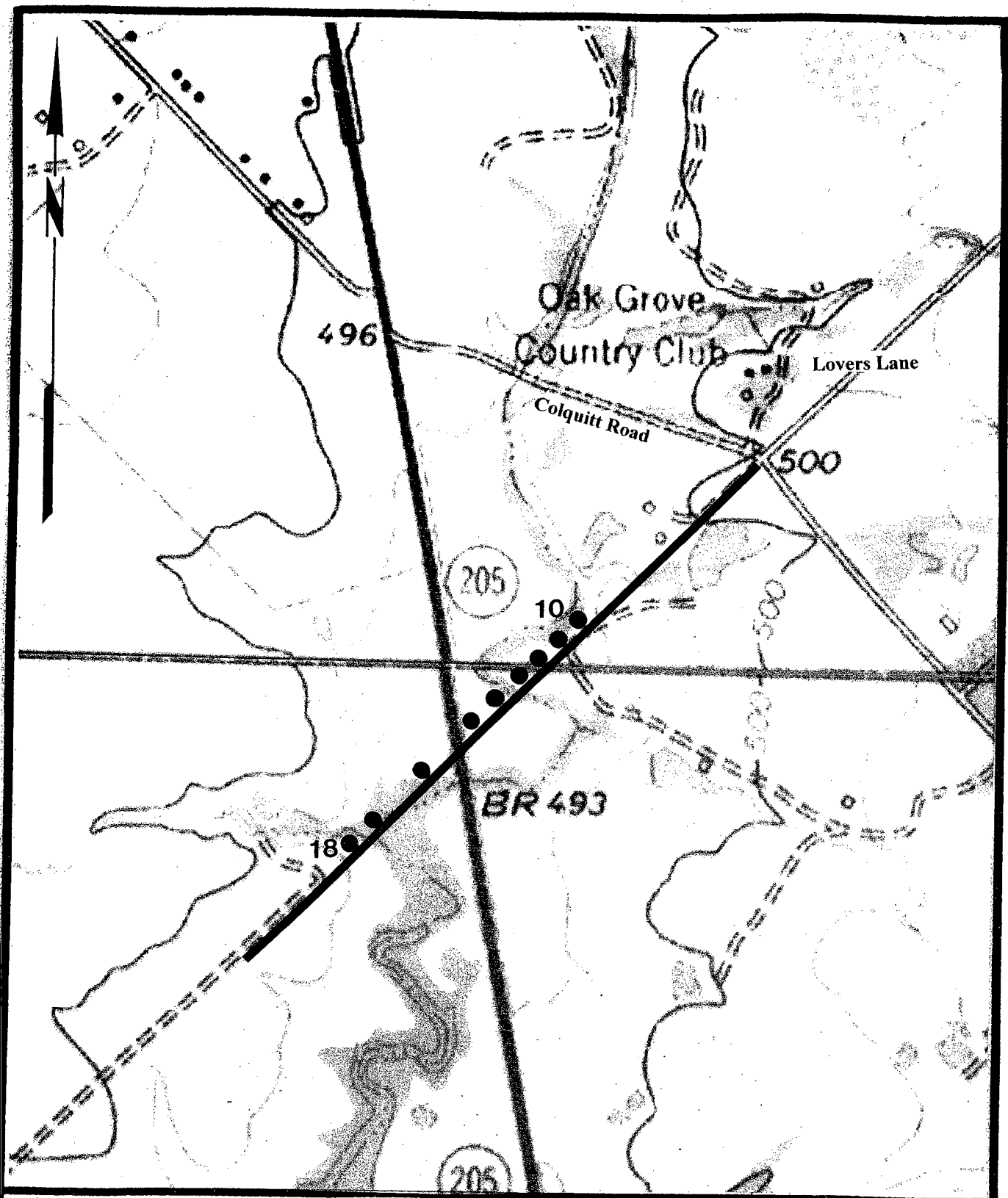


Figure 3. Pipeline route surveyed and shovel test locations for the northern crossing of Bachelor Creek plotted on enlarged (300%) portions of the Terrell South and North, Texas USGS maps.

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Figure 4. Push and trash piles along proposed route southwest of former residence. View is to the southwest.

Shovel test 14 was placed approximately 10 m from the west bank and encountered the same sandy loam as in STs 12 and 13 to 20 cm, but the subsoil was a different colored clay that extended to 51 cm below the surface. From 51 to 71 cm, a different clay was encountered which overlay another clay that contained calcium carbonate filaments to a depth of 172+ cm below the surface. Shovel test 15 was placed approximately 50 m southwest of ST 14 and northeast of FM 205 and uncovered 17 cm of sandy loam overlying clay subsoil that extended to 35+ cm below the surface. No cultural materials were found during the pedestrian survey or in the shovel tests from the intersection of Lovers Lane and Colquitt Road to FM 205.

FM 205 will be bored beneath. Shovel tests 16 and 17 were placed at 100 m intervals southwest of FM 205 and ST 17 just happened to be on the north bank of the tributary to Bachelor Creek. Both STs encountered sandy clay that extended to 52 and 54 cm below the surface, respectively. Shovel test 18 was placed one meter from the south bank of the tributary and encountered 43+ cm of loamy clay. No shovel tests were placed from ST 18 to the end of the survey route because the land had been bulldozed in the past as shown in Figure 5, possibly to construct a two-track road. Ground visibility in the area was 95 percent.



Figure 5. Jeff Craver is standing in front of a push pile present on the level area at the west end of the survey area of the proposed pipeline route. View is to the northeast.

Conclusions

No cultural materials were found during the pedestrian survey or in the 18 shovel tests despite intensively looking for cultural materials. Wendorf's sites appear to be on ridges overlooking Bachelor Creek and not very large. The absence of sites along the proposed pipeline route at the southern crossing is hard to explain, but along the northern route, cultural materials may have been removed by bulldozing activities. Erosion resulting from farming activities since 1940 may have removed remains of cultural materials along the southern route.

Table 1. Shovel test descriptions.

ST No.	Depth (cm)	Description*
1	0-26 26-34+	Very dark grayish-brown (10YR3/2) clayey loam Very dark brown (10YR2/2) clay
2	0-33 33-54+	Light grayish-brown (10YR6/2) sandy loam Dark grayish-brown (10YR4/2) sandy clay with 30% strong brown (7.5YR5/8) clay mottling
3	0-36 36-57+	Dark grayish-brown sandy clayey loam Dark brown (7.5YR3/3) clay
4	0-32 32-55+	Dark grayish-brown sandy clayey loam Dark brown clay
5	0-26 26-174+	Dark brown (10YR3/3) clayey loam Light brownish-yellow (10YR6/4) sandy loam
6	0-22 22-57+	Dark brown clayey loam Light brownish-yellow sandy loam
7	0-12 12-46+	Dark brown clayey loam Pale brown (10YR6/3) sandy clayey loam
8	0-15 15-43+	Dark brown clayey loam Pale brown sandy clayey loam
9	0-66+	Dark brown sandy loam with some clay
10	0-35 35-54+	Brown (10YR5/3) clayey loam Brown (10YR4/3) loamy clay
11	0-41 41-52+	Brown sandy loam Very dark grayish-brown clay
12	0-12 12-58 58-96+	Brown sandy loam Very dark grayish-brown clay Brown sandy clay
13	0-22 22-56 56-116 116-170+	Brown sandy loam Very dark grayish-brown clay Dark grayish-brown clay Very dark brown (10YR2/2) clay
14	0-20 20-51 51-71 71-172+	Brown sandy loam Dark grayish-brown clay Very dark brown clay Dark grayish-brown clay with CaCo3 filaments
15	0-17 17-35+ 35	Brown sandy loam Dark grayish-brown clay Root
16	0-52+	Dark yellowish-brown sandy clay
17	0-54+	Dark yellowish-brown sandy clay
18	0-43+	Very dark grayish-brown loamy clay

* Munsell color chart numbers are listed only the first time used.

RECOMMENDATIONS

The purpose of this investigation was to determine if significant cultural resources were present adjacent to or along the banks of Bachelor Creek at the two proposed water pipeline route crossings. No cultural resources were discovered during the intensive pedestrian survey or in the 18 shovel tests. Based upon the absence of cultural materials, AR Consultants, Inc. recommends that further cultural resource investigations are unwarranted.

However, although unlikely, if cultural materials are discovered during construction of the pipeline route, work should stop in that area immediately and the Archeology Division of the Texas Historical Commission and the Fort Worth District of the US Army Corps of Engineers should be notified. Work should not continue until the recommended investigations have been carried out after consultation with the proper agency.

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