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ARCHAEOLOGICAL SURVEY

ALONG PORTIONS OF THE PROPOSED

GRAND PRAIRIE THIRTY-INCH

WATER PIPELINE ROUTE

DALLAS AND TARRANT COUNTIES, TEXAS

Texas Antiquities Permit Number 4331

Jesse Todd, MS, MA

submitted to:

FREESE AND NICHOLS, INC.
4055 International Plaza, Suite 200
Fort Worth, Texas 76109-4895

AR CONSULTANTS, INC.
11020 Audelia Road, Suite C105
Dallas, Texas 75243-9085

Cultural Resources Report 2007-11
March 5, 2007

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ABSTRACT

The City of Grand Prairie intends to construct the approximately 2.5 mile long Grand Prairie Thirty-Inch Water Pipeline Route which begins at a business park north of Carrier Parkway in Tarrant County and runs generally east to Roy Orr Boulevard. The pipeline will be attached to the bridge over the West Fork of the Trinity River and then will run generally east along the floodplain of the river until it encounters Hardrock Road. The route parallels Hardrock Road southeast and terminates northwest of the intersection of Hardrock Road and Wildlife Boulevard in Dallas County. Much of the area has been disturbed by road, office complexes, residences and mining activities.

On February 8 and March 1, 2007, AR Consultants, Inc. conducted an intensive pedestrian archaeological survey of an upland portion of the proposed route between the business park and Roy Orr Boulevard and deep testing in the West Fork floodplain east of Roy Orr Boulevard. The archaeological survey was done for Freese and Nichols, Inc. which is doing the environmental permitting for the City of Grand Prairie. No archaeological sites were found in the upland portion, but site 41DL449, which consists of a freshwater mussel shell and bone scatter, was found buried a meter beneath the ground surface in the West Fork floodplain. No lithic materials, fire-cracked rock, charcoal or hearth was found associated with the scatter. The site appears to be on the surface of a developed soil. The site was excavated during the deep testing. The site is deemed ineligible for nomination to the National Register of Historic Places or as a State Archaeological Landmark due to the absence of diagnostic artifacts.

AR Consultants, Inc. recommends that further cultural resource investigations are unwarranted due to the absence of archaeological sites in the upland area and the excavation of site 41DL449 during deep testing of the West Fork floodplain. However, if buried cultural materials older than 50 years are encountered, work should stop immediately in that area and the Archeology Division of the Texas Historical Commission should be notified. In addition, if the cultural materials older than 50 years are uncovered within the West Fork's floodplain, the Fort Worth District of the US Army Corps of Engineers also should be notified. Work should not continue until consultations with the appropriate agency have been conducted.

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r-arc Roy Orr Blvd, F&N

INTRODUCTION

On March 2, 2007, AR Consultants, Inc. (ARC) conducted an intensive pedestrian archaeological survey and deep testing in the floodplain of the West Fork of the Trinity River on the east side of Roy Orr Boulevard in Grand Prairie, Texas for the proposed Grand Prairie 30-inch diameter water pipeline route. In addition, an upland area west of Roy Orr Boulevard and south of the West Fork was investigated (Figure 1). The archaeological survey was conducted for Freese and Nichols, Inc. which is doing the environmental permitting for the City of Grand Prairie. The pipeline route is approximately 2.5 miles long and begins about 860 feet north of Carrier Parkway in a office complex in Tarrant County and runs generally east to Roy Orr Boulevard. The pipeline route then turns north and crosses the West Fork of the Trinity River. The pipeline will be attached to the bridge over the river. North of the West Fork, the proposed pipeline route runs east, turns north, then back east and then generally southeast until it encounters Hardrock Road. The route parallels Hardrock Road southeast and terminates approximately 585 feet northwest of the intersection of Hardrock Road and Wildlife Boulevard. Much of the area has been disturbed by road, office complexes, residences and mining activities.

The cultural resource investigation was required because the City of Grand Prairie is a political entity of the State of Texas and Texas Antiquities Permit Number 4331 was issued for the archaeological survey. In addition, since the pipeline will cross waters of the United States, the proposed pipeline route falls within the jurisdiction of the Fort Worth District of the US Army Corps of Engineers. Relevant federal legislation includes the National Historic Preservation Policy Act of 1966, as amended (PL-96-515), the National Environmental Act of 1969 (PL-90-190), the Archeological and Historical Preservation Act of 1974, as amended (PL-93-291), the Clean Water Act, as amended PL92500 and the Rivers and Harbors Act of 1899. The Archeology Division of the Texas Historical Commission not only will review this report as the State Agency, but also as the Section 106 review agency.

This report is written in accordance with the guidelines for reports adopted by the Archeology Division of the Texas Historical Commission, and developed by the Council of Texas Archeologists (N.D.). The following report presents a brief description of the natural setting of the project area, followed by a discussion of the archaeology and history. A chapter on the research design and methodology employed in the investigation is then followed by the results of the field investigation. The report concludes with recommendations followed by the references cited.

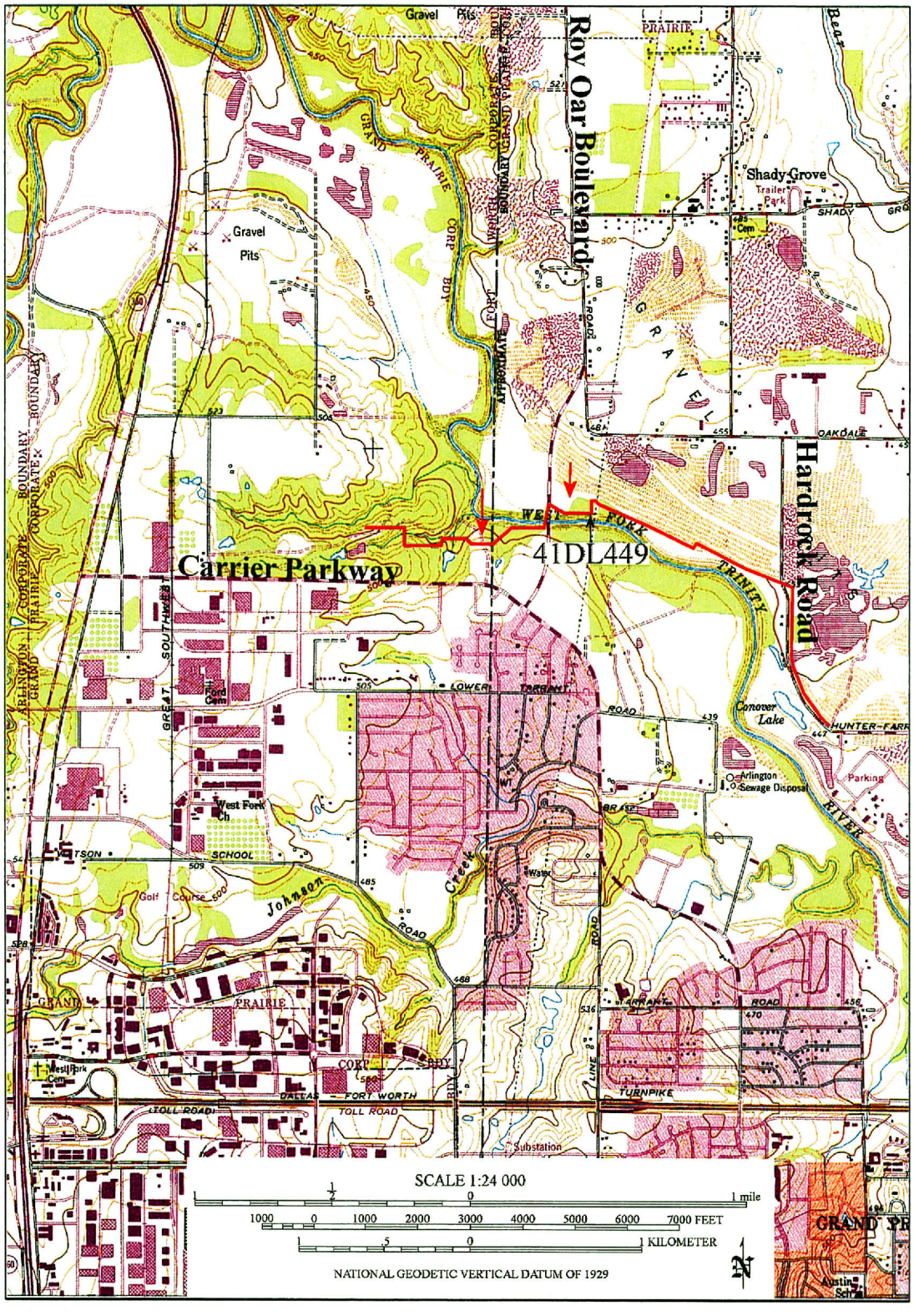

Figure 1. Proposed Grand Prairie 30-inch Diameter Water Pipeline Route and location of site 41DL449 plotted on a portion of the Euless, Texas 7.5' USGS map. Arrows point to the surveyed portions of the route.

Administrative Information:

Sponsor:	City of Grand Prairie with Freese and Nichols, Inc. doing the environmental permitting
Review Agency:	Archeology Division of the Texas Historical Commission and the Fort Worth District, U.S. Army, Corps of Engineers
Principal Investigator:	Jesse Todd, MS, MA
Field Crew:	Lance K. Trask and Todd
Project Man-days:	4
Acres Surveyed:	approximately 15.17
Sites Investigated:	
Prehistoric:	41DL449
Historic:	None
Curation:	No artifacts collected

NATURAL ENVIRONMENT

The study area is located on the north bank of the West Fork floodplain and on a ridge overlooking the West Fork. The proposed water pipeline route crosses the Houston Black-Heiden and Trinity-Frio Soil Associations in Dallas County (Coffee et al. 1980:General Soils Map) and the Batsil-Silawa Soil Association in Tarrant County (Ressel 1981:General Soils Map). The upland ridge in Tarrant County is mapped as containing Silawa fine sandy loam with 3 to 8 percent slopes (Ressel 1981:Sheet 33) and the portion of the pipeline route investigated in Dallas County is mapped as being frequently flooded Frio silty clay (Coffee et al. 1980:Sheet 29). The subsoil for the Silawa series is described as being 6 inches (9 cm) (Ressel 1981:107), and the C horizon for the Frio series is listed as being 53 inches (132.5 cm) below the ground surface (Coffee et al. 1981:60).

The underlying geology consists of the Eagle Ford Shale Formation which is covered by Quaternary age terraces along the proposed pipeline route (Bureau of Economic Geology 1988). The channel of the West Fork is mapped as containing Quaternary alluvium.

The West Fork has incised a wide floodplain through both Lower Cretaceous- and Upper Cretaceous-aged bedrock and reached its lowest base level about 18,000 years ago (Ferring 1986:Figure 4). Since then, it has alluviated as carrying capacity varied and aggradation increased. The meandering channel has left behind a series of sloughs and cut-off meanders which apparently stabilized about 2,000 years ago (Ferring in Shaunessy, Jurney, and Yedlowski 1994:5). These geological processes have buried a complex web of channel and levee deposits which span the past 20,000 years.

Remnants of a bottomland hardwood forest occur in the West Fork floodplain and in a pre-1900 condition it would have provided habitat for deer, quail, dove, rabbit, squirrel, raccoon and other animals (Jurney 1988; Martin 1988; Ressel 1981:57). The bottomland hardwood forest is a western extension of the forest from downstream on the Trinity (US Fish and Wildlife Service 1985). In its native state, elm and postoak were the dominant trees, along with hackberry, Spanish oak, and elm. Various fruit and nut producing species included bur oak, red haw, walnut, pecan, gum bumelia and mulberry. Upland tree cover outside of the valley was composed primarily of post oak and blackjack oak (Peter and Jurney 1988).

A consensus about the paleoenvironmental conditions of North-Central Texas over the past 12,000 years has not been reached. Discussions by Prikryl (1993), Ferring (1990), Humphrey and Ferring (1994) and Brown (1998) offer disparate interpretations based on different analytical approaches. The following discussion relies heavily on Ferring's investigations and focuses upon the past two thousand years. Correlating periods of rapid alluviation with higher precipitation and slow alluviation with drier conditions, Ferring has concluded that the Late Holocene [5000 yr B.P. to the present] was a wet period with moderate alluviation, except for a dry period between 2000 to 1000 yr B.P. [A.D. 1-1000]. It was during this dry period that the West Fork Paleosol was established on the stable surfaces of the river meanders along the Upper Trinity and its tributaries. This

interpretation is supported by changing patterns seen in stable isotope analysis. Brown (1998) offers a different interpretation based on isotopic analyses of mussel shells from a prehistoric site (41DL270) on Denton Creek. He concludes that the period from 1500 to 2500 yr B.P. was cooler and/or wetter and that before and after that time period, the environment was warmer and drier. He points out, however, that this interpretation may only be applicable for the Elm Fork tributary and not the region.

REVIEW OF WEST FORK FLOODPLAIN STUDIES

This chapter reviews archaeological investigations and soil studies in the floodplain of the West Fork of the Trinity River between Fort Worth and Dallas over the past fifteen years as they have a bearing upon the potential for finding buried prehistoric sites in the study area along the West Fork. The presentation begins with the on the east side of Fort Worth and ends just east of the study area. A prehistoric chronology, based on Prikryl (1990), and an added historic period, for North Central Texas is presented below to provide the reader with a time framework for the previous occupation discussed below.

Historic European	A.D. 1800 to Present
Protohistoric	A.D. 1600 to A.D. 1800 [Historic Native American]
Late Prehistoric	A.D. 700 to A.D. 1600
Late	A.D. 1400 to A.D. 1600
Middle	A.D. 1000 to A.D. 1400
Early	A.D. 700 to A.D. 1000
Archaic	6,000 B.C. to A.D. 700
Paleo-Indian	ca. 11,000 B.C. to 6,000 B.C.

Archaeological Investigations

The First Street Bridge site (41TR138) is located on the east side of Fort Worth (Largent, Hunt and Peters 1991). The site consists of four concentrations of mussel shell and/or burned rock on the south bank of the West Fork. The site deposit extends from one to four meters below the surface in what the authors refer to as a deposit topped with the West Fork paleosol. The site shows evidence of repeated occupation and inundation which is common for sites on the West Fork, although few had been documented.

The River Bend site (41TR68) was located on the north side of the West Fork midway between the Gateway section and the mouth of Village Creek. The site was tested in 1987 (Peter 1987) and is an example of a specialized foraging camp that was repeatedly reoccupied between AD 850 and 1350. Low quantities of artifacts and virtually no curated tools were found, although a wealth of burned rock and mussels shells were present. Faunal remains included bones of deer, bison, rabbit, frog and turtle, but it was concluded that the large mammals were butchered elsewhere (Peter 1987:32). Four rock features were uncovered and radiocarbon dates of AD 1200±50 (Beta-22487) and AD 1330±100 (Beta-22488) were obtained from charcoal. Archaeomagnetism yielded dates between AD 1350 and 1450.

AR Consultants, Inc. (Todd and Skinner 2002) conducted an archaeological reconnaissance of four areas for the creation of wetland mitigation banks. Despite intensive investigation, no cultural materials were found in the survey areas. One site, however, that consisted of mussel shell, fire-cracked rock and bone that was

approximately 100 m long and 3 m below the surface, was found eroding from the bank of the West Fork outside one of the survey areas.

River Legacy Park is a City of Arlington park that extends west from FM 157 almost to Greenbelt Road and is situated along the south side of the West Fork channel. Ferring's survey of the park area (1994) located four prehistoric sites (41TR143-146) exposed in the riverbank. He also described the Old Bridge Geologic Section from the south bank of the West Fork to just east of the Rough Green site (Skinner and Caran 1997; Skinner, Caran and Trask 1999). The Old Bridge section includes four units (A-D). Unit A consists of laterally accreted sands and silts and is related to the Sanger Alloformation which is mid-Holocene in age (10,000 to 5,000 B.P.). A moderately developed soil with a thick A-horizon is present at the top of Unit A. Unit B consists of calcareous silts and clays with a prominent buried soil on top of the unit. This has been termed the West Fork Paleosol. All of the recorded river bank sites are contained in this unit from near its top to four meters below the surface. Unit C consists of discontinuously exposed younger channel fills that are inset onto Units A and/or B. Unit D consists of recent alluvium that covers all exposures of units B and C.

Two sites were discovered by AR Consultants, Inc. (Todd and Skinner 2003) during an archaeological survey of the proposed expansion of MacArthur/Meyers Road north of US 30. Site 41DL426 was discovered in the West Fork's floodplain and consists of mussel shell, fire-cracked rock, bone and a charcoal and ash lens. Site 41DL425 was recorded on the south bank of Bear Creek just north of the West Fork. The site contains at least two shell lens overlying one another. Bone, charcoal, freshwater mussel shells, fire-cracked rock, four pieces of lithic debris and an unusual deer antler tool (?) were recovered during test excavations.

Two prehistoric sites were located during the survey of a pipeline that crossed the western part of River Legacy Park and continues north across the river before connecting with a Trinity River Authority (TRA) pipeline (Skinner and Caran 1997). The Rough Green site was discovered by shovel testing and was defined using augering and backhoe trenching. A deeply buried prehistoric site, 41TR164, was located by backhoe trenching. Extensive testing at Rough Green (Skinner, Caran and Trask 1999) found Late Archaic and Early Late Prehistoric occupations situated along the overbank levee paralleling Walker Branch before the West Fork pirated the creek. It was concluded that the primary function of the site was to collect bur oak acorns, although evidence of hunting deer and other mammals and gathering freshwater mollusks was found in the site deposit.

In 1994, the Archaeology Research Program (ARP) of Mercyhurst College recorded two sites (41TR141 and 142) east of FM 157 in the West Fork floodplain (Shaunessy, Jurney and Yedlowski 1994:1). Both sites are located along an old meander of the West Fork. Testing at site 41TR141 yielded a Middle to Late Archaic Palmillas dart point, as well as other artifactual and ecofactual materials. Subsequent testing of site 41TR142 and other floodplain deposits for buried cultural horizons was conducted in 1996 by Geoarch Consultants (Ferring and Byers 1996). Testing revealed the presence of an abandoned meander belt system in the floodplain west of site 41TR142. The site was shown to

contain a preserved Late Archaic deposit over an area of about 20,500 square meters. The floodplain site is considered to be the largest such site in the West Fork below Lake Bridgeport (Ferring and Byers 1996:12). Mussel shell and animal bone are present, in addition to lithic artifacts and fire-cracked rock.

Testing of additional prehistoric sites (41TR167) was conducted by the Texas Department of Transportation in conjunction with planning for a hiking and biking trail between FM 157 and Highway 360 (Ellis 1998). The site is described as an example of a "...zone containing a large number of 'localities' (Binford 1980) where small-scale, limited-function resource exploitation events occurred (Ellis 1998:11)." The upper part of the site sediment column is described as an A-horizon that has no clear evidence of the West Fork Paleosol. A single radiocarbon date from the lower part of the occupation was dated at A.D. 900 but was not associated with temporally diagnostic chipped stone tools.

Downstream and also on the north side of the West Fork, Geo-Marine, Inc. found a buried prehistoric site reported as 41TR174 with the limits of a proposed pipeline route designated as WF-11B by the Trinity River Authority (Burson, Hunt, Peter and Shanabrook 2000). After a record's search, the authors realized that their new site was probably part of Ellis' site, 41TR167, which has been radiocarbon dated to about a thousand years ago. At site 41TR174, cultural materials were found from 48 to 200 cm below the surface. This zone was described as the West Fork Paleosol and a radiocarbon date from near the base of the paleosol was dated A.D. 330±50 (Beta-131368).

Previous Investigations

No archaeological surveys or archaeological sites are listed on the Texas Archeological Sites Atlas (2007). AR Consultants (Trask et al. 1995) conducted an archaeological survey southwest of Hardrock Road and adjacent to the Grand Prairie Gun Club (formerly the Arlington Sewage Disposal Plant).Two shovel tests were excavated in the approximately 6 acre study area and, based upon the shovel tests, it was determined that the whole area had been disturbed in the past. The survey is across the river from where the proposed pipeline terminates.

RESEARCH DESIGN & METHODOLOGY

Regular flooding of the West Fork floodplain and the destruction of the floodplain and the extensive quarrying of floodplain sediments eliminated historic occupation as a major focus for this investigation. The following research questions were posed to be answered at the time this project was begun.

> -It was expected that sediments containing evidence of prehistoric occupation would be found buried under the recent floodplain sediments along the north bank of the West Fork and that the most recent of these site deposits would be found more than a meter below the present surface and associated with the top of the West Fork Paleosol.
>
> -It was further expected that a deeper occupation would be found and would provide evidence of earlier visitation to the drainage edge.
>
> -It was further expected that sites would be located adjacent to the present channels in settings including the floodplain and buried levees, all within one hundred meters of the channels. While we recognize that most of this study area is within the 100 m limit, this question is relevant to all research within the West Fork floodplain.

The West Fork of the Trinity River has been shown to have a good potential for containing buried prehistoric archaeological resources (Ferring 1990). Ferring (1986:108) states that sites with better preservation potentials are those that occur either above or below the West Fork paleosol. Although lateral channel movement of the West Fork may have destroyed some sites, this movement, along with siltation, is likely to have buried prehistoric sites under the present surface.

The field team conducted a pedestrian survey along the portion of the pipeline route adjacent to the West Fork. Shovel testing was not done because shovel testing has been shown to rarely penetrate the recent alluvium in the West Fork floodplain. The proposed pipeline route right-of-way is approximately 50 feet and the pipe will be buried from 5 to 6 feet below the ground surface. The deep testing recommended by the Council of Texas Archeologists (2002) was exceeded. Soils were described following the procedures developed by Vogel (2002). In order to meet OSHA requirements, all trenches were stepped; the trenches ranged from triangular to roughly square in shape to insure safety and this also allowed the archaeologists to be able to view more area than a narrow trench would have provided. The trenches were 5 m long and about 2 m deep. No shovel testing was done in the upland portion of the survey area west of Roy Orr Boulevard due to the good (at least 50 percent) ground visibility. Photographs of both areas were taken as were notes on the topography, vegetation and other relevant data.

RESULTS

Most of the proposed pipeline route has been disturbed by mining and the construction of residences. However, two areas appear to be undisturbed. An upland area west of Roy Orr Boulevard and a portion of the West Fork floodplain east of Roy Orr Boulevard. The deep testing within the West Fork's floodplain is discussed first and is followed by a description of the upland archaeological survey. Site 41DL449 is described next and conclusions derived from the survey end the chapter. Backhoe trenches are described generally in the text, but specific information is provided in Table 1. Backhoe trench locations are shown on Figure 4.

Deep testing

Three backhoe trenches were placed within the West Fork's floodplain. The area is forested by hackberry, American elm and bois d'arc trees. Understory vegetation includes saw greenbriar, grape vine, dandelions, johnson grass, clover, native grasses and bushes. Eye-height visibility was excellent, but ground visibility was less than 10 percent. The vegetation is shown in Figure 2. A ditch (Figure 3) is present about 150 m east of Roy Orr Boulevard and is not shown on the USGS map. The ditch apparently was formed from run-off from the road and is approximately 5 m deep and wide. No buried cultural materials were seen in the 45-degree sloped bank walls.

Figure 2. Floodplain forest along the north bank of the West Fork and east of Roy Orr Boulevard. View is to the east.

Figure 3. Ditch about 150 m east of Roy Orr Boulevard. Note metal pipe in background. View is to the northwest.

Approximately 245 m of pipeline route were investigated by three backhoe trenches. No cultural materials older than 50 years were seen on the ground surface prior to the deep testing. The first backhoe trench was excavated about 50 m east of the ditch and the backhoe trenches went from east to west. It was intended to excavate to 3 m below the ground surface, but when the heavy amount of calcium carbonate was encountered at 171 cm in Zone VI in Backhoe trench (BHT) 1 (Figure 5), it was decided that further trenching was unnecessary because we had encountered a developed soil zone that no sites had been found in based upon descriptions of backhoe trenches such as the River Bend site (Peter 1987:15), the Rough Green site (Skinner et al. 1999:24) which was found by shovel testing, not trenching, and site 41TR174 (Lintz et al. 2004:A3-A5). Therefore, Backhoe trenches 2 and 3 were excavated until this soil was encountered.

The most interesting trench was BHT 1 because it contained 7 soil zones while the others only contained five. However, in cross-section, Zones IV and V appear to pinch out prior to BHT 2. This may be a result of erosion. A bowl-shaped depression forms the lower surface (Zone V in BHT 1, Zone IV in BHT 2 and Zone IV in BHT 3). The lowest soil zone, however, indicates a slight rise in elevation to the south in BHT 3.

During excavation of BHT 3, mussel shells were seen at about 100 cm below the ground surface. Backhoe trenching was stopped to determine if a site was present. It was and is described below.

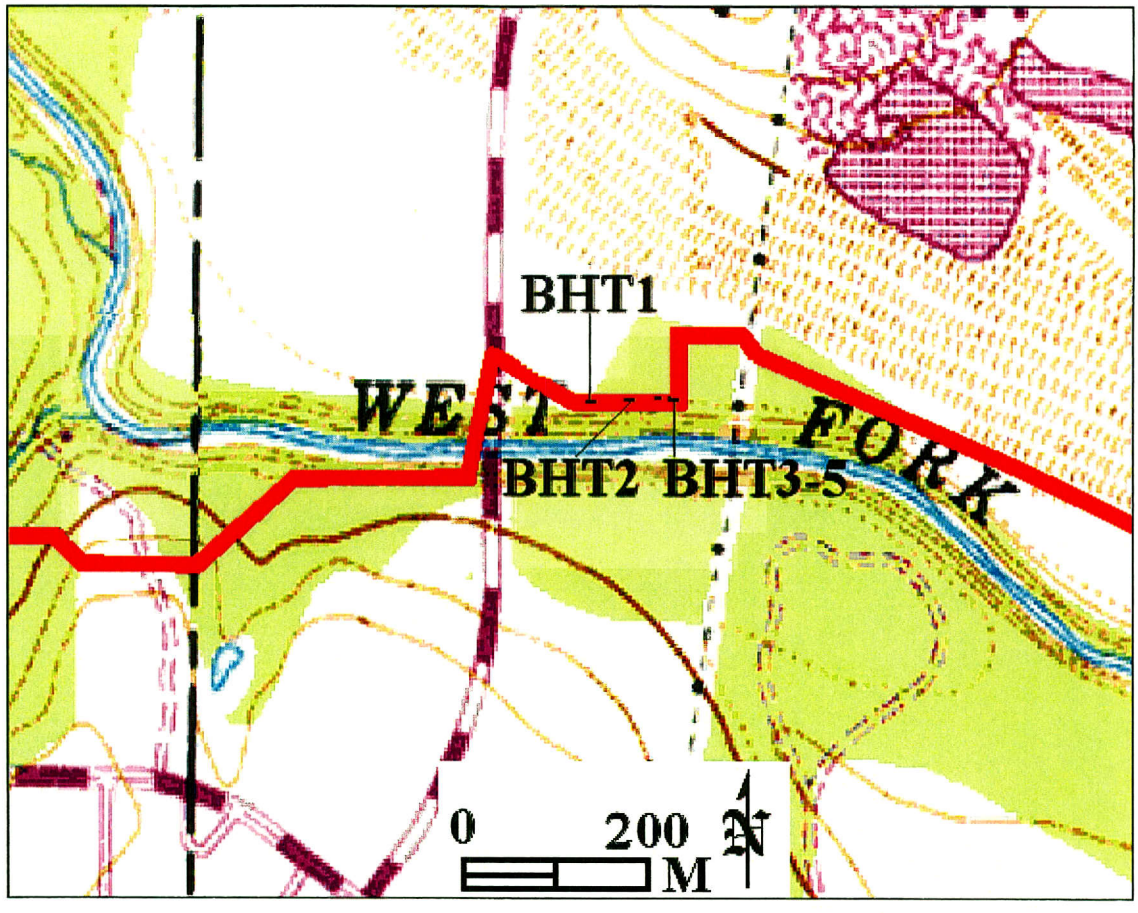

Figure 4. Backhoe trench locations plotted on a portion of the Euless, Texas 7.5' USGS map.

The upland survey

Approximately 270 feet (90 m) of the proposed pipeline route in the uplands (Figure 1) was pedestrian surveyed. The intended length of the pipeline route was approximately 540 feet (180 m) but construction of residences had disturbed half the survey area. The vegetation is similar to that along the West Fork except that the trees ranged to 2.5 feet in diameter and eastern red cedar trees are present as well as prickly pear. The ground surface consists of a thin layer of forest duff overlying loamy sand in places. The sandstone bedrock is approximately 2 m below the ground surface. The ground along this portion of the pipeline route had eroded so badly that small rills ran throughout the area allowing for good ground exposure as well as good soil profiles. No shovel tests were excavated due to the good ground visibility (50+ percent) and no cultural materials older than 50 years were seen on the ground surface or in the soil profiles.

Figure 5. Backhoe trench 1. Note the amount of calcium carbonate in the bottom zone which ranges from 171 to 235 cm below the ground surface. View is to the south.

Table 1. Backhoe trench descriptions. Note: Munsell Color Chart numbers used only first time listed. Soil was moist when described.

BHT No.	Zone	Depth (cm)	Description
1	I	0-17	Very dark grayish-brown (10YR3/2) silty clay; very weak; soft; very fine subangular blocky; no clay films noted; abundant roots; horizon boundary clear and smooth
	II	17-30	Brown (10YR4/3) silty clay with minute laminae of silt; very weak; soft; no structure; no clay films noted; abundant roots; horizon boundary abrupt and smooth

	III	30-64	Dark grayish-brown (10YR4/2) slightly silty clay; moderately weak; slightly hard; very fine subangular blocky; no clay films noted; abundant roots; horizon boundary clear and smooth
	IV	64-96	Brown clay; moderate; slightly hard; fine subangular blocky; very few, thin clay films on ped faces; few fine rootlets; horizon boundary gradual and smooth
	V	96-135	Dark grayish-brown clay with beginnings of calcium carbonate filaments (≤ 1%); moderate; slightly hard; extremely plastic; fine to medium columnar; very few, thin clay films on ped faces; few fine rootlets; horizon boundary gradual and smooth
	VI	135-171	Brown to dark brown (10YR3/3) clay with calcium carbonate filaments and small nodules (≥1%); moderate; slightly hard; fine columnar; clay films common and moderately thick on ped faces, pore linings and bridges; some slickensides; very fine rootlets; horizon boundary abrupt and smooth
	VII	171-235	Dark grayish-brown clay with abundant (40 to 50%) calcium carbonate filaments and small nodules; strong; hard; fine prismatic; clay films common and moderately thick on ped faces and some pore linings; very few fine rootlets
2	I	0-25	Very dark grayish-brown silty clay; very weak; soft; very fine subangular blocky; no clay films noted; abundant roots; horizon boundary clear and smooth; snail shell fragments and shells (*Rabdotus dealbatus, Helicina orbiculata*) present
	II	25-54	Brown (10YR4/3) silty clay with minute laminae of silt; very weak; soft; no structure; no clay films noted; abundant roots; horizon boundary abrupt and smooth
	III	54-190	Brown silty clay; moderately weak; slightly hard; fine subangular blocky; no clay films noted; many fine rootlets; horizon boundary abrupt and smooth
	IV	190-205	Brown to dark brown (10YR3/3) clay with calcium carbonate filaments and small nodules (≥1%); moderate; slightly hard; fine columnar; clay films common and moderately thick on ped faces, pore linings and bridges; some slickensides; very fine rootlets; horizon boundary abrupt and smooth
	V	205-220+	Dark grayish-brown clay with abundant (40 to 50%) calcium carbonate filaments and small nodules; strong; hard; fine prismatic; clay films common and moderately thick on ped faces and some pore linings; very few fine rootlets
3	I	0-30	Very dark grayish-brown silty clay; moderately weak; slightly hard; very fine subangular blocky; no clay films noted; abundant roots; horizon boundary clear and smooth; abundant snail shell fragments
	II	30-73	Very dark gray (10YR3/3) slightly silty clay; moderate; slightly hard; fine angular blocky; few clay films thin on ped faces; abundant roots; horizon boundary gradual and smooth; scattered snail shell fragments
	III	73-102	Dark grayish-brown clay with minute calcium carbonate filaments; moderate; hard; fine columnar; few to common clay films present on ped faces; few fine rootlets; horizon boundary gradual and smooth; moderate amount of snail shell fragments – *Strobilops texasiana* present
	IV	102-193	Brown to dark brown (10YR3/3) clay with calcium carbonate filaments and small nodules (≥1%); moderate; slightly hard; fine columnar; clay films common and moderately thick on ped faces, pore linings and bridges; some slickensides; very fine rootlets; horizon boundary abrupt and smooth
	V	193-210+	Dark grayish-brown clay with abundant (40 to 50%) calcium carbonate filaments and small nodules; strong; hard; fine prismatic; clay films

			common and moderately thick on ped faces and some pore linings; very few fine rootlets

Site 41DL449

Site 41DL449 was found approximately 100 cm below the ground surface at the contact of Zones III and IV in BHT 3 (Figure 6) which was excavated about 10 m north of the West Fork. The site consists of approximately 7 mussel shell valves and 2 pieces of what appeared to be deer bone. The site's dimensions are about 5 cm (two mussel shells) thick and 20 cm wide and long (Figure 7). The mussel shells were identified and left in the field. The bone was collected for radiocarbon dating and sent to Beta Analytic, Inc. The bone was dated to 910±40 B.P. (A.D. 1000 to 1160). No fire-cracked rock, lithic tools or debris, burned earth or features were associated with the shells. The shells were unburned and, based upon a cursory examination of the whole valves, had not been culturally modified.

To further explore the site, the initial trench was widened and then a trench (BHT 4) was excavated perpendicular to BHT 3 as shown in Figure 7. The trench was 120 cm deep and no buried cultural materials were found. Also, another trench (BHT 5) was excavated about 1.5 m northeast and at about a 45 degree angle from BHT 3 to 120 cm, but no buried cultural materials were found. Neither BHT 4 nor 5 were profiled, but the soil matrices are similar to BHT 3 as are the soil zones.

The site may reflect a very short-term occupation. Until the bone was found, it was felt that the shells may have been collected for fish bait as suggested by Claassen (1986). Five species were recognized and dominated by the presence of *Plectomerus dombeyanus* (Bankclimber). Other species include *Amblema plicata* (Threeridge), *Potamilus purpuratus* (Bluefer), *Quadrula mortoni* (Southern Mapleleaf) and *Lampsils* sp. cf *L. hydiana* (Louisiana fatmucket). Seven different freshwater mussels are represented. The small size of the shells indicates a possibly stressed environment or the mussels were collected from a shallow portion of the river. However, *Potamilus purpuratus* prefers deep water and the river may have been shallow when the shells were collected. An investigation along the bank did not reveal any mussel shells.

Lintz and others (2004:113) encountered two dates for the West Fork at site 41TR174 about 1.4 miles northwest of the study area. Sediment was dated to 1,050±70 B.P. from 55 to 58 cm and shell was dated to 2,000±60 B.P. from between 90 and 100 cm below the ground surface. The date for the 100 cm level at 41TR174 is about twice as old as date from site 41DL499. The disparity may be the distance from the West Fork. Site 41DL499 is on the bank of the river whereas site 41TR174 is slightly more than 1,000 feet south of the river and on an older terrace deposit.

Conclusions

As expected, no archaeological site was found in the upland portion of the survey area, but as expected, a buried site was found in the West Fork floodplain. The site is deemed ineligible for nomination to the National Register of Historic Places or as a State Archeological Landmark site due to absence of diagnostic artifacts and the fact that the site was excavated away during the trenching process.

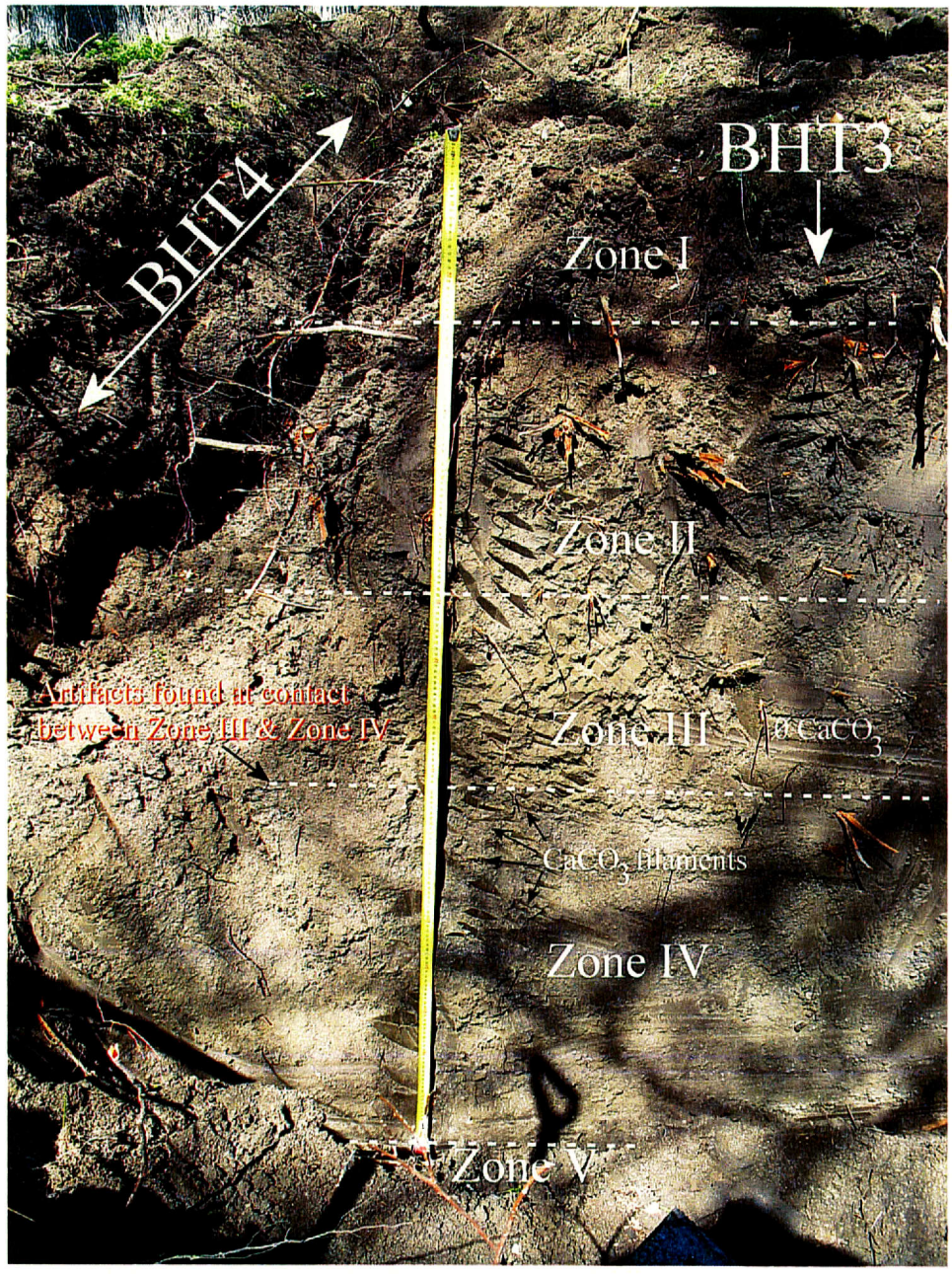

Figure 6. Location of site 41DL449 in profile of east wall of BHT 3. Note trench perpendicular to the backhoe trench in left portion of the picture. This is better illustrated in Figure 7. View is to the northwest.

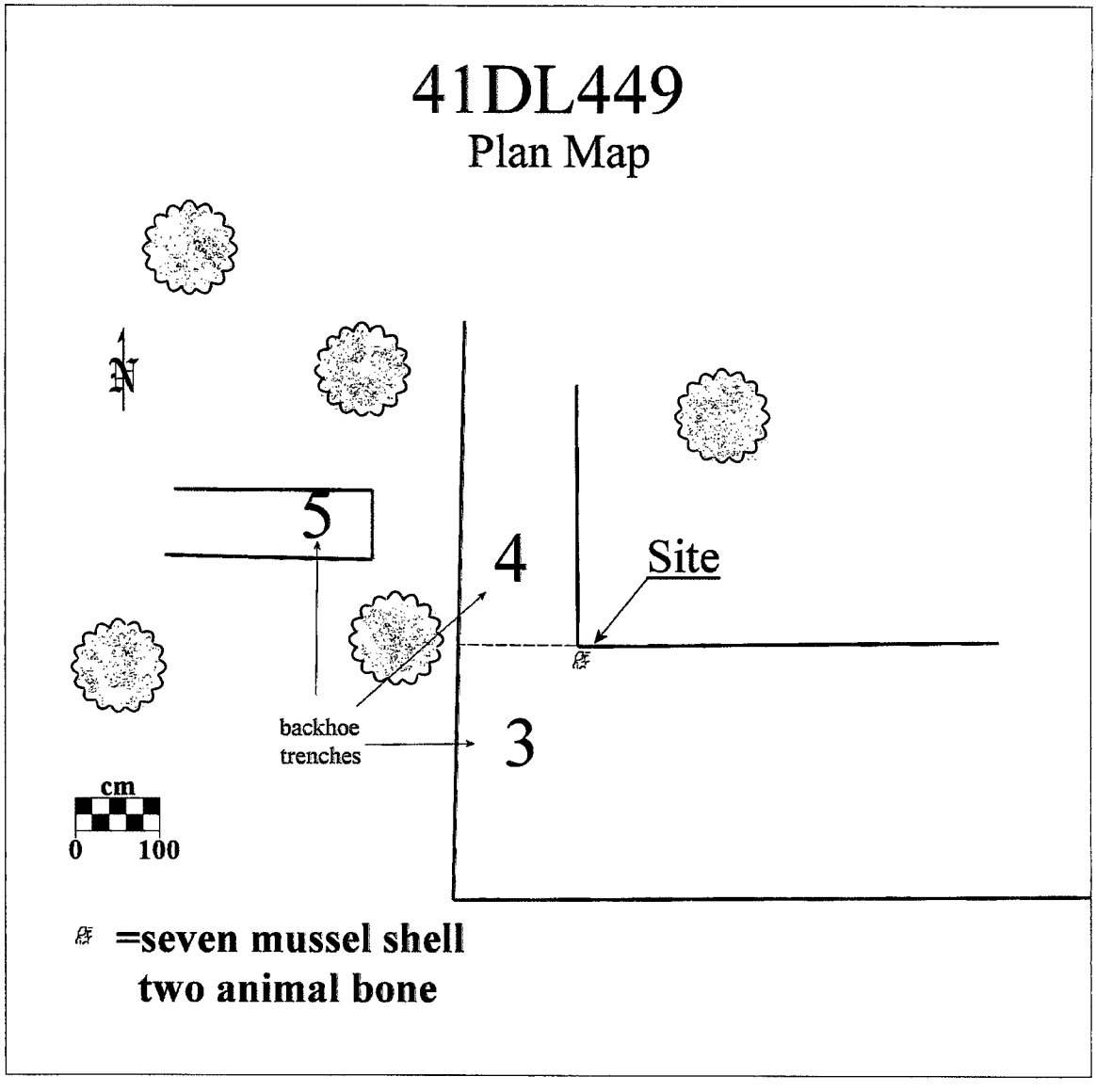

Figure 7. Plan map of site 41DL449.

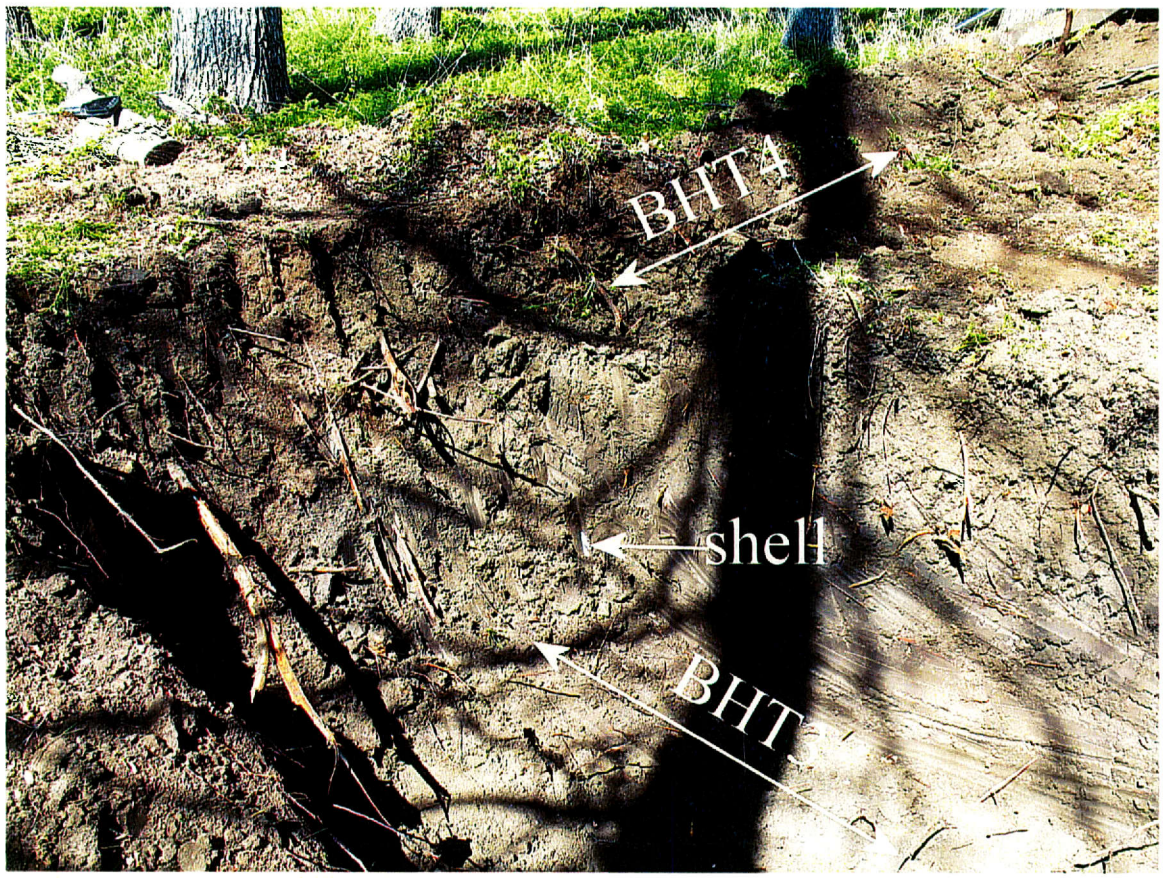

Figure 8. A freshwater mussel shell is in the center of the picture which represents the location of site 41DL449. BHT 4 is perpendicular to BHT 3. View is to the northwest.

RECOMMENDATIONS

Although site 41DL449 was discovered, it is considered ineligible for nomination to the National Register of Historic Places or as a State Archeological Landmark site due to the absence of diagnostic artifacts and the fact that it was removed during trenching. No historic sites were encountered. Based upon our findings, AR Consultants, Inc. recommends that further cultural resource investigations are unwarranted. Planning and construction personnel should be advised that buried archaeological materials could be encountered during construction, and if this should happen, work should cease in that immediate area and the Archeology Division of the Texas Historical Commission and the Fort Worth District of the US Army Corps of Engineers be notified.

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