

AN ARCHAEOLOGICAL SURVEY OF THE CITY OF LUFKIN  
AC WATERLINE REPLACEMENT IN CENTRAL ANGELINA COUNTY, TEXAS

Texas Antiquities Permit Number 2210

by

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AN ARCHAEOLOGICAL SURVEY OF THE CITY OF LUFKIN  
AC WATERLINE REPLACEMENT IN CENTRAL ANGELINA COUNTY, TEXAS

BVRA Project Number 99-09

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## ABSTRACT

Brazos Valley Research Associates (BVRA) performed a cultural resources survey of a water line replacement project in central Angelina County, Texas in July 1999. This project was conducted under Texas Antiquities Committee permit number 2210. The project area was investigated by shovel probing and testing. The area investigated consisted of five areas (A-E), a total of 6.8 miles with a right-of-way of 10 feet (8.3 acres). Overall, the area examined was found to be very disturbed through construction associated with the existing water line and other utilities and adjacent residential and commercial development. High probability areas received the most attention, and no archaeological sites were found. It is recommended that construction be allowed to proceed as planned by the City of Lufkin. Copies of the final report are on file at the Division of Archeology, Texas Historical Commission; Texas Archeological Research Laboratory; the City of Lufkin; and BVRA in Bryan, Texas.

## ACKNOWLEDGMENTS

BVRA is appreciative of the assistance provided by Mr. Keith Wright, P.E. of the City of Lufkin on this project and his assistant Debbie Fitzgerald, Engineering Designer. The City provided project area maps and an assistant, Jarvis Ward, Jr. to help with the shovel testing. At the state level, Carolyn Spock, Head of Records at the Texas Archeological Research Laboratory (TARL) in Austin, Texas checked the TARL files for previously recorded sites in the project area. Ed Baker of the Texas Historical Commission, Archeology Division, was the reviewer for this project. John E. Ippolito, Forest Service Archeologist, Lufkin Office, shared his knowledge of the potential for archaeological sites in the project area; I am grateful to him for taking time from his busy schedule to talk with me. All figures in this report were prepared by Lili Lyddon of Lyddon Illustrations of Wellborn, Texas.

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## INTRODUCTION

The City of Lufkin proposes to replace an existing water line in central Angelina County, Texas (Figure 1). Of the total area to be affected, only 6.8 miles with a 10 foot right-of-way (8.3 acres), were required by the Division of Archeology, Texas Historical Commission to be examined by a professional archaeologist. The 6.8 miles consists of five separate areas and are referred to in this report as areas A-E. The project area is depicted on two topographic quadrangles, Lufkin (dated 1949 and photorevised in 1980) (Figures 2-3) and Keltys (dated 1949 and photorevised in 1980) (Figure 4). It should be noted that these maps are very out of date. Only one house appears on the Lufkin quadrangle in the area referred to as Area C in this report. Prior to the survey, for example, this tract was considered to be a very high probability area for an archaeological site. Today, however, the southern part of Area C within the City right-of-way contains an apartment complex; other areas examined contain shopping malls, subdivisions, and commercial structures.

According to the letter from William A. Martin (dated June 7, 1999) to John Rusk of Goodwin-Lasiter, Inc., portions of the project area "may contain undiscovered historic or prehistoric sites, some of which may be eligible for inclusion in the National Register of Historic Places or may warrant designation as State Archeological Landmarks." Mr. Martin further states that an archaeological survey should be performed for all portions of the project area highlighted in yellow on the "attached project area maps." In order to comply with this request, the City of Lufkin retained BVRA to conduct this service which was performed under Texas Antiquities permit 2210 with William E. Moore the Principal Investigator.

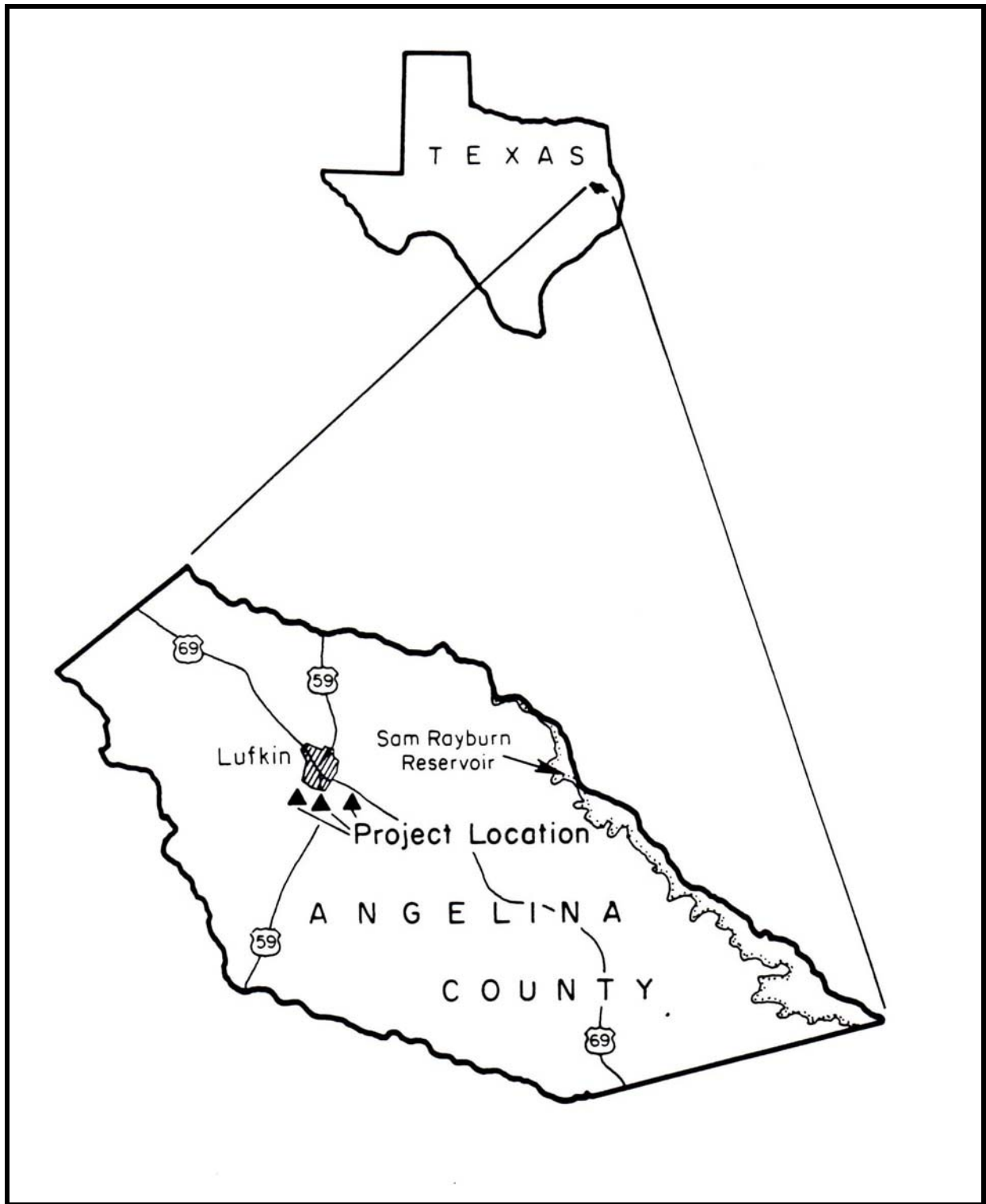


Figure 1. General Location of Project Area

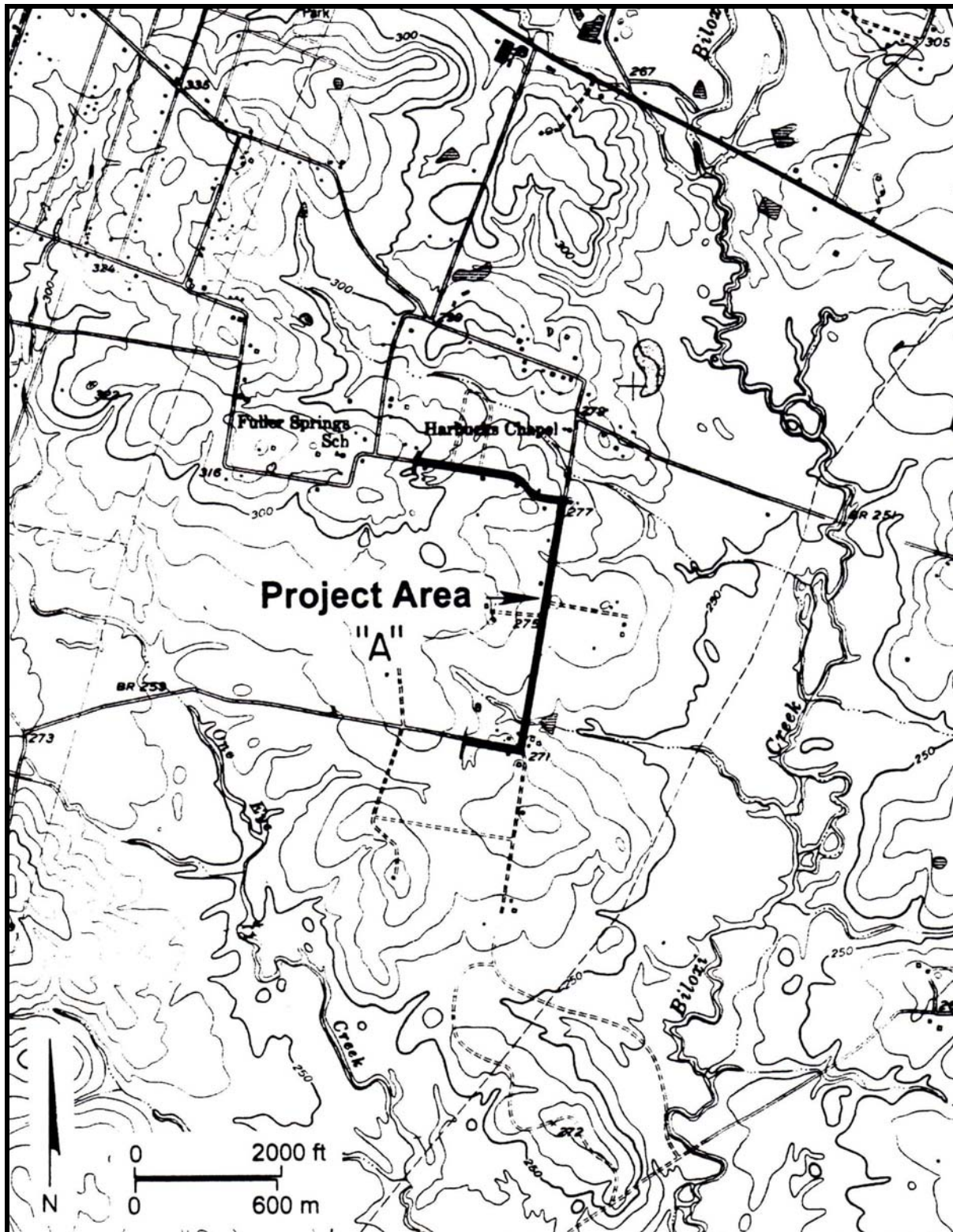


Figure 2. Project Area A (Lufkin Quadrangle)



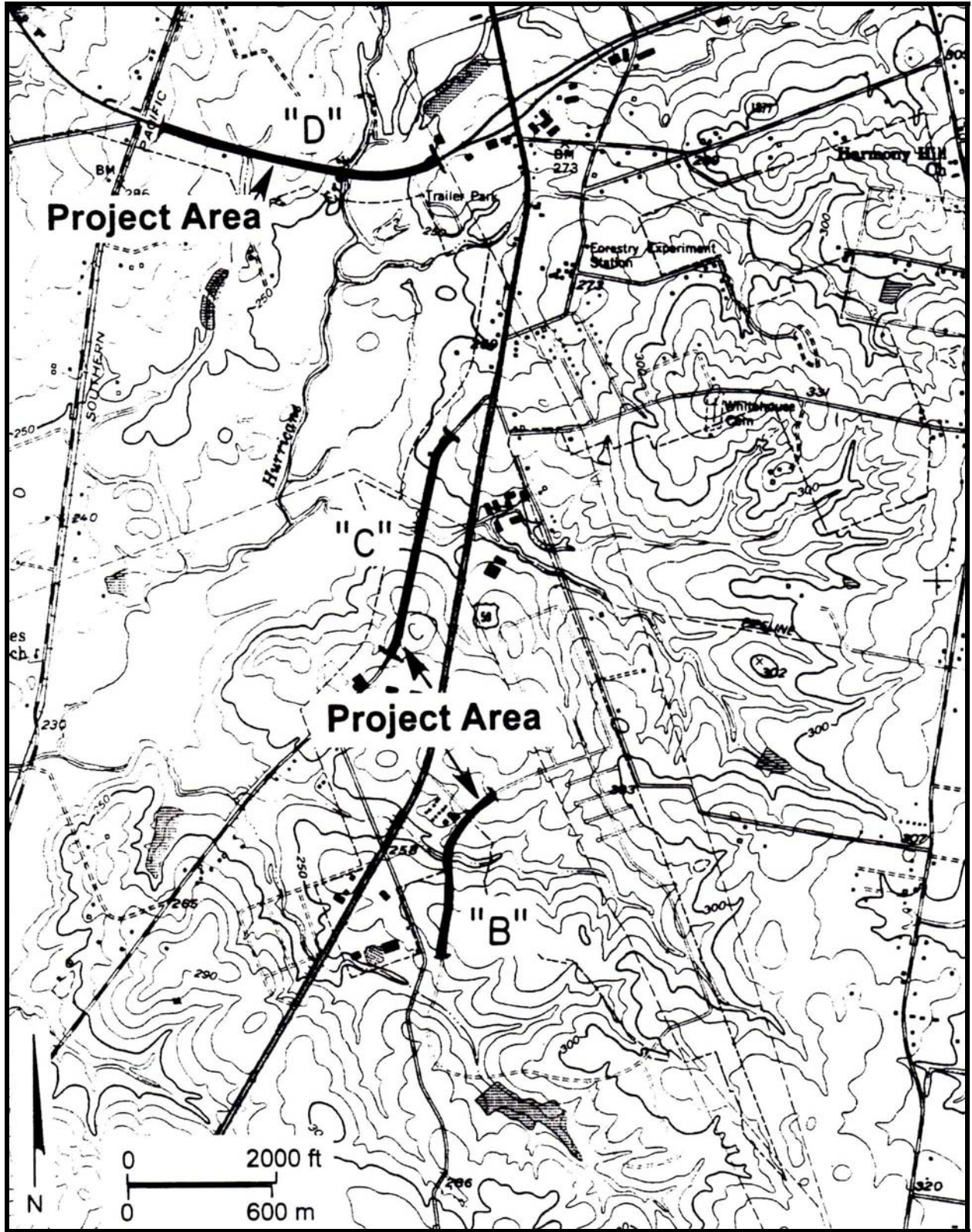


Figure 3. Project Areas B-D (Lufkin Quadrangle)



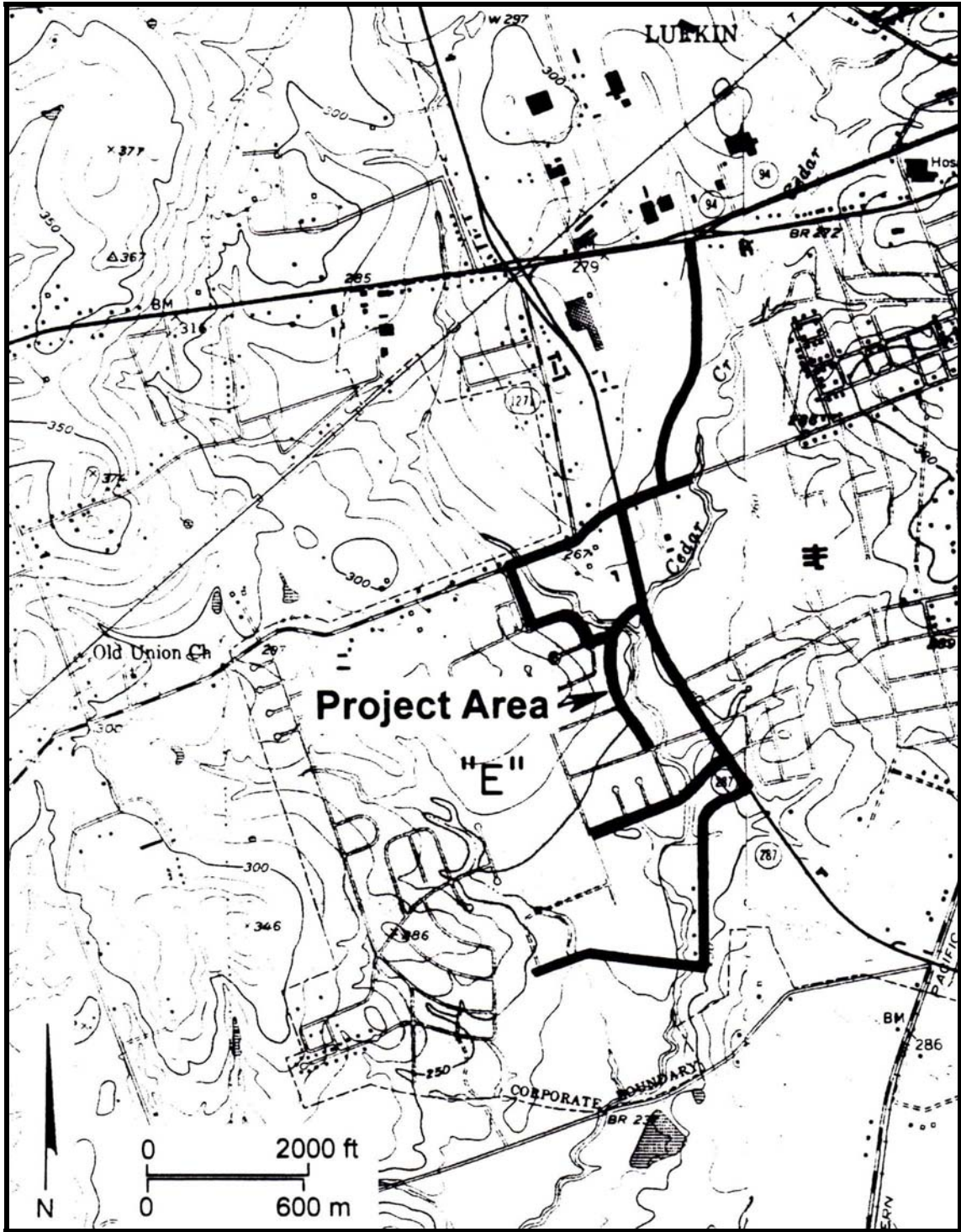


Figure 4. Project Area E (Keltys Quadrangle)

## ENVIRONMENTAL SETTING

The following general discussion of Angelina County was taken from the Soil Survey of Angelina County (Dolezel (1988:1-4). Angelina County is located in the central part of East Texas. The northern and southern parts of the county have a dendritic drainage system with many large streams. Two rivers, Nueces and Angelina, drain the county. Elevation ranges from about 100 feet in the south near the Nueces River to about 460 feet in the northern part of the county. Angelina County is in the East Texas Timberlands Land Resource Area and forest products are a major part of the local economy. Soils in this area formed mainly under forest vegetation in a humid environment, and most are light in color and low in natural fertility. Nearly level areas are often wet, and moderately steep-to-steep areas tend to erode easily. When possible, descriptions of soils specific to the project area appear in the *Results and Conclusions* section of this report. Angelina County has long, hot summers because of moist tropical air from the Gulf of Mexico persistently covers the area. Winters are cool and fairly short. Rainfall is fairly heavy throughout the year, and prolonged droughts are rare. The total annual precipitation is 41 inches. Of this, 21 inches (50%) usually falls in April through September. In winter, the average temperature is 50 degrees Fahrenheit, and the average daily minimum temperature is 39 degrees. In summer, the average temperature is 82 degrees, and the average daily maximum temperature is 93 degrees.

## ARCHAEOLOGICAL BACKGROUND

According to a recently published planning document for the Eastern Planning Region of Texas (Kenmotsu and Perttula 1993:Figure 1.1.2), Angelina County is situated within the Northeast Texas archeological study region. In 1985, according to a statistical overview prepared by the Texas Historical Commission (Biesaart et al. 1985:107), Angelina County contained 52 recorded sites. The site files at TARL revealed 172 recorded sites at the time of this survey. In 1985, 1 site in the county had been excavated, 21 had been tested by hand, 1 had been tested by machine, 30 sites had been dug by collectors, and 46 had been surface collected. Nine recorded prehistoric sites in the county were listed as Archaic, and 41 sites were listed as Late Prehistoric (Biesaart 1985:108). Five sites contained burials.

In 1991, an evaluation was made of significant sites in the Northeast Texas Archeological Region (Kenmotsu and Perttula 1993:Table 2.1.1). At this time Angelina County contained 121 recorded prehistoric sites; of this number 19 were listed as not significant, 67 as unknown significance, 35 as probably significant, and 22 as significant.

The archaeological significance of Angelina County is partially reflected in the following statistics. In 1993, the county contained the second highest number of important known hunter-gatherer sites in Northeast Texas (n=3) (Kenmotsu and Perttula 1993:Figure 2.3.3) and also contained at least 13 important Late Caddoan sites (n=13) (Kenmotsu and Perttula 1993:Figure 2.5.2). Unfortunately, there are major forces that continue to threaten the integrity of archaeological sites in Angelina County. These include population growth (City of Lufkin and surrounding area), highway construction, surface lignite mining, Sam Rayburn Reservoir (formerly McGee Bend), and the lumbering industry.

Although private contract archaeology firms have played a part, most of the archaeological sites known to exist in Angelina County have been identified by surveys associated with reservoir construction and in-house projects by National Forest personnel. The earliest archaeological research in the area was performed in the late 1930s and early 1940s by researchers from The University of Texas at Austin. At that time prehistoric cemeteries and mound sites were considered to be of primary importance. From the late 1940s until the mid 1970s, most of the archaeological research in East Texas was carried out in connection with reservoir construction. In 1948, for example, Robert L. Stephenson published the results of his work at the proposed McGee Bend Reservoir in Angelina, Jasper, Nacogdoches, Sabine, and San Augustine counties (Stephenson 1948a, 1948b). At the time this was the only systematic professional major archaeological investigation in the county.

In the 1970s, Ross Fields (1979) presented an overview of the cultural resources of the Davy Crockett, Sam Houston, Angelina, and Sabine National Forests of Texas. This document provides a brief discussion of all sites in each forest; 23 sites in Angelina County are mentioned. Another important document for this area is a cultural resource overview of the National Forests in Texas by John Ippolito (1983). Of particular relevance to this project is Ippolito's Figure 21 entitled "Drainage Systems & Probability Zones, Angelina National Forest, Texas."

Although no part of the project area is within the Angelina National Forest, Ippolito's figure covers areas within 10 miles of the City of Lufkin. He considers the Neches and Angelina rivers to be high probability areas with several streams in the county listed as medium probability areas. According to Ippolito (personal communication, July 15, 1999), there are several drainages in the county such as Hurricane Creek and Biloxi Creek that should be considered to be medium to high probability areas. Ephemeral streams such as Ippolito views those in Area A of the current project area as low probability areas.

It is beyond the scope of this report to discuss in detail the archaeological background of Angelina County, especially when numerous contract reports are available. The interested reader is referred to the statistical overview (Biesart et al. 1985), the planning document published by the Texas Historical Commission (Kenmotsu and Perttula 1993), and other reports cited above for more detailed information regarding the archaeology of Angelina County.

## FIELD METHODS

This project was performed by driving all of the roads identified by THC personnel as being in areas that needed to be subjected to an archaeological survey. The depth of the proposed trench for the additional water line will not exceed three feet. Shovel tests and probes were excavated in high probability areas (areas near local water sources), and backhoe trenching was not considered necessary. All excavated matrix was screened using 1/4 inch hardware cloth and recorded on a shovel test log (Appendix I). In all, 17 shovel tests were excavated in the 8.3 acre project area. Virtually the entire project area has been disturbed through prior water line installation and various forms of residential and commercial development. The results of the examination of these five areas (Areas A-E) are discussed separately below.

## RESULTS AND CONCLUSIONS

The site records at TARK yielded no previously recorded archaeological sites in the project area. A review of the literature revealed that significant prehistoric and historic sites are present in Angelina County. One previously recorded prehistoric site (41AG21) is located on Cedar Creek near the confluence of this stream and Hurricane Creek approximately 3000 meters south of Area E and 2300 meters west of Area B. This site, recorded by Gus Arnold of the University of Texas at Austin in 1939 during his informal survey of East Texas, is the closest known site to the current project area. This prehistoric site is stated on the site form as about one acre in size on the top of a sandy ridge (250 foot contour) that slopes into "bottom land and creeks to the west and north." The age of this site is unknown; however, ceramics and projectile points suggest a Late Prehistoric or Caddoan component. Overall, the entire project area has been disturbed through residential and commercial development and erosion of certain landforms. The findings at each of the five areas are discussed below.

### Area A

This area (Figure 5) is 1.2 miles in length (1.4 acres) and is considered to be a low probability area in terms of archaeological site potential. The only natural water sources in the area are two minor tributaries of Biloxi Creek, a major stream that drains into the Neches River to the south. Both sides of the road in this area contained deep ditches where the new water line will be placed making it difficult to find undisturbed areas to shovel test. According to Debbie Fitzgerald (Engineering Designer), the water line replacement in Area A will be put in one of these ditches and will require little if any additional excavation. Five shovel tests were excavated at the edges of the ditch, and no evidence of a prehistoric or historic site was found. The proposed water line replacement will have no negative affect on cultural resources in Area A.

### Area B

This area (Figure 6) is 0.47 miles in length (0.6 acres). There is one prominent landform at the 290 foot contour that appears to be a likely location for an archaeological site; therefore, prior to this survey this was considered to be a medium to high probability area in terms of archaeological site potential. The only natural water sources in this area are the terminal reaches of two minor tributaries of Hurricane Creek, a major stream in the county. The water line replacement will be placed on the east side of the road that is very disturbed through road construction and other utilities. The west side is a subdivision. According to John E. Ippolito (personal communication, July 15, 1999), this was a heavily wooded area that was recently cleared to make room for the roads and subdivision. The soil type at the top of the hill is Moswell loam, 1 to 5 percent slopes (MsB) as described by Dolezel (1988:51). This soil occurs on smooth, gently sloping, broad interstream divides. Typically, it has a loam surface layer about five inches thick.

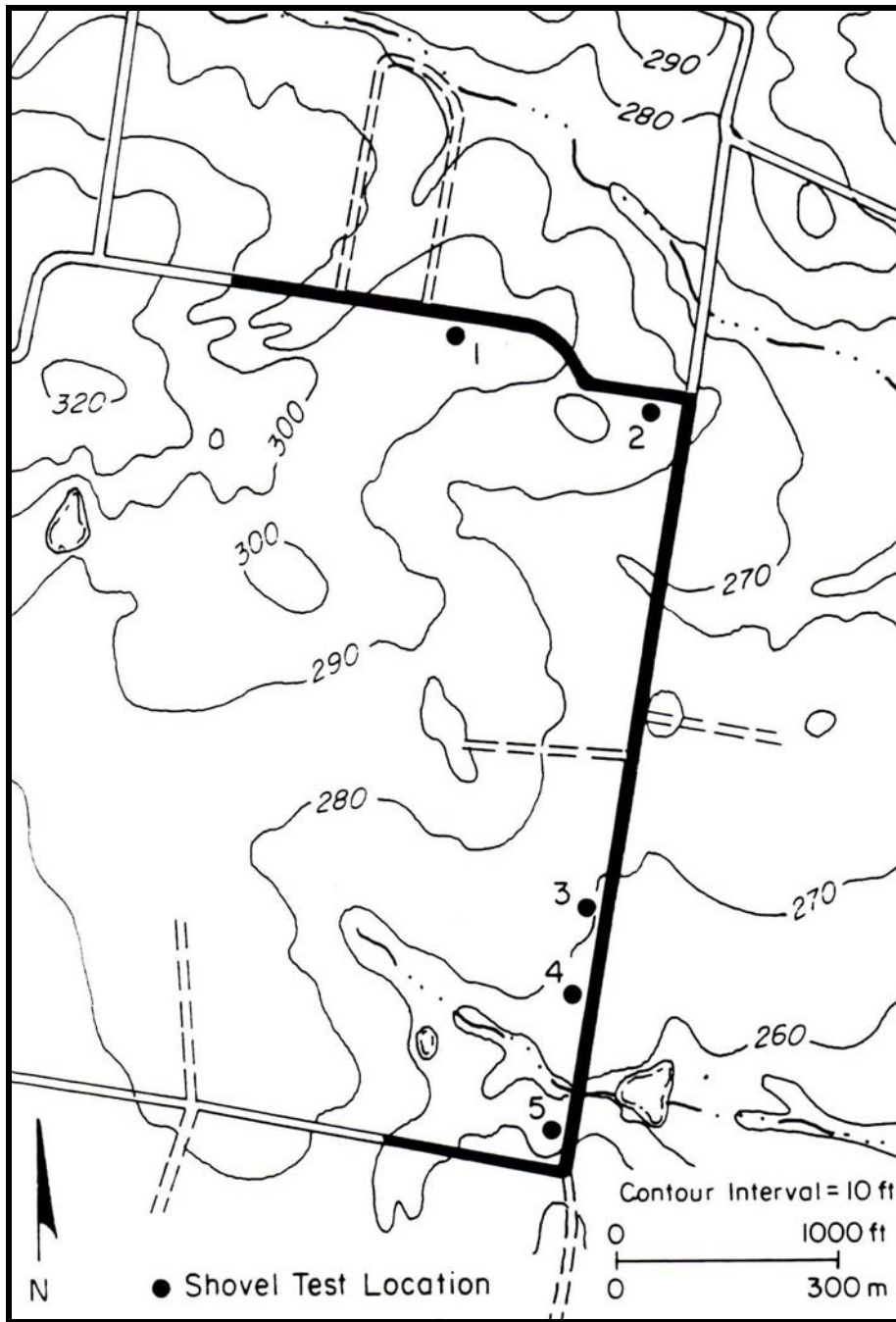


Figure 5. Area A



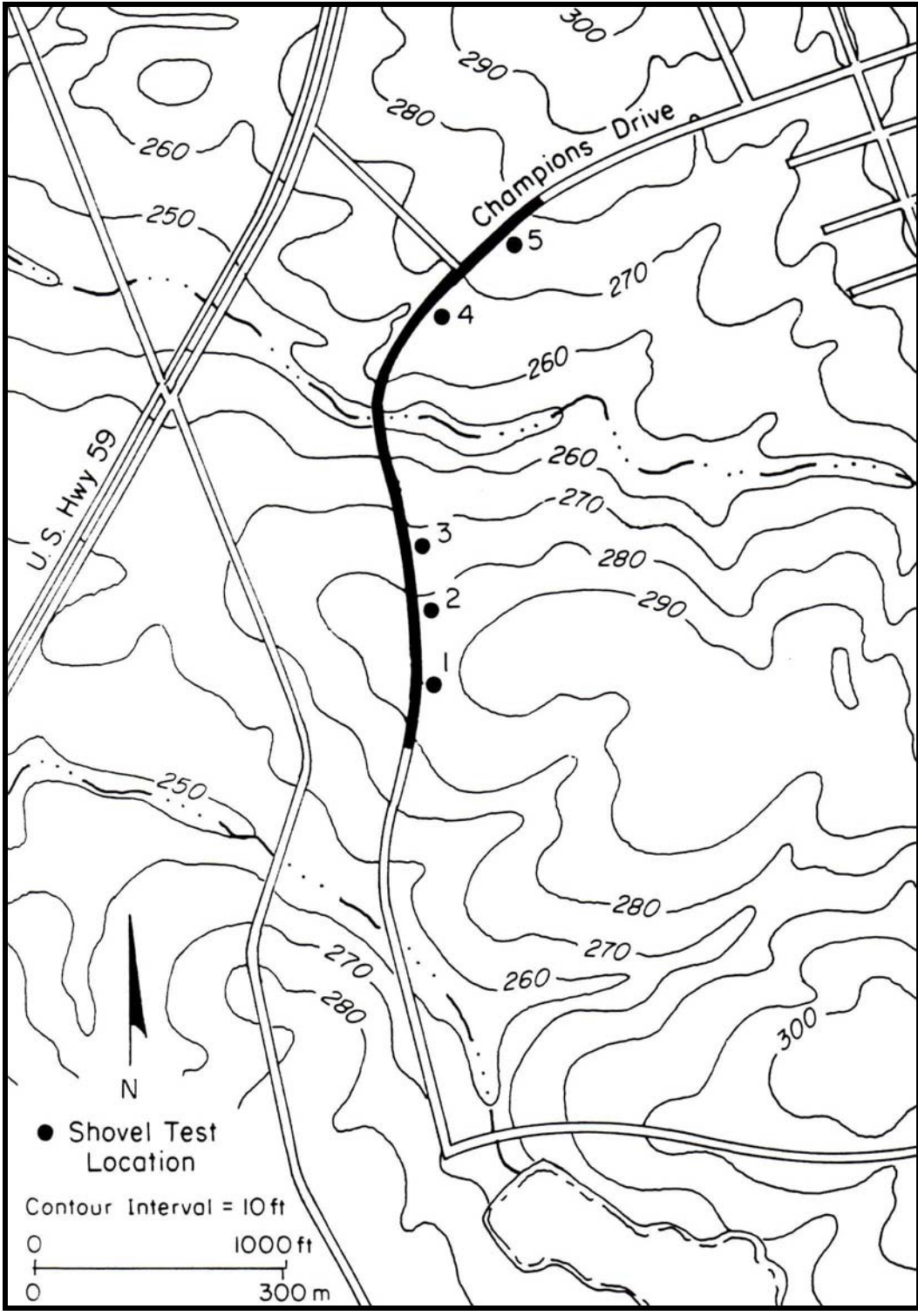


Figure 6. Area B

The subsoil is sticky and plastic clay to a depth of 37 inches and platy clay to a depth of 45 inches. This soil is very slowly permeable and moderately well drained. It has a medium available water capacity, and water erosion is a severe hazard.

Five shovel tests were excavated, and no evidence of a prehistoric or historic site was found. Three shovel tests (B-1 - B-3) at the top of the hill, excavated at 10 meter intervals, revealed crushed rock and concrete. Overall, the landform has a hummocky appearance typical of land contouring. Tests B-4 and B-5, excavated at 20 meter intervals, were placed at the northern end of this area and were also sterile. The soil in this area is Alazan very fine sandy loam, 0 to 4 percent slopes (AaB), as described by Dolezel (1988:23-24). This is a deep, nearly level to gently sloping soil on terraces and low uplands throughout most of the county. This soil formed in sediment partly reworked by wind. This soil has a high water capacity, is moderately permeable, and somewhat poorly drained. Runoff is slow to medium. It is saturated late in winter and early in spring. It has a water table at a depth of 18 to 30 inches. In addition to the existing water line, other buried utilities such as electric and gas are present. The proposed water line replacement will have no negative affect on cultural resources in Area B.

#### Area C

This area (Figure 7) is 0.6 miles in length (.72 acre). That part of Area C south of Hurricane Creek rises to a height of 280 feet and is the most likely section for the presence of an archaeological site. The water line replacement will be placed on the west side of the road that is very disturbed through road construction and other utilities. The only natural water source is a minor tributary of Hurricane Creek that terminates shortly after crossing Highway 59. Unfortunately, however, the area was cleared and altered to accommodate an apartment complex in the project area right-of-way. When the apartments were constructed there was at least a 100-200 foot buffer that extends to the 10 foot right-of-way where the water line is to be replaced. Here, the soils (AaB) are the same as those in the upland part of Area B (see discussion above). According to John Ippolito, this area was heavily timbered until logged in the 1920s and 1930s. He states that the soils are not well drained and highly erosive. This was confirmed by shovel testing as tests C-1 through C-4 revealed a shallow clay less than 30 cm from the existing ground surface.

That part of Area C north of the minor tributary of Hurricane Creek is a floodplain that is made up of Pophers silty clay loam, frequently flooded (Po) as defined by Dolezel (1988:54-55). This is a deep soil on broad, uniform bottomlands of the Neches River flood plain and many of the larger creeks. This is a silty clay loam throughout and is somewhat poorly drained and slowly permeable. It has a medium available water capacity, and runoff is slow. This soil overflows 2 to 3 times per year in most years. Flooding lasts for several days. The water table is at or near the surface during the cool season. The hazard of frequent flooding of long duration and the high water table are limitations of this soil.

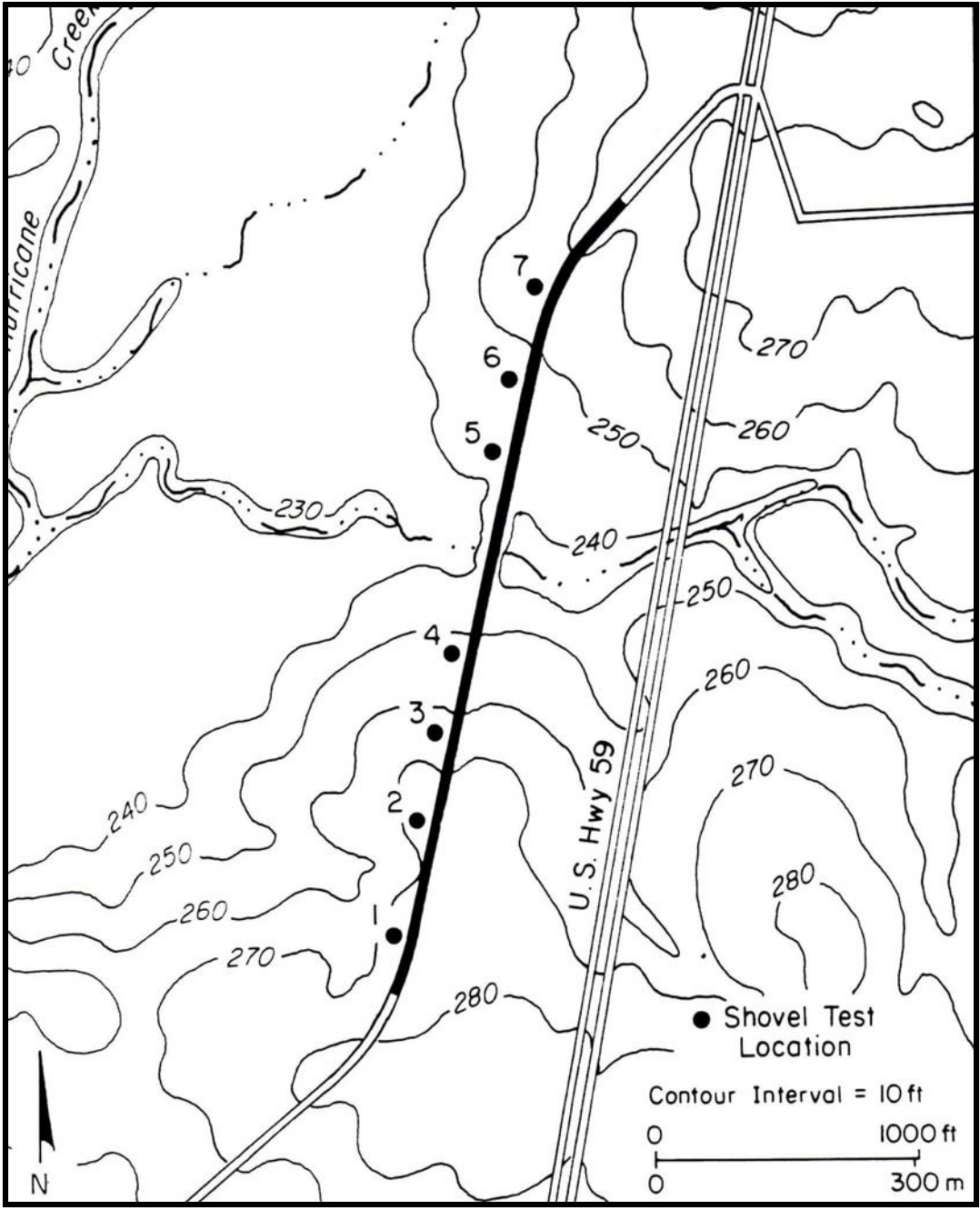


Figure 7. Area C

At the time of this survey, this area contained standing water and numerous crayfish mounds. Three tests (C-5 through C-7) were excavated in the southern portion, all at 20 meter intervals. This area is considered very low probability for the presence of an archaeological site. The proposed water line replacement will have no negative affect on cultural resources in Area C.

## Area D

This area (Figure 8) is 0.76 miles in length (.9 acre). The only natural water sources in this area are Hurricane Creek and one of its tributaries that cross Highway 287 in a north-south direction. Area D consists of a highly developed section of town that includes the loop around the City of Lufkin (287). There were no undisturbed areas in the current project area worthy of shovel testing, due in part to the large areas that have been covered with cement for sidewalks, parking lots, and roads. The City plans to install the additional water line by boring beneath existing construction. The proposed water line replacement, which will be placed on the north side of the highway, will have no negative affect on cultural resources in Area D.

## Area E

This area (Figure 9) is 3.8 miles in length (4.6 acres). The only natural water sources in this area are Cedar Creek and several of its tributaries. Area E consists of a highly developed section of town that includes the Brookhollow and Southridge subdivisions. This is an area of upper income houses and well-kept yards. Overall, Area E is in a floodplain that was built up for the subdivisions. According to Ippolito, the entire area has been altered to accommodate the construction of roads and houses. The area is low enough that floodplain insurance is common for homeowners adjacent to creeks and low areas. Based on the topographic map, there are some higher elevations that may be likely locations for archaeological sites. However, these areas are well outside the 10 foot right-of-way. The proposed water line replacement will have no negative affect on cultural resources in Area E.

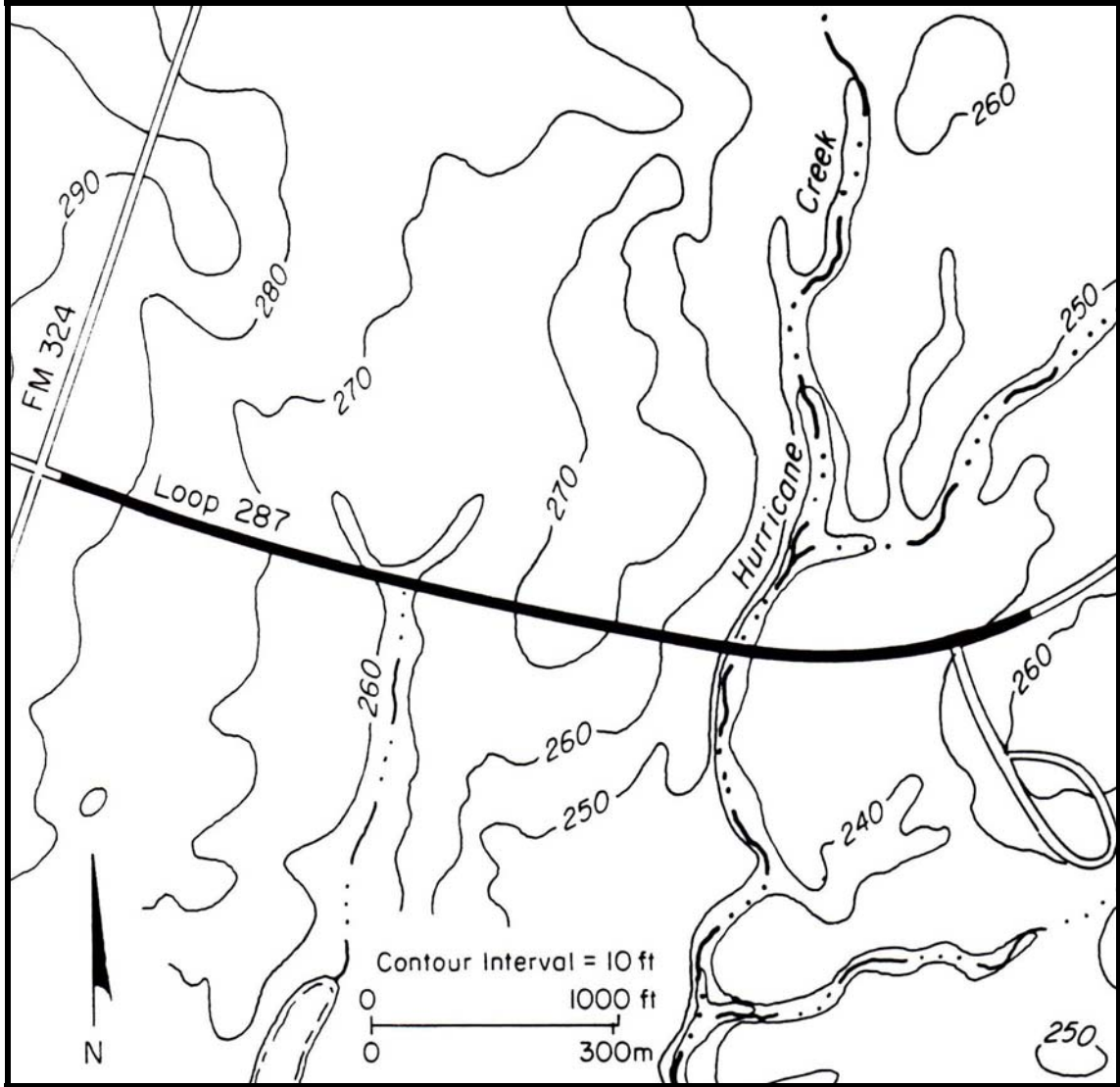


Figure 8. Area D



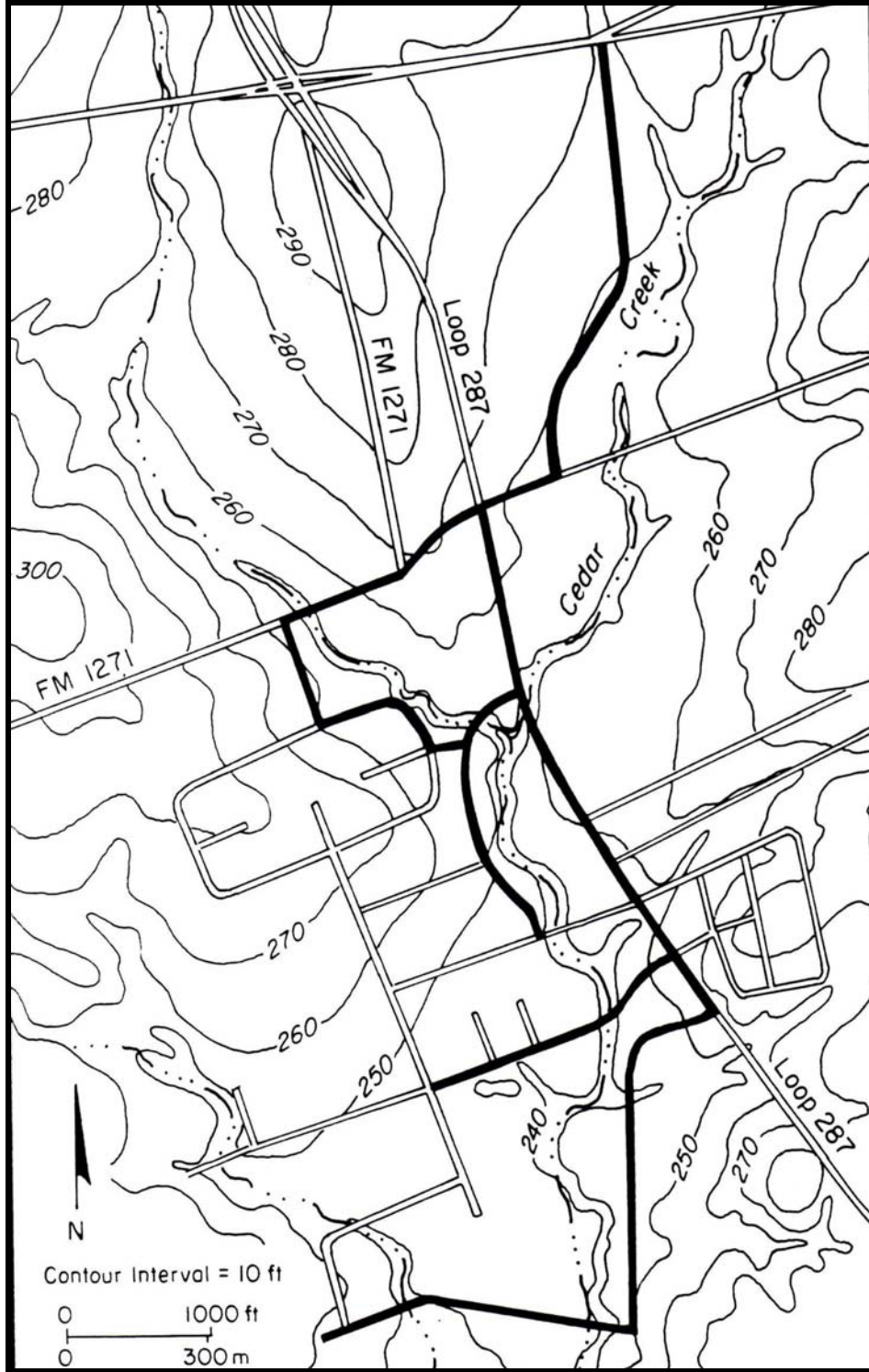


Figure 9. Area E

## Summary

Virtually the entire project area right-of-way is located within a disturbed context. The original amount of disturbance required to lay the existing water line extends beyond the present water line. Within the current project area right-of-way, the deepest construction footprint would be a trench three feet deep and between 18 and 36 inches wide. Although there are a few landforms within the project area where archaeological sites might be present, no cultural materials were found in any of the shovel tests or through surface inspection. It is highly unlikely that, should any sites be present, they would contain intact deposits and possess significant research potential. It should be stated here that, many shovel tests were not dug to a depth of three feet, a large number were placed in existing ditches that extended the depth of the tests to below three feet from the existing ground surface outside of the 10 foot right-of-way.

## RECOMMENDATIONS

Based on the absence of archaeological sites in the project area, it is recommended that construction be allowed to proceed as planned. It is always possible that archaeological sites are missed during any archaeological survey. Should evidence of a prehistoric or historic site in the project area right-of-way be discovered during construction, all work in this area should cease immediately until the Archeology Division, Texas Historical Commission can evaluate the situation.



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## APPENDIX I: SHOVEL TEST LOG

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Shovel Test	Depth	Diameter	Results
Area A			
A-1	50 cm	30 cm	sterile (clay)
A-2	50 cm	30 cm	sterile (clay)
A-3	50 cm	30 cm	sterile (clay)
A-4	50 cm	30 cm	sterile (clay)
A-5	50 cm	30 cm	sterile (clay)
Area B			
B-1	50 cm	30 cm	sterile (disturbed; rocks and cement)
B-2	25 cm	30 cm	sterile (reddish clay)
B-3	30 cm	30 cm	sterile (reddish clay)
B-4	50 cm	30 cm	sterile (reddish clay)
B-5	50 cm	30 cm	sterile (reddish clay)
Area C			
C-1	20 cm	30 cm	sterile (reddish clay)
C-2	50 cm	30 cm	sterile (reddish clay)
C-3	25 cm	30 cm	sterile (disturbed)
C-4	25 cm	30 cm	sterile (disturbed)
C-5	20 cm	30 cm	sterile (reddish clay)
C-6	20 cm	30 cm	sterile (reddish clay)
C-7	20 cm	30 cm	sterile (reddish clay)
Area D			
no tests			
Area E			
no tests			

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