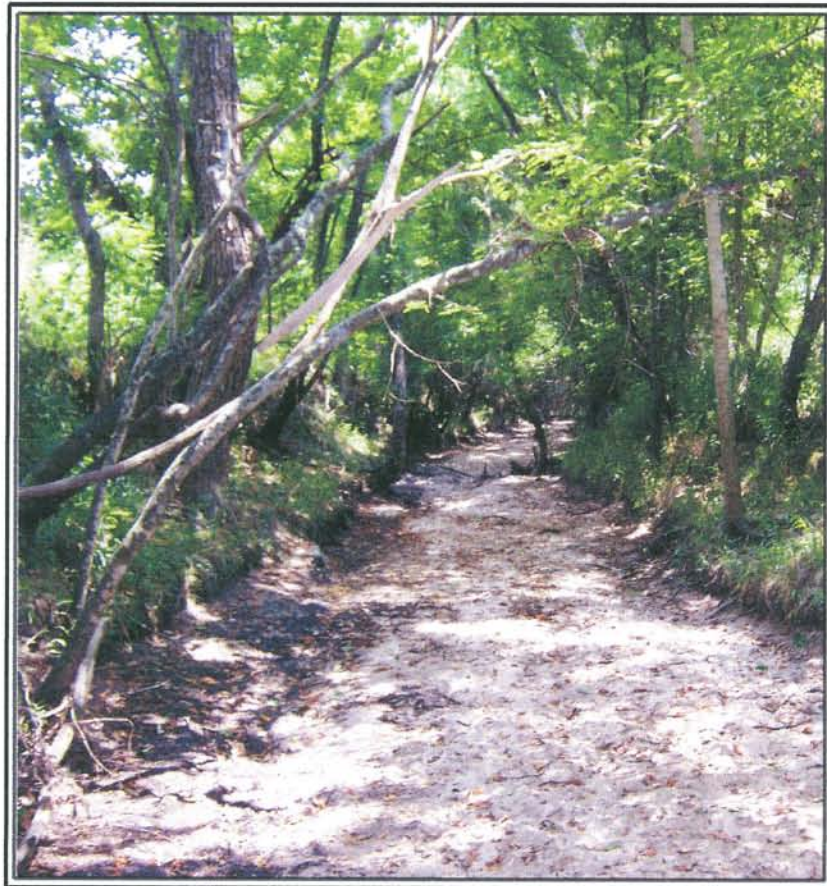


**AN ARCHAEOLOGICAL SURVEY FOR THE
WALKER COUNTY SPECIAL UTILITY DISTRICT
WATER SYSTEM IMPROVEMENT PROJECT
IN CENTRAL WALKER COUNTY TEXAS**

Antiquities Permit 3765



*By
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*Brazos Valley Research Associates
Contract Report Number 114*

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AN ARCHAEOLOGICAL SURVEY FOR THE WALKER COUNTY
SPECIAL UTILITY DISTRICT
WATER SYSTEM IMPROVEMENT PROJECT IN
CENTRAL WALKER COUNTY, TEXAS

BVRA Project 03-02

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ABSTRACT

A Phase I archaeological survey of a water line segment (1.5 miles) in central Walker County, Texas was performed on June 22, 2005 by Brazos Valley Research Associates under Texas Antiquities Permit 3765 with William E. Moore the Principal Investigator and Edward P. Baxter the Project Archaeologist. In all, 5.5 acres were examined. No archaeological sites (prehistoric or historic) were found, and no artifacts were collected. It is recommended that the project be allowed to proceed without further consultation with the Texas Historical Commission. Copies of the report are on file at the Texas Historical Commission, Archeology Division and the Texas Archeological Research Laboratory in Austin, Texas; the Walker County Special Utility District in Huntsville, Texas; and Brazos Valley Research Associates.

ACKNOWLEDGMENTS

The authors are grateful to following individuals for their participation in this project. Steve J. Jordan, P.E. of Schaumburg & Polk, Inc., an engineering firm in Beaumont, Texas and James Morrison, General Manager of the Walker County Special Utility District provided maps and logistical support. Debra L. Beene of the Archeology Division, Texas Historical Commission, served as the reviewer for the project. Jean Hughes, Assistant Curator of Records at the Texas Archeological Research Laboratory, conducted the background site records check for this project.

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INTRODUCTION

The Walker County Special Utility District (SUD) plans to install water transmission lines in five separate locations in Walker County. In addition, one elevated tank site is planned. The general location of the project area is depicted in Figure 1. Funding for the project will be in the form of a loan from the United States Department of Agriculture, Rural Utilities Services (RUS).

Area 1 is an 11,800 foot segment along F.M. 1696 in which an eight inch pipe will be installed under three feet of cover in the highway right-of-way. It also includes a one mile segment of Guerrant Road and the location of a proposed elevated tank. In this area, an eight inch water line will be installed on private property. Guerrant Road is paved with caliche and crosses two unnamed tributaries. The elevated tank is on the east side of the road on a five acre tract. Area 1 is depicted on the Steep Branch, Galilee, and Crabbs Prairie topographic quadrangles (figures 2-3).

Area 2 begins at F.M. 1696 and runs to the northeast before turning to the south and traversing cross-country until it connects with Wire Road. After leaving Wire Road it passes through SHSU property, also cross-country. At the southern terminus of the SHSU segment, it follows a paved road through a subdivision until it intersects with State Highway 30. It then turns south onto State Highway 30 where it connects to an elevated tank site. The line in Area 2 will be 10 inches in diameter and will be installed under three feet of cover. There will be a construction easement of 30 feet that will be in effect for one year and a permanent easement of 20 feet. The only creek crossing in this area is the upper reaches of McGary Creek on SHSU property. Area 2 is depicted on the Galilee, Crabbs Prairie, and Huntsville topographic maps (Figure 4).

Walker County is in an area that contains numerous prehistoric and historic archaeological sites. Because of the potential for significant sites in the project area, a survey by a professional archaeologist prior to construction was requested by the Texas Historical Commission, Archeology Division. In order to fulfill this requirement, the Walker County SUD contracted with Brazos Valley Research Associates (BVRA) to perform this assessment. A research design was submitted to the Texas Historical Commission, and Texas Antiquities Permit number 3765 was issued to BVRA with William E. Moore the Principal Investigator. The project number assigned by BVRA is 03-02.

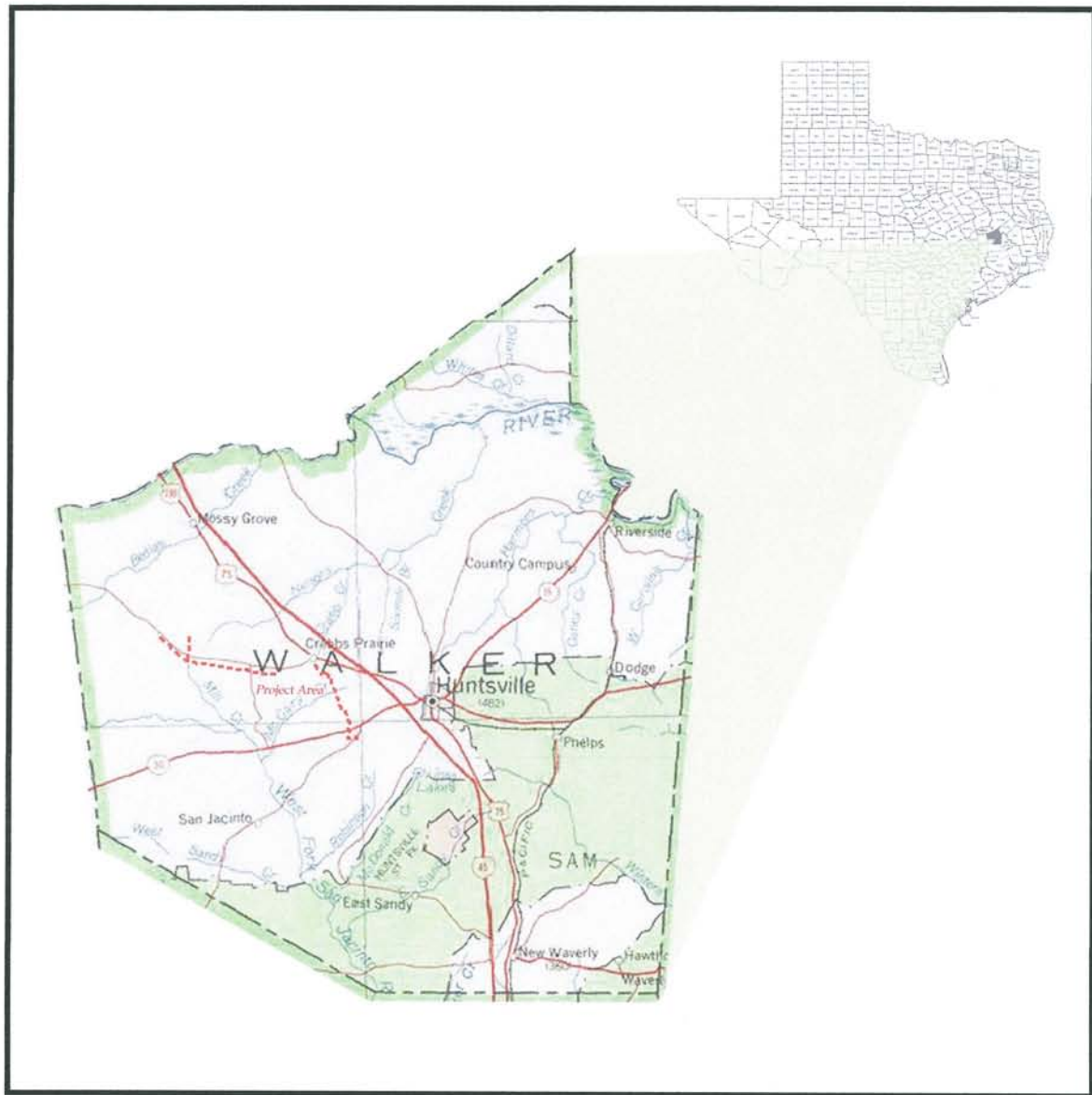


Figure 1. General Location

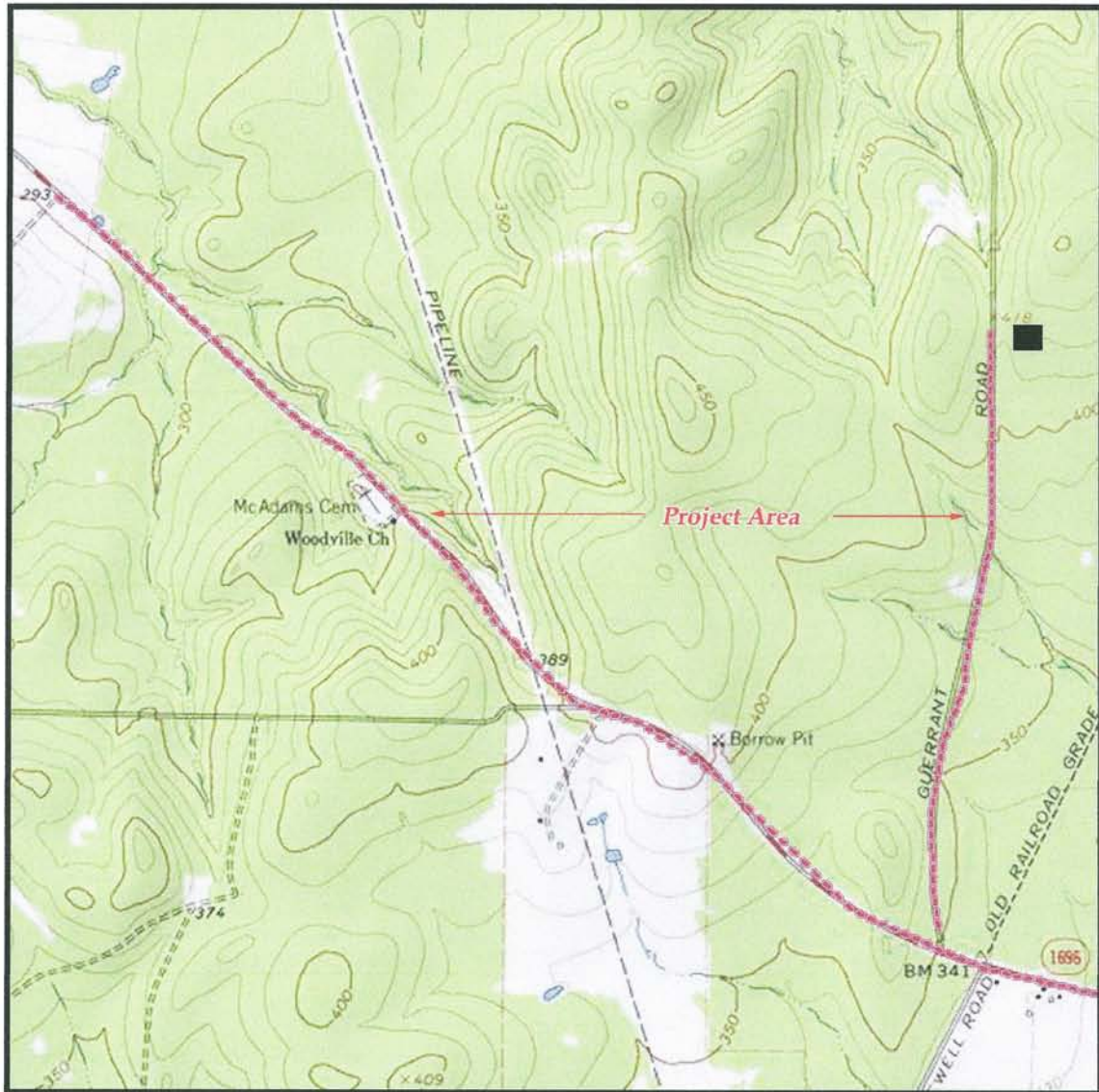


Figure 2. Area 1 on Topographic Map (West Portion)

(Proposed elevated tank – black square)

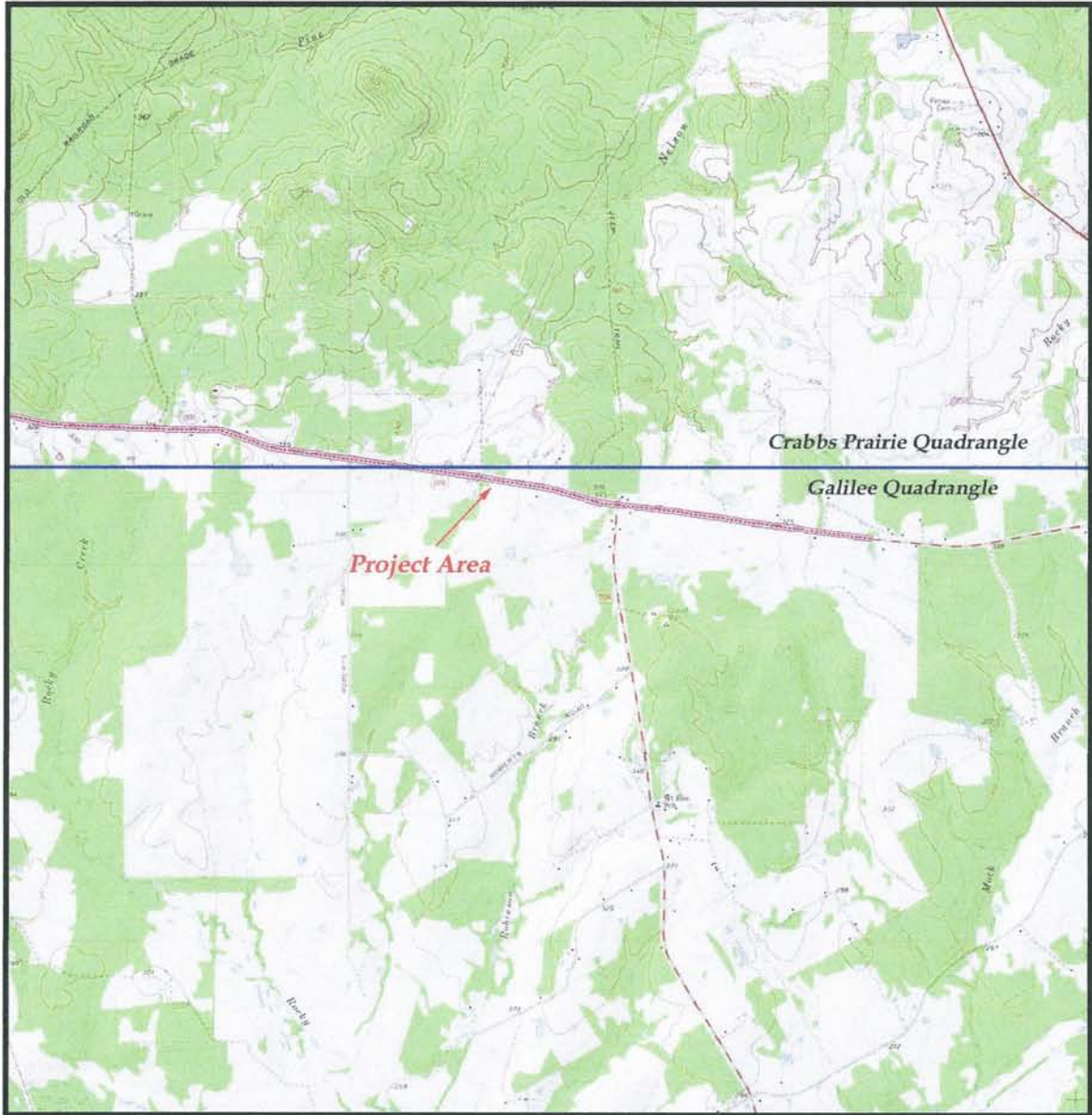
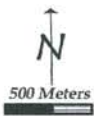
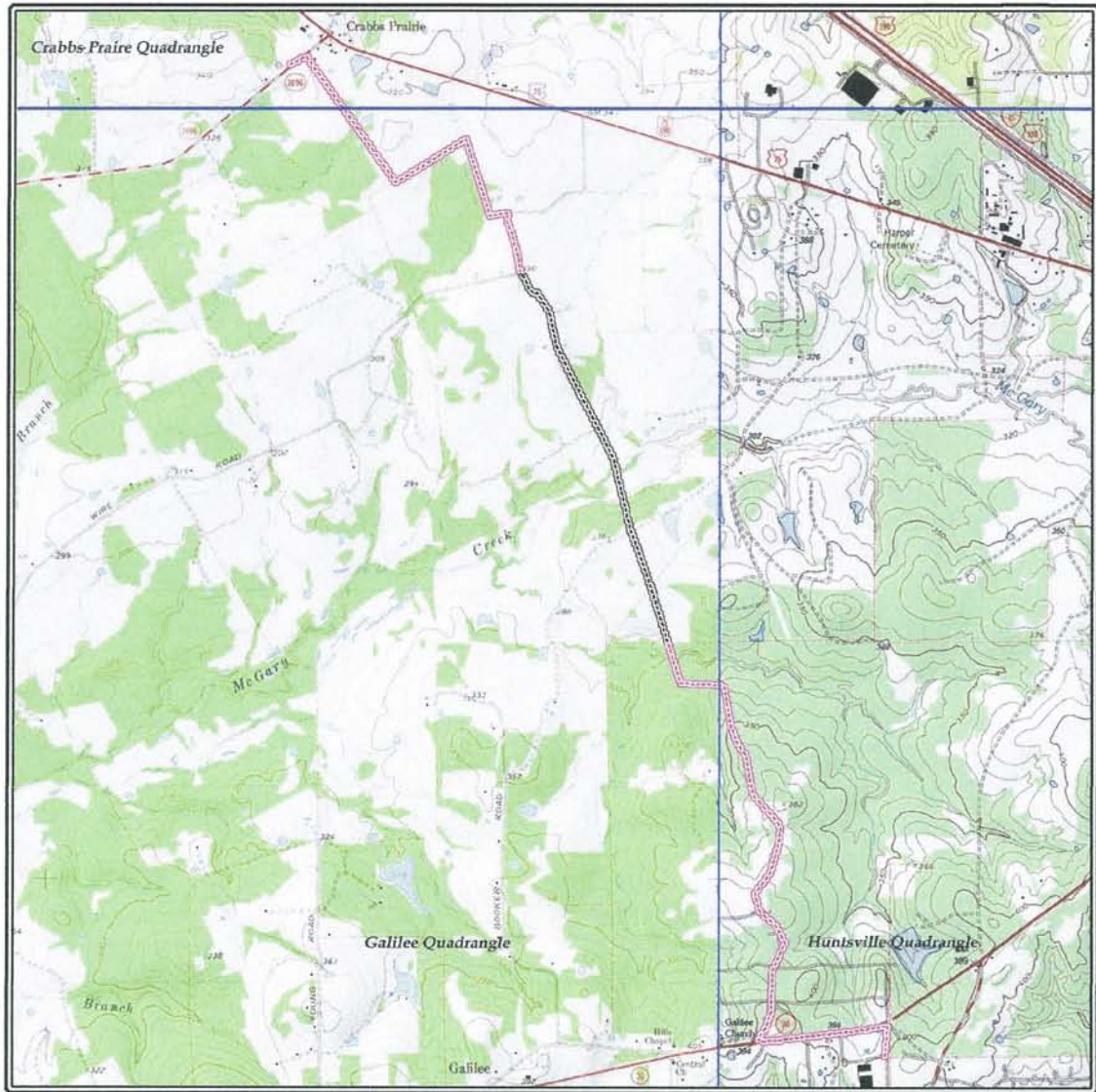


Figure 3. Project Area on Topographic Map (East Portion)



USGS Crabbs Prairie, Galilee,
and Huntsville, Texas
Quadrangles 3095-342, 3095-313,
and 3095-314



 Proposed Waterline *BVRA*
 Survey Area, SHSU Property

Figure 4. Area 2 on Topographic Map

ENVIRONMENTAL SETTING

General

Walker County is located within the Austroriparian biotic province as defined by Blair (1950) and includes the Gulf coastal plain from the Atlantic Ocean to eastern Texas. The western boundary of this province in Texas is approximated by a line running north from western Harris County to western Red River County. The western boundary of the Austroriparian is also the western boundary of the main body of the pine and hardwood forests of the eastern Gulf coastal plain (Blair 1950:99). According to Thornthwaite (1948), these forests are limited on the west by available moisture.

Flora

The Project Area is located within the loblolly pine, shortleaf pine, and upland hardwood plant community as defined by the United States Forest Service for the four National Forests in East Texas. According to Ippolito (1983:6-7), the major forest cover types in this community include loblolly pine, shortleaf pine, slash pine, post oak, southern red oak, white oak, black oak, blackjack oak, black gum, sweet gum, American elm, red maple, hickories, and beech. Approximately 70 percent of East Texas is currently occupied by the Piney Woods with Post Oak Savannah and Blackland Prairie in the rest of the region (Boyd and Howard 1988:4). Keller (1974:139-156) believes that deciduous trees may have been more numerous during most of the Holocene and were probably more important resources to prehistoric populations than the modern flora would suggest.

Fauna

The vertebrate fauna of the Austroriparian is considered typical of that to the east. Blair (1950:99) states that at least 47 species of mammals occur or have occurred there in recent times. Known types include at least 29 species of snakes, 10 lizards, 2 land turtles, 17 anurans, and 18 urodeles. Ippolito (1983:11) states that there is an inadequate sample of faunal material for the area in an archaeological context. Therefore, assumptions concerning prehistoric exploitation of animals must be based on historical accounts and current populations.

A study by Keller (1974:78-81) of the paleoecology of the middle Neches region lists those mammals most likely to have been hunted in the area. They are Whitetail deer, Cottontail rabbit, Swamp rabbit, Grey squirrel, Fox squirrel, Flying squirrel, Raccoon, Opossum, Red fox, Grey fox, Woodchuck, Bobcat, Spotted skunk, Striped skunk, Mink, Otter, Long-tailed weasel, and Muskrat. According to Ippolito (1983:11), this list excludes many species of birds, especially migratory fowl, and fish that can still be found in the area.

Species not found in the area today include black bear, beaver, and wild turkey. These were once numerous, but they were eradicated by uncontrolled hunting and timber harvesting that irreparably altered their habitats.

Climate

The following climatic information was taken from McClintock et al. (1979). The weather in Walker County consists of hot summers and cool winters. An occasional cold front may cause temperatures to drop below freezing, sometimes quite suddenly. The average winter temperature is 51 degrees Fahrenheit with an average daily minimum of 41 degrees. In summer, the average is 82 degrees with an average daily maximum of 94 degrees. The growing season consists of 234 days above freezing each year. Prevailing winds are from the south and southeast. Rainfall is uniformly distributed throughout the year and snowfall is rare.

Survey Area

At the time of this survey, the project area was in pasture and woods. The woods consisted mainly of oaks, elms, scattered pines, mesquite, hackberry, and sweet gum. The creek bottoms had been cleared for pasture and were covered with thick brush, weeds, and mesquite. Larger trees such as oaks and elms lined the edge of the creek. There was no water in the stream channel at the union of the creek and proposed route of the water line. In a few areas, stagnant pools were observed. The main channel of the upper reaches of McGary Creek is inside the project area. The majority of the survey area was along the edge of the woods. Figure 5 is an aerial photograph of the area surveyed. This image was provided by Stever Jordan of Schaumburt & Polk, Inc. One view of the project area is depicted in Figure 6.



Figure 5. Survey Area on Aerial Photograph



Figure 6. View of Project Area

ARCHAEOLOGICAL BACKGROUND

Although several significant studies involving prehistoric and historic sites have been conducted in Walker County, most of the site data are based on survey level studies with little or no subsurface testing. As a result, much of the information for Walker County is taken from projects in surrounding areas such as Lake Livingston in Polk and San Jacinto counties (McClurkan 1968; Ensor and Carlson 1988); Lake Conroe in Montgomery County (McNatt 1978; Shafer 1968; Shafer and Stearns 1975); Davy Crockett, Sam Houston, Angelina, and Sabine National Forests (Fields 1979); Davy Crockett National Forest (Bond and Moore 1980); Lake Creek Reservoir (Bement et al. 1987); and the Gibbons Creek Mine in Grimes County (Rogers 1993, 1994, 1995). Several overviews have been published which provide valuable data for Walker County and vicinity. These are *Indians of the Upper Texas Coast* by Aten (1983), *Comments on Woodland Cultures of East Texas* by Shafer (1975), and *An Overview of the Archaeology of East Texas* by Story (1981).

More recently, five studies have been published which are worthy of mention. These are *Archeology in the Eastern Planning Region, Texas: A Planning Document* compiled by the Department of Antiquities Protection (Kenmotsu and Perttula (1993); a dissertation by Roger G. Moore (1995) Ph.D. entitled *The Mossy Grove Model of Long-Term Forager-Collector Adaptations in Inland Southeast Texas*; Volume 66 of the *Bulletin of the Texas Archeological Society* which reviews the current state of Archeology in Texas and contains a chapter devoted to Southeast Texas (Patterson 1995); an archaeological study by the Texas Parks and Wildlife Department at the Huntsville Fish Hatchery (Davis et al. 1994:20-33); and a survey for the Trinity River Authority by Moore Archeological Consulting (Moore and Moore 1996:6-12).

The work by Moore Archeological Consulting (Moore and Moore 1996) is particularly noteworthy because of the database created from encoding site data for all known sites in Walker County at the time of this project. This database, presented in Moore and Moore (1995) was an attempt to define settlement rules specific to Walker County through the application of an empirical analysis cross-tabulating site data with environmental variables and was based, as stated above, on the computerization of data from all of the existing TARL site records for the county. A total of 181 sites was used for this study; however the analyses utilized only those sites with prehistoric components since the sample size for historic sites is inadequate and the settlement criteria for historic sites location are much different and currently more ambiguous than for prehistoric sites. This study found that prehistoric sites seem to be found throughout the county where suitable landforms (sandy ridges and knolls) exist in close proximity to dependable water sources. The only known large concentrations of prehistoric sites are the result of large area surveys. Single sites along major drainages should not be interpreted as sparse use of an area; rather, these sites were most likely recorded by individuals with restricted access to larger areas.

An example of this is the privately funded study by William E. Moore (1976) in the 1970s. Moore drove much of the county and recorded sites observed in road cuts and through personal communication with local landowners and collectors. In all, 36 sites scattered throughout the county were recorded. At the time, this number represented 77% of the known sites in Walker County. This study recorded two sites on McGary Creek, the major drainage in the current project area. Site 41WA60 is located on a sand hill about 30 feet above the east bank of Mack Branch of McGary Creek. A shovel test revealed two distinct mantles of sand overlying a clay substratum. The upper four inches of sand contained recent historic materials (glass, pottery, and metal). In the next layer (also about four inches), 1 plain body sherd, 3 dart points, and 2 biface failures. No artifacts were found in the clay. Site 41WA61 is located on a sand hill on the west side of McGary Creek at an elevation of about 20 feet. One shovel test a sandy mantle about six inches in thickness contained a large number of pebbles. Several flakes were observed on the surface. This landform appears to be an excellent location for a significant site.

Chronometric dates for inland Southeast Texas are rare. Many sites in this area have been assigned to cultural periods by other means such as cross-dating artifacts with similar types from sites in other areas where absolute dates have been obtained.

Only six prehistoric sites in Walker County have been formally tested by professional archaeologists. These are 41WA82 (McNatt 1978), 41WA97 (Boyd and Howard 1988), 41WA105 and 41WA108 (Davis et al. 1994), 41WA185 (Gaddus and Fields 1997), and 41WA218 (Kingsborough and Mangum 2000).

The Kaygal site (41WA82) was tested by Texas A&M University in 1977 (McNatt 1978) and represents the first reported subsurface investigation of a prehistoric site in Walker County. Based on the association of sandy paste ceramics with contracting stem dart points, the site was assigned to the Early Ceramic Period (200 B.C. - A.D. 900). One contracting stem arrow point fragment may indicate a Late Ceramic Period occupation (A.D. 900 - A.D. 1700). The excavators state that additional work at this site will not yield new information regarding the prehistoric life ways of the region. Therefore, mitigation was not recommended.

Site 41WA97, located in the Sam Houston National Forest, was tested by Prewitt & Associates, Inc. in 1988 (Boyd and Howard 1988). This investigation revealed a multi-component site containing Early and Late Ceramic period occupations. Due to extensive bioturbation and a lack of features and natural or cultural stratification, it was not possible to separate the components into discrete analytical units. Therefore, no further work was warranted.

Site 41WA105 (Davis et al. 1994) on a high sandy terrace overlooking Harmon Creek was tested by the Texas Parks and Wildlife Department in 1989. Backhoe trenching and hand excavation encountered cultural deposits to a depth of three meters and identified Late Ceramic, possible Early Ceramic, and Archaic occupations in a relatively stratified sequence. Calculating the recovery from those units where volumetric control was maintained, the site has a composite lithic artifact density of 31 specimens per cubic meter (Davis et al. 1994:59). The prehistoric component is buried in sandy sediments and is represented by quantities of debitage (chert, quartzite, and silicified wood); arrow points, dart points, and other chipped stone tools; sandy paste and tempered ceramic sherds; burned nut shell; and ground and pecked stone artifacts (Davis et al. 1994:52-59).

One feature was encountered; a grouping of sandstone rocks that are described by the authors (Davis et al. 1994:61) as "a complete nut processing and milling tool kit." Site 41WA105 was judged to be eligible for nomination to the National Register of Historic Places under Criterion D: the property may be likely to yield information important in prehistory (United States Department of the Interior 1982:1).

Site 41WA108 (Davis et al. 1994) is a prehistoric/historic site on a high alluvial terrace approximately ten meters above Harmon Creek was tested by the Texas Parks and Wildlife Department in 1989. Due to the low density of cultural resource materials and lack of diagnostic materials or features, the site was not considered significant (Davis et al. 1994:69).

Site 41WA185 was tested by Prewitt & Associates, Inc. (Gaddus and Fields 1997) in 1996. Diagnostic artifacts, four radiocarbon dates, and vertical distribution of artifacts suggest that the site contains two primary components; early and middle Late Prehistoric period and Woodland-Late Prehistoric transition. Because these components are isolable, and because they contain sufficient artifacts to permit interpretation, the site has the capacity to yield important information regarding the prehistory of the Walker County area. Therefore, the site was recommended for nomination to the National Register of Historic Places and designation as a State Archeological Landmark (Gaddus and Fields 1996:v).

Site 41WA218 was tested under the supervision of Walter D. Kingsborough of the National Forest and Grasslands office in Lufkin in March 2000 using volunteer labor. This project is one of the largest conducted in the area with 40 cubic meters of earth being excavated to a depth of 3.36 meters. Over 6000 artifacts were recovered including a number of diagnostic points in a chronologically stratified archeological deposit that reflects relatively little turbative mixing. Only arrow points were found in the upper levels with a clear separation between them and dart points. At 2.20 meters a gray chert *Bulverde* point was recovered, and a non-diagnostic scraper was found at 2.60 meters. Flakes were found at 3.36 meters. No historic material below the root mat, and no plow zone was encountered (Walter D. Kingsborough, personal communication to William E. Moore, May 28, 2001). The report is still in draft form.

METHODS

Pre-field Tasks

Prior to entering the field the Principal Investigator checked the site records at the Texas Archeological Research Laboratory (TARL) on the campus of The University of Texas at Austin for the presence of previously recorded sites in the project area and vicinity.

The Principal Investigator and Project Archaeologist drove as much of the project area as possible to identify high probability areas and areas to be eliminated because of disturbance and other factors. Area 1 was eliminated from survey because that portion along F.M. 1696 has been disturbed through road construction or will be placed in a ditch. The area along Guarrant Road was eliminated from survey because there are no major stream channels in close proximity to the proposed water line route. Part of Area 2 was eliminated from survey because of a lack of stream crossings. The area recommended for survey is that segment north and south of the tributary of McGary Creek where terraces and upland ridges may be present.

A review of the topographic maps helped the Principal Investigator identify areas that seemed most likely to contain archaeological sites in those areas where the only access would be by walking. These plottings were submitted to the Texas Historical Commission with a Research Design (Appendix I) for approval before entering the field. Also, a review of relevant literature was conducted in order to be familiar with the kinds of sites expected to occur in the area. It was decided that only one segment of the proposed water line would be subjected to archaeological survey. This area is located on SHSU property and is approximately 1.5 miles in length.

Field Tasks

The entire area was walked, and shovel tests were dug where appropriate with an emphasis on terraces and high ground. Each test was dug by hand, and the excavated dirt was screened using ¼" hardware cloth. A shovel test log was maintained (Appendix II), and documented through field notes and digital photographs. Shovel tests were excavated to clay when possible. In all, 22 tests were dug through sand and sandy clay loam to depths of less than 10 cm to 70 cm. Clay was reached in every test. The approximate location of each test appears in Figure 7.

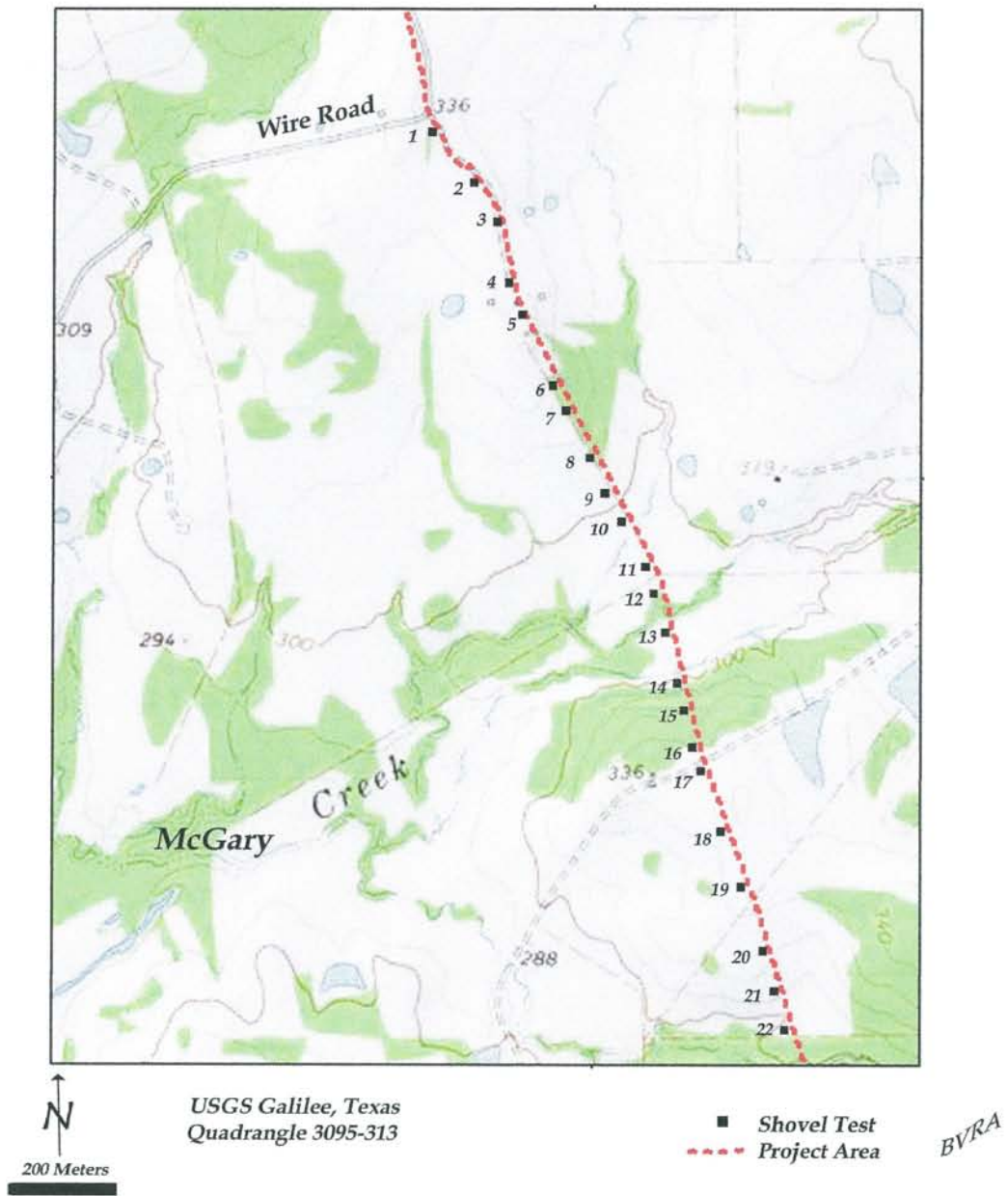


Figure 7. Shovel Test Locations

RESULTS AND CONCLUSIONS

The archival research indicated no previously recorded archaeological sites in the project area, and no major surveys have been conducted in the vicinity. No prehistoric sites were found through surface inspection or shovel testing, and no historic sites greater than 50 years of age were observed. Overall, the project area consisted of sandy soils, some with clay or clay loam that varied in depth from less than 10 cm to 70 cm. Of the 22 shovel tests excavated, only nine were deeper than 10 cm. The area was in pasture, woods, and thick brush along the creek bottoms. The authors believe that the lack of deep sandy soils and distance from perennial water are the two main reasons for an absence of prehistoric sites in the project area. The survey was performed in accordance with the Minimum Survey Standards as published by the Texas Historical Commission, Archeology Division.

RECOMMENDATIONS

Since no archaeological sites were found in the project area, it is recommended that construction be allowed to proceed in this area as planned without further consultation with the Texas Historical Commission. Should significant cultural deposits be found in the project area, all construction must stop until the situation can be evaluated by the Archeology Division, Texas Historical Commission in consultation with the Walker County SUD and BVRA. Also, if the route of the water line is changed, the Texas Historical Commission must be notified as this may require additional survey.

REFERENCES CITED

- Aten, Lawrence E.
1983 *Indians of the Upper Texas Coast*. Academic Press. New York.
- Bement, Leland C., Rolfe D. Mandel, Jesus F. de la Teja, Dan K. Utley, and Solveig A. Turpin
1987 *Buried in the Bottoms: The Archeology of Lake Creek Reservoir, Montgomery County, Texas*. Texas Archeological Survey, Research Report 97.
- Blair, W. Frank
1950 The Biotic Provinces of Texas. *The Texas Journal of Science* 11(1):93-116.
- Bond, Clell L., and William E. Moore
1980 *Archeological Investigations in the Davy Crockett National Forest*. Texas A&M University, Cultural Resources Laboratory, Report Number 1.
- Boyd, Douglas K., and Margaret A. Howard
1988 *Archeological Testing at 41WA97, Sam Houston National Forest, Walker County, Texas*. Prewitt and Associates, Inc., Technical Reports, Number 3.
- Davis, Michael W., Jan Guy, Marybeth S. F. Tomka, and Daniel J. Crouch
1994 *Archeological Investigations at Huntsville Fish Hatchery, Walker County, Texas*. Texas Parks and Wildlife Department, Cultural Resources Program. Austin.
- Ensor, H. Blaine, and David L. Carlson
1988 *The Crawford Site, 41PK69, Central Trinity River Uplands, Polk County, Texas*. Texas State Department of Highways and Public Transportation, Highway Design Division, Contract Reports in Archeology Number 4.
- Fields, Ross C.
1979 Cultural Resources of the Davy Crockett, Sam Houston, Angelina, and Sabine National Forests of Texas. Report submitted under Contract No. 53-432P-8-00219 to the United States Department of Agriculture, United States Forest Service, by the Texas Archeological Research Laboratory, The University of Texas at Austin.

- Gaddus, E. Frances, and Ross C. Fields
 1997 *Test Excavations at 41WA185, Walker County, Texas.* Prewitt & Associates, Inc., Technical Reports, Number 25.
- Ippolito, John E.
 1983 *A Cultural Resource Overview of the National Forests in Texas.* United States Department of Agriculture, Forest Service, Lufkin, Texas.
- Keller, John Esten
 1974 *The Subsistence Paleoecology of the Middle Neches Region of East Texas.* Unpublished Ph.D. Dissertation, The University of Texas at Austin.
- Kenmotsu, Nancy Adele, and Timothy K. Perttula (editors)
 1993 *Archeology in the Eastern Planning Region, Texas: A Planning Document.* Department of Antiquities Protection, Cultural Resource Management Report 3. Texas Historical Commission.
- Kingsborough, Walter D, and Douglas G. Mangum
 2000 *Deep Holocene Alluvial Deposits along the West Fork San Jacinto River: An Interim Report of Archeological Investigations at Storm Site (41WA218), Sam Houston National Forest.* National Forest and Grasslands of Texas. Lufkin.
- McClintock, William R., Jr., Joseph J. Castille, Michael Stewart, and L. E. Andrew
 1979 *Soil Survey of Walker County, Texas.* United States Department of Agriculture, Soil Conservation Service and Forest Service in cooperation with the Texas Agricultural Experiment Station.
- McClurkan, Burney B.
 1968 *Livingston Reservoir, 1965-66: Late Archaic and Neo-American Occupations.* Papers of the Texas Archeological Salvage Project, Number 12.
- McNatt, Logan D.
 1978 *Archeological Investigations at the Kaygal Recreation Area Site (41WA82), Walker County, Texas.* Texas A&M University, Anthropology Laboratory, Report 44.

- Moore, Roger G.
1995 The Mossy Grove Model of Long-Term Forager-Collector Adaptation in Inland Southeast Texas. Unpublished Ph.D. dissertation, Department of Anthropology, Rice University, Houston, Texas.
- Moore, Roger G., and William E. Moore
1995 *A Preliminary Archeological Assessment of a Proposed Trinity River Authority Waterline Project, Walker County, Texas.* Moore Archeological Consulting, Report of Investigations Number 161.
- Moore, Bill (William E.)
1976 An Archeological Survey of Walker County, Texas. Unpublished report on file at the Texas Archeological Research Laboratory and Brazos Valley Research Associates.
- Moore, William E., and Roger G. Moore
1996 *An Archeological Survey of a Proposed Trinity River Authority Waterline Project, Walker County, Texas.* Moore Archeological Consulting, Report of Investigations Number 171.
- Patterson, Leland W.
1995 The Archeology of Southeast Texas. *Bulletin of the Texas Archeological Society* 66:239-264.
- Rogers, Robert
1993 *Data Recovery of Three Prehistoric Sites at the Gibbons Creek Third Five-Year Mine Permit Area, Grimes County, Texas.* Espey, Huston & Associates, Inc. Document Number 910529.
- 1994 *Excavations at Site 41GM224 in the Gibbons Creek Lignite Mine Permit 38A Area, Grimes County, Texas.* Espey, Huston & Associates, Inc. Document Number 930476.
- 1995 *Archeological Excavations at Prehistoric Sites 41GM166, 41GM281, and 41GM282 in the Gibbons Creek Lignite Mine, Grimes County, Texas.* Espey, Huston & Associates, Inc. Document Number 940611.

- Shafer, Harry J.
1968 *Archeological Investigations in the San Jacinto River Basin, Montgomery County, Texas*. Papers of the Texas Archeological Salvage Project, Number 13.
- 1975 *Comments on Woodland Cultures of East Texas. Bulletin of the Texas Archeological Society* 46:249-254.
- Shafer, Harry J., and Thomas B. Stearns
1975 *Archeological Investigations at the Scotts Ridge Site (41MQ41), Montgomery County, Texas*. Texas A&M University, Anthropology Laboratory, Report 17.
- Story, Dee Ann
1981 *An Overview of the Archaeology of East Texas. Plains Anthropologist* 26(92):139-156.
- Thorntwaite, C. W.
1948 *An Approach Toward a Rational Classification of Climate. Geography Review* 38:55-94.
- United States Department of the Interior
1982 *How to Apply the National Register Criteria for Evaluation*. National Park Service, National Register Division, United States Department of the Interior. Washington, D.C.

APPENDIX I

RESEARCH DESIGN

WALKER COUNTY SPECIAL UTILITY DISTRICT WATER SYSTEM IMPROVEMENTS PROJECT

Records Check

Prior to entering the field, BVRA will contact the Texas Archeological Research Laboratory (TARL), in Austin, Texas, the state repository for site records, to determine if previously recorded sites are present in the project area. This task may be conducted by a personal visit to TARL or by telephone. Also, a request for artifact and records curation (Request for Housing) has been submitted to TARL per the requirements of the Antiquities Permit that states an arrangement must be made between the archaeologist, client, and TARL for curation of artifacts if found in the project area as a result of this survey.

Permit Application

No fieldwork will commence until a permit from the Texas Historical Commission (THC), Archeology Division, has been issued.

Project Description

The Walker County Special Utility District (SUD) proposes to construct water lines in two areas in central Walker County totaling 13.07 miles. The official name for this project is the Walker County SUD Water System Improvements Project. Funding for the project will be in the form of a loan from the United States Department of Agriculture, Rural Development. The easement is 15 feet, and all water line will be placed under three feet of cover.

Area 1 is a 7.65 mile segment along F.M. 1696 and Guerrant Road. The water line in this area will be 8 inches in diameter. The segment along F.M. 1696 will be placed on the north side of the road in the public right-of-way. The segment along Guerrant Road may be placed on either side of the road, preferably on private property. At the north end of Guerrant Road an elevated storage tank is planned. This tank will be placed on the east side of the road about 150-200 yards distant. Area 1 is depicted on the Crabbs Prairie, Galilee, and Steep Branch topographic quadrangles.

Area 2 is a 5.42 mile segment that begins at F.M. 1696 and ends at an existing elevated storage site on State Highway 30. The water line north of Highway 30 will be 12 inches in diameter. That portion from F.M. 1696 to Wire Road is on private property. Between Wire Road and the south bank of a tributary of McGary Creek, the line will be placed on property owned by Sam Houston State University (SHSU). From the southern terminus of SHSU land, the project passes through a residential subdivision until it terminates at Highway 30. The line then runs east along the south side of Highway 30, turns south for a short distance, and terminates at the existing elevated storage site. On Highway 30, the water line will be 8 inches in diameter and will be placed on the south side of the road. Area 2 is depicted on the Crabbs Prairie, Galilee, and Huntsville topographic quadrangles.

Walker County is in an area that contains numerous significant prehistoric archaeological sites. Although historic sites can be found in a variety of environmental settings, prehistoric sites are almost exclusively found on sandy ridges in close proximity to dependable water sources. According to a Walker County site database prepared by Moore Archeological Consulting, more than 68% of all prehistoric sites (sample size = 97) are 150 meters or less from water, and 61 of 75 sites are on prominent hills or ridges with well drained soils.

All creek crossings will be subjected to directional drilling or boring. It is estimated that the distance beneath McGary Creek will be at least six feet and will continue for several hundred feet on each side of the creek to avoid disturbing floodplains and other wetland areas.

Areas Recommended for Archaeological Investigation

Area 1

The segment along F.M. 1696 was visually inspected during a windshield survey by the Principal Investigator and Project Archaeologist. The entire area on the north side of the road is either disturbed through road construction or is situated in a ditch. In addition, an existing water line is present. This segment does not cross any major streams, and it is viewed by BVRA as a low probability area for archaeological sites. Survey is not recommended.

The segment along Guerrant Road was visually inspected during a windshield survey by the Principal Investigator and Project Archaeologist. This segment does not cross any major streams, and the proposed elevated tank site is far from water. This segment is viewed by BVRA as a low probability area for archaeological sites. Survey is not recommended.

Area 2

The northern segment of this route traverses cross-country on private property. No major streams are crossed, and the route generally follows slopes and low areas. This is a low probability area for significant archaeological sites. No survey is recommended.

On SHSU property the route crosses McGary Creek, a major stream in the county. Survey is recommended for the high ground and terraces on both sides of this drainage. To the south the water line crosses a tributary of McGary Creek. Survey is recommended at the north bank of this stream.

After crossing a tributary of McGary Creek, the route enters a residential subdivision. This entire area has been disturbed through the construction of roads and other residential features. In addition, a highline follows much of the route. No survey is recommended in this area.

The last segment of Area 2 is that portion along State Highway 30. The windshield survey revealed a disturbed area. No survey is recommended.

Survey Methods

William E. Moore will be the Principal Investigator, and Ed Baxter will be the Project Archaeologist. A portion of the project area has already been evaluated by a windshield survey. Three high probability areas identified from the topographic maps will be visited in the field and investigated through shovel testing if sandy soils are present. If additional areas are identified in the field as likely locations for archaeological sites they will be shovel tested also. During the Pedestrian Survey only diagnostic artifacts will be collected from the surface.

All dirt removed through shovel testing will be screened through 1/4 inch hardware cloth. Shovel tests will be approximately 30 x 30 cm in size and will be dug to the underlying clay when possible. Selected tests may be dug 10-20 cm into the clay. The distance between shovel tests will be decided in the field. Some areas, for example, that are disturbed or where clay is found to exist at or near the surface may receive only one test. Shovel probes may be utilized to confirm the presence of clay.

All artifacts recovered through shovel testing will be collected for analysis. Those artifacts not worthy of permanent curation will be discarded following permission from the THC. Those artifacts considered to possess historical, cultural, or scientific value will be placed in permanent curation at TARL. All artifacts collected will be bagged and recorded on a field sack log.

If a site is found, additional tests will be excavated to identify site boundaries along the right-of-way, recover diagnostic artifacts, and hopefully determine site condition and significance. The survey will concentrate on undisturbed areas within the water line route. All sites identified in the project area will be depicted on the topographic maps, and a site map will be created with a GPS reading taken at each site. A shovel test log will be maintained. GPS readings will be taken and the project area will be documented through digital photography.

Report Production

A report will be written which documents the survey and will include field methods, results, and recommendations. Two copies of this report in draft form will be submitted to the THC for review. Once the report has been approved any changes requested by the THC reviewer will be made and copies will be delivered to the THC (n=20), Schaumburg & Polk, Inc. (n=2), and TARL (n=1).

Appendix II
Shovel Test Log*

Shovel Test	Depth (cm)	Soil Type	Area Description
Replacement Roads			
1	10	Clay	West side of gravel road, woods and pasture
2	10	Clay	West side of gravel road, woods and pasture
3	10	Clay	West side of gravel road, woods and pasture
4	10	Clay	West side of gravel road, woods and pasture
5	10	Sandy Clay Loam Over Clay	Pasture near house
6	10	Sandy Clay Loam Over Clay	Pasture, cross country along fence line
7	30	Sandy Clay Loam Over Clay	Pasture, cross country along fence line and woods
8	10	Sandy Clay Loam Over Clay	Pasture, cross country along fence line and woods
9	< 10	Sandy Clay Loam Over Clay	Pasture, cross country along fence line
10	< 10	Clay	Woods near creek tributary
11	< 10	Clay	Pasture, cross country along fence line
12	< 10	Clay	Woods near creek tributary
13	< 10	Clay	Between creek tributaries, brush and weeds
14	10	Sandy Loam Over Clay	Toeslope by creek, brush and weeds
15	30	Sandy Loam Over Clay	Slope above creek, woods
16	30	Sandy Loam Over Clay	Slope above creek, woods
17	20	Sandy Loam Over Clay	Top of hill by gravel road, pasture
18	70	Sandy Loam Over Clay	Top of hill, pasture
19	20	Sandy Loam Over Clay	Top of hill, pasture
20	20	Sandy Clay Loam Over Clay	Slope, pasture
21	20	Sandy Clay Loam Over Clay	Slope, pasture
22	60	Sandy Loam Over Clay	Bottom of slope, pasture

*All tests were negative.