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CULTURAL RESOURCES SURVEY OF MUSTANG WATER SUPPLY CORPORATION'S PROPOSED WATER PIPELINE IMPROVEMENTS, BOSQUE COUNTY, TEXAS

Jesse Todd, MS, MA

Submitted to:

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Cultural Resources Report 2006-44
September 5, 2006

HISTORICAL BUILDINGS ARCHAEOLOGY NATURAL SCIENCES

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ABSTRACT

An intensive pedestrian archaeological survey was conducted of approximately 6 miles of proposed pipeline route for the Mustang Water Supply Corporation approximately four miles west of Meridian in Bosque County, Texas. The proposed pipeline begins just south of SH 6 and runs south and terminates on the west side and parallel to FM 2130 at an existing water plant site. The survey was done for Duff Engineering Consultants, Inc. which is designing the pipeline route and doing the construction overview. No cultural materials were found on the ground surface during the pedestrian archaeological survey nor were any locations likely to contain prehistoric sites, signature plants or structures older than 50 years during the visual survey. The lack of prehistoric sites is attributable to the absence of knappable lithic resources and a perennial water supply. Historic sites were not encountered probably due to the narrowness of the proposed pipeline route and its closeness to CR 2130..

Based upon the absence of archaeological sites, it is recommended that the Texas Historical Commission concur with AR Consultants' recommendation that construction of the pipeline route will have no adverse impact upon any significant cultural resources. If buried materials are uncovered during construction, the Texas Historical Commission should be advised and construction stopped in that area immediately until proper investigations can be carried out.

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INTRODUCTION

On August 28, 2006, AR Consultants conducted an intensive pedestrian archaeological survey of approximately six miles of proposed water pipeline improvements located approximately 4 miles west of Meridian in Bosque County, Texas. The survey area begins at the existing Meridian Plant No. 2 and runs northwest paralleling FM 2130 on its west side. At the intersection of FM 2130 and FM 2137, the proposed pipeline route turns north and meanders in various directions until it terminates just south of SH 6 (Figure 1). The proposed pipeline route is to be placed adjacent to and crosses a north-south oriented ridge and west of FM 2130 in an upland setting. No floodplains are present and the only drainage crosses is an unnamed intermittent tributary that flows between ridge crests. Pipeline diameters range from 2 to 6 inches and the pipeline is to be buried approximately 4 feet beneath the ground surface. The pipeline route has a fifteen foot right-of-way and will be placed within 15 feet adjacent to the caliche two-track private roads and within 15 feet of the fence line along CR 2130.

The purpose of the survey was to locate any cultural resources that are present within the plant site and to make recommendations about their significance and how they might be impacted by construction. The survey was conducted for Duff Engineering Consultants, Inc. which is designing and performing the construction overview. The archaeological survey was requested by the Texas Historical Commission in a letter dated July 12, 2006 because sites have been recorded north and south of the study area.

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

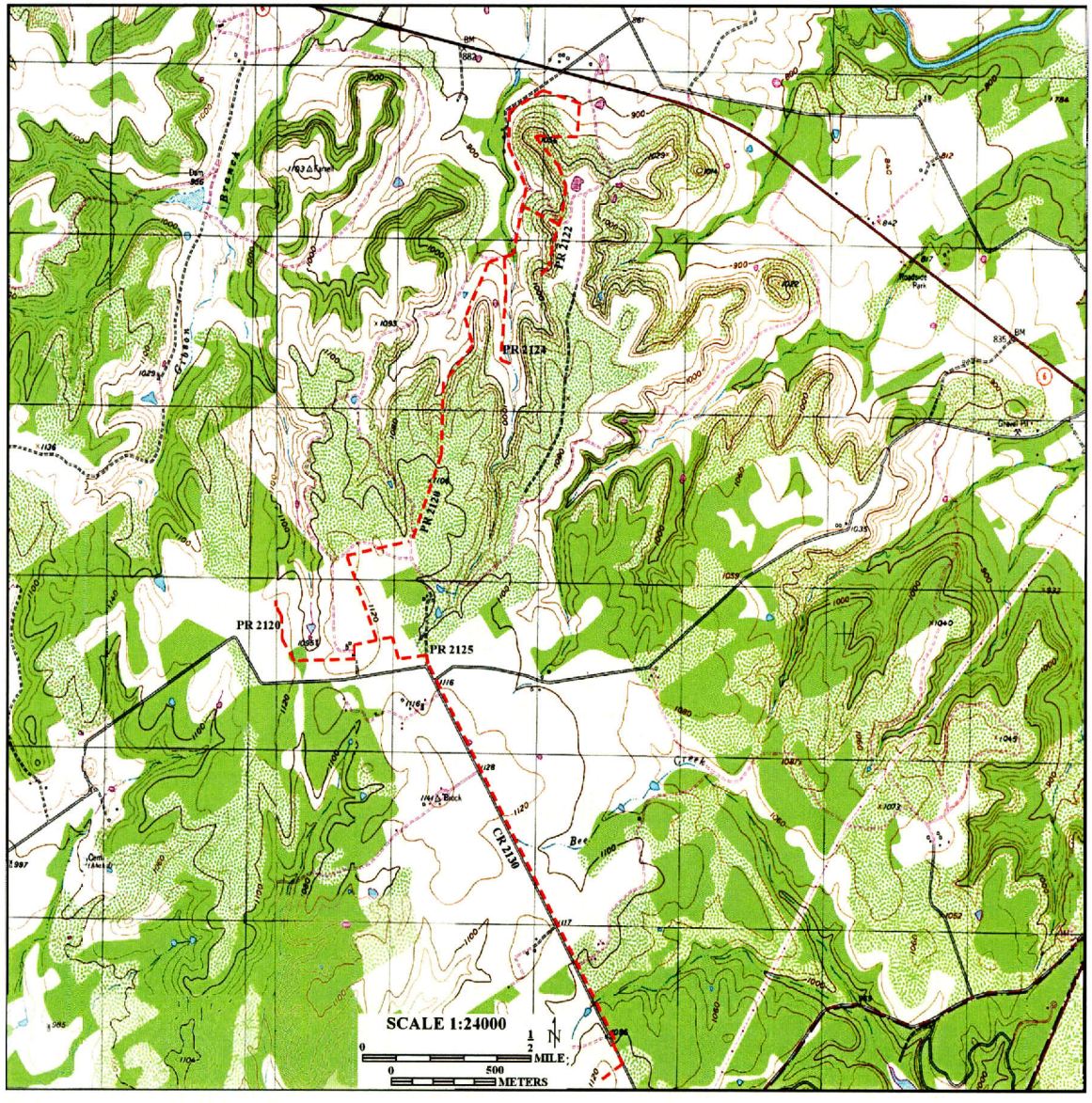

Figure 1. Project area plotted on a portion of the Meridian, Texas 7.5' USGS map.

Administrative Information

Sponsor:	Mustang Water Supply Corporation with Duff Engineering Consultants, Inc. designing and performing the construction overview.
Review Agency:	Texas Historical Commission, Archeology Division
Principal Investigator:	Jesse Todd, MS, MA
Field Crew:	Jeff Craver and Todd
Fieldwork Dates:	August 28, 2006
Acreage Surveyed:	approximately 20
Sites Recorded:	None

NATURAL SETTING AND CULTURAL HISTORY

Natural Setting

Bosque County is included within the Grand Prairie vegetative community which includes the Fort Worth Prairie, but Bosque County is considered to be separate from the Fort Worth Prairie (Diamond, Riskind, and Orzell 1987:Figure 1). Kuchler (1966) characterizes it as the juniper-oak savanna. Most of the native prairie has been replaced with domesticated grasses, and the grasslands are grazed by domesticated animals, rather than the buffalo and antelope which once inhabited the area. Trees occur as narrow ribbons along the rivers and their tributaries.

The geology of the upland areas is primarily Lower Cretaceous in age, consisting of the lower part of the undivided Washita Group that includes the Denton Clay, Fort Worth Limestone, and the Duck Creek Limestone and the Walnut Clay (Bureau of Economic Geology 1970).

The study area's soil association is Eckrant-Brackett-Cranfill which consists of gently sloping to steep cobbly and gravelly clays and loams (Stringer 1980: General Soil Map). Soil types in between SH 6 and FM 2130 include hilly Brackett-Eckrant association, Cranfill gravelly clay loam with 3 to 8 percent slopes, Sunev clay loam with 1 to 3 percent slopes and gently undulating Eckrant association. The Sunev clay loam is located along the base of the ridge while the other soils are either on the ridge slope or ridge top. The R horizon for the Eckrant series, the dominant soil type, is listed as being 10 inches below the ground surface (Stringer 1980:47). Soils west of FM 2130 included Denton silty clay with 1 to 3 percent slopes, Tarpley clay loam with 1 to 3 percent slopes, Purves gravelly clay with 1 to 5 percent slopes and undulating Tarrant association (Stringer 1980:Sheets 22 and 28).

The first order drainages within the study area are unnamed and mapped as intermittent.

Paleoenvironmental change is not well documented but it is summarized by Prikryl and Jackson (1985:13-14) and is discussed by Henry (1995). Prior to 12,000 B.C., the climate of northern central Texas was cooler and moister than at present. Between 12,000 and 8,000 BC, the climate became warmer and this continued to the present, but with brief mesic periods. It is suggested that the presence of high grass pollen and low arboreal pollen between 5,550 and 1050 B.C. show a drying with a return of arboreal pollen after 1050 BC. The later change is similar to today's environment. High grass pollen also occurs at approximately A.D. 450 and from A.D. 1550 to 1650, and this also indicates a drier period. The presence of paleosols between A.D. 1 and 1000 suggest an increase in moisture during this period with a return to drier conditions after A.D. 1000. However, the concept of a single paleoenvironment for Central Texas has been questioned by Ellis et al. (1995:401-426). Their argument is that there were varying environmental changes within Central Texas and that different cultures responded differently.

Cultural History

The prehistory of the area adjacent part of the Central Brazos River Valley has been summarized in conjunction with the construction of Lake Whitney (Stephenson 1970), the raising of the conservation pool in the early 1970s (Skinner and Gallagher 1974), the excavation of the Baylor and Britton sites at Lake Waco (Story and Shafer 1965), and the excavation of the Kyle site, a rockshelter in Hill County (Jelks 1962), and recording the Ballew site (Watt and Agogino 1968). These summaries are not repeated here. More recent investigations include the excavation of the Horn Shelter Number Two (Forrester 1985; Redder 1985), and the Walton site [a historic Native American site] (Story 1985). Plainview points and Perdiz arrow points were recovered from Horn Shelter Number Two as were burials. Occupation at the Horn Shelter Number Two can be dated to the Paleo-Indian, Early Archaic, Middle Archaic and Late Prehistoric.

The nearest major archaeological study is the archaeological survey of the proposed Lake Bosque (Briggs 1987), which was never constructed and is located north of the study area. The archaeological survey of the proposed lake recorded 146 sites, 57 of which are prehistoric, 49 are historic and 20 are multi-component. Sites range in age from Paleo-Indian times to recent. Prehistoric sites consisted of lithic scatters and camp sites while historic sites included house foundations, houses with associated outbuildings, cemeteries and a windmill. Almost one-fourth of the sites were recorded in upland situations on soils belonging to the Purves-Maloterre association, Cranfill clay loam and undulating Tarrant association. These soils can be found in the study area. Sites also were recorded on floodplains, floodplain rises, stream terraces and upland terrace edges.

No archaeological sites were listed on the Texas Archeological Sites Atlas (2006) within the study area. However, several archaeological surveys have been conducted for and adjacent to the city of Meridian. In 1982, the Texas Department of Water Sources investigated site 41BQ75 which consists of a large lithic and pottery buried scatter for eligibility for nomination to the National Register of Historic Sites. The Texas Department of Water Board also investigated portions of 260 acres for a sludge area for the city of Meridian but failed to find any archaeological sites. In 1996, the Texas Parks and Wildlife Department conducted a cultural resources survey of approximately 500 acres for the Meridian State Park. Ten prehistoric, 2 historic and 3 multi-component sites were recorded. The prehistoric sites include 8 lithic scatters and 2 rock shelters. Three of the historic materials on the historic/multi-component sites include dumps, a house foundation and a Civilian Conservation Corps complex.

RESEARCH DESIGN AND METHODOLOGY

The purpose of this research design is to insure that fieldwork made a contribution to the prehistory and history of Bosque County, Texas. A records review indicated no evidence of prehistoric or historic occupation in the survey area. However, a letter from Mr. Fred E. Swains to the Texas Historical Commission mentioned that widespread flint chips are common in the area. Based on the known prehistoric and historic archaeology of the area, we proposed the following three research questions.

The first research question concerns the prehistoric occupation of the study area.

> Based upon the absence of Lower-Cretaceous-aged limestone which contains chert, prehistoric quarry and lithic working sites are unlikely to be present. No permanent village sites were expected due to the absence of perennial water.

The second question concerns the historic occupation of the study area.

> It was predicted that historic sites were likely to be located along roadways in well drained settings that were not farmed.

The third question guided the survey work in this survey as well as any archeological survey done and that question is, "How did past people use the land, what record of this use did they leave behind?"

Methodology

Approximately six miles of proposed water pipeline improvement route was surveyed. Portions of the proposed pipeline route along slopes and where the land had been terraced was visually surveyed. Those portions that crossed the generally level ground were pedestrian surveyed. The pipeline route along CR 2130 was generally visually surveyed, but likely areas for containing archaeological sites were pedestrian surveyed. The pipeline right-of-way is fifteen feet wide. Pipeline diameters range from two to six inches and the pipeline is to be buried approximately 2 feet beneath the ground surface. The trench will be approximately one foot wide. The pipeline route will be placed within fifteen feet adjacent to the caliche two-track private roads and within fifteen feet of the fence line along CR 2130. Notes were made about the percent of ground visible, the topography, vegetation, etc. In addition, notes were made about eye-height visibility, which is the ability to see through the adjacent vegetation from an individual point. AR Consultants believes that this observation provides additional assurance that standing structures and outbuildings are noted and then recorded. Photographs were taken. Shovel testing was normally would have been done on a judgmental basis as recommended by the Council of Texas Archeologists (2006) since the proposed pipeline route is in an upland area. However, due to the excellent ground visibility and limestone outcrops on the surface, no shovel tests were excavated. Backhoe trenching was not done due to the shallow depth to the subsoil.

RESULTS

Introduction

The following discussion presents the results of the field survey. The road adjacent to the proposed pipeline route was inspected first by Mr. Matt Powell, Ranch Foreman of the Crossbow Ranch Subdivision, and the archaeologists. No shovel tests were excavated due to the excellent ground exposure and the presence of limestone outcropping on the surface. Survey began south of FM 6 and went south.

Site Survey

Survey began at the home of Mr. Powell and went north along Private Road (PR) 2120 which ran north and then looped around to PR 2122. The proposed route is to be placed on the east, south and west side of the road. Vegetation consists of eastern red cedar and mesquite trees. Understory vegetation consists of prickly pear, yucca, bunch grass and native grasses and bushes. Ground visibility was at least 60 percent and limestone outcropped on the surface in places. In addition, portions of the area had been terraced. Since the proposed route is to be placed on a slope and across terraced areas, this portion of the route was evaluated visually. No cultural materials were seen on the ground surface.

From PR 2120, survey continued south along the west side of PR 2122. The proposed pipeline route is to be placed in front of several residences along the ridge; therefore the route was examined visually. Limestone bedrock, gravel and cobbles were on the ground surface and the soil consists of a clayey loam which is approximately 6 inches deep. In addition, the proposed route is to be placed on limestone bedrock for approximately 200 meters. Ground visibility is about 80 percent as shown in Figure23. The portion of the pipeline route to be placed in front of the residences was visually inspected and the last 200 meters was pedestrian surveyed. No cultural materials were seen on the ground surface and no shovel tests were excavated due to the excellent ground visibility and limestone bedrock on the surface.

The archaeologists then returned to PR 2120 and continued the survey south along the road from PR 2122 to PR 2124. The portion of the pipeline route that connects PR 2122 to 2120 was inspected visually because it is on a slope. The pipeline is to be placed on the east side of the road. The vegetation which consists of eastern red cedar trees and native grasses and bushes is shown in Figure 3. Ground visibility averaged 50 percent. In places, the ground had been excavated by bull dozing as well as had been terraced in the past providing 100 percent ground visibility. The portions of the pipeline route which were not on slopes were pedestrian surveyed.

An unnamed, intermittent drainage was encountered before reaching PR 2124 which will be bored beneath. The drainage is approximately 3 m wide and deep. The substrate consists of clayey loam with limestone gravel and cobbles. The drainage was

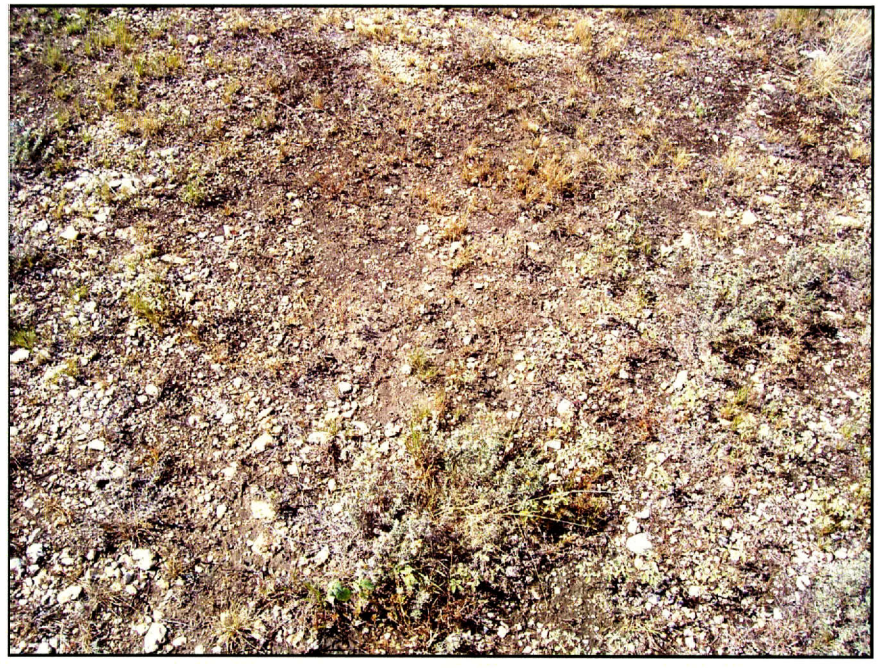

Figure 2. Ground visibility along the west side of PR 2124. View is to the north.

Figure 3. Vegetation along the proposed pipeline route which is to be placed left of the fence. View is to the south.

dry and is shown in Figure 4. The bank walls were closely investigated for buried cultural materials but none were found. The banks of the drainage were not shovel tested due to the at least 60 percent ground visibility. This drainage will be bored beneath. No cultural materials were found on the ground surface from PR 2122 to PR 2124 or on the banks of the intermittent drainage. No shovel tests were excavated due to the excellent ground visibility.

Figure 4. Unnamed, intermittent drainage prior to encountering PR 2124. View is to the southeast.

Survey continued on the west side of CR 2124. The area had been bulldozed and this provided good ground surface exposure. The disturbance and ground visibility is shown in Figure 5. Trees along the route include eastern red cedar, mesquite, hackberry and oak. Understory vegetation includes saw greenbriar, prickly pear, yucca and native grasses and bushes. Survey was terminated at a locked gate where the pipeline route terminates. This portion of the pipeline route was visually inspected due to disturbances to the soil. No cultural materials were seen on the ground surface and no shovel tests were excavated due to the good ground visibility.

The archaeologists then returned to PR 2120 and continued the survey along the east side of the road to where PR 2120 intersects PR 2125. Vegetation along this portion of the proposed pipeline route consists of oak tree copses. Other trees include eastern red cedar, hackberry and mesquite. Understory vegetation includes yucca, prickly pear, grape vine, saw greenbriar and native grasses and shrubs. Ground visibility averaged at least 60 percent as shown in Figure 6 and eye-height visibility was excellent as shown in Figure 7. This portion of the route is in the level upland and runs across a north-south oriented ridge. At times, limestone bedrock outcropped on the surface. The portion of the pipeline

Figure 5. Disturbance on the west side of PR 214. Note good ground visibility and bull dozed brush piles. View is to the south.

Figure 6. Ground visibility along the proposed pipeline route west of PR 2120. View is the north.

route going upslope was visually surveyed, but the portion across the ridge was pedestrian surveyed. Numerous armadillo holes were investigated, but no cultural materials were seen. No cultural materials were seen on the ground surface and no shovel tests were excavated due to the excellent ground visibility and limestone outcropping on the surface.

Figure 7. Eye-height visibility and vegetation along the east side of PR 2120. View is to the southwest.

At the road intersection, PR 2125 went east and PR 2120 continued west. PR 2125 extends to the intersection of CRs 2137 and 2130. Vegetation was similar to that along PR 2120. Ground visibility was about 40 percent. This portion of the route was pedestrian surveyed. No shovel tests were excavated due to the good ground visibility and no cultural materials were found on the ground surface.

The archaeologists then returned to the intersection and continued the survey along the north side of PR 2120. After approximately 150 meters, the proposed pipeline route crosses the road and runs on the south side until the route terminates on the ranch. Vegetation is similar to that already described and ground visibility was at least 50 percent. This portion of the pipeline route was pedestrian surveyed. No cultural materials were seen on the ground surface and no shovel tests were excavated due to the good ground visibility.

From CR 21237, the proposed pipeline route runs on the west side and adjacent to CR 2130 until it terminates at the existing Meridian Plant No. 2 site. The proposed route runs through alternating improved and unimproved pastures. Ground visibility in the unimproved pasture was about 45 percent because field roads ran along the fence line. In

improved pastures, ground visibility was much better as shown in Figure 8. At times, the proposed pipeline route was pedestrian surveyed, but mainly was visually surveyed. No cultural materials were found on the ground surface nor were any standing historical structures older than 50 years and no signature plants were seen.

Figure 8. Ground visibility and vegetation in an improved pasture west of CR 2130. View is to the northwest.

Conclusions

No cultural materials were found during the archaeological survey along Mustang Water Supply Corporation's proposed pipeline route. As previously mentioned, Mr. Fred E. Swains mentioned that widespread flint chips are common in the area. Mr. Mr. Matt Powell, Ranch Foreman of the Crossbow Ranch Subdivision, stated that he had found no chips along the edges of the ridges in the area and, in fact, had not found any arrow heads. The pedestrian archaeological survey across the level upland of the ridge failed to discover any flint chips or cobbles of limestone containing flint.

The absence of prehistoric archaeological sites may be attributed to the absence of perennial water and the lack of knappable lithic resources. No Lower Cretaceous-aged limestone outcrops containing chert or chert cobbles were found during the survey. If buffalo, deer or antelope had been hunted in the area, procurement sites would contain numerous bones and probably would be located along the intermittent drainages. No sites were found. The absence of historical sites is probably a result of the narrowness of the pipeline right-of-way and its close proximity to CR 2130. The private roads have been built within the last ten years.

RECOMMENDATIONS

AR Consultants, Inc found no evidence of historic or prehistoric archaeological sites or historic standing structures on the surface during the intensive pedestrian and visual archaeological survey of Mustang Water Supply Corporation's proposed pipeline route. AR Consultants, Inc. requests that the Texas Historical Commission concur with our conclusions that this project proceed as planned. If cultural resources are discovered during construction, work should cease in that area, and the Texas Historical Commission should be notified.

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