AN ARCHAEOLOGICAL SURVEY
OF THE PROPOSED
PALOMA CREEK SCHOOL SITE,
DENTON COUNTY, TEXAS

Texas Antiquities Permit Number 3974

Jesse E. Todd, MS, MA

Submitted to:

SHW GROUP, LLP
4000 McEwen Road North
Dallas, Texas 75244

Prepared by:

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Cultural Resources Letter Report 2005-62
December 19, 2005

HISTORIC BUILDINGS  ARCHAEOLOGY  NATURAL SCIENCES
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On December 19, 2005, AR Consultants, Inc. conducted an intensive pedestrian survey of approximately 15 acres upon which an elementary school is to be constructed by the Denton Independent School District. The proposed school site is in an upland setting that overlooks Little Elm Creek and is located on the west side of Navo Road and about 3,000 feet north of US 380. The survey was done for the SHW Group, LLP. which is acting as the agent for the Denton Independent School District.

The 1918 and 1930 soil maps showed no historic residence within the study area, and the Texas Archeological Site Atlas did not show any prehistoric or historic sites within the study area. An intensive pedestrian survey and 10 shovel tests did not find any significant cultural resources.

Based on the field investigation, it is AR Consultant's recommendation that further cultural resource investigations are unwarranted on this property. The Archeology Division of the Texas Historical Commission should be advised if buried cultural resources are uncovered during construction, and, if found, construction should cease immediately in that area until proper investigations can be carried out.
INTRODUCTION

The Denton Independent School District intends to construct an elementary school on 15 acres east of Elm Creek and approximately 3,000 feet north of US 380 and north of what was the crossroads community of Navo. The tract of land is west of Navo Road as shown in Figure 1. An intensive pedestrian archaeological survey of the proposed school site was requested by the Archeology Division of the Texas Historical Commission. The SHW Group, LLP. which is acting as the agent for the Denton Independent School District, contracted with AR Consultants, Inc. to conduct the archaeological survey. Fieldwork was conducted on December 19, 2005. The purpose of the survey was to locate any cultural resources present within the tract and make recommendations about their significance and how they might be impacted by construction. The Antiquities Code of Texas applies since the survey is being done for the Denton Independent School District which is a political subdivision of the State of Texas. The scope of the project included a records review, a pedestrian survey with shovel testing of areas considered to have potential for containing archaeological sites deposits, and a final report.

NATURAL SETTING

Denton County is located in North Central Texas. It is split by the sandy soil of the Eastern Cross Timbers. The western half of the county consists, on the surface, of the black soil of the Grand Prairie and the eastern half consists of the rich, black soil of the Blackland Prairie. The county is drained by the Elm Fork of the Trinity River and several major creeks. The average rainfall is approximately 33 inches while the temperature ranges from 34 degrees in January to a maximum of 96 degrees in July (Odom 2003).

The study area is on the east side of the Little Elm Creek resting on the cemented fine sandy sediments above a narrow and north-south oriented strip of exposed Woodbine Formation that is adjacent to the Eagle Ford Formation (Bureau of Economic Geology 1967). The location is on the Eastern Cross Timbers/Blackland Prairie econiche, the oak forest adjacent to a grassland prairie. For almost a century, the upland and the floodplain of Denton County have been farmed. Native vegetation exists today in only a few relict prairie and woodland habitats; the study area does not reflect any of these relict locations.

The soil in the study area is placed in the Nava-Wilson Association which are upland clayey soils on nearly level to moderately steep slopes (Ford and Pauls 1980:General Soils Map). The soils are mapped as Altoga silty clay with 3 to 5 percent slopes, Lewisville clay loam with 3 to 5 percent slopes and Wilson clay loam with 1 to 3 percent slopes (Ford and Pauls 1980:Sheet 23). The deepest subsoil is listed as 15 inches (38 centimeters) below the surface (Ford and Pauls 1980:53).
Little Elm Creek is mapped as an intermittent stream on the Soil Conservation Service and Bureau of Economic Geology maps, but is mapped as a perennial stream on the Little Elm, Texas 7.5' USGS map.

The upland had been cleared of most native trees and was apparently farmed until soon after purchase of the land for construction of the nearby Lake Lewisville, or the earlier Garza-Little Elm Reservoir. The farmed areas had been abandoned by the time the county soil survey report was prepared and since then have been further invaded by cedar elms and thorny honey locusts.

PREVIOUS INVESTIGATIONS

Archaeological surveys in the Aubrey-Navo area are presently being driven by population growth in the immediate Lake Lewisville-Denton area (Ferring and Byers 2001; Todd and Skinner 2002a and b; Owens and Gibson 1999) and a decade ago was stimulated by the desire to have a better inventory of cultural resources along the edge of Lake Lewisville (Stephenson 1949; Nunley 1973; Brown and Lebo 1991; Lebo and Brown 1990, Ferring and Yates 1998) and upstream in the Elm Fork floodplain and at Lake Ray Roberts (Bousman and Verrett 1973; Skinner 1982; Skinner and Baird 1985;
ARCHAEOLOGICAL SURVEY OF THE PALOMA CREEK SCHOOL SITE


No archaeological sites were listed within the study area on the Texas Archeological Sites Atlas (2005). However, site 41DN27 is located west of the study area. Excavations of the site located a well-preserved and artifact-rich deposit dated to the Late Archaic and the Late Prehistoric period II (Ferring and Yates 1998:79-99). The site was extensively tested using shovel tests, test squares and backhoe trenches and the underlying bedrock sediments are generally not more than a meter below the present ground surface. Although roughly defined by the natural topography to the east, north and west, the southern extent of the site is uncertain. In 2001, the area was revisited by Geograph of Denton (Ferring and Byers 2001) who investigated the proposed Riverbend Wastewater Treatment Plant located southwest of 41DN27 on top of a hill. They recovered only 12 flakes from 12 shovel tests in 13 acres. AR Consultants, Inc. (Skinner 2002) conducted an archaeological survey of a one acre extension of the wastewater plant located between the hill and site 41DN27 and recovered 2 flakes from 9 shovel tests. Also AR Consultants, Inc. (Todd 2004) surveyed a 0.65-acre wetland area southwest of the Riverbend Water Reclamation Plant but found no cultural materials. Site 41DN26, originally recorded by Nunley (1973), was located southwest of the survey area on the adjacent hill. 41DN26 was reinvestigated and found to contain lithic projectile, points, fire-cracked rock, bone and mussel shells from the Late Archaic to Late Prehistoric II times (Ferring and Yates (1998:77).

RESEARCH DESIGN AND METHODOLOGY

Based upon the previous investigations,

It was predicted that this location might contain prehistoric artifacts. Although Ferring and Byers (2001) and Skinner (2002) found only small amounts of lithic debris immediately north of the study area, the presence of 41DN27, a site slightly further north and 41DN26 south of the study area, both excavated by Ferring and Yates (1998) can not be discounted. There may be a buried site deposit in the area.

Historic maps, including the 1918 Soil Map of Denton County (Carter and Beck 1918) and the R. King Harris’ map (1948) did not show any historic farmsteads; however, historic structures might be present since the study area is adjacent to a transportation route.

In order to address these questions, a systematic pedestrian survey of the entire tract was done. Since the study area is in an upland setting, shovel testing was done throughout the tract on a judgmental basis as recommended by the Council of Texas Archeologists (2002) despite the excellent ground visibility. Usually 2 shovel tests per acre are required for this size tract. The clay matrices were not screened but were broken by hand and the pit walls were visually examined. Notes on the vegetation, soil, terrain were taken as
were photographs. Backhoe trenching was deemed unnecessary because of the shallow depth to the subsoil.

RESULTS

Shovel tests are described generally in the text and specific information is provided in Table 1. The researchers intended to supplement the shovel tests with augering, but the clay soil was so compact that shovel testing was difficult and augering could not be done even with two people trying to turn the handle. Shovel test locations are shown on Figure 2.

![Figure 2. Shovel test locations plotted on a portion of the Little Elm, Texas 7.5' USGS map.](image)

The survey area

The study area consists of an upland edge overlooking Little Elm Creek. The area is on unimproved pasture. Vegetation includes broomweed, bunch grass, thistle, grama grasses and native prairie grasses. Hackberry, eastern red cedar and oak trees were present along the upland edge. Ground visibility ranged from 50 to 70 percent. The terrain dips gently to the west and then slopes at about a 10 to 12 degree angle. According to a mid-1990s aerial photograph, the area has been farmed because the plowed rows could be seen in the photograph. The northwest trending toe of the upland edge is shown in Figure 3. This portion of the survey area was walked in northwest-southeast oriented transects spaced 30 m apart. The rest of the survey area was walked in north-south oriented transects spaced 30 m apart.
Figure 3. Northwest trending toe of the upland edge showing vegetation. View is to the southeast.

The survey

Survey began at the northwestern edge of the toe. Shovel tests 1 through 4 were placed along the uppermost portion of the toe although the flanks were examined during the transects. Shovel tests 1 and 2 uncovered 15 and 12 cm of yellowish-brown gravelly clay overlying a darker yellowish-brown gravelly clay. The upper yellowish-brown clay is described as the subsoil in the soils book for Denton County, Texas. The shovel tests were terminated at 43 and 36 cm below the surface respectively. Shovel test 3 only encountered 31+ cm of the subsoil which was very hard and compact. Shovel test 4 uncovered 21+ cm of very hard silty clay. No cultural materials were found during the pedestrian survey of the toe or in the 4 shovel tests.

Shovel test 5 was placed on a small bench that overlooks an intermittent tributary to Little Elm Creek and uncovered 34 cm of yellowish-brown gravelly clay overlying dark brown clay that extended to 45+ cm below the surface. No cultural materials were seen on the surface or in the shovel test on the bench.

As previously mentioned, the rest of the survey area was investigated by walking north-south transects spaced 30 m apart. Shovel tests were concentrated along the upland edge where there was a small bench and where there was a likelihood of sites being present.
Shovel test 6 was placed adjacent to and on the south side of the intermittent tributary. The shovel test uncovered 33 cm of grayish-brown gravelly clay overlying yellowish-brown clay subsoil which contained at least 40 percent pea gravel. A riding lawn mower and fill had been placed south of the shovel test in a small gulley to prevent erosion. No cultural materials were found in the shovel test and no cultural materials over 50 years were seen on the ground surface in the vicinity of the shovel test.

Shovel test 7 uncovered 24 cm of the grayish-brown soil which overlaid olive brown clay subsoil that extended to 35+ cm below the surface. Shovel test 8 encountered 18 cm of grayish-brown clay overlying very dark-grayish brown clay subsoil that extended to 27 cm below the surface.

Shovel tests 8 and 9 were placed on the top of the hill and uncovered 35 and 39 cm of dark gray clay. No cultural materials were uncovered in shovel tests 6 through 10 or seen on the surface of the rest of the study area.

Disturbance was noticeable along Navo Road, and especially close to Fishtrap Road. In the northeast corner of the survey area, plastic pipes were sticking out of the ground and two caliche roads entered the study area. This is where the metal tank is located which can be seen in the background of Figure 3. About midway of the study area along Navo Road, it appears that construction of a sewer pipeline had occurred because a manhole could be seen which is shown in Figure 4.

Figure 4. Sewer pipeline construction and manhole shown by arrow about midway of the study area west of and adjacent to Navo Road. View is to the west.
Table 1. Shovel test descriptions. Munsell color chart numbers listed only first time used.

<table>
<thead>
<tr>
<th>ST No.</th>
<th>Depth (cm)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0-15</td>
<td>Yellowish-brown (10YR5/8) gravelly clay</td>
</tr>
<tr>
<td></td>
<td>15-43+</td>
<td>Yellowish-brown (10YR5/4) gravelly clay</td>
</tr>
<tr>
<td>2</td>
<td>0-12</td>
<td>Yellowish-brown gravelly clay</td>
</tr>
<tr>
<td></td>
<td>12-36+</td>
<td>Yellowish-brown gravelly clay</td>
</tr>
<tr>
<td>3</td>
<td>0-31+</td>
<td>Yellowish-brown gravelly clay</td>
</tr>
<tr>
<td>4</td>
<td>0-21+</td>
<td>Brown (10YR5/3) very hard silty clay</td>
</tr>
<tr>
<td>5</td>
<td>0-34</td>
<td>Yellowish-brown clay</td>
</tr>
<tr>
<td></td>
<td>34-45+</td>
<td>Dark brown (10YR3/3) clay</td>
</tr>
<tr>
<td>6</td>
<td>0-33</td>
<td>Grayish-brown (10YR5/2) very gravelly clay</td>
</tr>
<tr>
<td></td>
<td>33-47+</td>
<td>Light-yellowish-brown (2.5Y6/3) gravelly clay, gravel 40%</td>
</tr>
<tr>
<td>7</td>
<td>0-24</td>
<td>Grayish-brown very gravelly clay</td>
</tr>
<tr>
<td></td>
<td>24-35+</td>
<td>Olive brown (2.5Y4/3) clay</td>
</tr>
<tr>
<td>8</td>
<td>0-18</td>
<td>Grayish-brown clay</td>
</tr>
<tr>
<td></td>
<td>18-27+</td>
<td>Very dark-grayish-brown (10YR3/2) clay</td>
</tr>
<tr>
<td>9</td>
<td>0-35+</td>
<td>Dark gray (10YR4/2) clay</td>
</tr>
<tr>
<td>10</td>
<td>0-39+</td>
<td>Dark gray clay</td>
</tr>
</tbody>
</table>

CONCLUSIONS AND RECOMMENDATIONS

No significant cultural materials were encountered during the pedestrian archaeological survey or in the 10 shovel tests. Erosion resulting from the farming of the area over the years has removed the topsoil and exposed the subsoil on the surface. According to the soils book for Denton County, the topsoil extended to at least 6 inches below the ground surface.

The purpose of this investigation was to determine if significant cultural resources were present within the proposed school site, to determine their significance and make recommendations about the impact to them. No prehistoric or historic cultural resources were found during the pedestrian survey. In addition the 1918 and 1930 soil maps showed no historic residence within the study area nor did the Texas Archeological Site Atlas.

AR Consultants recommends that there is a low chance for finding buried cultural resources within the survey area and that further cultural resource evaluations are unwarranted. We further recommend that construction supervisors be advised that buried archaeological materials could be uncovered during construction, and, if this situation should arise, work should immediately cease in that area and the Archeology Division of the Texas Historical Commission should be advised of the discovery. Work should not continue until the proper investigations have been conducted.
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