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An Archaeological Survey for the Proposed City of Granbury Water Treatment Plant Project in Hood County, Texas

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AN ARCHAEOLOGICAL SURVEY FOR THE PROPOSED CITY OF GRANBURY WATER TREATMENT PLANT (HOOD COUNTY, TEXAS)

Antiquities Permit 7273

By

William E. Moore

Principal Investigator

Brazos Valley Research Associates

Contract Report Number 271

2015

AN ARCHAEOLOGICAL SURVEY FOR THE PROPOSED CITY OF GRANBURY WATER TREATMENT PLANT PROJECT IN HOOD COUNTY, TEXAS

BVRA Project No. 15-04

Principal Investigator

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Prepared for

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ABSTRACT

An archaeological survey of a one-acre tract in Hood County, Texas was conducted by Brazos Valley Research Associates (BVRA) on June 5, 2015. Prehistoric site 41HD11 had been recorded in the Area of Potential Effect (APE), and the purpose of this project was to confirm its presence and identify site boundaries and site significance if possible. William E. Moore was the Principal Investigator and Jesse Todd was the Project Archaeologist who performed the survey. The Texas Historical Commission (THC) issued Antiquities Permit number 7273 to this project. The area was extensively shovel tested and no cultural materials were found. Previous reports by other archaeologists indicated that the site had been disturbed so much that further work was not recommended. All records will be permanently housed at the Texas Archeological Research Laboratory (TARL) on the campus of The University of Texas at Austin. Copies of the final report will be submitted to the THC, TARL, Texas Parks and Wildlife Department (TPWD), the city of Granbury (aka City), Enprotec/Hibbs & Todd, and selected libraries across the state.

ACKNOWLEDGMENTS

The success of every project depends on the assistance and cooperation of others. My initial contact was with the Project Geologist, Dan C. Choate and Keith Kindle, P.E. (Project Engineer and Chief Operating Officer at the Abilene office of Enprotec/Hibbs & Todd). They provided the maps and served as our liaison with the City. Alva Cox is the Director of Public Works for the City and he coordinated our visit and offered assistance. Jesse Todd conducted the field survey and read the draft report to ensure that his work was reported correctly. Lili G. Lyddon prepared the figures and edited the report. Jesse Todd took the photographs.

CONTENTS

INTRODUCTION

The city has plans to construct a backwash decant water discharge line from their existing water treatment plant site on the east side of Business Highway 377 (aka Pearl Street) to a one-acre tract on the west side of the highway (Figure 1). The property is owned by the Towne Lake Apartment Homes complex, and the water line will be placed in an easement deeded to the City. The site of the proposed construction is on a terrace of the southeast bank of the Brazos River at an elevation of approximately 700 feet above mean sea level. The original channel of the river is about 0.3 km to the northwest. A dam was placed across the river to impound water for the proposed De Cordova Bend Reservoir (now Lake Granbury). When it reached its 155,000 acre-feet of storage capacity in 1969, the result was 103 miles of shoreline and a maximum width of two miles. The proposed construction will include excavation of a trench 30 inches wide to a depth of 40 inches followed by the installation of a 16-inch PVC line, subsequent bedding, compaction, and cover. The City is in the process of assuming ownership, and funding will come from the State Revolving Fund. The project area is depicted on the USGS 7.5' topographic quadrangle Granbury (3297-234) (Figure 2). The area had been previously surveyed by archaeologists from Southern Methodist University (SMU) and prehistoric site 41HD11 was found to be in the boundaries of the area proposed for the water treatment plant. Since the city is considered to be a municipality of the State of Texas, an Antiquities Permit was required. On May 8, 2015, permit number 7273 was assigned to this project.

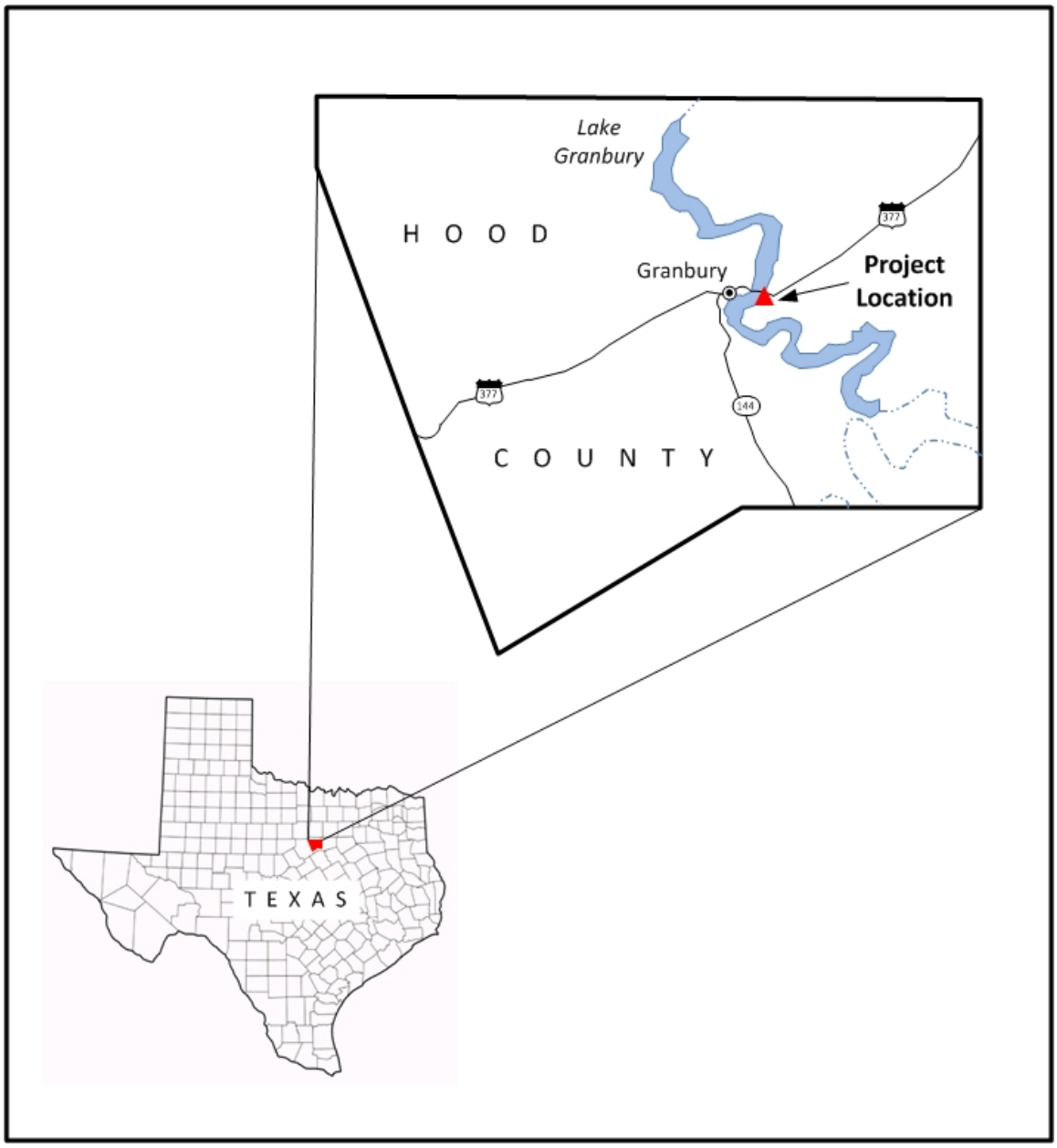

Figure 1. General Location Map

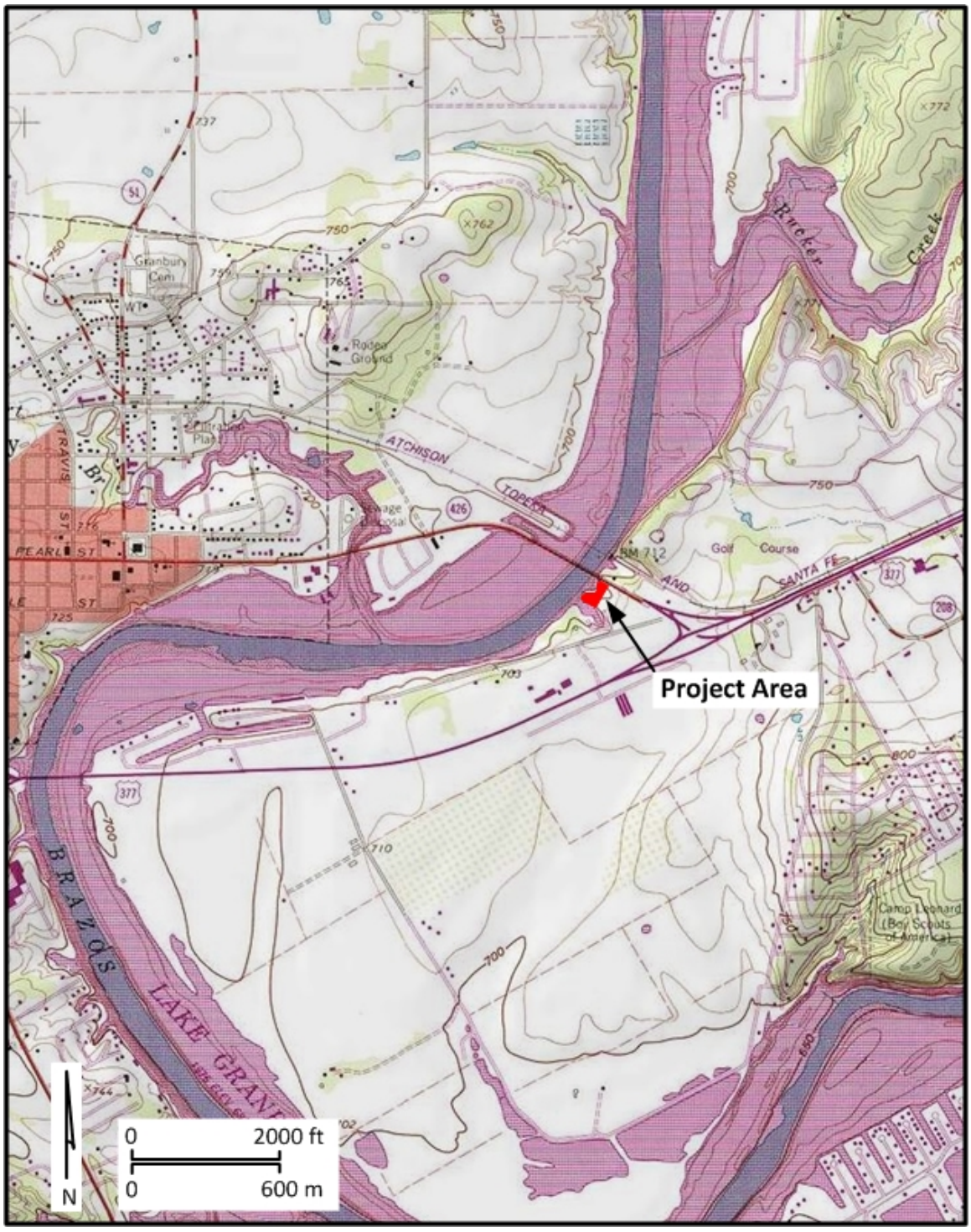

Figure 2. Project Area

ENVIRONMENT

Hood County is located in North Central Texas and is within the Grand Prairie biotic province (Hayward et al. 1992:9; Jelks 1954). The Grand Prairie forms a belt of grassland and savannah that ranges from the Red River to Burnet County, Texas (Schmidly 2002:14). The eastern and west central portions of the county consist of undulating to hilly terrain covered by loam, whereas the remainder of the county is covered by loam and sand. The Brazos River flows from north to south across the county, and the Paluxy River flows from northwest to southeast. The vegetation consists mainly of bluestems, Indian grass, grama grasses, mesquite, oaks, and juniper. Blair (1950:101-102) places the county in the Texan Biotic Province and Gould (1962) refers to it as part of the Western Cross Timbers.

Bedrock throughout the county is Cretaceous limestone of the Comanche Series. Terraces along the Brazos River usually have a surface member of sand that has been widely cultivated for 80 to 90 years. Cotton was the principal crop but emphasis has shifted to peanuts in recent years. Stream valleys are heavily timbered with oaks, pecans, juniper, and some mesquite. The rugged uplands support a fairly heavy cover of juniper, mesquite, and various shrubs. Small relatively flat upland areas sustain grasses that provide excellent pasturage for cattle but goats are the only livestock that can subsist on the rocky hills that are found in most of the county. The above information was taken from Jelks (1954), the Geologic Atlas of Texas (Bureau of Economic Geology 1972), the Texas Almanac (Dallas Morning News 2004-2005), and personal communication with the Project Archaeologist.

According to the soil survey for Hood and Somervell counties, the project area is in only one soil type (Coburn 1978). The survey refers to it as Paluxy very fine sandy loam, 1 to 3 percent slopes (35). It is described as a deep, well drained, gently sloping soil on geologic terraces adjacent to and parallel to the flood plain of the Brazos River. Areas are oblong in shape and range from 15 to 100 acres in size. A typical surface layer (undisturbed) consists of about 10 inches of very fine sandy loam. The subsoil is very fine red sandy loam that extends to a depth of 34 inches and neutral yellowish-red very fine sandy loam to a depth of 46 inches. Beneath these strata or horizons there is a continuation of very fine sandy loam that is reddish-yellow to a depth of 62 inches. No mention is made of bedrock or clay underlying the soils mentioned above. Soil blowing is mentioned as one of the hazards of this soil. During the initial survey in 1953, Jelks (1964) observed evidence of site disturbance due to wind and stated that it had a negative effect on sites exposed on the surface.

ARCHAEOLOGICAL BACKGROUND

According to Biesaart et al. (1985:76), Hood County is located in the North Central Texas Cultural-Geographical Region of Texas (Figure 3). The number of recorded sites in the region in 1985 was 2,678 and that represented 13.25% of the state. At the time, this region was second only to Central Texas based on the number of recorded sites. Fifty-eight sites were known in the county in 1985. That number constituted 2.17% of the region and .29% of the state. There are 39 counties in the region and Hood County was 19th in terms of numbers of recorded sites. These sites were classified as Paleoindian (n=3), Early Archaic (n=2), Middle Archaic (n=1), Late Archaic (n=9), general Archaic (n=18), and Late Prehistoric (n=15). Most of the sites have been disturbed by such actions as erosion, construction, and vandalism. Two sites are described as destroyed. Four sites had been excavated. Unfortunately, this source does not provide site numbers.

In 1995, BVRA (Moore 1995b) conducted a review of previous archaeological investigations in Bosque, Erath, Hood, Johnson, and Somervell counties. At that time, there were 70 sites recorded in Hood County. This represents an increase of 21% since 1985 when the statistical overview by Biesaart et al. (1985) was published. The current number of recorded sites is 92, and this is an increase of 59% from 1985 to 2015. A list of sites in Hood County listed in the National Register of Historic Places, designated as State Archeological Landmarks, and documented as Texas Family Land Heritage Properties is presented in Appendix I.

Evidence of prehistoric activity has been documented at sites with artifacts dating from Paleoindian to Late Prehistoric times. Most Paleoindian points are isolated surface finds such as the Clovis fluted point found in Hood County by Randall Rash who reported the find to S. Alan Skinner who documented it in Volume 40 of the *Bulletin of the Texas Archeological Society* (Skinner and Rash 1969). An exception is the Acton site (41HD24) that was recorded during the Lake Granbury project and reported by Blaine et al. (1968). At this site, 77 of the points collected "exhibit attributes common to Paleo-Indian projectile points." Types found include *Plainview*, *Plainview Golondrina*, *San Patrice*, and *Meserve*. The authors (Blaine et al. 1968:57) concluded that this site "represents a single homogenous group of Indians who lived there intermittently, seasonally or perhaps for rather long periods of time." They view 41HD24 as a site where there was a transition over time from Late Paleo-Indian to Early Archaic times. One of the reasons for the hypothesis that this was a campsite and not just a short term activity area was the presence of a variety of tools such as milling stones, manos, metates, a variety of scrapers, gouges, burins, drills, gravers, and retouched flakes. The ten arrow points are dismissed as hunting losses.

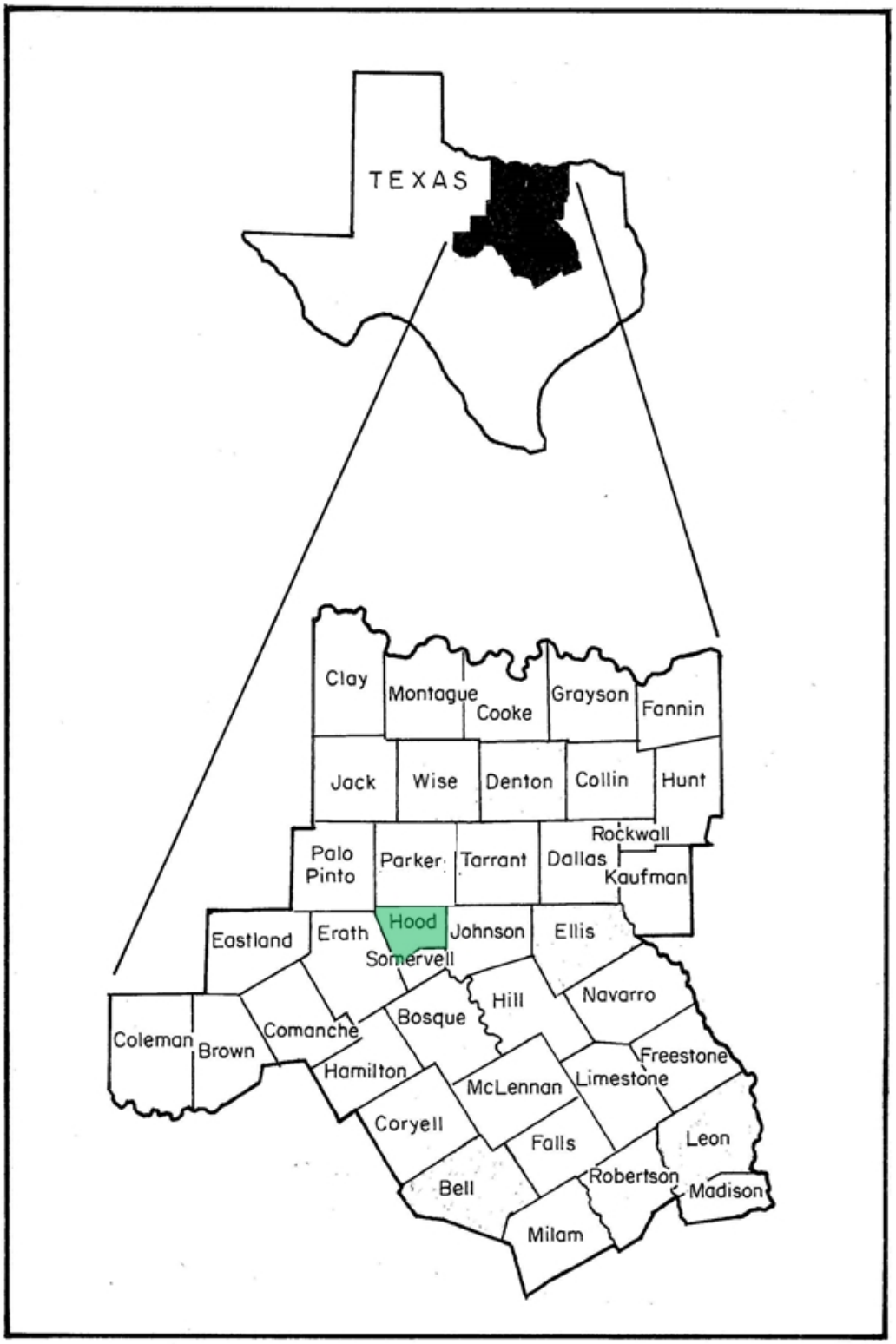

Figure 3. North Central Texas Region

It is the opinion of most archaeologists that the raw materials used to make the stone tools found at sites in this area were Uvalde gravels collected from point bars on major rivers such as the Brazos or on the surface of areas where the deflated surface has exposed ancient cobbles of this material. An excellent discussion of the origin of Uvalde gravels is presented by Byrd (1971). Exotic materials not common in the area have been found at some sites but these are usually the minority. They may represent trade with other groups or they could have been obtained when local groups were in areas where these materials were present. The presence of two obsidian flakes at 41SV51 in adjacent Somervell County is an example of exotic materials at a site where this material does not occur naturally (Moore 1991).

Sites in the general area that have yielded Archaic points and Late Prehistoric arrow points are the most common. The DeCordova Bend survey is an example. Fifty-one prehistoric sites were recorded and all were classified as Archaic or Late Prehistoric. Site types range from base campsites to seasonal hunting camps to lithic reduction stations. Base camp sites were discovered on alluvial terraces, seasonal camps on tributaries, and chipping stations on limestone bluffs overlooking the Brazos River. Edward B. Jelks (1954) states that most of the aboriginal sites found during the initial survey for the proposed reservoir yielded artifact types affiliated with the Central Texas Aspect as well as earlier types of the Archaic period that are similar to those of the Trinity Aspect.

The Comanche, Lipan Apache, and Kiowa roamed through Hood County during the Historic Native American period. Comanche Peak was the meeting place of the Comanche and the town of Lipan is named after the Lipan Apache (Galloway 2009). American settlers began to colonize the county some ten to fifteen years prior to the Civil War and they settled mainly along the valleys of the Brazos and Paluxy rivers. Hood County was formed in November of 1866. Prior to that time, the county was a part of various other counties (Moore 1975). Farming and ranching dominated the subsistence economies for many years, but pecan farming entered the economic scene during the 1980s. Today, the population of the county continues to grow due to the addition of the petroleum industry and other economic activities (Galloway 2009).

PREVIOUS INVESTIGATIONS

Hood County

Archaeologists first visited the site of the proposed De Cordova Bend Reservoir in 1953 as part of the National Park Service River Basin Survey program (Jelks 1954). The initial survey was carried out by Edward H. Moorman and Edward B.Jelks who were in the field from August 17 to September 3, 1953. This was an informal investigation that did not include shovel testing. Based solely on surface exposures, the crew recorded twelve sites (41HD1 – 41HD12). Most of the sites were found on sandy river terraces. Moorman and Jelks describe these sites as "open sites of Indian occupation" except 41HD9 that is the site of George Barnard's trading house that was in operation from 1849 to 1855. Jelks states that the survey was hampered by a limited time for collecting and poor field conditions. He also says that wind erosion of the plowed sand had destroyed much of the original stratigraphy. The blowing winds exposed cultural materials that allowed Moorman and Jelks to locate sites as well as creating ideal conditions for surface collecting. They were told by locals that there are several large artifact collections from this area. Seven of the twelve recorded sites have been so extensively eroded that they were not considered worthy of excavation. However, Jelks believed at the time that "…they still contain material, which is of considerable archeological significance and surface collections from them should be made." Site 41HD11 is one of those sites. The site form describes 41HD11 as an "open camp" located south and east of the State Highway 377 Bridge over the Brazos River. Cultural materials were observed on a hill and extending downward to several springs on the bank of the river. Types of artifacts observed included arrow points, dart points, a graver, blades, a chopper, a probable mano, and scrapers. In Table IV of Jelk's (1954) report he gives recommendations for future work, and site 41HD11 was only recommended for surface collecting. The approximate amount of investigation that Jelks said would be required was .01 survey units. In his table he states that the probable date of flooding will be 1956.

Southern Methodist University (SMU) contracted with the National Park Service to conduct formal survey (Skinner 1968) and testing (Skinner 1971) for the De Cordova Bend Reservoir project. Dr. S. Alan Skinner supervised the project and 51 new sites were recorded. Members of the Dallas Archeological Society assisted SMU by relocating the sites documented by Jelks and Moorman and locating new sites. Their survey was restricted to conversations with locals and a surface inspection. They found that one of the previously recorded sites had disappeared and they identified seven new sites. A summary of the results of the survey, their field notes, and material collected were submitted to the university (Lorrain 1967). No site revisit forms were filled out and no formal report was written.

In 1984, Paul Lorrain and J. Starett visited site 41HD11 and found it to be disturbed by the ongoing construction of condominiums. The soil was described as sandy clay with good surface visibility but most of the topsoil had been removed by various activities associated with the condominium construction and ground leveling. At the time of their visit only a few places of intact topsoil remained. They observed flakes and chips, a large biface fragment, and a piece of flat sandstone that they thought at the time was part of a mano. They date the site to sometime during the Archaic. This site had been very disturbed and they believe that the only areas that remained intact were probably beneath the newly constructed Plantation Inn and its parking lot. The size of the site at the time of their visit was estimated at one hectare. No features were observed, and they were not able to classify the site as to type. The only documentation of their work available was the site form on file at TARL.

Other surveys along the river have been conducted but the only one that recorded sites in close proximity to 41HD11 was also part of the De Cordova Bend project and carried out by Skinner (1968). He located and recorded sites 41HD52 and 41HD54 on the east bank of the Brazos River. Site 41HD52 is described as a "lithic chipping area" on a sandy terrace. Artifacts observed included flakes and chips and one projectile point, a type that Skinner refers to as *Granbury*. Site 41HD54 is referred to on the site form as a possible semi-permanent camp where "lithic chipping" was one of the tasks performed. Skinner (1971) discusses settlement patterns of groups in the De Cordova Bend area in Volume 42 of the *Bulletin of the Texas Archeological Society*. It is sometimes difficult to identify new sites recorded by SMU because of the specialized numbering system used. For example, when site X41HD-13 was reported to TARL it became 41HD24.

The most recent investigation in close proximity to the APE is a survey for a proposed boat ramp in 2005 that was conducted by Todd (2005) who was working with AR Consultants, Inc. The area investigated consisted of 2.3 acres of land under the jurisdiction of the United States Army Corps of Engineers. The investigation consisted of a 100% Pedestrian Survey accompanied by testing with shovels and augers. No cultural resources were found, and it was recommended that construction of the boat ramp be allowed to proceed.

Adjacent Counties

The first large scale survey in neighboring Somervell County took place in 1972 at the site of the proposed Squaw Creek Reservoir that was planned to inundate 3200 acres of Somervell and Hood counties. S. Alan Skinner supervised the fieldwork and he co-authored a report with Gerald K. Humphreys (1973). Twenty-four prehistoric sites were recorded in Somervell County and three sites in Hood County were documented. Other large projects in Somervell County were performed by BVRA.

William E. Moore (1991) surveyed the Squaw Valley Golf Course (200 acres) while construction was ongoing. This project resulted in the relocating of site 41SV51 and the documentation of four new prehistoric sites (41SV3, 41SV4, 41SV5, and 41SV47). Site 41SV47 was an undisturbed site with an intact hearth and a panel of rock art was observed on a boulder on the bank of Squaw Creek. According to Archeological Steward, Jimmy Tanner, this was the first known example of rock art in the area. Two obsidian flakes were taken from 41SV5. At the time, Thomas R. Hester was interested in identifying sources of obsidian found at sites in Texas. Along with Frank Asaro and Fred Stross Hester published two articles documenting their findings had been published (Hester et al. 1980, 1982). The flakes from 41SV5 were submitted to Hester for analysis and it was determined that their origin was the Jemez Mountains in New Mexico (Hester, personal communication to William E. Moore, 1991).

An archaeological assessment of the Fossil Rim Wildlife Center in Somervell County (3000 acres) was conducted by William E. Moore (1995a) who was assisted by Roger G. Moore. Because of the danger of wild animals, certain areas of the park were not investigated. However, 11 prehistoric sites, 3 historic sites, and 5 isolated finds were found on the wildlife center. Cultural materials were identified as lithic scatters, possible open campsites, and one occupied rock shelter. Other large shelters probably contain cultural materials but the floors of the shelters were covered with roof fall. Artifacts found at Fossil Rim dated from the Paleoindian Stage through the Late Prehistoric. Prior to this assessment, BVRA (Moore 1995b) conducted a review of archaeological investigations in Bosque, Erath, Hood, Johnson, and Somervell counties (discussed above).

A second survey for an expansion of the Squaw Valley Golf Course was conducted by William E. Moore and Michael R. Bradle (1997). This Phase I survey examined 260 acres and one prehistoric site (41SV151) was recorded. This site was viewed as significant as it is a buried hearth on an ancient terrace adjacent to a former channel of Squaw Creek. Artifacts observed included burned rock, bone, and charcoal at a depth of 95-100 centimeters.

METHODS

Prior to entering the field, the Archeological Site Atlas (hereafter referred to as the Atlas) was checked for previously recorded sites and past surveys in the project area and vicinity. Archaeological reports were reviewed during the planning stages of this project in order to become familiar with the types of sites in the area and where they are likely to be found. Jesse Todd was the Project Archaeologist, and he conducted the survey on June 5, 2015. The field methods consisted of a 100% Pedestrian Survey that was carried out before the shovel-testing phase. The survey began in the northeastern corner. The Project Archaeologist walked transects at intervals of ten meters when possible. During this phase, photographs were taken of the area.

Shovel testing was the second phase of the investigation. Six shovel tests were excavated where the site center appears to be placed on the Atlas. Each one of these tests was culturally sterile and encountered red clay subsoil (2.5YR 4/8) at depths of 21 to 105 cm, with the majority of tests (n=9) being terminated within 65 cm of the surface. Limestone bedrock was encountered at 21 cm in Shovel Test 4. The remainder of the 14 shovel tests were dug in areas that appeared to be most likely to contain cultural materials and to ensure that all areas of the APE were tested. A formal grid was not established because no cultural materials were found on the surface and there was no site datum. The 14 tests adequately covered the entire area. Shovel Test 7 was supplemented by a hand-held auger and at 105 cm was the deepest test in the APE. This test was placed on the highest bench or terrace in the APE. Because this landform extends from the Towne Lake Apartment Homes and the Plantation Inn, it is believed that it is artificial. Limestone bedrock was encountered at six of the tests. The auger was also used at tests 11 and 12.

The soil from each test was screened using ¼ inch hardware cloth, and the soil color was described using the Munsell Color Chart. Shovel test data were recorded on a log that appears as Appendix II to this report. The location of each test was plotted on a field map and their relative position is depicted in Figure 4. In addition, GPS coordinates were taken at each test. The project area was documented through digital photography intended to illustrate the various field conditions, as they existed at the time of this survey. A representative sample of photographs depicting the variation of topography and vegetation in the project area can be found in Appendix III.

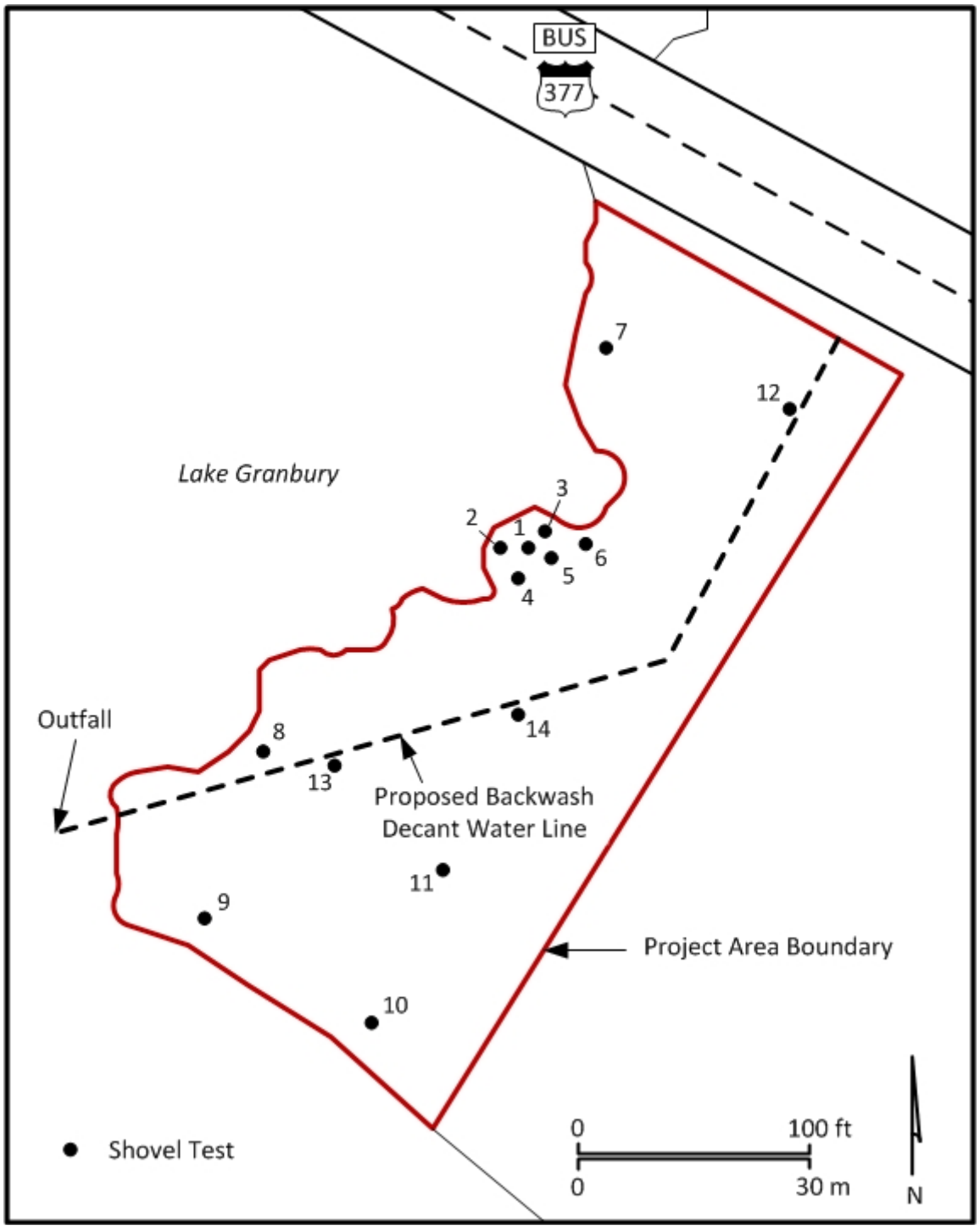

Figure 4. Shovel Test Locations

RESULTS AND CONCLUSIONS

This project was conducted according to standards established by the THC and CTA and consultation with the project reviewer. The area was thoroughly inspected for cultural materials on the surface, and the subsurface was investigated by a grid superimposed over the project area that was used to systematically place shovel tests for thorough coverage. Six shovel tests were terminated when limestone bedrock was encountered. The depth of tests varied from 21 cm to 105 cm below the existing surface. Nine of the tests were dug to depths of 65 cm or less. Earlier reports that discuss 41HD11 dismissed it as very disturbed and the only work recommended was a surface inspection. Site 41HD11 was undoubtedly a potentially significant site before it was subjected to cultivation. Large collections of artifacts dating to the Archaic and Late Prehistoric periods had been reported. Its location on a sandy terrace above the Brazos River with natural springs below combined to make it a very suitable area for a long-term camp. As stated above, the soil survey refers to the soil type in the project area as very susceptible to blowing winds. The initial survey of the area in 1953 mentioned the exposure of artifacts and removal of topsoil by wind. In fact, 41HD11 was one of the sites not recommended for any additional work except surface collecting when the peanut fields would be dormant and the surface visibility would be at its best.

All of the shovel tests encountered red clay subsoil. According to the soil survey for Hood County (Coburn 1978), this is the B-horizon. Paul Lorrain (1967), in his description of 41HD11, mentioned that artifacts were found only in what remained of the A horizon after the area had been disturbed. No A-horizon was found during the shovel testing. Therefore, it has either been removed artificially or by erosion. Based upon the disturbance from construction, erosion, the encountering of the B-horizon in 14 shovel tests, and the lack of any cultural materials older than 50 years on the ground surface, it appears that 41HD11 is no longer present within the APE.

When Paul Lorrain and J. Starett visited site 41HD11 in 1984 and reported that the only areas that remained intact were probably beneath the newly constructed Plantation Inn and parking lot, the Towne Lake Apartments Homes complex had not been constructed. The addition of the apartment complex would have been another major source of disturbance to the area.

RECOMMENDATIONS

No evidence of previously recorded site 41HD11 was found in any of the shovel tests or on the surface. It is, therefore, recommended that the client be allowed to proceed with construction of the water treatment plant as currently planned. Further consultation with the THC is not necessary. Should construction plans change to include one or more areas not investigated during this project, the THC must be notified so that a decision can be made regarding the need for additional survey by a professional archaeologist.

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APPENDIX I: SIGNIFICANT SITES

National Register of Historic Places

Hood County Courthouse Historic District

Wright-Henderson-Duncan House (NRS-1846)

State Archeological Landmark

41HD22 (Historic gravesite in the Acton Cemetery

Hood County Courthouse

Texas Family Land Heritage Registry

Massey Home (established 1860)

Compton Farm (established 1872)

Millington Ranch (established 1873)

APPENDIX II: SHOVEL TEST LOG

ST NO.	DEPTH (CM)	DESCRIPTION	GPS COORDINATES (ALL GPS 14 S)
1	0-55	Red (2.5YR 4/8) slightly sandy clay	06 15 904 Easting 35 89 998 Northing
2	0-50	Red (2.5YR 4/8) slightly sandy clay	06 15 903 Easting 35 90 001 Northing
3	0-54	Red (2.5YR 4/8) slightly sandy clay	06 15 913 Easting 35 90 003 Northing
4	0-21	Red (2.5YR 4/8) slightly sandy clay (dug to limestone bedrock)	06 15 904 Easting 35 89 989 Northing
5	0-60	Red (2.5YR 4/8) slightly sandy clay	06 15 595 Easting 35 89 986 Northing
6	0-55	Red (2.5YR 4/8) slightly sandy clay	06 15 922 Easting 35 90 002 Northing
7	0-105	Red (2.5YR 4/8) slightly sandy clay	06 15 925 Easting 35 90 020 Northing
8	0-32	Red (2.5YR 4/8) slightly sandy clay (dug to limestone bedrock)	06 15 869 Easting 35 89 977 Northing
9	0-25	Red (2.5YR 4/8) slightly sandy clay (dug to limestone bedrock)	06 15 863 Easting 36 89 970 Northing
10	0-65	Red (2.5YR 4/8) slightly sandy clay	03 15 840 Easting 35 89 998 Northing
11	0-72	Red (2.5YR 4/8) slightly sandy clay (dug to limestone bedrock)	06 15 898 Easting 35 89 974 Northing
12	0-99	Red (2.5YR 4/8) slightly sandy clay	06 15 934 Easting 35 90 004 Northing

ST NO.	DEPTH (CM)	DESCRIPTION	GPS COORDINATES (ALL GPS 14 S)
13	0-89	Red (2.5YR 4/8) slightly sandy clay (dug to limestone bedrock)	06 15 876 Easting 35 89 965 Northing
14	0-88	Red (2.5YR 4/8) slightly sandy clay (dug to limestone bedrock)	06 15 925 Easting 35 89 992 Northing

APPENDIX III

PROJECT AREA PHOTOGRAPHS

Terrain and Vegetation

(View to Southwest)

Trees in Northeast Corner

(View to Northeast)

Good Surface Visibility

View of Limestone Bedrock at the Surface