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Cultural Resources Survey for the Rehabilitation of Floodwater Retarding Structures 10 and 11 Within the Ellis-Prairie Soil Water Conservation District Ellis County, Texas

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FINAL REPORT

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September 2017

AECOM

Prepared for The Natural Resources Conservation Service
By AECOM

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Ellis County, Texas

By

Steven W. Ahr

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Principal Investigator

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For

Natural Resources Conservation Service

Texas Antiquities No. 7521

September 2017

ABSTRACT

AECOM Technical Services, Inc. (AECOM) was contracted by the United States Department of Agriculture's Natural Resources Conservation Service (NRCS) to perform a cultural resources survey in support of plans to rehabilitate Floodwater Retention Structures (FRSs) 10 and 11, located in Ellis County, Texas. Rehabilitation activities for FRSs generally consist of widening and raising the earthen spillway, flattening the downstream slope and extending the footprint of the earthen structure, updating or replacing the inlet and/or outlet pipes, and sediment excavation within the drained pool area. Auxiliary spillways, which are typically located on the uplands, may also be modified, and temporary construction sites may be established on the uplands.

The project is being developed by the Ellis-Prairie Soil Water Conservation District (Ellis-Prairie SWCD) of the Texas State Soil and Water Conservation Board (TSSWCB), and the NRCS. As such, the project is subject to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. In accordance with Advisory Council on Historic Preservation (ACHP) regulations pertaining to the protection of historic properties, federal agencies are required to assess the effects of their undertaking on historic properties prior to issuing permits or funding. Furthermore, because each FRS is currently monitored, operated, and maintained by the Ellis-Prairie SWCD/TSSWCB, which is a political subdivision of the State of Texas, the projects also fall within the purview of the Antiquities Code of Texas, which requires the Texas Historical Commission (THC) to review any actions that have the potential to disturb prehistoric or historic sites within the public domain of the State of Texas.

The survey carried out within the estimated Limits of Construction (LOC) at each FRS on January 15, 2016 under Texas Antiquities Permit No. 7521, issued by the THC. Dr. Steve Ahr served as Principal Investigator. For purposes of these investigations, the LOC is considered to be equivalent to the Area of Potential Effect for cultural resources compliance with the NHPA and the Antiquities Code of Texas. The survey included a 100 percent pedestrian survey of all areas of potential new disturbance associated with rehabilitation measures at each FRS. Field investigations also included an assessment of the soils and geomorphic setting of the project areas as it relates to archaeological integrity potential and previous impacts.

No prehistoric archaeological sites were identified during the survey, though two small shed structures were found at the far northwest corner at FRS 10. One is located inside the APE, while the other is situated just outside the current defined limits. Additional archival investigations indicates that these sheds were constructed sometime between 1995 and 2001, and given their recent age, neither should be considered eligible for listing in the National Register of Historic Places (NRHP), or merit designation as a State Antiquities Landmark (SAL). No artifacts were collected during the survey. Pursuant to 13 TAC 26.17, all project notes, maps, photographs, and other documentary records will be permanently curated at the Center for Archaeological Studies, Texas State University, San Marcos.

Based on the results of the background review and survey, it is recommended that the proposed rehabilitation efforts for FRS 10 and 11 in Ellis County should have **No Effect** on properties included in, or eligible for inclusion in, the NRHP, or that merit designation as SALs. In the event

that previously undiscovered sites are found during construction, appropriate actions should be taken in accordance with the State Level Agreement among NRCS and the Texas State Historic Preservation Office, the National Programmatic Agreement among NRCS, the National Conference of State Historic Preservation Officers, and the ACHP, and NRCS General Manual 420, Part 401 guidance.

In the event that any unmarked prehistoric or historic human remains or burials are encountered during construction, the area of the remains is considered a cemetery under current Texas law and all construction activities must cease immediately so as to avoid impacting the remains. The THC must be notified immediately by contacting the History Programs Division at (512) 463-5853 and the Archeology Division at (512) 463-6096. All cemeteries are protected under State law and cannot be disturbed. Further protection is provided in Section 28.03(f) of the Texas Penal Code, which provides that intentional damage or destruction inflicted on a human burial site is a state jail felony.

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1.0 INTRODUCTION

AECOM Technical Services, Inc. (AECOM) was contracted by the United States Department of Agriculture's Natural Resources Conservation Service (NRCS) to perform a cultural resources survey in support of plans to rehabilitate Floodwater Retention Structures (FRSs) 10 and 11, located in Ellis County, Texas (**Figure 1**). The project is being developed by the Ellis-Prairie Soil Water Conservation District (Ellis-Prairie SWCD) of the Texas State Soil and Water Conservation Board (TSSWCB), and the Natural Resources Conservation Service (NRCS). Rehabilitation activities for FRSs generally consist of widening and raising the earthen spillway, flattening the downstream slope, extending the footprint of the earthen structure, updating or replacing the inlet and/or outlet pipes, and sediment excavation within the drained pool area. Auxiliary spillways, which are typically located on the uplands, may also be modified, and temporary construction sites may be established on the uplands.

Because these projects are being developed through the NRCS, they fall under the purview of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. In accordance with Advisory Council on Historic Preservation (ACHP) regulations pertaining to the protection of historic properties (36 CFR 800), federal agencies are required to assess the effects of their undertaking on historic properties prior to issuing permits or funding. Historic properties are defined as those properties that are included in, or eligible for inclusion in the National Register of Historic Places (NRHP). Therefore, the project is subject to review by the Texas State Historic Preservation Office (SHPO). Furthermore, because each FRS is currently monitored, operated, and maintained by the Ellis-Prairie SWCD/TSSWCB, which is a political subdivision of the State of Texas, the projects also fall within the purview of the Antiquities Code of Texas, which requires the Texas Historical Commission (THC) to review any actions that have the potential to disturb prehistoric or historic sites within the public domain of the State of Texas. Regulations pertaining to the code can be found within Title 13, Part 2, Chapter 26 of the Texas Administrative Code (TAC). The THC issues Antiquities Permits that stipulate conditions under which survey, discovery, excavation, demolition, restoration, or scientific investigations can occur. Therefore, AECOM submitted an Antiquities Permit application and research design in order to perform the archaeological survey.

For purposes of these investigations, the Limits of Construction (LOC) is considered to be equivalent to the Area of Potential Effect (APE) for cultural resources, which includes all known areas of disturbances related to the project. The survey carried out within the estimated LOC at each FRS on January 15, 2016, under Texas Antiquities Permit No. 7521. Dr. Steve Ahr served as Principal Investigator. Field investigations were performed by AECOM archaeologists Shelley Hartsfield and Chris von Wedell.

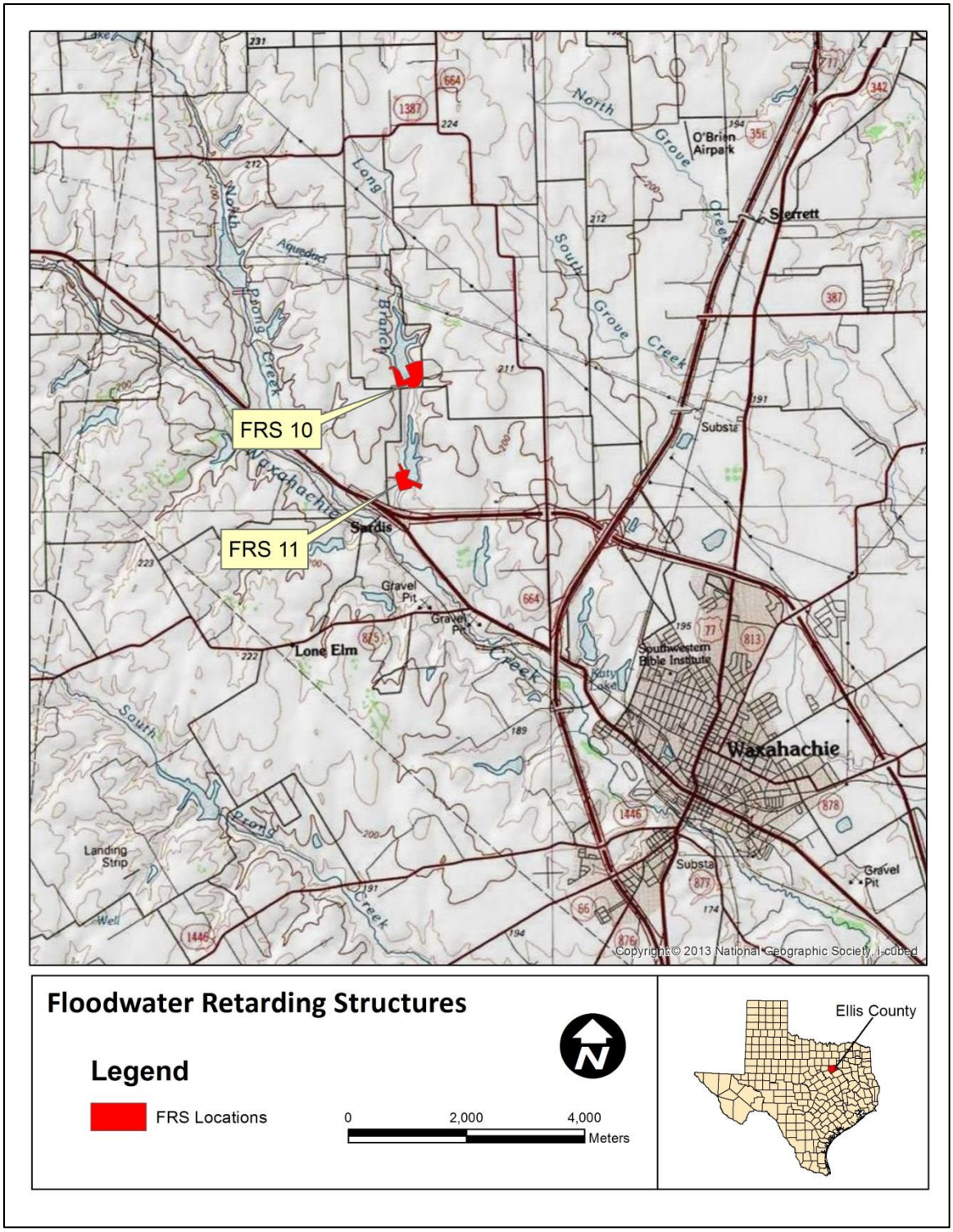

Figure 1. FRS 10 and 11 locations in Ellis County, Texas.

2.0 ENVIRONMENTAL SETTING

Physiography, Topography, and Climate

The project is located within the Gulf Coastal Plain physiographic region, which exhibits low rolling topography that is the result of progressively younger, southeast-tilting geologic beds. Ellis County is within the Trinity River Basin in the Blackland Prairies Region, which is typified by rolling to nearly level plains ranging in elevation from 450 to 1,000 ft above mean sea level (amsl) (Bureau of Economic Geology [BEG] 1996). Local climate is classified as humid subtropical and has an annual rainfall that ranges from 35 to 40 inches. About half of the rain usually falls between April and May, with July and August being the two driest months of the year. This region tends to have a relatively mild year-round temperature, with occasional exceedingly hot and cold snaps (Brooks et al. 1964; Estaville and Earl 2008).

Geology and Soils

FRS 10 is located along the lower reaches of Long Branch, which is a tributary to Waxahachie Creek, and is located approximately 5 miles northwest of Waxahachie, in Ellis County, Texas. The APE is underlain by Upper Cretaceous Austin Chalk deposits; no recent (Holocene-age) deposits are mapped in the study area (BEG 1988). Eddy and Austin series soils comprise approximately 95 percent of the LOC and are found primarily on the outer edges of the stream valley, along the lower slope portions of the adjacent uplands (NRCS 2017). Eddy soils consists of shallow to very shallow, well drained, moderately permeable soils that formed in residuum from chalky limestone, and exhibit a generalized A1-A2-Cr horizon sequence. Austin soils consist of moderately deep, well drained, moderately slowly permeable soils that formed in residuum weathered from chalk. These soils are on nearly level to sloping uplands, and exhibit a generalized Ap-A-Bw-Bk-Cr horizon sequence. As modern stream networks evolved, downcutting into the adjacent strata, these well-developed soils formed on the intervening uplands, on interfluves, plains, and ridges. Given their age and geomorphic setting, these upland soils exhibit low potential for containing deeply buried archeological deposits. In these areas, it is expected that archeological deposits would be found at or very near the surface, in a disturbed context. Within the narrow channel below the dam outlet pipe, the LOC contains fine-grained, silty alluvium (no series designation). The remainder of the APE is located beneath the inundation zone and the earthen fill materials comprising the dam structure.

FRS 11 is located approximately 5 miles northwest of Waxahachie, in Ellis County, about one mile downstream from FRS 10 along Long Branch. The APE is underlain by Upper Cretaceous Austin Chalk deposits; no recent (Holocene-age) deposits are mapped in the study area (BEG 1988). Eddy and Austin series soils comprise the vast majority of the LOC and are found typically on the edges of the stream valley, along the lower slope portions of the adjacent uplands (see description above). The narrow channel portion of the LOC immediately below the dam is mapped as Frio silty clay, 0 to 1 percent slopes, frequently flooded. These deep, clayey soils are found on floodplains and formed within variably-thick deposits of Holocene-age alluvium (BEG 1988). Since these soils and geomorphic settings represent the greatest potential to contain buried and intact cultural materials, close inspection was made to cutbank exposures. The

remainder of the APE is located beneath the current inundation zone and the earthen fill materials comprising the dam structure.

Biota

Vegetation common to this area consists of tall grass prairie with oak-hickory forests of post oak, blackjack oak, and hickory along stream edges. Fauna in the region include white-tailed deer, wild turkeys, mourning doves, eastern cottontails, eastern fox squirrels, bullfrogs, Virginia opossum and striped skunk (Telfair 1999). Prior to Euro-American settlement, an array of animal species was present in the region encompassing Ellis County, although the diversity of species has declined over time. Current game species typically include dove, quail, and fox squirrel along bottomlands (Griffith et al. 2007:61). The Blackland Prairie contains a high percentage of cropland and many areas have been converted from native grass communities to use for urban and industrial purposes (Griffith et al. 2007:61). Native grass communities began to decline with the introduction of ranching and agriculture. The farming of cotton and other crops promoting extensive clearing of land resulted in the loss of much of the native prairie grasses (Griffith et al. 2007:62). Non-native grasses, introduced to the Blackland Prairie during the nineteenth and twentieth centuries, include Johnson grass, Bermuda grass, and King Ranch Blustem. Frequent historic and prehistoric fires have shaped the ecology of the region by promoting new vegetation growth and preventing the encroachment of woodlands, although some wooded areas do exist (Griffith et al. 2007:61-62). The Blackland Prairie is dissected by the broad valleys of the Trinity, Brazos, and Colorado Rivers, which contain forested areas of oak, hackberry, elm, ash, cottonwood, and pecan (Griffith et al. 2007:65). As with much of the other areas of the Blackland Prairie, many of these riparian settings have been cleared over time for agricultural purposes.

3.0 CULTURAL BACKGROUND AND PREVIOUS INVESTIGATIONS

Cultural Background

The general cultural sequence of Ellis County, based on previous research, can be divided into four primary chronological and developmental periods — Paleoindian, Archaic, Late Prehistoric, and Historic. These divisions are believed to reflect changes in subsistence and cultural development as evidenced by material remains and settlement patterns. The following discussion of these periods draws on previous summaries by Peter and McGregor (1988) and Prikryl (1990). Historic research efforts focused on primary sources including historic maps, historic aerials, and available historic newspapers; and secondary sources including county histories, city histories, and available previous cultural resources investigations.

Paleoindian Period (Pre-8500 years Before Present [BP])

The Paleoindian period is the earliest defined cultural period in North America. Chronologically, it extends from the terminal Pleistocene into the early Holocene. Subsistence may have been based, in part, upon hunting the now-extinct megafauna of the late Pleistocene, including mammoths and extinct species of bison (*Bison antiquus*), as well as on the collecting of plants and small animals. Social organization probably consisted of loosely structured, highly mobile social groups composed of several nuclear families generally referred to as "bands." Archaeological sites of this period often seem to be representative of transient camps along small streams occupied by band-sized or smaller groups. Larger occupation sites, often referred to as "base camps," are relatively rare. Overall population density is thought to have been rather low during this period.

Diagnostic artifacts of the Paleoindian Period include a variety of finely flaked, sometimes fluted, lanceolate projectile points, such as Clovis, Folsom, Plainview, Scottsbluff, and Angostura. The latter is a transitional point type, which has also been found in Early Archaic sites in this region (Prikryl 1990).

Archaic Period (8500-1250 BP)

Near the end of the Paleoindian Period, global climate began to change slowly, becoming gradually warmer and dryer (Brown and Lebo 1991). In response, plant and animal populations also changed and the human populations in north Texas began to exploit a wider variety of food resources. Large game was no longer the primary focus of subsistence. Changes in technology included a more diverse suite of lithic tools, increased use of grinding stones, and the development of basketry. Pottery is absent. This adaptation is known as the Archaic Period, generally divided into Early- Middle- and Late-, and has been dated in north Texas as occurring between about 8500 BP and 1250 BP.

Like the Paleoindian Period, Early Archaic Period (8500-6000 BP) population densities remained low, still consisting of small, mobile bands. Early Archaic sites are typically located on terraces along tributary watercourses, but are also often found deeply buried in floodplain alluvium. The location of these sites provides further evidence of a shift in subsistence patterns with humans possibly exploiting marine life such as mussels or fish. Split-stemmed points such as Gower,

Martindale, and Uvalde, as well as Big Sandy, Hardin, and Hoxie, are diagnostic of Early Archaic occupations.

During the Middle Archaic Period (6000-3500 BP), the trend toward bottomland exploitation increases, with fewer sites found along minor tributaries. Population density remained relatively low but increased over time with broad-spectrum hunting and gathering represented at larger sites where food sources were more abundant.

In contrast to earlier time periods, the Late Archaic Period (3500-1250 BP) represents a period of increased population and site density. Subsistence is focused on hunting and gathering within the bottomlands of major creeks and rivers. Deer remains are quite common at Late Archaic sites, and the exploitation of plant foods seems to have increased during this period, based upon an increase in plant-processing tools. Late Archaic sites are typically found on sandy terraces along tributaries, as well as on clayey floodplains.

Late Prehistoric Period (1250-250 BP)

The Late Prehistoric Period represents a significant change from earlier patterns in the region. It is marked first by the appearance of arrow points and subsequently by the introduction of pottery. Several researchers have distinguished an early and a late phase for this period (Ferring and Yates 1997; Prikryl 1990). The early phase (1250-750 BP) is generally characterized by sand-and-grog-tempered pottery, Scallorn and Alba arrow points, and a continuation of the foraging subsistence pattern of the Late Archaic Period, although horticulture is present at some sites in the upper Trinity River drainage (Peter and McGregor 1988). The late phase (750–250 BP) reflects a Southern Plains influence with the appearance of shell-tempered Nocona Plain pottery, various un-stemmed triangular arrow points (e.g., Fresno, Harrell, and Washita), and Perdiz points. Evidence for horticulture and bison hunting also appears in sites of this late phase.

Historic Period (Post AD 1700)

Contact began with the arrival of European and later American immigrants in this region during the time of the early Spanish missions and French explorations. Native American groups encountered in this area during this time included the Tonkawa, Apache, Comanche, Wichita, Kitsai (Kichai), Yojuane, Caddo, Delaware, and Kickapoo (Prikryl 1993). Trade items included glass beads, European-made ceramics, gun parts, and metal arrow points.

Before Texas independence, while under the control of Mexico, several empresario grants were awarded by Mexico in order to populate the territory (Haaser 2010; Hardy nd). Three grants were awarded within present-day Ellis County. The first was awarded to Thomas Jefferson Chambers for 8 leagues on September 23, 1834, followed by a second grant to Rafael de la Pena for 11 leagues, and then a third to Alejandro de la Garza for 4 leagues, both on October 22, 1834. On March 2, 1836, Texas declared its independence from Mexico and became the Republic of Texas, and was subsequently annexed by the United States in 1846. While still a Republic, Texas followed the example set by Mexico as it sought to populate its new country by offering land as an incentive (Haaser 2010; Hardy nd). In 1841-1842, Texas awarded a land grant, which included the northern section of present-day Ellis County, to William S. Peters, also doing business as (DBA) Texas Emigration and Land (Ericson 2010; Haaser 2010).

In 1843, the Republic of Texas awarded another land grant, which included the southern section of present-day Ellis County, to Charles Fenton Mercer, DBA Texas Association. The Peters and Mercer land grants were to become two of the most significant grants in the development of Texas. The Peters land grant, or Peters Colony, eventually covered 16,000 square miles, including the area around the present-day City of Ennis (Hardy nd). Peters solicited settlers exclusively from the states of Arkansas, Kentucky, Missouri, and Tennessee. By 1848, over 2,000 families had settled on his land. Early settlers included William R. Howe, who established Forreston in 1843; the Southerland Mayfield family, who established Reagor Springs in 1844; and the Billingsley family, who established Ovilla in 1844 (Haaser 2010). In 1849, Ellis County was excised from Navarro County and named in honor of Richard Ellis, President of the Constitutional Congress during the declaration of Texas' independence (Brooks et al. 1964).

The early settlers of Ellis County included many who emigrated from southern states, bringing cotton with them and, frequently, their slaves (Haaser 2010, Hardy nd). In 1850, the number of slaves in Ellis County stood at 87, with an average of less than five per family farm. Despite this early influx, the main economy was cattle in the late 1850s, and by 1860 cattle production ranked sixth in the state. However, as the overall population of Ellis County continued to increase, the cotton economy began to develop on a wider scale. Not coincidently, the number of slaves rapidly increased, reaching 1,104 by 1860. Settlers from cotton-producing states were not the only ones drawn to Ellis County, immigrants from Europe, most notably from Czechoslovakia, Hungary, and Germany, also arrived.

The Civil War divided the county as it divided the country. Nonetheless, Ellis County residents supported the Confederacy and, as such, voted for succession (Haaser 2010). In fact, one source stated that every single person of voting age in Ellis County voted for succession (Lewis Publishing 1892:154). In support of the war effort and their beliefs, a Confederate powder mill was established in Waxahachie and a Confederate hat factory was established in Italy (Haaser 2010). Several regiments quickly formed within Ellis County with the Twelfth Texas Cavalry Regiment, also known as Parsons' Brigade, quickly becoming recognized as one of the finest cavalries west of the Trans-Mississippi line (Bailey 2010; *Waxahachie Daily Light* 1907).

The loss of the war and subsequent Reconstruction proved to be a very difficult time as the county struggled with occupation by Union troops and the change in culture and economics brought about by the freeing of former slaves (Haaser 2010). With the end of slavery, both the landowner and the former slaves were in need of new economic models. As such, the practice of tenant farming emerged and included both African- and Anglo-Americans (Hardy nd). In addition, Ellis County suffered the loss of 100 square miles to Johnson County in a dispute over boundaries, which was not resolved until a new survey was undertaken in 1939 (Haaser 2010). A bright spot in the midst of all the post-war difficulties was the arrival of the Houston and Texas Central (H&TC) Railroad into Ellis County in 1871/1872, which bolstered the economy by allowing crops and goods to be shipped more widely, while at the same time providing easier access to supplies for local farmers and merchants (Haaser 2010; Hardy nd).

During the Panic of 1873, one-fourth of the railroads nationwide went bankrupt. Within the next two years, 18,000 businesses failed and unemployment skyrocketed to 14 percent. The massive financial failure led many to migrate west, including many from southern cotton states which served to reinforce the early cotton culture in Ellis County (Haaser 2010). During the 1870s, cotton production increased by 600 percent (to 18,956) and by 1880, aided by new technologies

such as mechanical cotton feeders, condensers, compact presses, and unloading devices, Ellis County was producing one-fourth of the world's cotton (Brooks et al. 1964; Haaser 2010; Hardy nd). By 1880, there were 2,884 farms and the population had tripled from 7,515 in 1879 to 21,294.

With the success of farming, and in particular cotton, farmers needed better roads in order to reach the various market towns and railroads that were operating in the County (Haaser 2010; Hardy nd). As a result, during the late nineteenth to early twentieth century, old roads received improvements, while new roads were built. In addition, a large number of iron truss bridges were built over Ellis County creeks.

By 1900, the county's population had risen to 50,059. There were 203 industrial businesses and the number of farms had more than doubled to over 6,000—a number which remained consistent until the 1930s (Haaser 2010). Of these 6,000 farms, approximately 80 percent were farmed by tenants. For a brief period in the early 1900s, Ellis County led the state in cotton production (Brooks et al. 1964).

While Ellis County had remained rural and predominately agricultural until this point, the 1930s through the 1940s would prove to be a time of major change. By 1930, the population had grown to 53,936. The African-American population, the fastest growing segment, accounted for almost one-fourth of the overall population (Brooks et al. 1964; Haaser 2010; Hardy nd). Cotton production began to decline due to soil erosion, subsequent acreage controls, the introduction of other crops, and a decreased demand caused by the Great Depression. As a result of the decreased demand for cotton and the continued mechanization of farming, the number of tenant farmers decreased sharply to only 1,236 by 1935.

In an effort to combat unemployment, in 1935, the Civilian Conservation Corps (CCC) set up camps in Waxahachie (*Waxahachie Daily Light* 1940). The CCC, a New Deal program, hired local young men, provided them with new skill sets and training, and then used those skills to make improvements within the county. During their tenure in Ellis County, the CCC built 319 miles of new fence, sodded 4,166 acres, stripped 17,007 acres, terraced 3,025 acres, and utilized new cultivation practices on 17,651 acres.

By 1940, the population had decreased slightly to 47,753, unemployment had jumped from 6 to 16 percent, and the county was in the process of transitioning from a largely agricultural economy to an urban one (Haaser 2010). The number of farms declined further, from 3,982 to 2,100, in a trend that was to continue until the 1980s (Brooks et al. 1964). By 1945, the mechanization of farming had become widespread. As less land was needed for the upkeep of horses and mules, it was now appropriated for cattle production. The increased mechanization also made farming faster and easier, leading to fewer but larger farms.

By 1950, Ellis County had become over 50 percent urban (Haaser 2010). Cotton had been replaced by maize and small farms had been replaced by ranches. Oil was discovered in 1953, adding to the county's economy. By 1954, electricity was available nearly county wide, reaching over 95 percent of the rural areas. By 1960 the transition from agricultural to urban was almost complete (Brooks et al. 1964; Haaser 2010). The number of farms continued to decrease, although those that did remain increased in size by almost 200 percent, reaching an average of 258 acres. Tenant farming, which accounted for 80 percent of the farming in 1930, now

accounted for 32 percent. Many large industrial plants—including clothing, refrigeration, steel, and packing—had been established, as had many smaller plants.

The 1960 and 1970 populations, 43,395 and 46,638 respectively, were far less than the 1930 population. Of these numbers, African-Americans accounted for 18 percent (8,593), slightly less than the 1930 average. Major transportation routes in Ellis County now included four major U.S. highways and six railroads. From 1970, and at least through the next decade, the primary industries became oil and gas, construction, manufacturing, transportation, public utilities, and wholesale trade.

Previous Investigations

Prior to fieldwork, AECOM conducted a cultural resources background review of the Texas Archeological Sites Atlas (TASA 2017) and Texas Historic Sites Atlas (THSA 2017) in order to identify previously recorded cultural resources sites and previous surveys within 1,000 meters (m) of the LOC at each FRS (**Figures 2 and 3**). The search included historic properties (properties that are listed in, or have been determined eligible for listing in, the NRHP), State Antiquities Landmarks (SALs), Texas Historical Markers, Recorded Texas Historic Landmarks, and previously recorded archaeological sites and cemeteries (including Historic Texas Cemeteries). The background review also utilized historic aerials, topographic maps, and the NRHP database.

Background review indicated that no archaeological sites, cemeteries, or previous surveys are recorded within 1,000 meters (m) of the LOC at either FRS 10 or 11 (TASA 2017). Review of aerial photographs indicated the presence of two possible farm or ranch-related structures at the far northwest corner of the LOC at FRS 10. These are discussed in the Results section. Two Historical Markers are located within 1,000 m of FRS 11 (see **Figure 3**). Neither marker would be affected by the project. Historical Marker #7075 (Sardis School) is located 885 m southwest of the FRS 11 dam. This marker text reads:

"Children of the Sardis Community attended school in the Methodist church building from the early 1870s until a small two-room schoolhouse was constructed near this site in 1897. By 1915 the school population had grown such that a larger facility was needed. Over the years, the Sardis School system served as a source of leadership for the community. As the population dwindled and school bus service became available, consolidation with the Waxahachie school district began in 1937 and was completed in 1952. The c. 1915 schoolhouse remains in use as a community center." (THSA 2017).

Historical Marker #7076 (Sardis United Methodist Church) is located 790 m southwest of the FRS 11 dam. This marker text reads:

"Methodist Church activities in this area can be traced to 1845, when the Rev. Thomas Welch, a circuit-riding minister, preached a sermon. Following a brush arbor meeting near this site in 1873, a formal congregation was organized. Services were held in a log schoolhouse until 1879, when a frame church was erected to serve the Methodist and Cumberland Presbyterian congregations. A separate Methodist Church building was completed in 1904. The Sardis United Methodist Church has been a part of Ellis County history for over one hundred years." (THSA 2017).

A search of the Native American Consultation Database was conducted to determine if there were any Indian tribes that might attach religious or cultural significance to historic properties that could be located in the proposed project areas of Hays and Caldwell Counties. This was

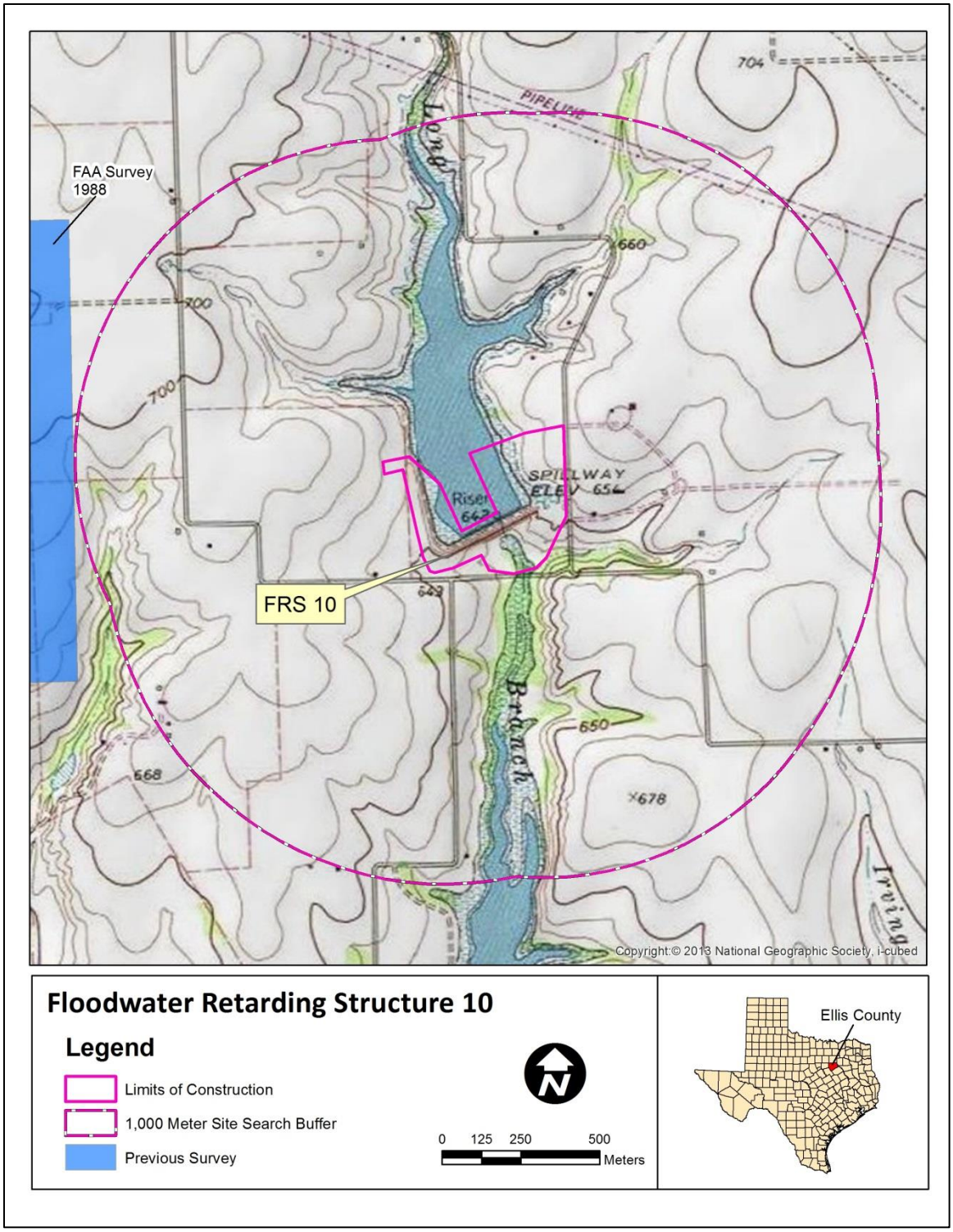

Figure 2. Topographic map of previously recorded cultural resource sites and surveys within 1,000 m of LOC at FRS 10.

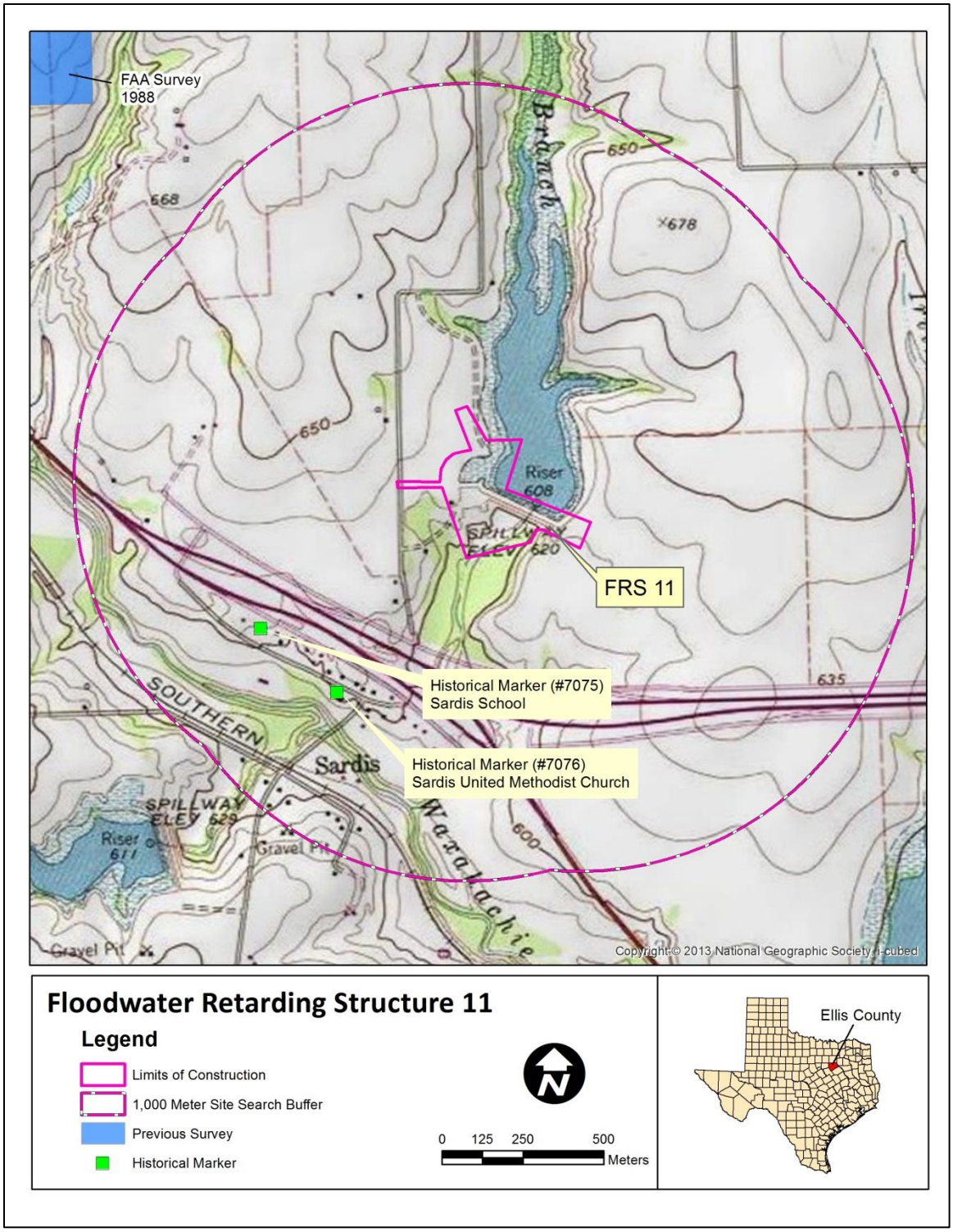

Figure 3. Topographic map of previously recorded cultural resource sites and surveys within 1,000 m of the LOC at FRS 11.

done in accordance with 36 CFR 800.2 (c)(i) of the Advisory Council on Historic Preservation Regulations. No Native American tribes were listed as having claims to land areas that include Hays or Caldwell Counties (National Park Service 2016).

Based on a list of tribes maintained by the Texas SHPO, the Comanche and Tonkawa both have indicated an interest in ancestral lands in Ellis County (James Collis, personal communication 2016). NRCS is preparing letters to send to each tribe.

Archaeological Potential

The majority of the LOCs at FRS 10 and 11 encompass upland margins, lower slope settings, and are buried beneath or otherwise impacted by existing dam structures and inundation zones. Soils in these areas were formed in residuum through the weathering of Cretaceous age limestone and marl. While site burial is possible in these types of soils, the artifact burial process would occur as vertical displacement from disturbances such as plowing, or from the downward movement through large soil cracks. Such burial processes rarely results in stratigraphic integrity. Based upon review of aerial photographs, much of the APE appears to consist of disturbed agricultural uplands, and areas that have been impacted by the original dam and spillway construction activities. These disturbances have most likely adversely affected the archaeological integrity potential of any sites that may be present.

Based on the observed increased frequency of prehistoric sites near water sources in the region, the portions of the LOCs located below the dam and spillway adjacent to Long Branch were presumed to exhibit the highest archaeological potential. As such, these areas were the focus of the most intensive level pedestrian investigations and cutbank examinations. Areas of lower archaeological probability (e.g., previously disturbed uplands and areas disturbed by the original dam construction), were subjected to less intensive scrutiny. These reduced probability areas were nonetheless inspected for possible cultural materials.

Given these geomorphic and pedologic conditions, and the extent of past disturbances from the original dam construction and subsequent maintenance, as observed on aerial photographs, the overall archaeological potential of the LOCs at FRS 10 and 11 for the presence of buried and intact sites is considered to be low.

4.0 METHODS

Antiquities Permit

Since the project falls within the purview of the Antiquities Code of Texas, a Texas Antiquities Permit application and research design were prepared and submitted to THC prior to fieldwork. The THC approved the application and issued Antiquities Permit No. 7521 on January 8, 2016. Steve Ahr served as Principal Investigator.

Field Survey

Fieldwork was conducted January 15, 2016 and included a 100 percent pedestrian survey at each LOC. All work was carried out by an archaeological professional meeting the U.S. Secretary of the Interior's *Professional Qualification Standards for Archaeology and Historic Preservation*. The objective of the archaeological survey was to identify and inventory any archaeological sites within the LOCs at each of the FRS localities, make eligibility recommendations for inclusion in the NRHP and/or for formal designate as a SAL, and to assess the potential for the presence of significant cultural resources relative to previous disturbances and anticipated future impacts.

During the field investigations all exposed ground surfaces within each of the LOCs were intensively examined for evidence of archaeological resources. Pedestrian survey typically entailed walking the centerlines of proposed access roads and the tops of each earthen dam, visual inspection of exposed surfaces within any drawdown zones, and careful examination of cleared areas within and adjacent to spillways, eroded plunge basins and outlet pipe areas, and exposed stream banks below the outlet pipes.

During the pedestrian survey, each FRS location was also assessed for the need for deep mechanical prospection (e.g., backhoe trenching) in order to locate deeply buried cultural materials. This assessment was based on local soil-geomorphic conditions, natural stream cutbank examinations, and the extent of prior disturbances relative to the anticipated aerial and vertical extent of project impacts. Based on the ground surface visibility within each LOC, which typically exceeded 30 percent, and given the degree of prior disturbances that have compromised the integrity potential for buried and intact cultural deposits, no shovel tests or backhoe trenches were deemed necessary.

In the event any archaeological sites were identified during the survey, site boundaries would be defined on the basis of artifact distributions, either on the surface or identified from shovel tests. The location and extent of all identified sites would be mapped with a handheld GPS, and an inventory and provenance of artifacts and/or features would be documented. A temporary field designation would be assigned to each site, and a TexSite form would be completed and submitted to the Texas Archeological Research Laboratory for assignment of a permanent trinomial designation. Additional archival research was conducted for any historic archaeological sites or structures found within the LOC, and all newly identified cultural resource sites were assessed to determine if they may be eligible for listing in the NRHP or merit SAL designation.

Curation

No artifacts were collected during the survey. Pursuant to 13 TAC 26.17, all project notes, maps, photographs, and other documentary records will be permanently curated at the Center for Archaeological Studies, Texas State University, San Marcos.

5.0 RESULTS

Cultural resources investigations for FRSs 10 and 11 in Ellis County were performed January 15, 2016. The survey results at each FRS are presented below.

FRS 10

Several rehabilitation alternatives are currently under consideration for FRS 10. The preferred alternative which best meets the purposes and need for the project is rehabilitation of the existing dam (**Figure 4**) by construction of dam safety modifications developed to address dam safety deficiencies consistent with the dam's high hazard classification. The anticipated rehabilitation actions at the existing FRS 10 complex would include raising the top of dam by 3.2 feet to elevation 661.8 feet, flattening the upstream and downstream slopes to 3:1; removing the existing principal spillway system; installing a new principal spillway system consisting of a standard inlet tower at crest elevation 642.75 feet, a 48-inch diameter conduit discharging into the stilling basin of a new labyrinth spillway; raising the vegetated auxiliary spillway crest to elevation 656.6 feet (1.92 feet higher than existing) and regrading the inlet and outlet channels of the auxiliary spillway; and adding a secondary 170-foot wide, 5-cycle labyrinth auxiliary spillway and stilling basin through the main embankment at elevation 656.1 feet, 6 inches below the vegetated auxiliary spillway crest. Rehabilitation activities would occur within a LOC that encompasses approximately 38 acres (**Figure 5**).

AECOM performed a pedestrian survey within areas of potential new disturbance associated with the rehabilitation alternative at FRS 10. Survey revealed that the LOC has been subjected to extensive prior disturbances from original dam construction (**Figures 6-11**). The earthen dam, auxiliary spillway, and associated dam components have been excavated and re-contoured to the current dam configuration. Pedestrian walkover further revealed disturbances from on-going farming and ranching in the uplands, two-track roads, erosion and bedrock outcrops, reservoir drawdown and surface lags, and artificial berms.

Soils on the valley margins and flanking uplands consist of Eddy and Austin soils. Both are described as shallow to very shallow soils that formed in residuum weathered from chalky limestone. Individual mapping units within these two series further indicate that much of the landscape within the LOC is eroded. Based on these observations and prior disturbances noted during the survey, the vast majority of soils exhibit no potential for containing deeply buried *in situ* cultural materials. About 5% of the LOC is mapped as fine-grained, silty alluvium, which occurs on either side of the narrow outlet channel below the dam. Cutbank inspection revealed these to be shallow, eroded, and gravelly soils over weathered bedrock. The plunge basin below the dam outlet is highly eroded/scoured. Immediately to the east, the area has been cleared of trees, and much of the soil has been stripped or eroded down to bedrock. The remainder of the LOC is located beneath the current water level and the earthen fill material of the dam structure.

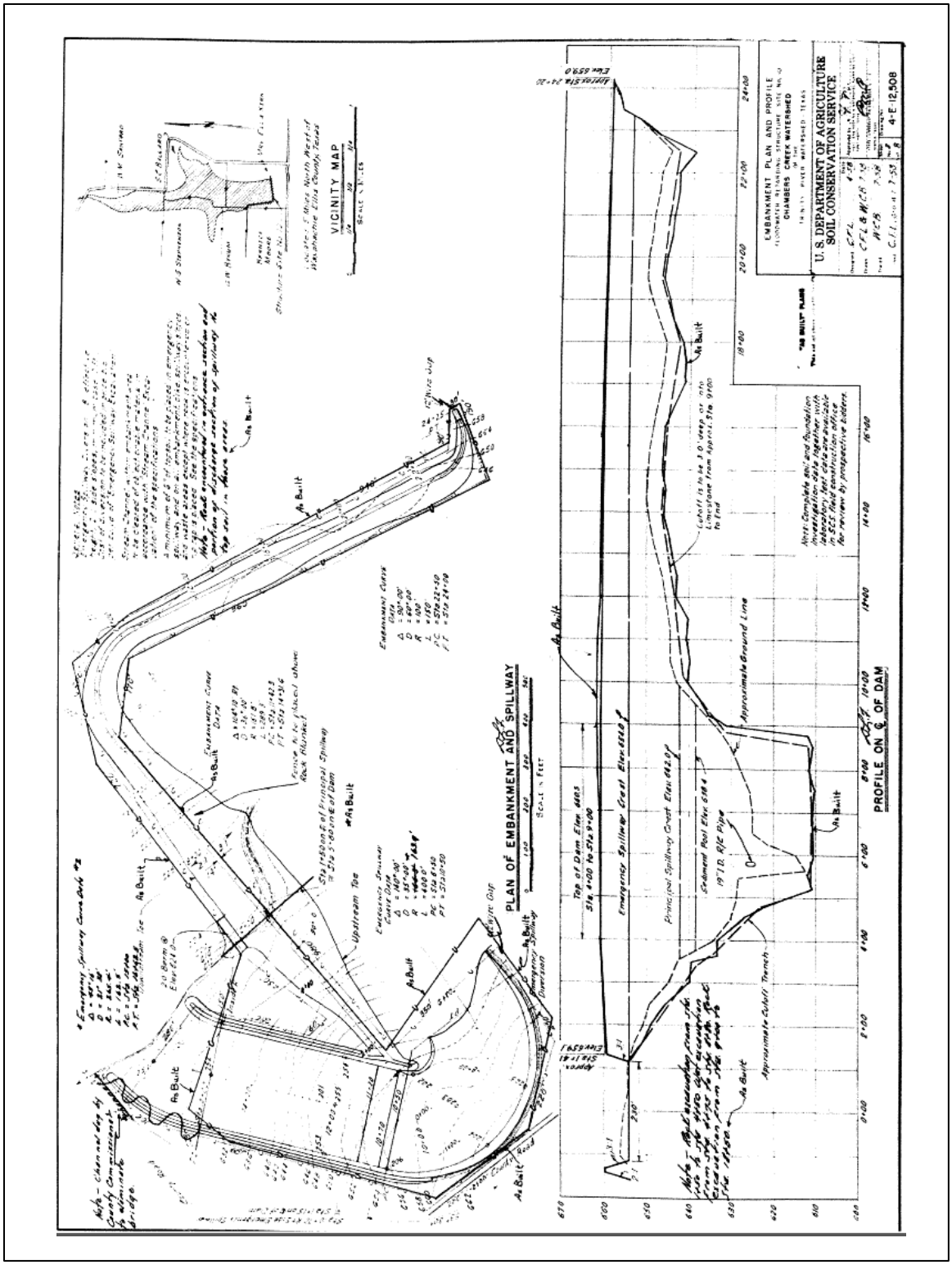

Figure 4. As-built plan of dam complex at FRS 10.

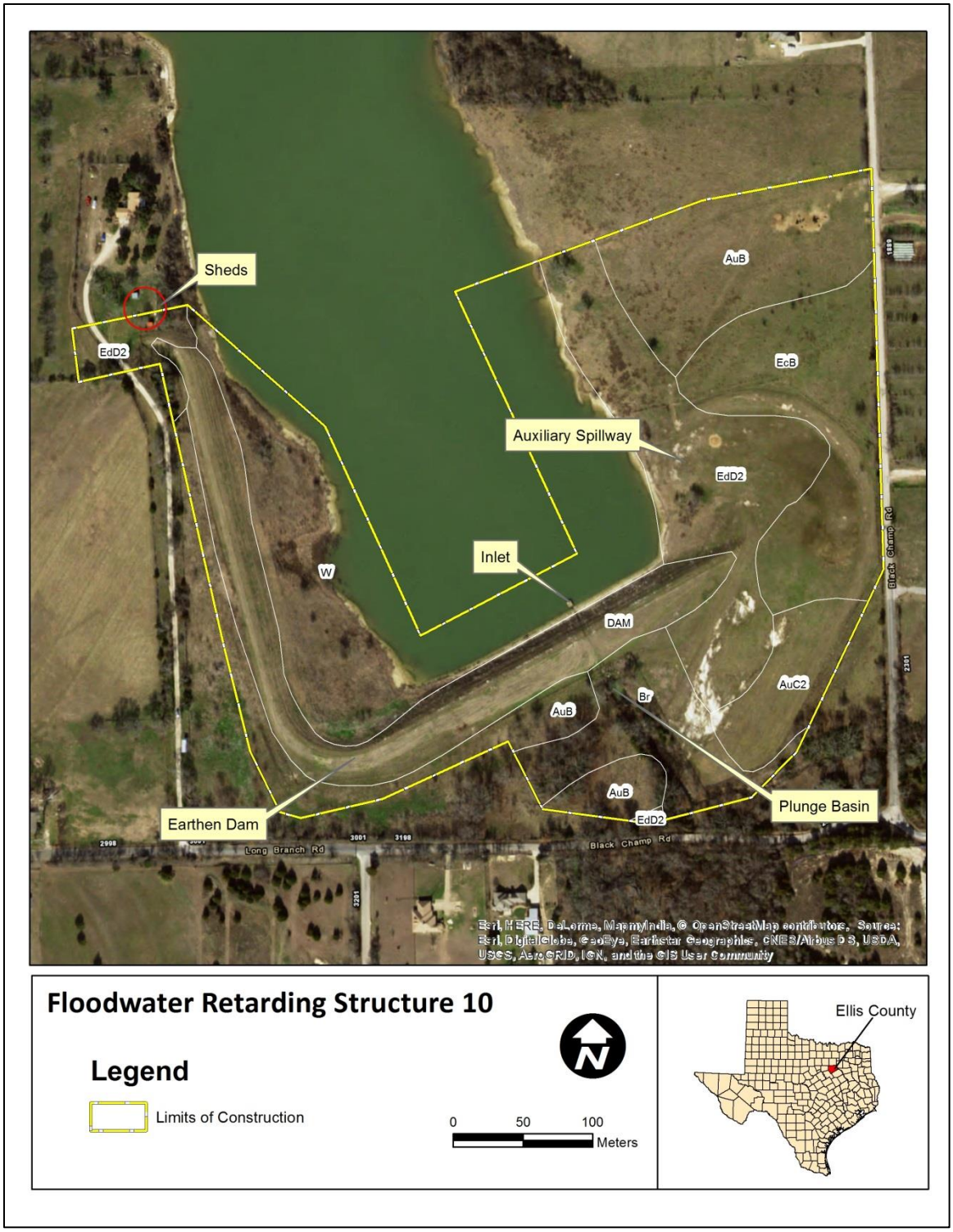

Figure 5. Aerial map showing dam components and LOC at FRS 10.

Figure 6. Overview of earthen dam. Facing southwest.

Figure 7. View of shallow and eroded soils within the LOC below the dam. Facing southwest.

Figure 8. View of outlet pipe and plunge basin below dam. Facing southeast.

Figure 9. West end of earthen dam, within exposed inundation area. Facing west.

Figure 10. View of two shed structures located at far northwest end of LOC, immediately below dam footprint. Facing northwest.

Figure 11. Entrance point at northwest corner of earthen dam structure. Facing west.

Field survey resulted in the identification of two agricultural outbuildings at the far northwest corner of the LOC (see **Figure 10**). Each structure consists of an open-sided one-story shed with corrugated metal shed roofs. The exterior walls of the shed inside the LOC consist of corrugated metal sheets. The exterior walls of the shed just outside the LOC are made out of plywood sheets. Additional archival inspection revealed that neither structure appears on 1995 aerial photographs; however they are visible on aerial photographs from 2001. As such, each structure appears to be somewhere between 16 and 22 years of age. No other buildings or structures were observed in the vicinity on 1963 or 1979 topographic maps. Given the young age of each structure, they do not meet the age requirement for NRHP eligibility consideration, and as such, each is currently recommended as *not eligible* for listing in the NRHP. Furthermore, neither structure merits SAL designation.

Field survey revealed that the area of potential new disturbance associated with rehabilitation measures at FRS No. 10 exhibits low potential for containing intact subsurface cultural deposits. Two shed structures were observed at the north end of the LOC. Based on field observations and archival background research, neither resource is considered eligible for the NRHP listing or SAL designation. Overall, numerous disturbances were documented within the LOC, and these disturbances preclude the presence of intact cultural materials with reasonable integrity potential. Based on soil-geomorphic conditions, the LOC exhibits low potential for the presence of deeply buried and intact subsurface cultural deposits, and given the results of the background review and survey, it is recommended that the rehabilitation at FRS 10 should have **No Effect** on properties included in, or eligible for inclusion in, the NRHP, or that merit designation as SALs. In the event that previously undiscovered sites are found during construction, appropriate actions should be taken in accordance with the State Level Agreement among NRCS and the Texas SHPO, the National Programmatic Agreement among NRCS, the National Conference of State Historic Preservation Officers, and the ACHP, and NRCS General Manual 420, Part 401 guidance.

FRS 11

The preferred alternative which best meets the purposes and need for the project is rehabilitation of the existing dam (**Figure 12**) by construction of dam safety modifications developed to address dam safety deficiencies consistent with the dam's high hazard classification. Designed dam safety modifications include raising the top of dam by 1.0 foot to elevation 626.5 feet, flattening the downstream embankment slope to 3:1; removing the existing principal spillway system; installing a new principal spillway system consisting of a standard inlet tower at crest elevation 607.8 feet and a 48-inch diameter conduit discharging into the stilling basin of a new labyrinth spillway; lowering the vegetated auxiliary spillway crest to elevation 619.9 feet (0.33 foot lower than existing) and regrading the inlet and outlet channels of the auxiliary spillway; and adding a secondary 145-foot wide, 5-cycle labyrinth auxiliary spillway and stilling basin through the main embankment at elevation 619.4 feet, 6 inches below the vegetated auxiliary spillway crest. Rehabilitation activities would occur within a LOC that encompasses approximately 24 acres (**Figure 13**).

AECOM performed a pedestrian survey within areas of potential new disturbance associated with the rehabilitation alternative at FRS 11. The LOC has been subjected to extensive prior disturbances from original dam construction (**Figures 14-19**). The earthen dam, auxiliary spillway, and associated dam components have been excavated and re-contoured to the current dam configuration. Pedestrian walkover further revealed disturbances from on-going farming

and ranching in the uplands, two-track roads, erosion and bedrock outcrops, reservoir drawdown and surface lags, and artificial berms.

Soils on the valley margins and flanking uplands consist of Eddy and Austin soils. Both are described as shallow to very shallow soils that formed in residuum weathered from chalky limestone. Individual mapping units within these two series further indicate that much of the landscape within the LOC is eroded. Based on these observations and prior disturbances noted during the survey, the vast majority of soils exhibit no potential for containing deeply buried *in situ* cultural materials. The narrow channel portion of the LOC below the dam is mapped as Frio silty clay, 0 to 1 percent slopes, frequently flooded. These are described as deep, clayey soils are found on floodplains and formed within Holocene-age calcareous alluvium. Cutbank inspection revealed these to be shallow, eroded, and gravelly soils over weathered bedrock. The plunge basin below the dam outlet is highly eroded/scoured. Immediately to the east, the area has been cleared of trees, and much of the soil has been stripped or eroded down to bedrock. The remainder of the LOC is located beneath the current water level and the earthen fill material of the dam structure.

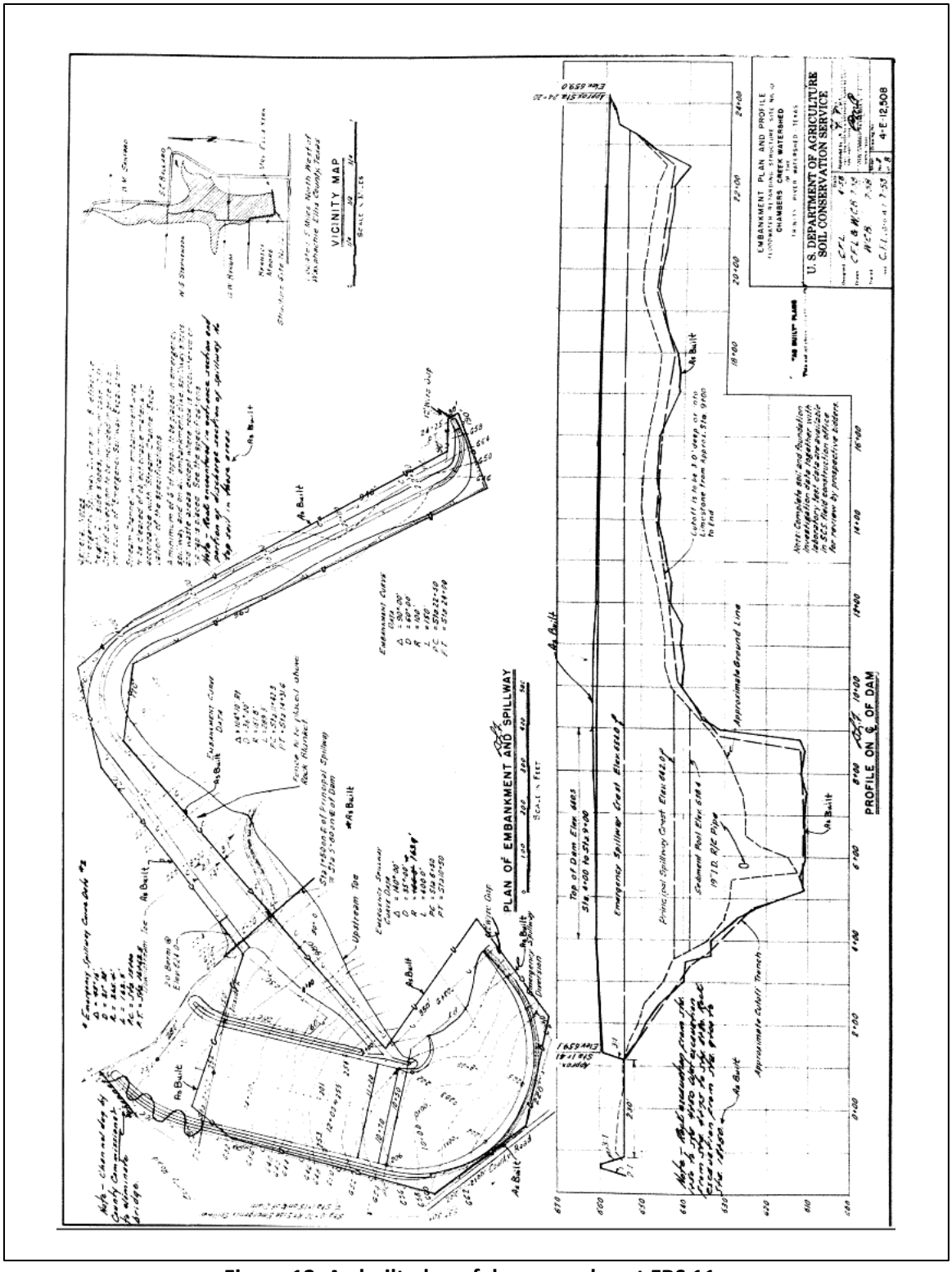

Figure 12. As-built plan of dam complex at FRS 11.

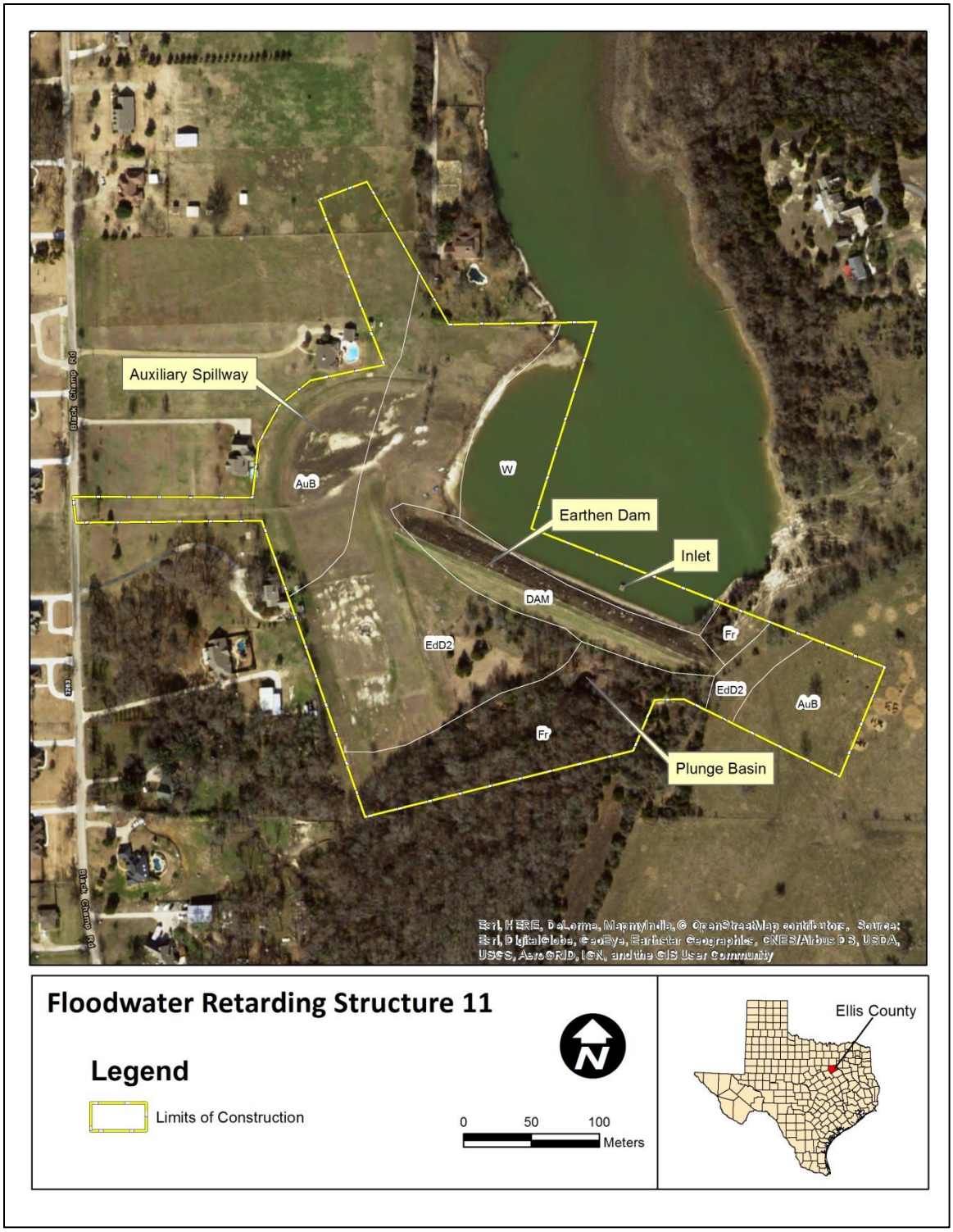

Figure 13. Aerial map showing dam components and LOC at FRS 11.

Figure 14. Overview of earthen dam structure. Facing southeast.

Figure 15. Eroded soil with exposed bedrock as seen within disturbed auxiliary spillway. Facing west.

Figure 16. Overview of earthen dam (right) and auxiliary spillway depression (left). Facing northwest.

Figure 17. View of outlet pipe and plunge basin below dam. Facing south.

Figure 18. Dam inlet inside the inundation area. Facing north.

Figure 19. View across northern part of auxiliary spillway, showing excavated zone and exposed bedrock. Facing north.

Field survey revealed that the area of potential new disturbance associated with rehabilitation measures at FRS 11 exhibits low potential for containing intact subsurface cultural deposits. Overall, numerous disturbances were documented within the LOC, and these disturbances preclude the presence of intact cultural materials with reasonable integrity potential. Based on soil-geomorphic conditions, the LOC exhibits low potential for the presence of deeply buried and intact subsurface cultural deposits. Based on the results of the background review and survey, it is recommended that the rehabilitation at FRS 11 should have **No Effect** on properties included in, or eligible for inclusion in, the NRHP, or that merit designation as SALs. In the event that previously undiscovered sites are found during construction, appropriate actions should be taken in accordance with the State Level Agreement among NRCS and the Texas SHPO, the National Programmatic Agreement among NRCS, the National Conference of State Historic Preservation Officers, and the ACHP, and NRCS General Manual 420, Part 401 guidance.

6.0 SUMMARY AND RECOMMENDATIONS

AECOM performed a cultural resources survey in support of plans to rehabilitate FRSs 10 and 11, located in Ellis County, Texas. The survey carried out within the LOC at each FRS, on January 15, 2016, under Texas Antiquities Permit No. 7521. For purposes of these investigations, the LOC is considered to be equivalent to the APE for cultural resources compliance with the NHPA of 1966, as amended, and the Antiquities Code of Texas.

The survey included a 100 percent pedestrian survey in all areas of potential new disturbance associated with rehabilitation measures at each FRS. Field investigations also included an assessment of the soils and geomorphic setting of the project relative to archaeological integrity potential and extant project impacts. Because the proposed rehabilitation efforts will be largely confined to previously disturbed areas within each dam complex, and due to the soil-geomorphic conditions which indicate an overall low probability for deep site burial, the LOC at each FRS locality does not exhibit the necessary integrity conditions to contain intact archaeological sites that would be eligible for listing in the NRHP or merit SAL designation. As such, no shovel tests or deep mechanic trenching was warranted. Previous investigations by NRCS at other rehab project locations often found that the areas are extensively disturbed, and rarely are there sufficiently preserved and intact soils with buried cultural remains (Calvin Sanders, personal communication 2015).

During the survey, two shed structures were found at the far northwest corner at FRS 10. One is located inside the APE, while the other is situated just outside the current defined limits. Additional archival investigations for these structures indicates that they were constructed sometime between 1995 and 2001, and given their recent age, neither should be considered eligible for listing in the NRHP or to merit SAL designation. No artifacts were identified or collected during the survey. Pursuant to 13 TAC 26.17, all project notes, maps, photographs, and other documentary records will be permanently curated at the Center for Archaeological Studies, Texas State University, San Marcos.

Based on the results of the background review and survey, it is recommended that the proposed rehabilitation efforts for FRS 10 and 11 in Ellis County should have **No Effect** on properties included in, or eligible for inclusion in, the NRHP, or that merit designation as SALs. In the event that previously undiscovered sites are found during construction, appropriate actions should be taken in accordance with the State Level Agreement among NRCS and the Texas SHPO, the National Programmatic Agreement among NRCS, the National Conference of State Historic Preservation Officers, and the ACHP, and NRCS General Manual 420, Part 401 guidance. Finally, in the event that any unmarked prehistoric or historic human remains or burials are encountered during construction, the area of the remains is considered a cemetery under current Texas law and all construction activities must cease immediately so as to avoid impacting the remains. The THC must be notified immediately by contacting the History Programs Division at (512) 463-5853 and the Archeology Division at (512) 463-6096. All cemeteries are protected under State law and cannot be disturbed. Further protection is provided in Section 28.03(f) of the Texas Penal Code, which provides that intentional damage or destruction inflicted on a human burial site is a state jail felony.

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