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Archaeological Monitoring Of The Historic Gan's Dam At Berry Creek Preserve For The Williamson County Parks Department, Williamson County Parks Department, Williamson County, Texas

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For The Williamson County Parks Department, Williamson County Parks
Department, Williamson County, Texas

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**ARCHAEOLOGICAL MONITORING OF THE HISTORIC GAN'S DAM
AT BERRY CREEK PRESERVE FOR THE
WILLIAMSON COUNTY PARKS DEPARTMENT,
WILLIAMSON COUNTY, TEXAS**

Texas Antiquities Permit Number 6674



By

Michael R. Bradle

and

Herbert G. Uecker

American Archaeology Group, LLC
Report of Investigations Number 187

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Report of Investigations Number 187

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ABSTRACT

Archaeological monitoring of repairs to the historic Gan's Dam, previously recorded as one historic component of archaeological site (41WM17), was conducted October 2-12, 2013 at the Berry Springs Preserve in Williamson County, Texas. Previous storm damage caused the dam to fail and impounded pond waters pushed the surface portion of the historic dam downstream. Williamson County Parks Department contracted with a construction firm to make repairs to the dam. Consequently, AAG was contacted about the discovery of the subsurface old historic dam limestone blocks and this led to discussions with the Texas Historical Commission, Archeology Division, and with the U.S. Army Corps of Engineers (COE), Fort Worth District. Subsequently, a Texas Antiquities Permit (6674) for monitoring was obtained and all work was also conducted under the auspices of Section 106 of the National Historic Preservation Act. Construction resumed with AAG on-site to ensure that the remnant historic dam features were not disturbed. The remaining dam portions were encapsulated with cement to provide a strong retention dam and to provide for long-term preservation of the historic dame and any potential remaining cultural deposits. No artifacts or features were encountered during monitoring, therefore, only project records are curated at the Center for Archaeological Research at the University of Texas at San Antonio.

ACKNOWLEDGEMENTS

American Archaeology Group LLC (AAG) is grateful to those whose cooperation made the completion of this project possible. Mr. Randy Bell, Director of Parks for the Williamson County Parks Department served as our primary contact and visited the project area to ensure the proper areas were examined and provided the survey crew with engineering maps. He is also thanked for his avid interest in protecting and preserving local cultural resources. Additional staff at the Williamson County Parks Department that assisted in the project were Terry Roberts, Park Superintendent, and Mr. Michael Young, Parks Program Manager. Mr. Dustin Mortensen, P.E. from Freese and Nichols Inc. is thanked for his extra efforts to help protect the historic Gan's Dam while still achieving the desired repairs. Herbert G. Uecker served as Principal Investigator for the project, and Michael R. Bradle served as Project Archaeologist, assisted by Robert L. Bradle and Ethan A. Bradle. Mr. Mark Denton in the Archeology Division of the Texas Historical Commission served as our lead reviewer for this project and he is thanked for his assistance and advice during this project, especially on-site. Mr. William A. Martin, also from the Archeology Division of the Texas Historical Commission was very helpful and provided advice initially to help get the project launched.

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INTRODUCTION

Archaeological monitoring of repairs to the historic Gan's Dam, previously recorded as one historic component of archaeological site (41WM17), was conducted October 2-12, 2013 at the Berry Springs Preserve in Williamson County, Texas. Previous storm damage caused the dam to fail and impounded pond waters pushed the surface portion of the historic dam downstream. Williamson County Parks Department contracted with a construction firm to make repairs to the dam. Consequently, AAG was contacted about the discovery of the subsurface old historic dam limestone blocks and this led to discussions with the Texas Historical Commission, Archeology Division, and with the U.S. Army Corps of Engineers (COE), Fort Worth District. Subsequently, a Texas Antiquities Permit (6674) for monitoring was obtained and all work was also conducted under the auspices of Section 106 of the National Historic Preservation Act. Construction resumed with AAG on-site to ensure that the remnant historic dam features were not disturbed. The remaining dam portions were encapsulated with cement to provide a strong retention dam and to provide for long-term preservation of the historic dam and any potential remaining cultural deposits. No artifacts or features were encountered during monitoring, therefore, only project records are curated at the Texas Archeological Research Laboratory.

The Berry Creek Preserve Park Project north of Georgetown, Texas which is owned and operated by Williamson County Parks Department instituted the dam repair project. Apparently the top portion of the dam washed away a few years ago after torrential rains associated with a hurricane. The dam (Figure 1) was originally recorded by AAG as a part of our survey project in 2003 under TAC Permit Number 3256 as a historic feature within the boundaries of site 41WM17. The site served as a mill, originally built by John Berry in 1846 as one of the earliest mills in Texas and was later operated as Gan's Mill through 1916.

During the current construction, the contractor (Westar Construction) encountered two separate aspects of the dam that are worthy of discussion. First, while excavating prior to any monitoring permit issued and AAG's involvement and cutting into bedrock to create an anchor for the new dam footing, they found old pipes and certain components related to the Gan's Mill operation (Figure 2). These components were placed onto a trailer for disposition. Upon discussions with the THC, and due to the severe impacts to these mangled pipes and remnant wood, THC recommended that a Petition to Discard be provided so that Williamson County Parks & Recreation can salvage aspects for use in historic interpretation within the Berry Springs Park. The second feature discovered was the base of the dam deep within the soil deposits (Figures 3-6). It is the same dam that was recorded in 2003 but the entire top portion is now missing.

The dam was recorded in 2003 as 16 inches thick and 151 feet long and built to the natural contour with concrete, limestone and mortar. The problem is that new specifications were developed without knowing the exact footprint of the old dam. Accordingly, as the new base support area was trenched, a small portion of the original dam base was impacted. Construction was halted and the Texas Historical Commission

MAP REMOVED TO PROTECT SITE LOCATION

Figure 1. Location of Project Area on 7.5' USGS Map Quad *Georgetown*.

was contacted as well as AAG. Since AAG was the original recorder of the dam site, we were called and requested to assist in handling the situation. Upon communication with the THC, we agreed to conduct an on-site inspection which did occur on July 3, 2013.

AAG met on-site with representatives from Williamson County Parks, Freese & Nichols and Westar Construction. After reviewing the remains of the original dam walls, AAG concluded that the proposed new dam construction appeared to be parallel to the original dam wall. AAG obtained photos from all involved to present to the THC during consultations. Since the construction needed to extend down-slope with respects to OSHA shoring requirements (deep trenching), the best strategy for long-term stabilization and preservation was designed to pour cement capping over the existing dam wall, and with a new concrete dam wall immediately uphill from the historic dame associated with concrete aprons to the sides of the dam. This will also provide a long-term preservation technique for the wall as long as a barrier between the new concrete and the original wall is put into place. This approach will work also, as long as minimal impacts occur on the down-slope side of the original dam wall.



Figure 2. Pipes and internal components discovered during impact trenching of original dam wall prior to AAG monitoring the construction.



Figure 3. Deep trenching operation for the new dam wall. Note the old historic dam wall to the left of the trench and remnant walls at the edge of the water.



Figure 4. View of the old dam wall on the left side of the water, new trench upslope from the historic dam wall.



Figure 5. Trenching down into bedrock, original historic dam wall at left of trenching machine, in the mud.



Figure 6. Close-up of buried historic dam wall in soil deposits.

ENVIROMENTAL SETTING

General

The project area is located within the Texan biotic province as defined by Blair (1950:110-102). This province includes the broad ecotone between the forests of the Austroriparian and Carolinian provinces of eastern Texas and Oklahoma and the grasslands of the western parts of these states (Dice 1943). According to Blair (1950:100), the southwestern boundary is arbitrarily defined by soil type at the line separating pedalfers from pedocals. The Balcones escarpment forms an abrupt western boundary for the central part of this province in Texas, and the western boundary in north Texas corresponds to the western boundary of the Western Cross Timbers. Rainfall in the Texan province barely exceeds water need, and the region is classified by Thornthwaite (1948) as a moist subhumid climate with a moisture surplus index of from zero to 20 percent.

Soils

There is one soil series in the study area depicted on sheet 37 of the Soil Survey of Williamson County, Texas (Werchan and Coker, 1980): Oakalla. The soils developed on the bedrock, colluvial, and alluvial deposits associated with the upland, ancient terraces, modern floodplain and modern channel of Berry Creek. The Oakalla soils are alkaline, alluvial, soils and have high preservation potential for buried, intact artifacts.

The Oakalla series consists of deep well drained, loamy soils found formed in alluvium on bottom lands of the North San Gabriel River. Slopes are less than 1 percent. The solum ranges in thickness from 69 to 152 centimeters. The A horizon is 0 to 81 centimeter thick, dark grayish brown to dark brown, silty clay loam. The B horizon is calcareous and moderately alkaline. The B horizon is about 70 centimeter thick, light yellowish brown, silty clay loam. The horizon is moderately alkaline and contains common fine threads of calcium carbonate (Werchan and Coker, 1980).

Vegetation

The vegetation of this area has been described in detail by Tharp (1939). The demarcation line for the Texan province is the boundary between moisture surplus and moisture deficiency. Sandy soils in this region support an oak-hickory forest dominated by post oaks (*Quercus stellata*), blackjack oaks (*Quercus marilandica*), and hickory (*Carya buckleyi*). Clay soils in the area originally supported a tall-grass prairie, much of which was cultivated during the modern historic era. The reader is referred to Blair (1950) for a comprehensive description of the Texan Biotic province.

ARCHAEOLOGICAL BACKGROUND

Williamson County is located in the North Central Texas cultural-geographical region as defined by Biesart et al. (1985:76). This area is referred to as Central Texas by most archaeologists and is rich in archaeological sites.

Summaries relevant to the prehistory of Williamson County and vicinity have been prepared by various archaeologists, primarily as a result of work at the Fort Hood Military Installation (Guderjan et al. 1980; Skinner et al. 1981, Thomas 1978; Roemer et al. 1985, Carlson et al. 1986), Belton Reservoir (Shafer et al. 1964), the Youngsport site (Shafer 1963), and Stillhouse Hollow Reservoir (Shafer et al. 1964; Sorrow et al. 1967). Weir (1976), and Prewitt (1981, 1985) have published summaries of the region. Additional work by Prewitt (1974) at the Loeve-Fox site has also provided information concerning the prehistoric inhabitants of Williamson County. Two comprehensive syntheses concerning the archaeology and paleoecology of Central Texas recently appeared in Volume 66 of the *Bulletin of the Texas Archeological Society*: "Forty Years of Archeology in Central Texas," by Michael B. Collins (1995), and "Implications of Environmental Diversity in the Central Texas Archeological Region" by Linda Wootan Ellis, G. Lain Ellis, and Charles D. Frederick (1995). The following discussion is adapted primarily from these works.

Paleoindian Period

Although according to Willey and Phillips (1958:80), problems exist with the term "Paleoindian." Nevertheless, the term is used ubiquitously in the archaeological literature, often to refer to prehistoric cultures oriented toward big game procurement as a primary means of subsistence. Collins (1995:381) posited instead that during Clovis times, Paleoindians exploited a diverse range of fauna that not only included large herbivores such as mammoth, bison, and horse, but also included smaller animals such as turtles, land tortoises, alligators, mice, badgers, and raccoons. The results of excavation of a cultural pavement at Kincaid Rockshelter suggest that the Paleoindian inhabitants of the site returned there repeatedly as part of a regular hunting and gathering strategy, in contrast with the migratory subsistence pattern of nomadic hunters who only pursued big game. Thus, it is probable that the Clovis diet included a broad array of plants (Collins 1990; Collins et al. 1989).

According to Skinner et al. (1981:13), the Paleoindian period is one of the least understood time periods in Central Texas prehistory, primarily because so few sites have been excavated. For example, as of 1985, only two Paleoindian sites had been reported for Bell County (Biesart et al. 1985:125). Evidence of Paleoindian cultures consists primarily of surface-collected materials found over much of Central Texas. At Fort Hood, distinctive Paleoindian projectile points were found in multi-component surface sites and as isolated finds (Carlson et al. 1986:125). Generally, it is believed that this period lasted from about 10,000 B.C. until 6000 B.C. Diagnostic artifacts of the period include dart points of the *Angostura*, *Clovis*, *Folsom*, *Golondrina*, and *Plainveiw* types as defined by Suhm and Jelks (1962) and Turner and Hester (1985).

These early sites are often found on old terraces of major river drainages and are typically more distant from major streams than more recent occupations (Bryan 1931). Some rockshelters, such as the Levi site, were intensively occupied even though they are located a considerable distance from major rivers. The only example of a Paleoindian occupation site in Central Texas adjacent to a major drainage is the Horn Shelter (41BQ46) in Bosque County (Redder 1985). Collins (1999) recently reported on archaeological work at the Gault Site, a major Clovis site in Bell County that was still being studied at this writing.

Archaic Period

The Archaic is a comparatively lengthy cultural period, which persisted in Central Texas from approximately 8500-1250 Before Present (B.P.). According to Prewitt (1981:71), "The Archaic Stage dominates all other remains in Central Texas." Prewitt (1981) has subdivided the Archaic into eleven phases. Johnson (1987) has questioned the validity of the phase concept as used by Prewitt, especially the phases occurring before the Middle Archaic. Carlson et al. (1986:15) grouped these into Early, Middle, Late, and Terminal Periods.

According to Prewitt (1981:77-78), during the Early Archaic there was a "strong orientation toward the gathering aspect rather than the hunting, and a mobile population was of low density." These characteristics apparently were predominant during the Circleville, San Geronimo, and Jarrell phases (8500-5000 B.P.). In the Middle Archaic, food gathering apparently became very specialized as evidenced by the presence of numerous burned rock middens/mounds (Prewitt 1981:78-80). Prewitt divides the Middle Archaic into the Oakalla, Clear Fork, Marshall Ford, and Round Rock phases (5000-2600 B.P.). It appears that considerably fewer burned rock middens were formed during the Late Archaic than in the earlier Archaic. The archaeological record indicates that bison were important in the diet of prehistoric peoples, but were not necessarily the principal food source, during this time (Prewitt 1981:80-81). The Late Archaic occurred during the San Marcos and Uvalde phases (2600-1750 B.P.). The terminal Archaic, according to the classification by Carlson et al. (1986), includes the Twin Sisters and Driftwood phases (1750-1250 B.P.). An increase in the importance of gathering and an apparent peak in site density seems to have occurred during Prewitt's (1981:82) Driftwood phase. A majority of the sites in Williamson County are Archaic in age, which, according to Prewitt (1981:Figure 3), lasted from 8500-1250 B.P. This interpretation is supported by the by Collins (1995:383) assertion that "two-thirds of the prehistory of Central Texas is 'Archaic' in character."

Late Prehistoric Period

This period has been characterized in the archaeological literature as the Neo-American Stage (Suhm et al. 1954), the Neo-archaic (Prewitt 1981), and the Post-Archaic (Johnson and Goode 1994). The Late Prehistoric is typically divided into the Austin (1250-650 B.P.) and Toyah (650-200 B.P.) phases. Technological changes are the

primary distinguishing characteristic of this stage. The archaeological record indicates that during this period, the bow and arrow became the principal weapon for hunting and warfare, and that the use of ceramics and the practice of horticulture first appeared in central Texas and surrounding regions.

According to Collins (1995:385), during the Late Prehistoric of central Texas, the bow and arrow was the first of these cultural innovations to be adopted, then pottery appeared, and finally agriculture developed last in the sequence, but was of relatively minor importance. Until the onset of these Late Prehistoric adaptations, most cultural groups continued to practice hunting and gathering as their principal means of subsistence, as had their ancestors throughout the Archaic and Paleoindian periods. However, in about 800 B.P., evidence for a different subsistence adaptation appears in the archaeological record and this cultural time boundary marks the separation between the late Archaic and the Austin and Toyah phases of the Late Prehistoric period (Collins 1995:385).

The most obvious of the changes that emerged at the beginning of the Late Prehistoric period was the introduction of the bow and arrow and decreased use of the *atlatl* or spear thrower. Otherwise, life ways in the Late Prehistoric were probably quite similar to those in the earlier Archaic period (Prewitt 1981:74; Weir 1976). A chronological model of bison presence and absence periods on the southern plains suggests that bison were present during the Toyah phase but during the preceding Austin phase (Dillehay 1974).

Historic Period

Collins (1995:386) divides the historic period of Central Texas into three sub-periods: early, middle, and late. The archaeological record of the first two of these sub-periods contains vestiges of occupations by both indigenous and European peoples; however, evidence of indigenous culture is almost completely absent for the third sub-period. The early historic sub-period in Central Texas began in the late seventeenth century with the arrival of the first Europeans to that area. Williamson County is situated within the historic range of the indigenous Tonkawa Indians who inhabited the area in the sixteenth century (Newcomb 1986). By the nineteenth century, they had broken ties with the Comanche and Wichita and were associated with the Lipan Apache (Aten 1983:32). The Apache have been described as typical southern Plains Indians who were hunters and gathers and who lived along the streams and rivers of Central Texas. Remains of this group have not been found in an historic context in Williamson County.

During this period, several aboriginal groups, including the Caddo, Jumano, Tonkawa, Comanche, and Lipan Apache occupied Texas (Newcomb 1986), and trade existed between the Jumanos and the Caddos. The Lipan Apaches, and subsequently the Comanches, entered the region from the Southern High Plains while following migrating game herds. Contact-period occupations are often identified by the presence at local archaeological sites of glass beads, gun parts, gunflints, metal projectile points, and European manufactured ceramics. The archival search by AAG did not discover the

existence of any Historic Indian sites in Williamson County. In nearby Coryell County, a blue glass bead was found with one of the burials at 41CV1, a group burial along the Leon River (Jackson 1931), and a steel arrow point has been reported as an isolated find on Horse Creek in the extreme east corner of Coryell County (Campbell 1952).

The earliest European expedition likely to have visited present-day Williamson County was led by Spaniard Alvar Nunez Cabeza de Vaca. That party wandered throughout Texas from 1528 to 1536. Some researchers believe that the eight months they apparently spent among the Avavares Indians was actually spent with the Tonkawas of the Williamson County area (Scarborough 1973:52).

The next recorded European incursion was led by the French governor of Texas, Robert Cavalier, Sieur de la Salle. In 1686 and 1687, La Salle met Indians and described landmarks that, according to some scholars, were in Williamson County (Hackett 1931:519-520).

In 1688, in response to French activity in Texas, Captain Alonso de Leon followed Spanish government orders and began construction of the system of royal roads that eventually spanned Texas and several surrounding regions known as the Caminos Reales (The King's Highway). These roads were used to establish several missions in east Texas. It was soon discovered that the segment of the camino real just to the east of present Williamson County became impassable when heavy rains overflowed the streams. In such wet times, De Leon designated a route to the west and north as the Camino de Arriba (the Upper Route). This road crossed Brushy Creek, the San Gabriel River, and the Brazos River just north of its confluence with the Little River. In his recorded trip along this route, De Leon left "a bull, a cow, a stallion, and a mare at each river he crossed," thus significantly contributing to the mustang and longhorn population of Texas" (Gard 1954). The construction of this trail through the heart of Williamson County by De Leon instigated the first Spanish exploration of the area immediately surrounding the project area.

In 1691, Spanish governor of Texas Domingo Teran de los Rios brought herds of cattle to the missions established the year before. Consisting of 50 soldiers and 13 churchmen, his entourage passed through southeastern Williamson County (Casteneda 1936 I:362, Bancroft 1884 XV:391, and Gard 1954:5).

The next Spanish expedition to pass through Williamson County occurred under the leadership of Captain Domingo Ramon and the dashing French trader Lois Juchereau de Saint Denis. The Ramon-St. Denis expedition, consisting of 75 men, 64 oxen, 490 horses and mules, and more than a thousand sheep and goats, spent several weeks in present-day Williamson and adjoining Milam Counties. They met and traded with several thousand Native Americans of various tribes. One of the clergy, Fray Espinosa, named several of the streams (Casteneda 1936 II:42, and 51).

Joseph de Azlor de Verta, a wealthy Coahuilan who had obtained the title of Second Marquis de San Miguel de Aguayo, conducted the most ambitious Spanish

expedition that ever entered present-day Williamson County. In fall of 1720, the Marques de Aguayo launched what is probably the largest expedition ever made to establish Spanish dominion over the province of Texas. It consisted of 500 men, 600 loads of supplies, 4000 horses, 600 cattle, 900 sheep, and almost 800 mules. After traveling nearly a thousand miles, the huge delegation reached the Colorado River. From there, it proceeded northeastward, crossing Chandler Branch and the South and North branches of the San Gabriel River in central Williamson County (Scarborough 1973:55-56, citing Castaneda 1936 II:131, 137). After traveling across the Lampasas, Salado, San Andres (now the Little San Andreas), and Brazos Rivers to the north, the entourage turned eastward near present-day Waco to reestablish the inactive Spanish missions founded in 1691. Some scholars believe that in successfully reestablishing the Spanish presence in Texas, this last of the major expeditions kept the French from capturing the state (Bolton 1962:144, Bolton 1939:17-18, and Morfi 1935 I:221-223).

In general, the expedition followed present-day Interstate 35 through Williamson County (Hackett 1931:474). Heeding the advice of a Tonkawan chief, El Cuilon (also called Juan Rodriguez), Aguayo followed the El Camino de Arriba through Williamson County, rather than taking the more heavily traveled El Camino Real which the chief had deemed to be impassable for this huge expedition because of marshes and thick woods (Hackett 1931:474).

The Spanish Army waged war against the Lipan Apache in the Williamson County area for 14 years. The area became renowned for its buffalo (Morfi 1935 I:221-223; Bolton 1939:17-18; Bolton 1962:27-28, 30, 141; and Hackett 1931:492). A particularly large Indian settlement called Rancheria Grande attracted frequent Spanish visitations during the first four decades of the eighteenth century to recruit candidates for the San Antonio missions. In 1746, the Spanish established Mission San Francisco Xavier de Horcasitas on the San Gabriel River just east of Williamson County to address the spiritual needs of the Native Americans and to fend off French incursions by also establishing a trade network with the local tribes (Bolton 1962:45, 150-151, 153-156, 160, 166, 185; Gilmore 1969:143).

Just two years later, the mission was destroyed by the Apache. However, by the 1749, two new missions, San Ildefonso and Nuestra Señora de la Candelaria, opened, and Mission Xavier was rebuilt. All three missions were in use for the next seven years. To add protection, Presidio San Francisco Xavier de Gagedo was established in the area in 1751. But tragedy struck as infighting among the Spanish left the Native American neophytes discouraged and many retreated into the wilderness. In 1756, the missions were abandoned. Although now actually in Williamson County, these three missions and the presidio influenced the daily lives of the many Native Americans who lived within a large part of central Texas (Scarborough 1973:63-64).

As soon as the early 1820s, a few pioneers of Austin's Colony drifted beyond the colony's boundaries to settle in the valleys of Brushy Creek and San Gabriel River. The majority of Williamson County was once part of the Robertson Colony. Early historic-era settlement of the area occurred in 1835 at Salado, in Bell County. Most of Williamson

County's earliest residents came from Bastrop and the Webber's Prairie area to the south and the Brazos River to the east (Scarborough 1973:64-70).

Within the State of Coahuila and Texas, the earliest regional governing body of today's Williamson County area was the Municipality of the District of Viesca. This district was northwest of the Camino Real, extending to the east beyond the Brazos valley. Along the Brazos, Tenoxtitlan, a Mexican military post abandoned in 1832, became a large trading post, the closest one to the settlements of Williamson County. The seats of government also were located on the West Bank of the Brazos, first in Sarahville de Viesca, five miles north of Marlin, Falls county, and then in Nashville, between present-day Gause and Hearne (Scarborough 1973:71-77).

Far removed from protection by the Spanish garrisons, these remote area were the scenes of frequent Indian attacks. Surveyor Thomas A. Graves was ambushed by Indians while working on the San Gabriel River in the fall of 1835. A surveyor named Lang was killed by Indians in 1836 while working at the headwaters of Brushy Creek (Scarborough 1973:76). Neil McLennan and his family suffered several dangerous encounters in the San Gabriel Valley. These attacks stimulated the organizing of one of the three original Texas Ranger companies in 1835. The rangers built a cedar facility near present Leander called the Tumlinson Block House (Barker 1925:329-330, 361, Smithwick 1900:213, Yoakum 1856 II:265-267, Webb 1952 II:690, Brown 1896:85, De Shields 1912:90-93, Wilbarger 1985:190-192).

In 1835, the District was renamed the Municipality of Milam. The Mexican Army invaded Texas to put down the Revolution. This precipitated the Runaway Scrape, causing many of the Anglo-American settlers in the Williamson County area to flee. During this time, Tumlinson's Block House Fort was burned by Indians (Makemson 1904 and Smithwick 1900). Most of this company of Rangers had departed to assist General Sam Houston at San Jacinto. The company was commanded by Major Robert M. Williamson (Bolton 1962:141).

With General Houston's victory at San Jacinto, the Republic of Texas began to govern the vast territory. Milam was made a county, one of 23 original counties in the Republic. In 1837, the United States suffered a widespread devastating crop failure and depression. Many of these newest immigrants settled in Milam County. Many Swedish immigrants settled in present-day Williamson County. The first organized settlement in Williamson County was Kenney's Fort, located just east of present-day Round Rock. Dr. Thomas Kenney built a house and fort on elevated above a cove along the south bank of Brushy Creek, just west of where Dyer Branch flows northward into Brushy Creek. Indian raids plagued the first settlers. In 1839, a particularly bloody conflict, the Battle of Brushy Creek, resulted in the death of several colonists and about 20-30 Native Americans. The Williamson County area was the setting for several other major skirmishes with Indians (Scarborough 1973:80-97).

Williamson County played a crucial role in two salient incidents involving ongoing relations between Texas and Mexico. One was the Flores-Cordova Affair, and

the other was the Santa Fe Expedition. In 1839, a prolonged chase led to the Texas Rangers' capturing a party of Mexican officials between the North and South San Gabriel. The Mexicans were cornered on a steep bluff of the North San Gabriel River. Although most escaped, the Texians recovered at least 156 horses and mules, several hundred pounds of gunpowder, and a variety of luggage. In the bags, they discovered several official communications revealing a plot to incite Indians against the government of Texas (Scarborough 1973:89-92). Two years later, Texas forces met a Kenney Fort and other sites north of Austin to head for New Mexico. The expedition met with bitter failure, as the forces were poorly organized and New Mexico remained loyal to the government of Mexico (Scarborough 1973:98-101).

Relations between Native Americans and Euro-American settlers remained hostile, producing deadly conflicts throughout this period. Dr. Thomas Kenney, founder of Kenny Fort, was killed by Indians. A renowned mediator who resolved numerous conflicts between Indians and settlers was Delaware tribesman Jim Shaw (Scarborough 1973:103-108).

The 1840s witnessed steady growth of this area. New communities arose around mills, churches, and general stores. Makemson (1904) identifies the location of these settlements: "At the time the county was organized, with few exceptions, the settlements were confined to Brushy Creek and San Gabriel River. Comparatively few settlements were made far out in the prairies until the era of barbed wire and the advent of railroads (Makemson 1904). New stage lines were added. A line connecting San Antonio to Waco was the first to run through the heart of Williamson County area. The first general mercantile store in the county was opened by Nelson Morey in 1848 just south of present Hutto. That same year, R. H. Taliaferro organized Missionary Baptist Church, the area's first Protestant church (Scarborough 1973:108-115). Also in 1848, the county's first school was built at Moss's Spring, just west of present Round Rock (Makemson 1904).

Led by San Jacinto hero Washington Anderson, a campaign was launched in 1848 to create a new county in this area north of Travis County. It was impractical to travel all the way to Nashville to conduct Milam County government business. The population well exceeded the 250 estimated by various historians. The legislature agreed, naming the area after longtime Judge Robert McAlpin Williamson on March 13, 1848. The Judge officiated many times at courts throughout Milam County.

In May 1848, a tract of land lying between the North and South San Gabriel Rivers, just south of their confluence, was donated by George Washington Glasscock for the county seat. In his honor, it was named "Georgetown" (Scarborough 1973:113-127). It was located near the post office of Brushy Creek, which had been established the year before (Scarborough 1973:145).

Troubles with Indians gradually declined throughout the 1850s as the Indians became increasingly friendly (Scarborough 1973:141). The last victims of Indian attack occurred as Mr. and Mrs. Wofford Johnson and their daughter were killed in western Williamson County on August 15, 1863. After that time, Comanches still ranged the area,

although attacks were rare because of the presence of the Texas Rangers. Most of these lawmen were called to the Confederate cause in the Civil War, but the survivors reorganized and returned to duty after the war (Makemson 1904:11-12, and Maltby 1906:20, 23-34, 26-27, 150-152, and 204).

By 1850, the population of Williamson County had grown to 1,568, and it reached 3,779 by 1858 (Scarborough 1973:141). In the 1860 Census, the County's population was 4,529, which rose slightly during the tumultuous Civil War and Reconstruction years to 6,368 by 1870. During the post-bellum industrialization and tenant farm transition, population exploded to 15,155 in 1880, the highest rate of increase over a 10-year period in the County's history. By 1870, Indian violence against settlers had been halted, encouraging much greater settlement. Population continued to increase but at a slightly lower rate, being 25,909 in 1890, 38,072 in 1900, and 42,228 in 1910. From 1920 to 1970, population levels actually declined, but they exploded in the past 25 years as Williamson County became part of the Austin Metropolitan Area (Texas Almanac 1993: 335).

The City of Georgetown experienced a similar population increase. From 1850 to 1870, it experienced the modest growth from 200 to 320. From 1870 to 1880, it rose to 1,354, and almost doubled to 2,447 in 1890. Increases were slight through 1960, except when populations slightly declined prior to 1920 (United States Census).

The frontier moved westward, leaving in its wake a growing population and farming area in western central Texas. The earliest farms grew commodities necessary for sustaining life for the pioneer settlers. Of the 249,528 acres of land comprising the County in 1858, only 22,618 acres were in cultivation. These consisted of 11,100 acres planted in corn, 9,350 in wheat, and 1,378 in cotton. The 1858 Williamson County tax rolls listed four thousand horses and 25,000 cattle were listed as property of the citizens. Peaches and hogs also are listed as agricultural commodities. In the 1850 United States Census, three-fourths of the men were listed as "farmers," and most of the others' occupations were listed jointly with "farmer" (United States Census, 1850).

John S. Knight planted some of the first massive amounts of cotton in the County in 1870. Many acres of eastern Williamson County were planted in Cotton during the 1870s and 1880s. Gins and mills involving the spin-off cottonseed industry flourished in Circleville, Granger, Taylor, and Georgetown. In 1899-1900, Williamson County led the state in number of bales of cotton produced. The county's first gristmill was built by Wash Anderson on the north bank of Brushy creek in 1843, at present Round Rock.

After destruction of this mill by a flood in 1845, others were built and maintained in the area throughout the nineteenth century. Other antebellum mills include Gann's Mill on Berry's Creek, operated from 1846 to 1916 (which is located on the current project area); Gooch's mills, which began in 1849; Mather's mill, which began in 1852; Ira Chalk's mill, which was started in 1855; and the Knight's Springs mills of Benjamin Gooch and John W. Owens, which thrived between 1852 and 1855 (Scarborough 1973:161-162). Throughout the postbellum period to the end of the nineteenth century,

numerous mills flourished throughout the county processing corn, syrup, and other products. Conducted mostly in the western portions of the county, the cattle industry reached its zenith from 1875 to 1900 (Scarborough 1973:233-235).

Historic Associations of the Project Area

The project area was once a key part of the rural Texas homestead of famous American frontiersman John Berry (1786-1866). He is the person for whom Berry Creek is named and whose remains rest in the small Berry family cemetery on the property. The information in this section about Berry and his equally renowned family is summarized from Pope (ed. 1988). The interested reader is referred to Pope's work for additional information about the Berry's.

Born in 1786 in Louisville, Kentucky, John Berry also lived during the course of his life in Indiana and Texas. He was twice a widower, and he and his three wives brought eighteen children into the world. Berry was generally a man of simple means, being a blacksmith, gunsmith, and miller, but he nevertheless lived an illustrious and exemplary life.

Berry was a veteran of the War of 1812, having fought under the command of his first wife's father, Bill Smothers, at the Battles of Tippecanoe and the Thames. Smothers came in 1813 to the part of Mexico that later became Texas, where he explored the untamed Brazos River valley for several years before becoming a scout for Stephen F. Austin in 1821. His stories of Texas apparently encouraged John Berry to relocate there from Indiana in 1826 with his second wife, Gracie, his three sons Joseph, John Bate, and Andrew Jackson, and his three daughters Elizabeth, Hannah, and Margaret. The Berrys settled in the Atascosito District in what is now far southeast Texas. Before coming to Texas, Berry had homesteaded with his first wife, Betsy, in 1816 near the small rural settlement of Blue Spring, Indiana, where he helped operate the family-owned grist mill on Indian Creek, near Hamilton. Betsy died in about 1818.

In 1831, Berry received a town lot in Liberty from the Mexican government because of his skill as a blacksmith and gunsmith. In 1834, Berry and his family moved to the new town of Mina (later Bastrop), where they received two town lots and a 12-acre farm tract. Pope (ed. 1988:1) indicates that shortly before the Battle of the Alamo in 1836, famous frontiersman, hunter, statesman, and Texian Alamo defender David Crockett, who was born in the same year as Berry, came to Berry for repair of Crockett's famous flintlock rifle, "Old Betsey," while the Berrys were at Mina.

Berry's second wife, Gracie, died in 1830, and in 1831 he took a third wife, Hannah, just a few years prior to moving to Mina and re-establishing his blacksmith trade there. John and his three eldest sons became Robertson Colonists in late 1835. By that time, the struggle for Texas independence had begun. Except for the three eldest sons, who joined the Texian forces, the Berry family fled to Fort Parker for protection from Santa Anna's army during the Runaway Scrape that occurred after the Battle of the

Alamo in the spring of 1836. Sons Bate and Jack fought at San Jacinto. Joseph was also present but apparently did not engage directly in the action (Pope ed. 1988:13).

Both before and after the war, these three also served with the rangers under such commanders as Seth Billingsley, John G. McGehee, William W. Hill, and John L. Lynch. All fought against hostile Indians in the famous Battle of Plum Creek in August, 1840. Joseph and Bate were members of the ill-fated Mier Expedition to Mexico, where Joseph was bayoneted to death by a Mexican soldier after being incapacitated with a broken leg. After being captured, escaping, and being re-captured and confined to Perote prison near Mexico City, Bate drew a white bean and thereby escaped execution. But he remained a prisoner until September, 1844. Bate, Andrew, and several of Berry's younger sons also served in the Civil War.

In August, 1845, John Berry received title from the Republic of Texas of a league and a labor of land in western Milam County (later Williamson County), about three miles northeast of present Georgetown. The AAG project area is the part of that grant near the location of Berry's last home. It contains the spring where Berry established a large grist mill used by farmers from surrounding areas to grind corn and wheat. It was one of the first grist mills in the county and its burrstone is currently displayed on the grounds of the courthouse in Georgetown.

Berry also built a blacksmith shop and forge within the Berry league. He and his sons cleared the property, erected split-rail fences, and built several cabins on it for their respective families. Some of the pecan trees present along Berry Creek at the time of this writing are alleged to have been planted by the Berry's (Pope ed. 1988:16). As a commissioner appointed by the Texas Legislature, John Berry helped organize the county and establish the county seat, and he served as a member of the county's first grand jury. Until a church was built, the home of Berry and his third wife Hannah along Berry Creek served as the meeting place for the local Baptist congregation for more than 14 years.

PREVIOUS INVESTIGATIONS

The Texas Archeological Research Laboratory files contain copies of numerous communications from landowners and artifact collectors documenting or describing sites and artifacts found in Williamson County. Also present in those files are copies of unpublished manuscripts, some of which do not provide sources or dates of preparation. Information regarding previous work in other parts of Williamson County appears in the various references cited above.

Williamson County has been the scene of numerous investigations by professional archaeologists at various levels from small projects by private contractors, universities, and state agencies to large area surveys such as that at Granger and North Fork Reservoirs, the first large-scale project in the county. Virtually no systematic archaeological work was done in Williamson County prior to the initial survey of the proposed North Fork, South Fork, and Laneport reservoirs (later referred to as Granger Reservoir) in 1963 (Shafer and Corbin 1965) as part of the Texas Archeological Salvage Project (TASP). Prior to this effort, two articles documenting archaeological work in the county were published by T.N. Campbell (1948) and Mardith K. Schuetz (1957).

In 1963, the TASP surveyed the sites of the proposed reservoirs. At North Fork, 44 sites were recorded, over half of which are burned rock middens or sites buried in alluvial deposits (ceramics were only found at one site [41WM71]); at South Fork, 30 sites were identified, almost half of which were burned rock middens; and at Laneport 10 sites were recorded. At this latter reservoir, both burned rock middens and alluvial terrace sites were found, but it was concluded that only the latter type of site can be said to be typical of the Laneport area (Shafer and Corbin 1965:47). Approximately 10 miles north of Taylor, Laneport Reservoir is the site of the closest major archaeological survey to the project area except for surveys along Brushy Creek about five miles to the southeast. Additional work in the area was conducted by Frank W. Eddy (1973) at Laneport, William S. Sorrow (Jackson 1974) at North Fork and Prewitt (1974) at Granger.

These early studies were not conducted using intensive or systematic sampling procedures. Therefore, in May 1976 the Anthropology Laboratory at Texas A&M University (TAMU) began an intensive archaeological site survey and assessment program of all government owned lands in the North Fork and Granger reservoir boundaries (Patterson and Moore 1976). The TAMU work consisted of a preliminary assessment (Patterson and Moore 1976), an archeological survey of the Granger Reservoir area (Moore, Shafer and Weed 1978) and the North Fork River basin (Patterson and Shafer 1980).

Several sites were tested prior to the inundation of Granger Reservoir. Site 41WM21 was tested by TAMU. In 1976, Gary L. Moore tested sites 41WM21, 41WM124, and 41WM133 (Shafer and Moore 1976). Clell L. Bond (1978) tested 41WM30, 41WM284, and 41WM294 in 1977. Site 41WM21 was determined to be the remains of an intermittent occupation during the Early, Middle, and Late Archaic periods of Texas prehistory.

The work at sites 41WM30, 41WM284, and 41WM294 was designed to determine possible similarities in lithic procurement and reduction at the three sites and to explain behavior patterns manifested in the archaeological deposits at 41WM130. This study established that 41WM130 had been periodically occupied from the Twin Sisters through Toyah phases. It was determined that the subsistence pattern of the site's inhabitants remained nearly constant through time and included the wide-ranging exploitation of resources found in the San Gabriel Valley. It was postulated that the availability of lithic resources was one of the principal reasons that this site was reused as during such a lengthy interval.

A single site (41WM283) is located about three miles northwest of the center of Taylor on the east bank of the north fork of Mustang Creek at the former Wilson Springs community. This site was recorded in 1976 (TARL site files). It is described as an Archaic occupation and quarry site. Additional surveys by Espey, Huston & Associates (Foster 1994) revisited 41WM432, 41WM546, and 41WM547. They also recorded one new site, 41WM808. Bradle et al (1998) surveyed along the North Fork San Gabriel River in Georgetown, Texas and recorded 41WM432, 41WM930, 41WM931, 41WM932, and 41WM933. Bradle et al. (2002a,b) conducted other nearby surveys that are worth noting.

An archaeological survey of approximately 126.602 acres for the proposed Berry Creek Preserve park project was conducted by American Archaeology Group, LLC (Bradle et al. 2003). (AAG) in October and November 2003. This project was performed for the Williamson County Parks Department. This investigation was performed using the pedestrian survey method supported by shovel testing and probing, by subsurface mechanical trenching and augering. One archaeological site (41WM17) was identified within the project area that contains prehistoric components ranging in age from Middle Archaic to Transitional Archaic (2000 B.C. to A.D. 700). The historic components range in age from 1845 to the present. 41WM17 was recorded as a large multicomponent site consisting of a historic farmstead, historic cemetery, prehistoric lithic scatter, large burned rock midden, former historic springhouse, historic Berry Spring site with associated Gan's Mill dam (the focus of the current project) and ponds. This site is eligible for inclusion on the National Register of Historic Places (NRHP) and worthy of designation as a State Antiquities Landmark (SAL). The entire project area was recommended for a National Register district. On July 16, 2004, the THC designated site 41WM17 as a State Antiquities Landmark and months previously, the State Historic Preservation Officer determined that the site was eligible for inclusion on the National Register of Historic Places.

FIELD METHODS

Background Research

Before entering the field, a background investigation was conducted by AAG. The TARL site records were checked for previously recorded sites in the project area and vicinity. In addition, site reports documenting work in the region were examined for information concerning archaeological surveys and other work relevant to the project area. AAG coordinated carefully with the Williamson County Parks Department to ensure that all of the project area was included in the investigation.

Field Survey

Archaeological monitoring of repairs to the historic Gan's Dam, previously recorded as one historic component of archaeological site (41WM17), was conducted October 2-12, 2013 at the Berry Springs Preserve in Williamson County, Texas. Trenching adjacent to the historic remnant Gan's Dam (Berry Springs) was conducted by Michael R. Bradle and Herbert G. Uecker with assistance from Robert L. Bradle and Ethan A. Bradle. Constant supervision with periodic close inspections were conducted daily to ensure that no further impacts would occur. Each phase of the trenching and dam construction were documented through photography and copies of all engineering designs are attached in Appendix II for future historic preservation planning and preservation use. No artifacts or features were encountered during the monitoring phase of this project, therefore, only records were curated at the Texas Archeological Research Laboratory.

AAG developed in concert with the engineers and contractors a more proactive approach to the trenching adjacent to the remnant dam wall by constructing a temporary soil barrier uphill from the dam (Figure 7). Then a small hole was excavated between the remnant dam and the soil barrier to pump excess water that was seeping into the area (Figure 4). This was done to keep the historic dam portion observable (Figure 8) and to ensure that current trenching operations would not impact the remnant dam portion. A second hole was excavated uphill between the soil barrier and the pond where spring water continued to flow. This was done in order to pump water around the dam and avoid any further water build up. This approach was very successful, and the final concrete cap was successfully constructed over the remnant historic Gan's Dam (Figure 9). Prior to concrete being poured, a thick "pond liner" material that is tough and very durable, yet flexible to ensure long-term preservation.



Figure 7. View of soil barrier and trench for new concrete dam.



Figure 8. View of the remnant limestone wall from Gan's Dam.



Figure 9. View of the concrete dam built over the Gan's Dam.

RESULTS AND CONCLUSIONS

Archaeological monitoring of repairs to the historic Gan's Dam, previously recorded as one historic component of archaeological site (41WM17), was conducted October 2-12, 2013 at the Berry Springs Preserve in Williamson County, Texas. Previous storm damage caused the dam to fail and impounded pond waters pushed the surface portion of the historic dam downstream. Williamson County Parks Department contracted with a construction firm to make repairs to the dam. Consequently, AAG was contacted about the discovery of the subsurface old historic dam limestone blocks and this led to discussions with the Texas Historical Commission, Archeology Division, and with the U.S. Army Corps of Engineers (COE), Fort Worth District. Subsequently, a Texas Antiquities Permit (6674) for monitoring was obtained and all work was also conducted under the auspices of Section 106 of the National Historic Preservation Act. Construction resumed with AAG on-site to ensure that the remnant historic dam features were not disturbed. The remaining dam portions were encapsulated with cement to provide a strong retention dam and to provide for long-term preservation of the historic dam and any potential remaining cultural deposits. No artifacts or features were encountered during monitoring, therefore, only project records are curated at the Texas Archeological Research Laboratory.

RECOMMENDATIONS

American Archaeology Group, LLC monitored trenching and construction in and adjacent to the historic Gan's (Berry) Dam and no artifacts or features were encountered during the monitoring phase of this project. Any future construction or subsurface disturbances in or around the dam may impact potential buried cultural materials. Therefore, any archeological resources that may be discovered from any flooding or erosional impacts, or any planned construction should be evaluated by the Archeology Division of the Texas Historical Commission, in consultation with American Archaeology Group LLC, and Williamson County Parks Department.

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1930, 1940, 1950, 1960, 1970, 1980, 1990,
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APPENDIX I: MONITORING SCOPE OF WORK

American Archaeology Group LLC

Scope of Work for Archaeological Monitoring Berry Springs Dam Project, Williamson County, Texas

Herbert G. Uecker & Michael R. Bradle

October 1, 2013

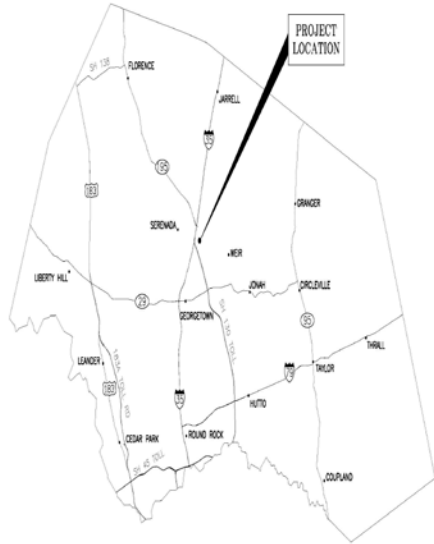
As previously coordinated with the Texas Historical Commission, monitoring for this project will focus on construction activities near the existing remnants of a limestone retaining wall on the high side of Berry Springs Dam. It will be done according to the Commission's *Chapter 26 Rules of Practice and Procedure for the Antiquities Code of Texas*, which specifies "...having a professional archeologist on-site to observe construction activities that may or will damage cultural resources and... ..report findings and impacts to sites to the commission. If previously unrecorded and significant archeological deposits are recorded during a monitoring investigation, then construction activities in the immediate area of the find must stop and the principal investigator shall notify the Archeology Division within 24 hours."

APPENDIX II: BERRY SPRINGS PARK DAM REPAIR DRAWINGS

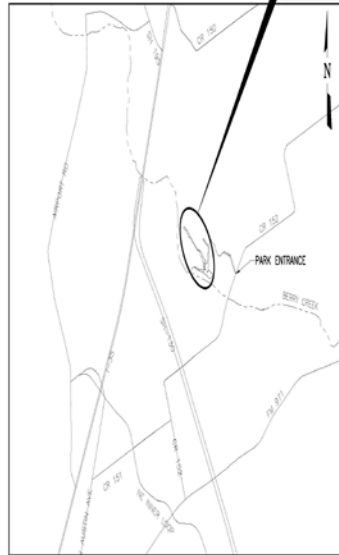
WILLIAMSON COUNTY

PLANS FOR

BERRY SPRINGS PARK DAM REPAIR



PROJECT LOCATION



VICINITY MAP

BERRY SPRINGS
PARK DAM
LAT 30.652832
LONG -97.649470

DECEMBER 2013

RECORD DRAWINGS

SUBMITTED FOR APPROVAL BY:

DUSTIN G. MORTENSEN P.E. 3-15-2013
REGISTERED PROFESSIONAL ENGINEER DATE
FREESE AND NICHOLS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-2144

This Record Drawing is a reproduction of the master engineering contract drawings for this project, modified by information furnished by the contractor reflecting changes to the project made during construction. The original master drawings are on file at the office of
FREESE AND NICHOLS, INC.
405 W. BRIDGEMAN AVENUE, SUITE 200
FORT WORTH, TEXAS 76104-4853
817-331-7887
RECORD DRAWING PREPARED ON:
12/15/2013

APPROVED BY: DUSTIN G. MORTENSEN, P.E.
DATE: 3-15-2013



**FREESE
& NICHOLS**
13214 Jollyville Road Building 11, Suite 100
Austin, Texas 78759
Phone - (512) 617-3100
Fax - (512) 617-3101

Freeze and Nichols, Inc.
Texas Registered Engineering Firm F-2144

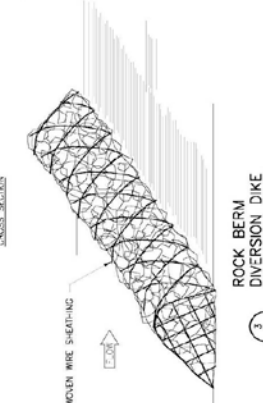
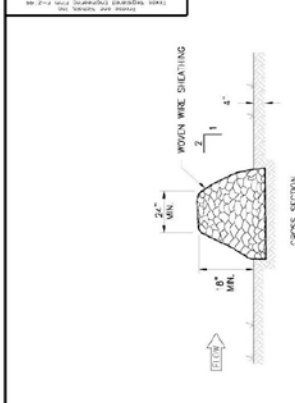
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INDEX OF SHEETS

SHEET NO. DESCRIPTION

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|-----|---|
| | COVER |
| 1 | GENERAL NOTES AND LEGEND |
| 2 | WORK ITEMS |
| 3 | SITE PLAN |
| 4 | EAST EMBANKMENT PLAN VIEW |
| 5 | WEST EMBANKMENT PLAN VIEW |
| 6 | OUTLET REMOVAL |
| 7 | CONCRETE NOTES AND JOINT DETAILS |
| 8 | WALL REPLACEMENT |
| 9 | OVERFLOW WALL DETAILS |
| 10 | SLOPE PAVING AND OVERFLOW WALL DETAILS |
| 10A | SLOPE PAVING AND OVERFLOW WALL DETAILS |
| 11 | SLIDE GATE AND ROCK PLATING REPAIR |
| 12 | SPRING OUTLET |
| 13 | EROSION AND SEDIMENTATION CONTROL NOTES |

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ROCK BERM:

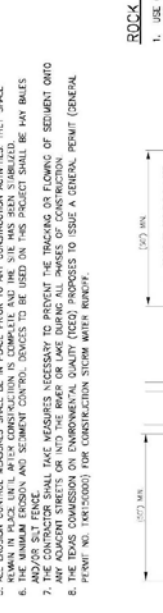
- USE ONLY ONE (1) GRADE ROCK 4-8 INCH DIAMETER FOR STREAM FLOW CONDITION.
- USE OPEN GRADE ROCK 3-5 INCHES DIAMETER FOR OTHER CONDITIONS.
- THE ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH WAVE, AND THE MAXIMUM ONE (1) INCH GROUND AND MINIMUM WORK DIAMETER OF 20 GAUGE.
- WHEN THE STRUCTURE COMES TO FUNCTION AS INTENDED DUE TO 3.5" ACCUMULATION AMONG THE ROCKS, WASH-OUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
- IF THE ROCKS ARE 5" TO 10" IN SIZE AND HEAVY ACCUMULATION OCCURS OF IN AN APPROXIMATE 5' TO 10' IN A MANNER AS TO NOT CREATE A SLATION.
- DATA INSPECTION SHALL BE MADE ON SURVEY SERVICE ROCK BERM, BUT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE FOOT.
- ROCK SHALL BE REMOVED AND DEPOSITED AT AN APPROVED MOUND.

EROSION/SEDIMENTATION CONTROL NOTES:

- THE CONTRACTOR SHALL RECALL EROSION/SEDIMENTATION CONTROLS AND MAJOR AREA PROTECTIVE OR ROAD CONSTRUCTION.
- THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE ENVIRONMENTAL CRITERIA SPECIFICATIONS AND THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
- ON THE APPROVED SITES, THE CONTRACTOR SHALL MAINTAIN CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED SITES. THE CONTRACTOR SHALL BE APPROVED BY THE OWNER.
- A 1/2" INCH STORM EVENT WITHIN 24 HOURS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE CONTRACTOR SHALL MAINTAIN CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED SITES. THE CONTRACTOR SHALL MAINTAIN CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED SITES. THE CONTRACTOR SHALL MAINTAIN CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED SITES.
- FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE ENVIRONMENTAL INSPECTOR DURING THE COURSE OF THE CONSTRUCTION TO CORRECT CONTROL.
- MAJOR REVISIONS MUST BE APPROVED BY THE OWNER.

EROSION CONTROL PLAN NOTES:

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) REGULATIONS AND THE TEXAS WATER POLLUTION PREVENTION PLAN (TWPPP) PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES AND TO OBTAIN A COMPLETED SITE NOTICE (ATTACHMENT 1 OF THE TWPPP) GENERAL PERMIT WITHIN THE TWPPP. (B) POST A SIGNED COPY OF THE SITE NOTICE AT THE CONSTRUCTION SITE. THE CONTRACTOR SHALL MAINTAIN CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED SITES. THE CONTRACTOR SHALL MAINTAIN CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED SITES.
- THE CONTRACTOR SHALL COMPLY WITH THE STORM WATER POLLUTION PREVENTION PLAN AND STORM WATER POLLUTION PREVENTION PLAN DETAILS SHOWN ON THIS SHEET SHALL BE THE CONTRACTOR'S RESPONSIBILITY THROUGHOUT ALL PHASES OF THE CONSTRUCTION.
- THE EROSION CONTROL PLAN SHALL BE USED BY THE CONTRACTOR AS A GUIDE FOR THE CONSTRUCTION OF EROSION CONTROL MEASURES. ADDITIONAL EROSION CONTROL MEASURES SHALL BE PROVIDED IF NECESSARY BY THE CONTRACTOR IN ORDER TO COMPLY WITH ALL REGULATIONS, AT NO EXTRA COST TO THE OWNER.
- THE CONTRACTOR SHALL MAINTAIN CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED SITES. THE CONTRACTOR SHALL MAINTAIN CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED SITES.
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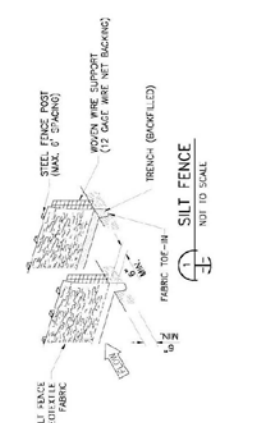


STABILIZED CONSTRUCTION ENTRANCE:

- STABILIZER SHALL BE 2" DIA. GRADE ROCK.
- LENGTH AS SPECIFIED BUT NOT LESS THAN 50'.
- WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING THE STABILIZED AREA.
- WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING THE STABILIZED AREA.
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SILT FENCE INSTALLATION:

- STEEL PILES WHICH SUPPORT THE SILT FENCE SHALL BE PLACED IN A ROW AND BE SPACED AT 6 FEET ON CENTER.
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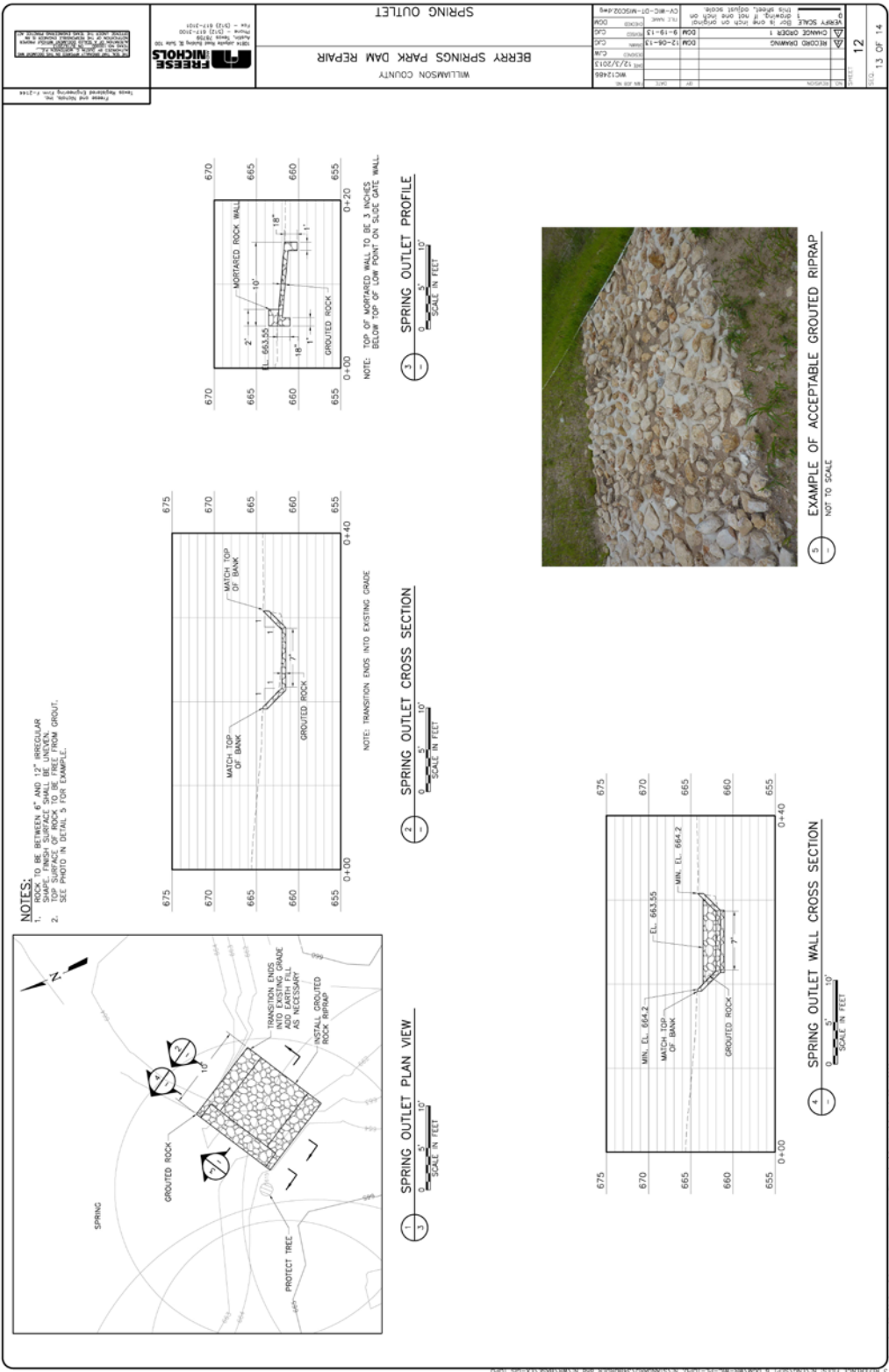


SILT FENCE:

- STEEL PILES WHICH SUPPORT THE SILT FENCE SHALL BE PLACED IN A ROW AND BE SPACED AT 6 FEET ON CENTER.
- THE SILT FENCE SHALL BE PLACED IN A ROW AND BE SPACED AT 6 FEET ON CENTER.
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GENERAL ENVIRONMENTAL NOTES:

- PREVENT POLLUTION OF WATERS WITH PETROLEUM PRODUCTS OR OTHER HAZARDOUS OR REGULATED SUBSTANCES. THE SPECIAL HERSELES, AND INSURANCES FROM ENTRING DRAINAGE WAYS.
- PREVENT POLLUTION OF WATERS WITH PETROLEUM PRODUCTS OR OTHER HAZARDOUS OR REGULATED SUBSTANCES. THE SPECIAL HERSELES, AND INSURANCES FROM ENTRING DRAINAGE WAYS.
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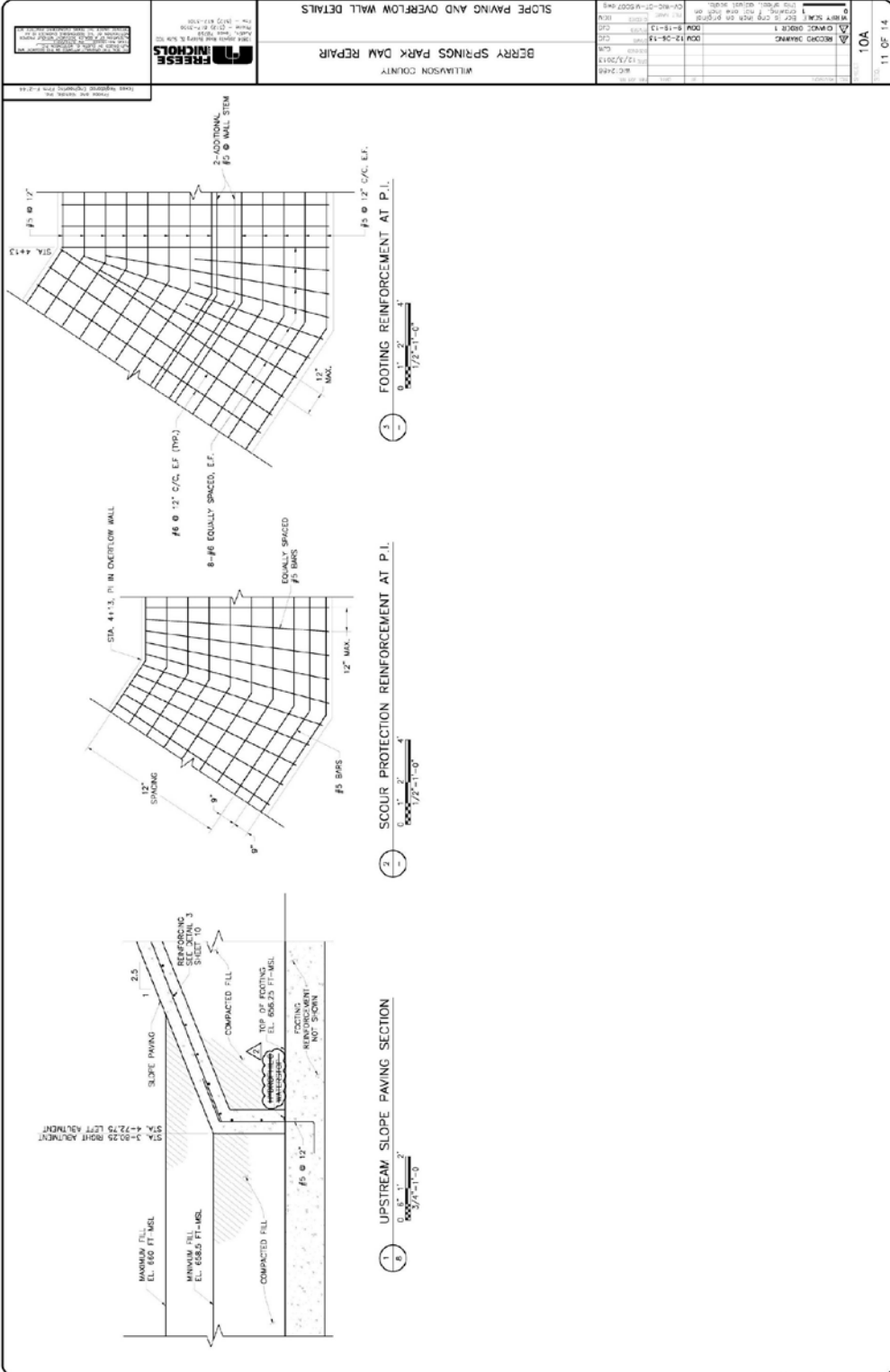


WILLIAMSON COUNTY
 BERRY SPRINGS PARK DAM REPAIR

DATE: 12/20/13
 DRAWN: J. L. HARRIS
 CHECKED: J. L. HARRIS
 SCALE: AS SHOWN
 THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN CONSENT OF THE ENGINEER.

PROJECT NO. W131488
 SHEET NO. 12 OF 14

PREPARED AND ISSUED BY:
 FREESTAR ENGINEERS, INC.
 10000 Highway 100, Suite 100
 Dallas, Texas 75243
 Phone: (214) 419-1000
 Fax: (214) 419-1001



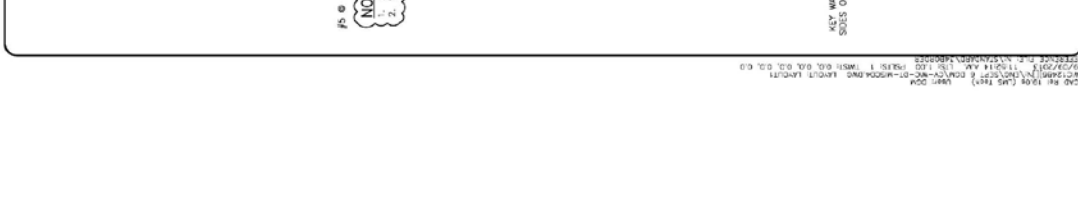
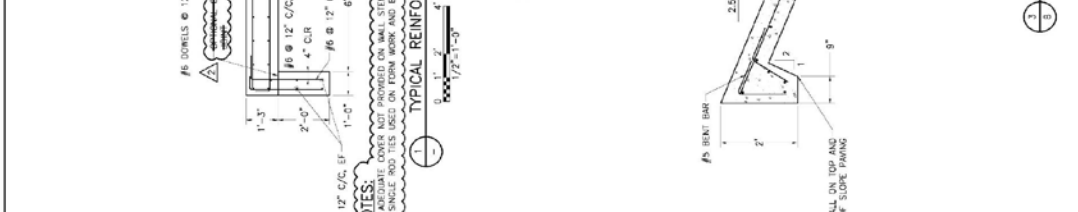
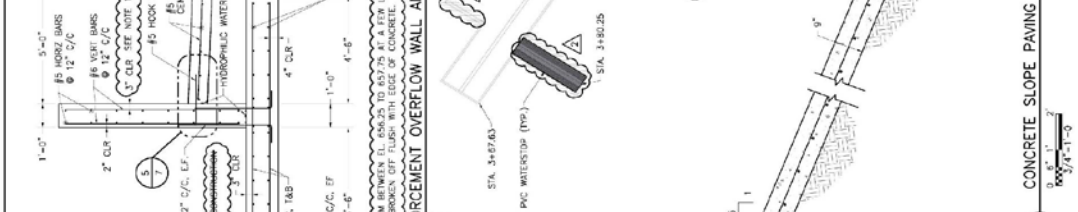
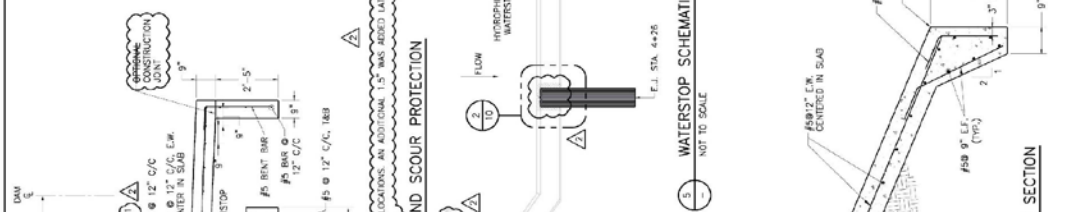
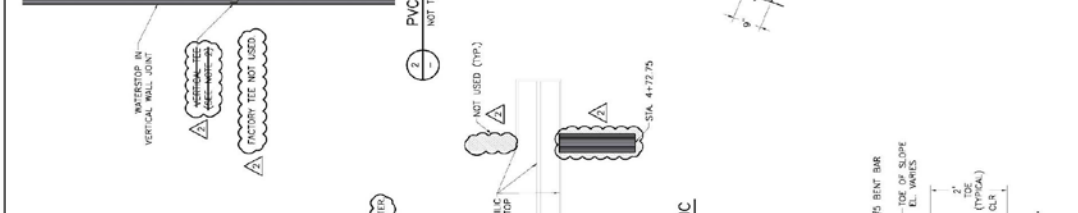
WILLIAMSON COUNTY
 BERRY SPRINGS PARK DAM REPAIR
 SLOPE PAVING AND OVERFLOW WALL DETAILS

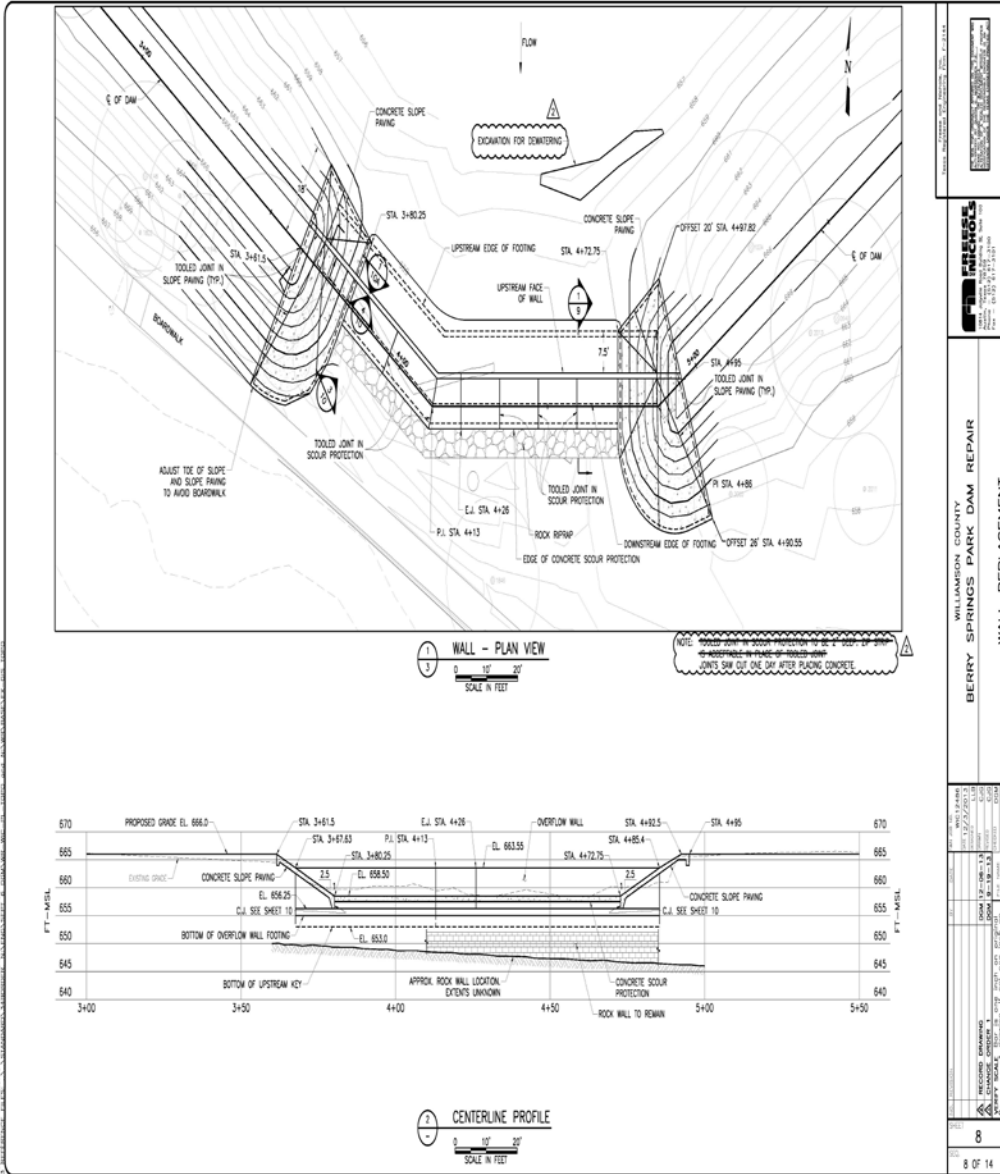
PRESE
 ENGINEERING
 1000 N. W. 10th St.
 Ft. Lauderdale, FL 33304
 Tel: (954) 561-1000
 Fax: (954) 561-1001

NO.	DATE	DESCRIPTION
1	12/12/2013	ISSUED FOR PERMIT
2	12/12/2013	ISSUED FOR CONSTRUCTION
3	12/12/2013	ISSUED FOR CONSTRUCTION
4	12/12/2013	ISSUED FOR CONSTRUCTION
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8	12/12/2013	ISSUED FOR CONSTRUCTION
9	12/12/2013	ISSUED FOR CONSTRUCTION
10	12/12/2013	ISSUED FOR CONSTRUCTION

WILLIAMSON COUNTY
 BERRY SPRINGS PARK DAM REPAIR
 SLOPE PAVING AND OVERFLOW WALL DETAILS

DATE	10
SCALE	10
PROJECT	BERRY SPRINGS PARK DAM REPAIR
DESIGNER	WILLIAMSON COUNTY
CHECKER	WILLIAMSON COUNTY
APPROVED	WILLIAMSON COUNTY
DATE	10/20/13
BY	WILLIAMSON COUNTY
DATE	10/20/13
BY	WILLIAMSON COUNTY
DATE	10/20/13
BY	WILLIAMSON COUNTY





GENERAL NOTES

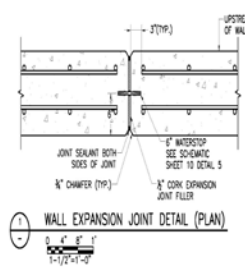
- VERIFY ALL DIMENSIONS, ELEVATIONS, OPENING SIZES, AND MECHANICAL EQUIPMENT HEIGHTS PRIOR TO STARTING WORK.
- FIELD VERIFY ALL EXISTING CONDITIONS, INCLUDING LOCATION AND DIMENSIONS OF ALL EXISTING CONSTRUCTION AND UTILITIES. NOTIFY ENGINEER IF THERE IS A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS BEFORE PROCEEDING WITH WORK.
- THE STRUCTURE IS DESIGNED FOR STABILITY IN THE FINAL CONDITION ONLY. PROVIDE TEMPORARY BRACING AND SHORING AS REQUIRED FOR STABILITY DURING CONSTRUCTION.
- PLANS, SECTIONS, AND DETAILS ARE NOT TO BE SCALED FOR DETERMINATION OF QUANTITIES, LENGTHS, OR FIT OF MATERIALS.
- SEE OTHER DISCIPLINE DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS, DEPRESSIONS, OFFSETS, SLEEVES, CURBS, PADS, INSERTS, ETC. NOT SHOWN ON STRUCTURAL DRAWINGS. BEFORE FABRICATION OF MATERIALS, COORDINATE WITH MECHANICAL AND ELECTRICAL EQUIPMENT REQUIREMENTS.
- THE GENERAL NOTES AND TYPICAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFIC NOTATIONS TO THE CONTRARY.

ABBREVIATIONS

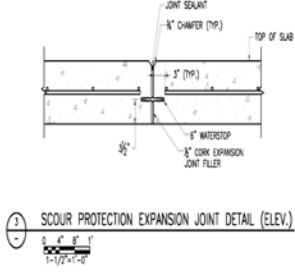
- C/C COVER TO CENTER
 C.L. CONSTRUCTION JOINT
 E.L. EXPANSION JOINT
 E.F. EACH FACE
 E.M. EACH WAY
 TYP. TYPICAL

CONCRETE AND REINFORCEMENT

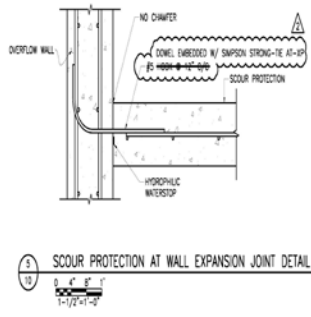
- CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITIONS OF ACI 301 AND ACI 308 AND US ARMY CORPS OF ENGINEERS DA 1110-2-2104.
- ALL DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS, UNLESS NOTED OTHERWISE, SHALL BE IN ACCORDANCE WITH THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI 315), LATEST EDITION.
- CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI UNLESS OTHERWISE NOTED.
- ALL REINFORCING SHALL BE IN ACCORDANCE WITH ASTM A 615, GRADE 60, DEFORMED.
- CLEAR COVER DIMENSIONS ARE MINIMUM "12".
- CONCRETE CLEAR COVER OVER REINFORCING SHALL BE AS LISTED BELOW, UNLESS OTHERWISE NOTED:
 - UNFORMED SURFACES IN CONTACT WITH FOUNDATION: 4"
 - FORMED AND SCAFFOLD SURFACES SUBJECT TO DAMAGING OR ABRASION, SUCH AS CHUTE AND BATTLE BLOCKS, STILLING BASIN SLABS, AND TUNNEL CONDUITS: 6"
 - FORMED AND SCAFFOLD SURFACES SUCH AS STILLING BASIN WALLS, CHUTE SPILLWAY SLABS, AND CHANNEL LINING SLABS ON GRADE:
 - EQUAL TO OR GREATER THAN 24 INCHES IN THICKNESS: 4"
 - GREATER THAN 12 INCHES AND LESS THAN 24 INCHES IN THICKNESS: 3"
 - EQUAL TO OR LESS THAN 12 INCHES IN THICKNESS WILL BE IN ACCORDANCE WITH ACI CODE 300
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" INSIDE FORMS OR TOOLED TO 3/4" RADIUS ON SLABS UNLESS OTHERWISE NOTED.
- GRADE-TO-GRADE WALL-TO-WALL CONSTRUCTION JOINTS AND GRADE-TO-FOUNDATION CONSTRUCTION JOINTS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
 - CONSTRUCTION JOINTS SHALL BE LOCATED WITHIN THE CENTER LINE OF THE WALL. ALL JOINTS SHALL BE A MINIMUM 48 INCHES AND MAXIMUM 108 INCHES TO THE NEXT REINFORCING BAR. CONSTRUCTION JOINTS SHALL BE REINFORCED TO MATCH THE ADJACENT CONCRETE. JOINTS SHALL BE REINFORCED TO MATCH THE ADJACENT CONCRETE TO THE JOINT.
 - CONSTRUCTION JOINTS SHALL BE REINFORCED TO MATCH THE ADJACENT CONCRETE TO THE JOINT.
- ADDITIONAL CONSTRUCTION JOINTS SHALL HAVE PRIOR APPROVAL OF THE ENGINEER.
- ALL REINFORCING SHALL BE CONTINUOUS. CONTINUOUS BARS SHALL LAP IN ACCORDANCE WITH ACI.
- THE SYMBOL INDICATES A LAPPED SPlice, NOT A BEND IN THE BAR.
- UNLESS INDICATED OTHERWISE, LAP SPICES IN BEAMS AND WALLS SHALL BE STAGGERED.
- ALL SPICES SHALL BE CLASS "3" SPICES WITH THE APPROPRIATE ALLOWANCES FOR BAR SPACING AND DEPTH OF CONCRETE CAST BELOW THE REINFORCEMENT UNLESS OTHERWISE NOTED.
- SPICES SHALL BE LOCATED WHERE INDICATED ON THE DRAWINGS OR AS AUTHORIZED BY THE ENGINEER.
- WHEN REINFORCING BARS OF DIFFERENT SIZE ARE TO BE SPICED, THE LENGTH OF LAP SHALL BE GOVERNED BY THE SMALLER DIAMETER BAR.
- SPICES SHALL BE STAGGERED TO GIVE 12 INCHES CLEAR BETWEEN ENDS OF ADJACENT SPICES, IF BARS ARE SPICED CLOSER THAN 6 INCHES OR 6 BAR DIAMETERS.
- SPICES IN REINFORCEMENT AT VERTICAL CONSTRUCTION JOINTS MAY BE SHIFTED TO AGREE WITH THE SEQUENCE OF CONSTRUCTION, UNLESS OTHERWISE SPECIFIED.
- NON-CONTACT LAP SPICES SHALL NOT BE SPACED FARTHER APART THAN ONE-FIFTH THE REQUIRED LENGTH OF LAP OR 6 INCHES.
- REINFORCEMENT PARALLEL CONSTRUCTION JOINTS SHALL HAVE A MINIMUM OF 2" CONCRETE COVER.
- IN CASES WHERE REINFORCING BARS CANNOT BE EXTENDED AS FAR AS REQUIRED DUE TO THE LIMITED EXIST OF THE ADJACENT CONCRETE STRUCTURE, THE BARS SHALL EXTEND AS FAR AS POSSIBLE AND END IN STANDARD HOOKS.
- UNLESS NOTED OTHERWISE, HOOKS SHOWN ON DRAWINGS SHALL BE ASSUMED TO BE STANDARD HOOKS PER ACI 318.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL FORMING, TEMPORARY BRACING AND SHORING.
- CONCRETE SHALL BE PLACED AND COMPACTED WITH CARE TO PREVENT SEGREGATION AND TO OBTAIN THE DESIRED STRENGTH AND DURABILITY. CONCRETE SHALL BE PLACED AND COMPACTED TO THE FULL DEPTH OF THE FORMS. CONCRETE SHALL NOT BE PLACED IN LAYERS EXCEEDING 4 FEET IN THICKNESS UNLESS OTHERWISE NOTED.
- WHEN SPICING BARS AT THE END OF A BAR, HOOKS SHALL BE USED TO TURN THE BARS TOWARDS THE ADJACENT CONCRETE.
- JOINT SEALANT SHALL BE SHAFLEX-2C HS.
- PRIME SURFACES TO BE SEALED W/ SHAFLEX 429 PRIMER.
- PREPARE BINDER HOOR IN JOINT TO BE SEALED.



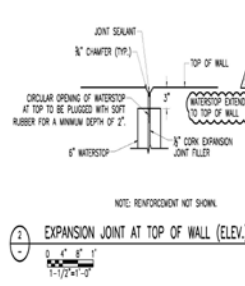
1 WALL EXPANSION JOINT DETAIL (PLAN)



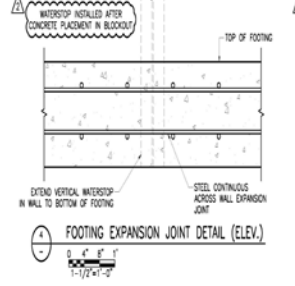
2 SCOUR PROTECTION EXPANSION JOINT DETAIL (ELEV.)



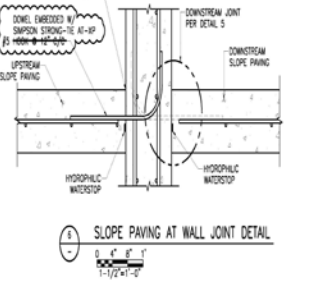
3 SCOUR PROTECTION AT WALL EXPANSION JOINT DETAIL



4 EXPANSION JOINT AT TOP OF WALL (ELEV.)

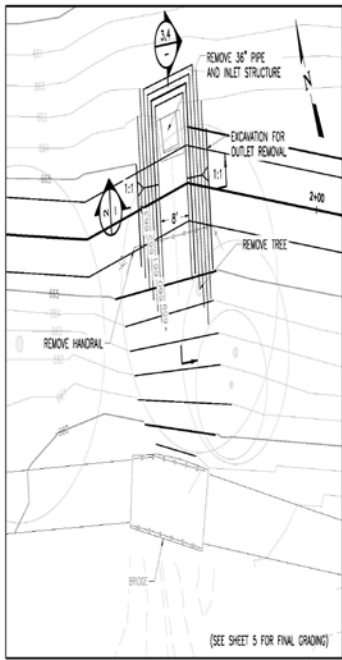


5 FOOTING EXPANSION JOINT DETAIL (ELEV.)

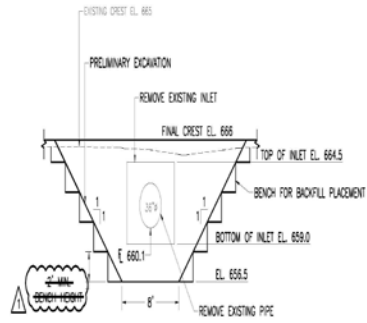


6 SLOPE PAVING AT WALL JOINT DETAIL

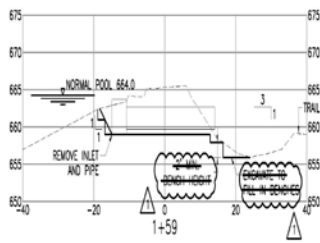
WILLIAMSON COUNTY
 BERRY SPRINGS PARK DAM REPAIR
 CONCRETE NOTES AND JOINT DETAILS
 7
 7 of 14



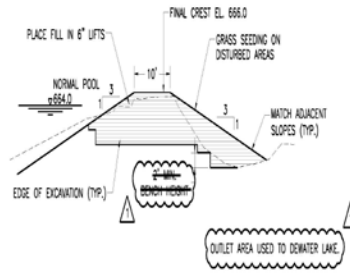
1 EXCAVATION PLAN FOR REMOVAL
SCALE IN FEET



2 OUTLET EXCAVATION AND BACKFILL SECTION
SCALE IN FEET



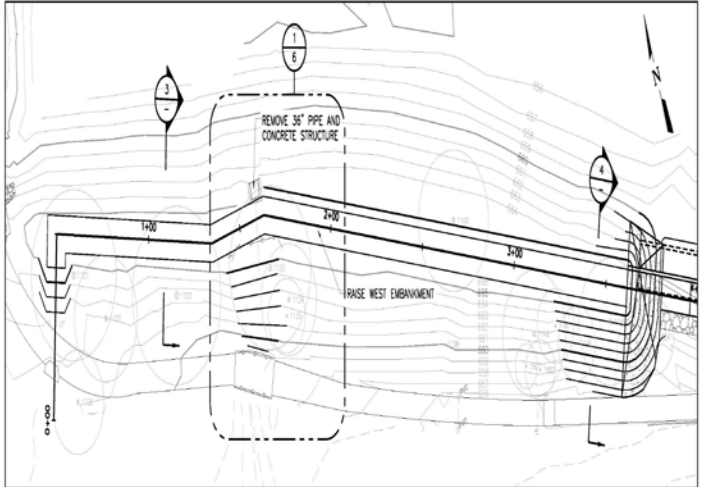
3 OUTLET EXCAVATION SECTION
SCALE IN FEET



4 POST REMOVAL OUTLET SECTION BACKFILL
SCALE IN FEET

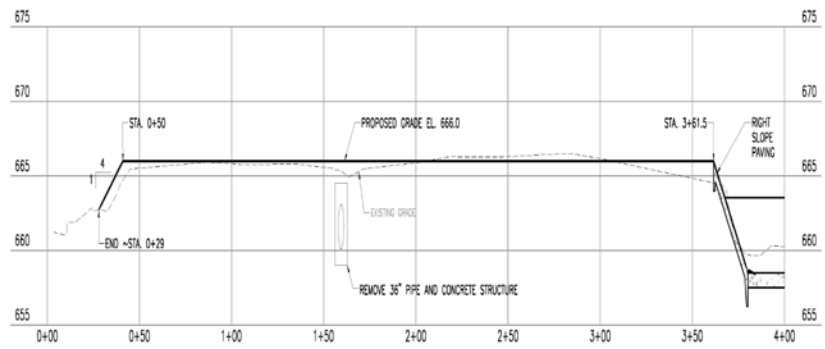
RECORD DRAWING
 PROJECT NO. 12-08-001
 SHEET NO. 6 OF 14
 DATE: 12/15/11
 DRAWN BY: J. H. HARRIS
 CHECKED BY: J. H. HARRIS
 APPROVED BY: J. H. HARRIS
 PROJECT: BERRY SPRINGS PARK DAM REPAIR
 CLIENT: WILLIAMSON COUNTY
 LOCATION: BERRY SPRINGS PARK DAM
 SCALE: AS SHOWN
 SHEET TITLE: OUTLET REMOVAL

WILLIAMSON COUNTY BERRY SPRINGS PARK DAM REPAIR OUTLET REMOVAL	
PROJECT NO. 12-08-001 SHEET NO. 6 OF 14 DATE: 12/15/11 DRAWN BY: J. H. HARRIS CHECKED BY: J. H. HARRIS APPROVED BY: J. H. HARRIS	PROJECT: BERRY SPRINGS PARK DAM REPAIR CLIENT: WILLIAMSON COUNTY LOCATION: BERRY SPRINGS PARK DAM SCALE: AS SHOWN SHEET TITLE: OUTLET REMOVAL
6 6 OF 14	

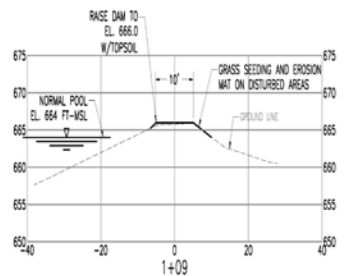


NOTE: REMOVE TREES PRIOR TO PLACING FILL

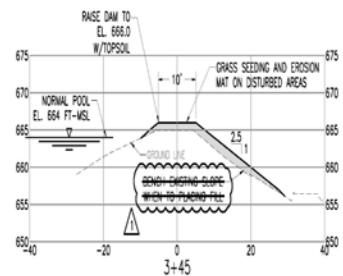
WEST EMBANKMENT
PLAN VIEW
SCALE IN FEET
0 10' 20' 40'



CENTERLINE PROFILE
SCALE IN FEET
HORIZONTAL: 0 20' 40'
VERTICAL: 0 5' 10'



SECTION
SCALE IN FEET
0 10' 20'



SECTION
SCALE IN FEET
0 10' 20'

CLASS 4 EARTH FILL WITH
6" CLASS 12 TOPSOIL

RECORD DRAWING: 12-08-13
 BERRY SPRINGS PARK DAM REPAIR
 CIVIL ENGINEER: [Signature]
 PROJECT NO.: 12-08-13
 DATE: 12/22/13
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]

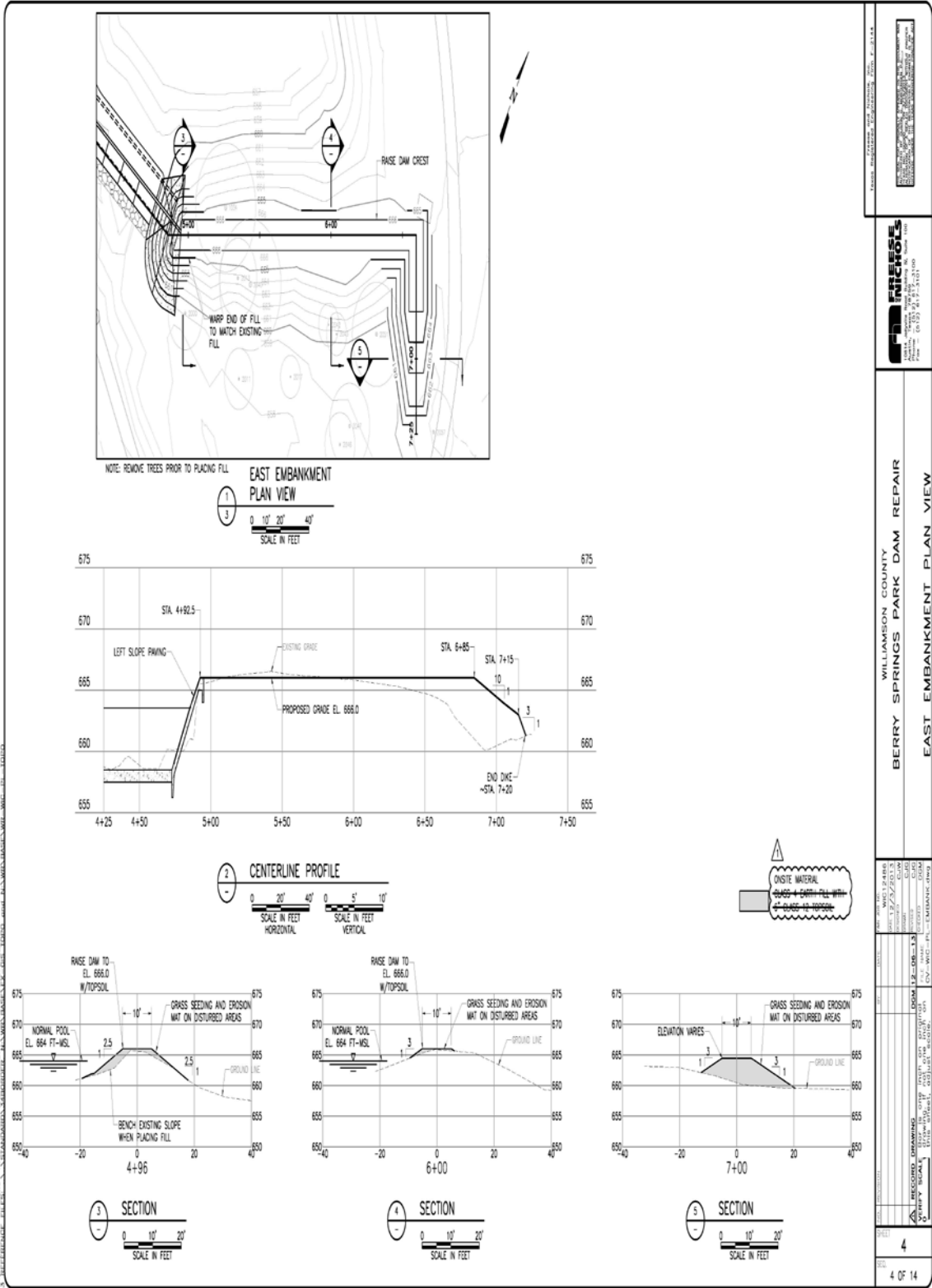
WILLIAMSON COUNTY
BERRY SPRINGS PARK DAM REPAIR
WEST EMBANKMENT PLAN VIEW

NICHOLS ENGINEERING
Professional Engineers
1000 N. W. 10th St., Suite 100
Tomball, TX 77375
Phone: 281.351.1100
Fax: 281.351.1101

DATE	BY	CHECKED	APPROVED	REVISION

5

5 OF 14

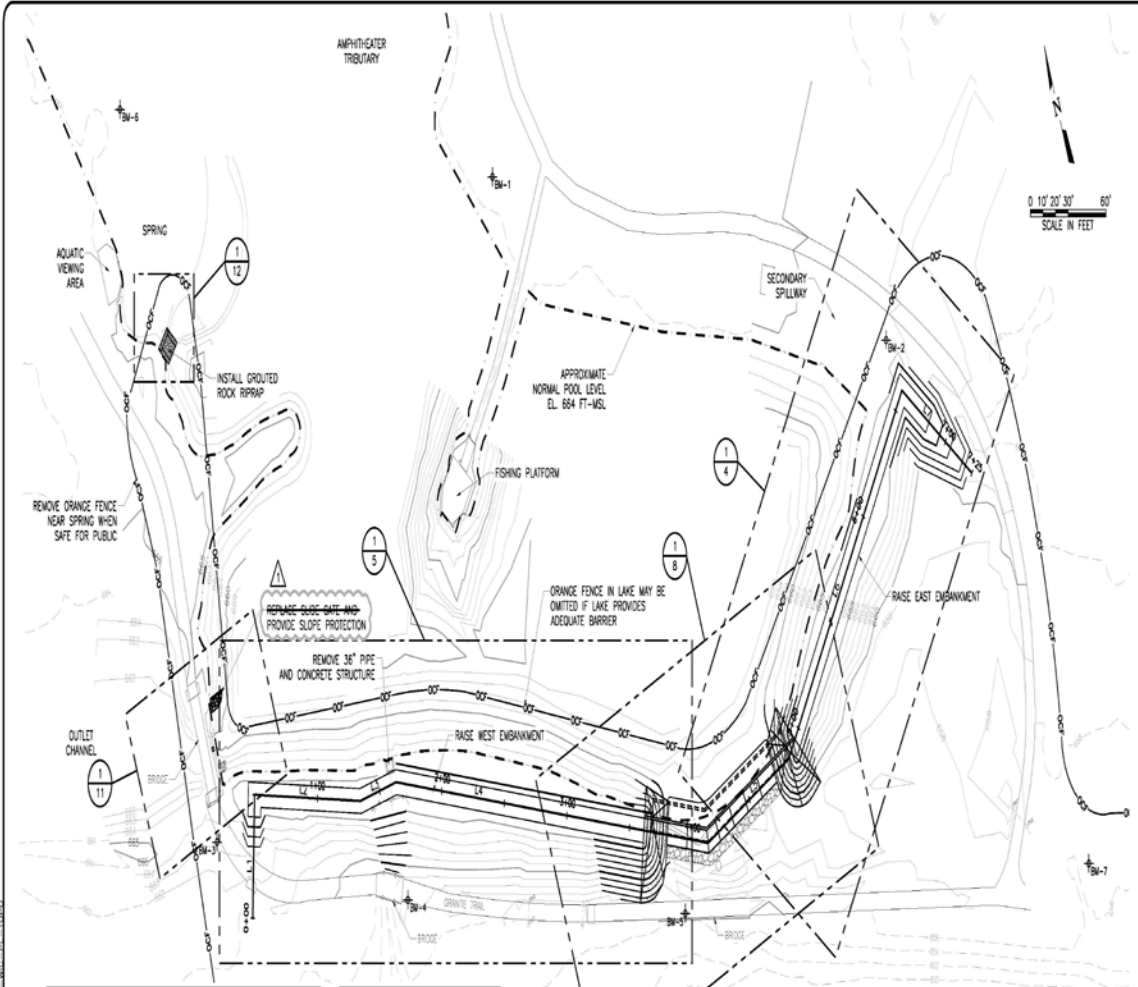


PROJECT: BERRY SPRINGS PARK DAM REPAIR
 DRAWING NO.: 4 OF 14
 DATE: 10/15/2014
 DESIGNED BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]
 PROJECT LOCATION: BERRY SPRINGS PARK, BERRY SPRINGS, ARIZONA
 CLIENT: WILLIAMSON COUNTY

WILLIAMSON COUNTY
BERRY SPRINGS PARK DAM REPAIR
EAST EMBANKMENT PLAN VIEW

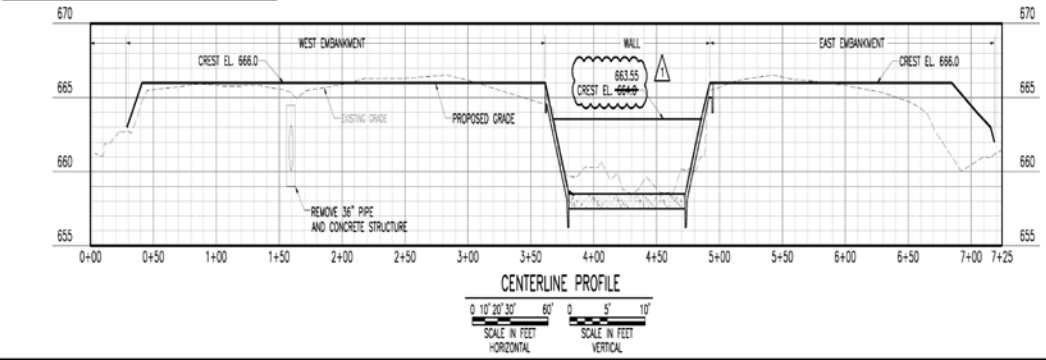
PREPARED BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]

4 OF 14



CENTERLINE TABLE					
LAKE #	START STATION	END STATION	LENGTH	START POINT	END POINT
L1	0+00	0+50	50.00	3141917.03, 10222402.48	3141837.85, 10222448.04
L2	0+50	1+34	84.20	3141837.85, 10222448.04	3141714.36, 10222411.33
L3	1+34	1+64	30.33	3141714.36, 10222411.33	3141743.43, 10222407.43
L4	1+64	4+13	248.24	3141743.43, 10222407.43	3141962.86, 10222389.25
L5	4+13	4+68	72.69	3141962.86, 10222389.25	3142028.53, 10222396.09
L6	4+68	6+80	173.88	3142028.53, 10222396.09	3142178.60, 10222389.07
L7	6+80	7+25	64.95	3142178.60, 10222389.07	3142214.08, 10222348.74

BENCHMARK TABLE		
DESCRIPTION	NORTHING (FT)	EASTING (FT)
BM-1	10222804.07	3141808.47
BM-2	10222423.83	3142171.86
BM-3	10222439.80	3141802.64
BM-4	10222359.79	3141733.69
BM-5	10222269.94	3141835.15
BM-6	10222743.28	3141845.53
BM-7	10222165.04	3142238.96

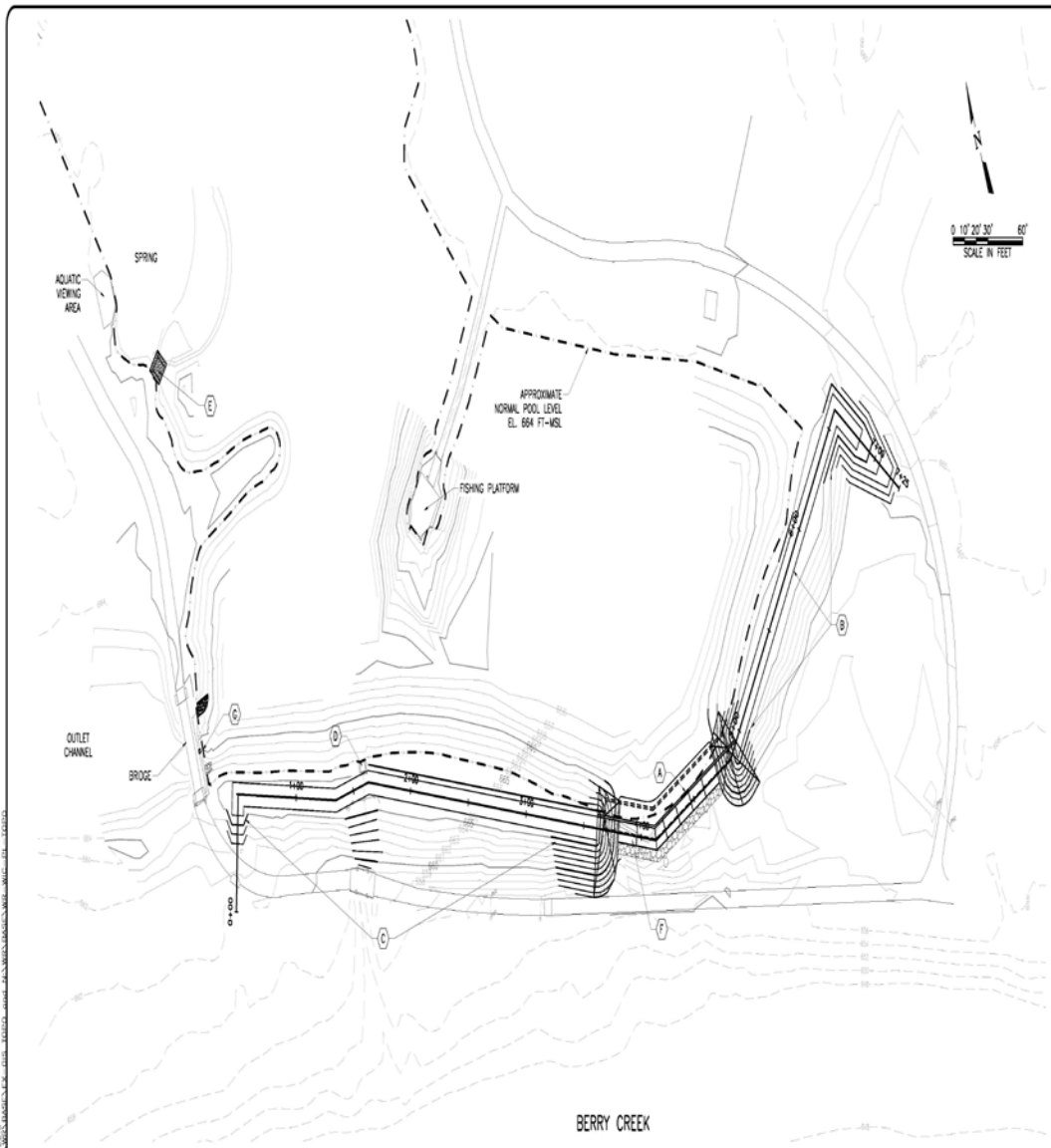


0 10' 20' 30' 60'
SCALE IN FEET

PRECISION
SURVEYING & ENGINEERING, INC.
1111 W. 10TH STREET, SUITE 100
DENVER, CO 80202
PHONE: 303.733.1111
FAX: 303.733.1112

WILLIAMSON COUNTY
BERRY SPRINGS PARK DAM REPAIR
SITE PLAN

NO. 1001-14-0000
DATE: 12/27/2013
DRAWN BY: CJD
CHECKED BY: CJD
DESIGNED BY: CJD
PROJECT: BERRY SPRINGS PARK DAM REPAIR
DRAWING NO.: 1001-14-0000
SHEET NO.: 3 OF 14



SCALE IN FEET
0 10' 20' 30' 60'

BERRY CREEK

WORK ITEMS

WILLIAMSON COUNTY
BERRY SPRINGS PARK DAM REPAIR

FRAN NICHOLS
Professional Engineer
No. 2105 - 04-15-2010
Address: 1820 S. 17th St., Berry Springs, AR 71609

NO.	DESCRIPTION	DATE	BY	APP.
1	DESIGNED			
2	PERMITTED			
3	CONTRACT			
4	AS BUILT			
5	REVISION			
6	REVISION			
7	REVISION			
8	REVISION			
9	REVISION			
10	REVISION			
11	REVISION			
12	REVISION			
13	REVISION			
14	REVISION			

SHEET: 2
2 OF 14

- WORK ITEMS:** (-) DENOTES WORK ITEM
- (A) CONSTRUCT REINFORCED CONCRETE WALL STA. 3+66.5 TO 4+89.7, CONCRETE SLOPE PAVING AND ROCK RIPRAP
 - (B) RAISE AND REGRADE EAST EMBANKMENT STA. 4+92.5 TO 7+20
 - (C) RAISE AND REGRADE WEST EMBANKMENT STA. 0+29 TO 3+61.5
 - (D) REMOVE 36" PIPE AND CONCRETE STRUCTURE
 - (E) CONCRETE RIPRAP IN SPRING OUTLET
 - (F) DEMOLISH AND REMOVE EXISTING MORTARED WALL
 - (G) REPLACE CLOSURE GATE AND REPAIR WALL - PROVIDE SLOPE PROTECTION

PROJECT NO. 1810-001 (1/2018) - Berry Springs Park Dam Repair
 DRAWN BY: J. L. HARRIS
 CHECKED BY: J. L. HARRIS
 DATE: 04/15/2010