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A Cultural Resource Survey of the Lower Greens Bayou Detention Embankment Project, Harris County, Texas

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HCDCD Project ID P500-01-00-E001

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With contributions by
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Project Archeologist
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MOORE ARCHEOLOGICAL CONSULTING, INC.
HOUSTON'S FIRST ARCHEOLOGY FIRM

Report of Investigations Number 676

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Prepared for
Halff Associates Inc.
and the Harris County Flood Control District

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ABSTRACT

In May of 2017, Moore Archeological Consulting, Inc. conducted an intensive pedestrian survey for the proposed improvements to the earthen embankment and control structure on the Lower Greens Bayou Regional Detention Facility in northeast Harris County, Texas. The project is located south of North Houston Parkway, extending south to 0.81 kilometers (km) (0.5 miles [mi.]) north of Tidwell Road, just west of Jon Ralston Road. It can be found on the Jacinto City (299515) and Harmaston quadrangles (299507) [see attached figures]. The proposed project involves improvements to an existing access road that traverses along the crest of the embankment, installation of additional riprap for bank stabilization on the upstream end of the spillway, improvements at three existing culvert sites, and mechanical vegetation clearing along the toe of the existing dam. The Harris County Flood Control District (HCFCD) owns the right-of-way (ROW) of the proposed project area, which measures 6.43 km (4.0 mi.) in length and 60.96 meters (m) (200 feet [ft.]) in width. The project area in which construction will take place is comprised of the entire length of the embankment as well as an area that will be cleared to both sides of the structure starting at the toe of the existing embankment. This cleared area will be either 4.5 m (15 ft.) or 15.25 m (50 ft.) from the toe depending on locale with the wider area being limited to the spillway structure and immediately adjacent. The area examined as a result of the archeological investigation was roughly 15 acres. The depth of impact is anticipated to only affect the surface area surrounding the rim of the embankment; it is possible that construction disturbance may be 20-50 centimeters below surface (cmbs.). This depth could be culturally significant in certain locales such as existing pimple mounds that may be within the proposed project corridor.

The objectives of the archeological investigation were to locate and identify cultural materials, sites, or historic properties within the proposed impact area, and to prepare management recommendations regarding any identified resources. The investigations (MAC PN 17-13 and 17-25) were conducted for Halff and Associates, Inc. and HCFCD (Project ID P500-01-00-E001) under Texas Antiquities Permit Number 8021.

The intensive pedestrian field survey included both surface and subsurface (shovel test) examination (Figures 6 and 7; see Appendix 1 for details). A total of 175 shovel tests were excavated. Two temporary sites (TS1 and TS2) were initially recorded, but after additional shovel testing were determined to be a isolated object (TS1) and a modern household waste site most likely associated with local dumping (TS2). All artifacts from both sites were recorded in the field and reburied or replaced on the surface as per the approved collection policy. The field investigations were conducted by project archeologist Rachel Goings and field technicians Tom Nuckols, Michael Hogan, Alejandro Castillo, Nathan Palmer, and Paul Cochran. Douglas Mangum served as the projects' principal investigator.

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INTRODUCTION

In May of 2017, Moore Archeological Consulting, Inc., conducted an intensive pedestrian survey for the proposed Lower Greens Bayou Regional Detention Facility in northeast Harris County, Texas (Figures 1-4). The investigation was conducted in response to a request by Halff and Associates, Inc. (the client) at the request of the Harris County Flood Control District (HCFCD: Project ID P500-01-00-E001). The area surveyed was approximately 15 acres. The project area can be found on the Jacinto City (299515) and Harmaston quadrangles (299507). The archeological investigation was conducted under Texas Antiquities Permit Number 8021.

The proposed project involves improvements to an existing access road that traverses along the crest of the embankment, installation of additional riprap for bank stabilization on the upstream end of the spillway, improvements at three existing culvert sites, and mechanical vegetation clearing along the toe of the existing dam.

The HCFCD owns the right-of-way (ROW) of the proposed project area, which measures 6.43 km (4.0 mi.) in length and 60.96 meters (m) (200 feet [ft.]) in width. The project area in which construction will take place is comprised of the entire length of the embankment as well as an area that will be cleared to both sides of the structure starting at the toe of the existing embankment. This cleared area will be either 4.5 m (15 ft.) or 15.25 m (50 ft.) from the toe depending on locale with the wider area being limited to the spillway structure and immediately adjacent. The area examined as a result of the archeological investigation was roughly 15 acres. The depth of impact is anticipated to only affect the surface area surrounding the rim of the embankment; it is possible that construction disturbance may be 20-50 centimeters below surface (cmbs.). This depth could be culturally significant in certain locales such as existing pimple mounds that may be within the proposed project corridor.

The intensive pedestrian field survey included both surface and subsurface (shovel test) examination. A total of 175 shovel tests were excavated. Two temporary sites (TS1 and

TS2) were initially recorded, but after additional shovel testing were determined to be a isolated object (TS1) and a modern trash dump most likely associated with a nearby construction site (TS2). The field investigations were conducted by project archeologist Rachel Goings and field technicians Tom Nuckols, Michael Hogan, Alejandro Castillo, Nathan Palmer, and Paul Cochran. Douglas Mangum served as the projects' principal investigator.

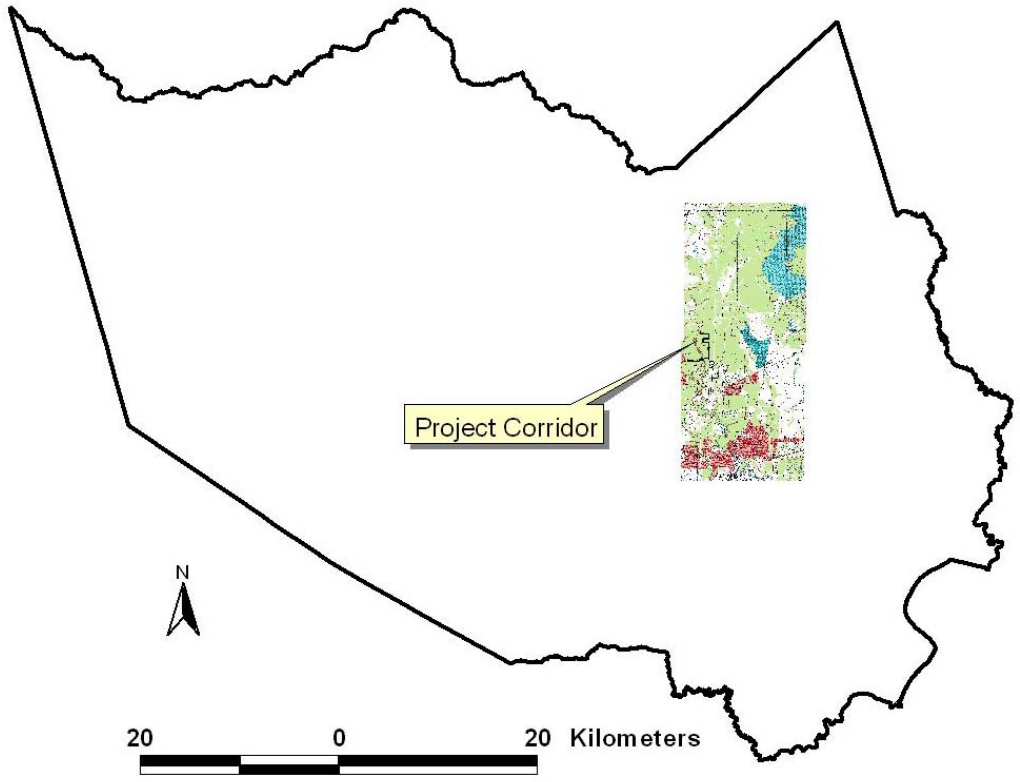

Figure 1: Proposed project corridor in Harris County.

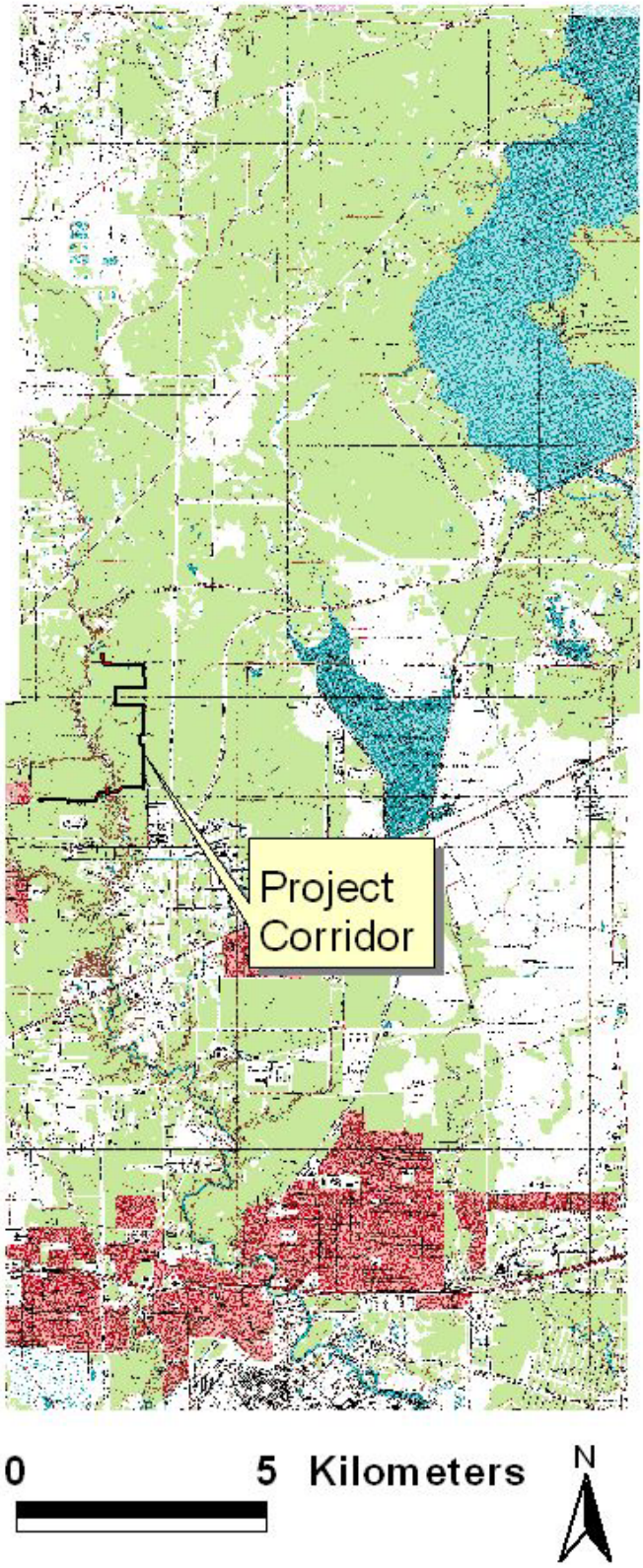

Figure 2: Project corridor on the Harmaston and Jacinto City USGS quadrangle maps.

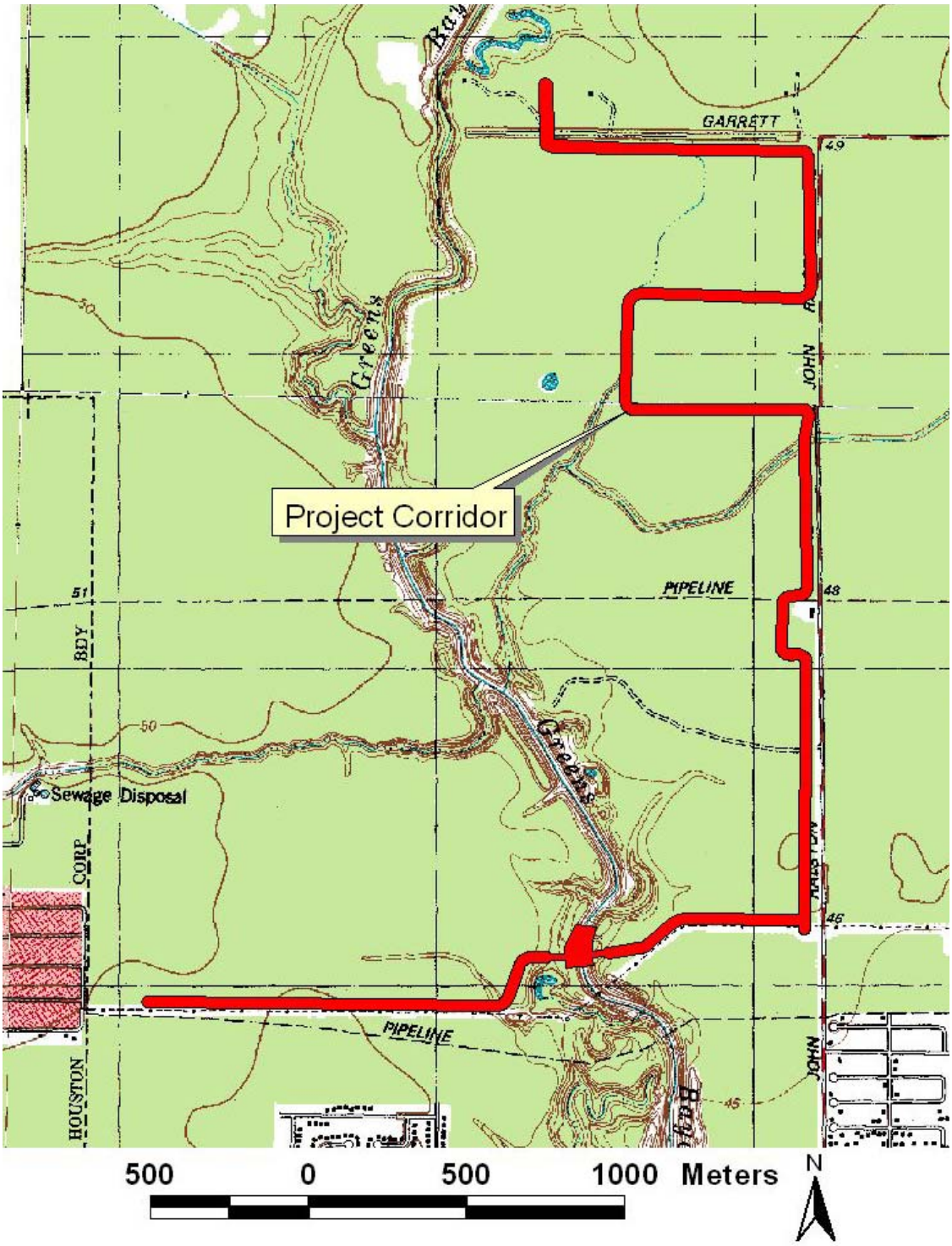

Figure 3: Detail of project corridor on the Harmaston and Jacinto City USGS quadrangle maps.

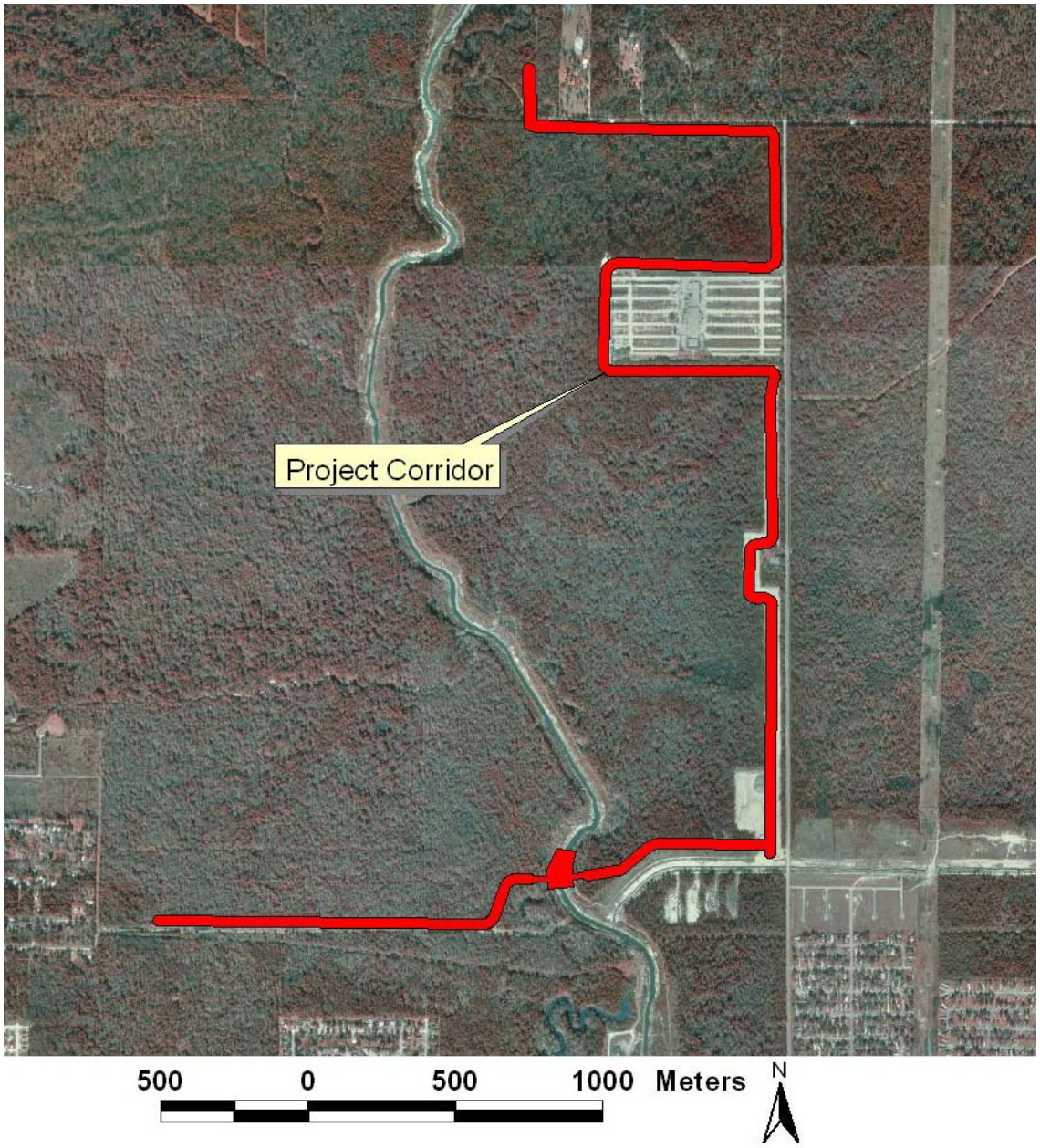

Figure 4: Map of project corridor over a modern aerial image.

ENVIRONMENTAL BACKGROUND

Soils and Geology

Harris County is located within the West Gulf Coastal Plain physiographic province (Hunt 1974). In the Texas region, the surface topography of the plain is characterized by relatively flat topography that dips slightly towards the Gulf of Mexico. Geologically, the project area lies atop the Beaumont Formation, a surface outcrop that extends from just east of the Mississippi River in Louisiana, to Kingsville, Texas (Bureau of Economic Geology 1982). The formation was deposited during a series of glacial and interglacial events during the Middle to Late Pleistocene. Extensive riverine downcutting and erosion of the formation occurred during the periods of lower sea levels associated with the Wisconsin glaciation. During the Holocene, after sea levels rose once more, the resulting river valleys filled with alluvial soils, creating broad, level floodplains.

The project area is depicted on sheet 71 of the Soil Survey of Harris County Texas (Wheeler, 1976). The soils within the project boundaries are classified as roughly 60 percent Sorter silt loam, but also include Gessner fine sandy loam, Texla silt loam, and Atasco fine sandy loam (Soil Survey Staff 2016).

Sorter silt loam, 0 to 1 percent slope, is the most prevalent soil type with in the project area and consists of Sorter and Dallardsville series. These soils are very deep and were formed in loamy fluviomarine deposits of the Lissie Formation of early to mid-Pleistocene age. Sorter series are poorly drained soils and are classified as coarse-loamy, siliceous, superactive, thermic Nartic Vermaqualfs. Dallardsville series are moderately well drained soils and are taxonomically classified as coarse-loamy, siliceous, semiactive, thermic Oxyaquatic Paleudults.

Gessner fine sandy loam, 0 to 1 percent slopes, consists of three series of soils including, the Gessner series, the Clodine series and the Katy series. These soils are very deep and were formed in loamy sediments derived from the Lissie Formation of Pleistocene age, and are typically found on coastal prairies. The Gessner series consists of very slowly

permeable soils and is taxonomically classified as fine-loamy, siliceous, active, hyperthermic Typic Vermaqualfs. The Clodine series consists of somewhat poorly drained, moderately permeable soils. Clodine series is taxonomically defined as coarse – loamy, siliceous, superactive, hyperthermic Typic Epiaqualfs. The Katy series consists of moderately well drained, moderately slow permeable soils and are taxonomically classified as fine-loamy, siliceous, active, hyperthermic Oxyaquic Paleudalfs.

Texla silt loam, 0 to 2 percent slopes, includes Texla, Camptown, Evadale, and Gist series. These soils are very deep and were formed in loamy fluviomarine deposits of the Beaumont formation of late Pleistocene age. The Texla series consists of somewhat poorly drained soils and is taxonomically classified as fine-silty, siliceous, active, thermic Oxyaquic Glossudalfs. The Camptown series consists of very poorly drained and ponded soils. These nearly level soils are in long and narrow relict stream meander channels and depressions and are taxonomically classified as fine-silty, siliceous, active, thermic Natric Vermaqualfs. The Evadale series consists of poorly drained soils, and are taxonomically classified as fine-silty, siliceous, active, thermic Typic Glossaqualfs. The Gist series consists of moderately well drained soils and is taxonomically classified of coarse-silty, siliceous, semiactive, thermic Oxyaquatic Glossudalfs.

Lastly, Atasco fine sandy loam, 2 to 5 percent slopes, contains three soil series including Atasco, Segno, and Texla. These soils are very deep and formed in loamy fluvial deposits of the Pleistocene age. Atasco series soils are very deep, moderately well drained soils formed in loamy fluvial deposits of Pleistocene age. Atasco series is taxonomically classified as fine smectitic, thermic Vertic Hapludalfs. Segno series are well drained and are classified as Fine-loamy, siliceous, semiactive, thermic Typic Paleudalfs. The Texla series consists of somewhat poorly drained soils and is taxonomically classified as fine-silty, siliceous, active, thermic Oxyaquic Glossudalfs.

The area in and around the proposed project area is heavily forested and largely undeveloped, making it highly likely that pimple mounds are still present. While pimple mounds are not visible on aerial imagery due to the high density of foliage, previous

surveys within the project area have recorded numerous pimple mounds, most of which contained cultural material (Ensor et al. 1990; TASA). Furthermore, according to Abbot (2001), Sorter series have a moderate to high geoarcheological potential. While he does not consider Gessner, Atasco, or Texla to have high geoarcheological potential, they are all soil types likely to having pimple mounds.

Climate

The modern climate of the Harris County study area is moderated by winds from the Gulf of Mexico, resulting in mild winters and relatively cool summer nights (Wheeler 1976:2, 66). Summer temperatures average 92°F (33°C), while winter temperatures average 64°F (18°C). Annual precipitation averages 46 inches (117 centimeters [cm]).

Hydrology

The only extant water source that impacts the project area, Greens Bayou, parallels the northern half of the project area and crosses the southern portion of the project ROW, which extends east to west. Greens Bayou is located just west of the northern terminus of the proposed project area. This bayou is a perennial stream, extending approximately 67.6 km (42 mi.) from north to south before emptying into the Port of Houston.

Based on a review of the Jacinto City and Harmaston USGS quadrangles maps as well as available aerial imagery of the project area (1944, 1953, 1978, 1989, 1995, 2002-2006, 2008-2016), Greens Bayou has been modified by human activity and was channelized near the project area sometime between 1947 and 1957. When straightening the channel, older channels were not filled in, inadvertently creating numerous wetlands around small oxbows. One of these small oxbows was also created just west of the Bayou, very near the intersection of the proposed project area and Greens Bayou.

Flora and Fauna

Harris County lies within the Austroriparian biotic province (Blair 1950:98-101). Not determined by a marked physiographic break, the western boundary of this province is loosely identified by the distribution of pine and hardwood forests on the eastern Gulf

coastal plain. San Jacinto County is situated within the pine-oak subdivision of the Austroriparian province (Tharp 1939). Blair (1950) lists the dominant floral species of the pine-oak forest subdivision as loblolly pine (Pinus taeda), yellow pine (Pinus echinata), red oak (Quercus rubra), post oak (Quercus stellata), and blackjack oak (Quercus marilandica). Hardwood forests are found on lowlands within the Austroriparian and are characterized by such trees as sweetgum (Liquidambar styraciflua), magnolia (Magnolia grandiflora), tupelo (Nyssa sylvatica), water oak (Quercus nigra), and other species of oaks, elms, and ashes, as well as the highly diagnostic Spanish moss (Tillandisia usneiodes) and palmetto (Sabal glabra).

Blair (1950) and Gadus and Howard (1990) identify the following mammals as common within the Austroriparian province: white-tailed deer (Odocoileus virginianus), muskrat (Ondatra zibethicus), raccoon (Procyon lotor), coyote (Canis latrans), opossum (Didelphis virginiana), Scalopus aquaticus, Pipistrellus subflavus, Lasiurus borealis, Sciurus niger, Sciurus carolinensis, Glaucomys volans, Geomys breviceps, Reithrodonomys fulvescens, Peromyscus leucopus, Oryzomys palustris, cotton rat (Sigmodon hispidus), packrat (Neotoma floridana), eastern cottontail (Sylvilagus floridanus), and swamp rabbit (Sylvilagus aquaticus). Bison (Bison bison) may have been present on nearby grasslands at various times in the past (Gadus and Howard 1990:15). Common land turtles include eastern box turtle (Terrapene carolina) and Terrapene ornata, while snapping turtle (Chelydra serpentinia), mud turtle (Kinosteron spp.), river cooter (Chrysemys concinna) and diamondback terrapin (Malaclemys terrapin) comprise common water turtles. Common lizards include Anolis carolinensis, Sceloporus undulatus, Leiolopisma laterale, Eumeces laticeps, Cnemidophorus sexlineatus and Ophiosaurus ventralis. Snakes and amphibians are also present in considerable numbers and diversity.

The actual vegetation encountered during this investigation was predominantly pine and mixed hardwood woods with a variety of understory plants. This latter included significant palmetto growth and a variety of shrubs, vines, and grasses dense enough to make surface visibility negligible (Figure 5).

Figure 5: Mixed understory and hardwood/pine forest.

CULTURAL BACKGROUND

Southeast Texas Culture History

The project area is located within the southeast Texas archaeological region (Patterson 1995; Story et al. 1990). The culture history of the region extends back at least 12,000 years into the past. A number of researchers have compiled chronological frameworks to describe the cultural histories of the area (Aten 1983; Ensor 1991; Patterson 1995; Shafer et al. 1975; Story et al. 1990). The majority of these divide human occupation into four broad stages, Paleoindian, Archaic/Lithic, Ceramic/Late Prehistoric, and Historic. The stages are based on a proposed sequence of economic strategies as they are revealed through the archaeological and/or historical record. These proposed shifts in dominant lifeways consider cultural, economic, and technological factors in order to provide a heuristic model useful for attempting to understand ancient and early historic populations. While the dates assigned to the period interfaces are based on "absolute" dating methods, they of course represent a generalized time range for the implied cultural evolution. The dates provided in the following discussion will be drawn from Ensor (1991) and are presented in Table 1.

The earliest period of occupation in southeast Texas is identified as the Paleoindian stage. Based on the earliest securely dated appearance of populations in the New World, this stage begins around 11,000-10,000 B.C., and lasts for approximately 4000 years. During this time, it is proposed that populations continued with a highly nomadic hunting tradition brought with them from the Old World. Traditional models emphasize the heavy reliance that these groups placed on the hunting of the large mammals of the Pleistocene. Plant foods and small game undoubtedly supplanted this diet, and may have played a more important role than previously thought (Black and McGraw 1985; Patterson 1995). Artifact types associated with this phase include various fluted and non-fluted lanceolate projectile points, such as Clovis and Folsom. In general, due to a paucity of well-stratified older sites, the Paleoindian stage remains poorly defined in southeast Texas.

By 8000 B.C., the Late Wisconsin glaciation had ended, increasing climatic aridity and creating extensive changes in the environment. As a result, the majority of Pleistocene megafauna became extinct. This required drastic changes in the dominant subsistence strategies of the affected populations. By 8000 B.C., the start of the Early Archaic stage, the remaining southeast Texas populations had adapted to the environmental changes by shifting to a lifeway dominated by seasonal scheduling. This type of subsistence economy specializes in a regionally circumscribed and repetitive exploitation of specific floral and faunal resources. By remaining in familiar territory, the nomadic populations were able to better exploit the various resources available within their local environment.

However, research has suggested that human population densities remained low in the area, and may have even decreased significantly during this time (Moore and Moore 1991). Eventually, the stabilization of the climate by around 1000 B.C., the start of the Late Archaic, appears to have led to increasing populations. This rise in regional population may have been further facilitated by the development of long-distance trade, technological innovations, and changing social relations (Patterson 1995).

Table 1. Archeological Chronology for Southeast Texas (after Ensor 1991).

Time Period	Dates
Paleoindian	10,000-8000 B.C.
Early Archaic	8000-5000 B.C.
Middle Archaic	5000-1000 B.C.
Late Archaic	1000 B.C.-A.D. 400
Early Ceramic	A.D. 400-800
Late Ceramic	A.D. 800-1750
Historic	post A.D. 1750

The final prehistoric period in southeast Texas is marked by the emergence of ceramics. Ceramic artifacts appear in the archaeological record of the Galveston Bay area by

approximately A.D. 100, and by A.D 500, had been adopted by a number of inland populations (Pertulla et al. 1995). A plain, sand-tempered type of ceramic identified as Goose Creek became prevalent during the period, although a number of decorated varieties and tempering materials were also present (Patterson 1995; Pertulla et al. 1995). The appearance of Caddoan pottery in southeast Texas around A.D. 1000-1300 has been used to suggest the presence of extended trade networks or migration during this time (Aten 1983). The period has also been associated with the introduction of the bow and arrow around A.D. 600 (Aten 1983).

Historic Overview

European contact in the region began in the early sixteenth century with the ill-fated Narváez expedition that, in 1528, deposited Cabeza de Vaca onto the Texas coastline, possibly on Galveston Island. More long-term contacts resulting from permanent European settlement did not directly impact aboriginal lifeways in southeast Texas until the early eighteenth century (Patterson 1995). However, European diseases introduced by explorers and early traders had begun to affect Native American populations in Texas by the sixteenth century (Ewers 1974). Throughout the eighteenth and nineteenth centuries, epidemic diseases, the mission system, and the fur trade seriously reduced, and in some cases exterminated, the indigenous populations residing in the region.

Anglo-American settlement in the Harris County area began in the early 1820s, with a number of Mexican land grants awarded in 1824 (Henson 1996). The modern boundaries of the county were established as Harrisburg County by the Texas Congress in 1836, and it was renamed Harris County in 1839. The presence of the highly navigable Buffalo Bayou stimulated economic development of the county, and of the city of Houston in particular. The establishment of six railroad lines in the area prior to the Civil War further stimulated economic prosperity, and helped lure a steady stream of settlers to the region. By the second decade of the twentieth century, the growing gas and oil industry was competing with agricultural interests, and helped create a significant boom in population

A range of aerial photographs of the project area taken from 1944 to 2014 were examined. In the 1944 aerial available for segment HA03 it appears that some light urban development had occurred along the south banks with scattered homes visible. The north bank was fairly undeveloped at that time, dominated by woods that were most likely the native riparian flora. However, by 1953 a mix of urban (in the form of a subdivision) and business development had occurred on both sides of the bayou, and by the 1970s this development had reached something like its apex. Although the actual alignment of Halls Bayou does not appear to have been changed during the period between the 1940s and the 1970s, it does appear that extensive deepening and probably some widening and armoring of the channel banks did occur. A review of older topographical maps dating to as early as 1922 indicates that there had been some modest straightening of the channel along HA03 sometime prior to the 1920s, however. As a result of flooding from Tropical Storm Allison in 2001, much of the urban development along the banks of Halls Bayou in HA03 was abandoned and the houses and even (eventually) the road demolished. This included the entire subdivision built north of the bayou between 1944 and 1953.

In the earliest of these aerial images from 1944 the entirety of segments HA02 and HA01 are in a natural state with natural riparian woods dominating and Halls Bayou flowing through mostly unmodified channel. Only one modern, man-made feature, what is now Mesa Road, crosses the stream. There are also two places where modifications have been made to the stream in order to straighten segments the channel. At some period between 1944 and 1953 (the next oldest aerial available) urban development began along some sections of the HA02 and HA01. This development included some additional straightening of the stream channel. By 1978 the urbanization of the area, as well as the straightening of the channel had stabilized to near its modern level, with only the easternmost end and some parkland along the corridor left little or undeveloped. A school (Lakewood Elementary), the campus of which is flanked by roughly 500 m (1640 feet) of the HA01 alignment, was demolished sometime between 2012 and 2013.

PREVIOUS ARCHEOLOGICAL INVESTIGATIONS

Prior to beginning field investigations, Moore Archeological Consulting, Inc. (MAC), performed a background investigation of archeological and historical literature relevant to the project area. Literature examined for this project includes site inventory records on file at TARL, previous archeological investigative reports on file at the Texas Historical Commission (THC), the Texas Archeological Sites Atlas (TASA), and MAC and other published literature pertinent to the current project, such as the desktop assessment completed previously for this project (Orsini 2017). The archival background search determined that numerous previously recorded archeological sites are located within the immediate vicinity (½ km), of the project area.

The review indicated that a total of 36 prehistoric sites were identified by Texas A&M University's Archeological Research Laboratory while surveying a 14,000 acre project area from November 20, 1989 though January 10, 1990 for the initial construction of the storm water detention facility on Greens Bayou (Ensor et al. 1990). The majority of the sites identified are located within 1 km (0.6 mi.) of the currently proposed project area, and located on pimple mounds (a topographic highpoint) containing cultural remains such as lithic debitage, projectile points, ceramics, and ash stains. Furthermore, five of the recorded prehistoric sites (41HR632, 41HR644, 41HR645, 41HR673, and 41HR674) are situated within 100 m (328 ft.) of the current project boundaries. All five of the sites were identified on topographic features known as pimple mounds, and were determined to be eligible for inclusion on the National Register of Historic Places (NRHP) by the Texas State Historic Preservation Office (SHPO). The pimple mounds range in size from 5 meters to 12 meters in diameter. All five recorded sites in the immediate vicinity of the project area were observed to contain scatter of lithic debitage, while some (41HR645, 41HR644, and 41HR643) sites contained a ceramic component, and one site exhibited evidence for a potential hearth (41HR644) (TASA 2016). Although Texas A&M University's Archeological Research Laboratory conducted a thorough investigation at the time, archeological standards have changed in the past three decades since the time of the original survey. Furthermore, the previously recorded sites were not delineated

and the extent of the sites remains unknown. Furthermore, the Texas A&M survey did not employ a shovel testing strategy within the vicinity of the current proposed project area-of-effect.

In August of 1987, the Texas Water Development Board (TWDB) conducted a pedestrian survey along Greens Bayou, directly south of the proposed project area. No prehistoric or historic archeological sites were identified as a result of this survey (Fox 1987). Also south of the proposed project area, a linear survey was conducted by Turpin and Son, Inc. (TAS, Inc.) in February of 2005. The survey did not record any cultural resources, which is most likely a result of increased development of the surveyed area (TAS, Inc. 2005).

No other archeological surveys have been recorded as having occurred in the immediate vicinity of the current project area and no additional work has been conducted to delineate or assess any of the sites previously recorded during the investigation by Texas A&M University's Archeological Research Laboratory.

FIELD METHODS AND RESULTS

The pedestrian cultural resources survey covered 100% of the proposed Project Area. The Project Archeologist and multiple field assistant conducted the survey. All areas of exposed soil were examined for surface exposure of cultural remains and features. Particular attention was paid to any landforms or features that have been determined of high archeological probability. The survey was conducted in accordance with prevailing standards accepted by the THC, the Council of Texas Archeologists, and Section 106 regulations.

Shovel testing was conducted in an attempt to identify buried cultural resources. Small (40 cm by 40 cm) shovel tests were excavated within the tract in an evenly spaced pattern (Figure 5). These were dug along two continuous transects on either site of the existing embankment/road. Shovel tests along the transects were dug at 100 m intervals, but since we were on opposite sides of a relatively narrow feature (the embankment) these intervals were offset so as to essentially result in a 50 m interval between excavations. Shovel tests were excavated in 10-cm arbitrary levels and were excavated to at least one meter deep or until intact basal clay or sterile deposits were reached. Each test was documented, including information on location (utilizing a hand-held, WAAS enabled, GPS unit), soil profile and cultural yield. Soil fill from tests was screened (when possible) through ¼-inch hardware cloth and examined for cultural materials, and the units were backfilled immediately. All visible surfaces were examined for historic or prehistoric archeological materials. Surface visibility varied throughout the Project Area, from 0% in the wooded portions to 100% in some cleared areas.

The project area has numerous “pimple mounds” within the tract. This combined with the minimal impacts that have occurred within the project area in the modern era and the results of previous archeological investigations suggested that the project area had a high probability for prehistoric sites. Additionally there are three previously recorded archeological sites known to be within close proximity to the project corridor. As a result, MAC increased the number of shovel tests to be excavated along the corridor

where it was close to the known sites. These were excavated in groups of 10 at 10 m intervals wherever the corridor is close to the sites. This allowed for more certainty regarding whether or not these poorly delineated sites extended to the project corridor or not. Another 8 shovel tests were added where the project corridor crosses Green Bayou (four on either side of the banks). We also allowed for professional placement of the shovel test along the route so as to allow for better testing of any pimple mounds encountered during the survey (particularly those close to water sources).

Based on the soils described in the county soil manual it was not anticipated that deep reconnaissance (in the form of backhoe trenching) would be necessary for this project. As a result no backhoe trenching was proposed for the investigation. If deep soils with the potential for intact cultural deposits were observed during this survey then the need for trenching would be reevaluated. However, no such soils were observed in the shovel tests excavated for this project.

Any locality producing either prehistoric or historic cultural remains was recorded on State of Texas archeological site forms for submission to THC. In addition to form information, photographs, plan and stratigraphic sketches and measured drawings, and crewmembers' daily field notes documented sites and features.

Investigations at identified sites or feature sought to determine site boundaries, depth, nature of the archeological deposits, and the site's state of preservation. Historic buildings (if any) and all other archeological sites and cultural features were photographed, mapped in plan view and plotted on USGS quadrangle maps and project maps. When possible, recommendations for State Archeological Landmark and National Register of Historic Places eligibility were made to the THC.

For buried or obscure sites, boundaries were delineated through a combination of soil surface examination and shovel test excavation. Where necessary, shovel tests were dug at 10-meter intervals radially in the cardinal directions from the presumed center of each site until no further artifacts were encountered in two successive units (or until the

boundary of the Project Area is reached). The site boundary on each radius was presumed to lie between the last artifact-producing test and the first sterile unit. Information on the depth and nature of the deposits was derived from shovel test results, as well as available surface observations.

The collection policy for this survey was that we would retain any diagnostic prehistoric or potentially pre-1870 historic materials recovered from shovel tests, other subsurface or surface investigations that did not prove, after extensive site delineation tests, to be isolated artifacts or modern debris. Any non-diagnostic artifacts (either prehistoric or historic) were recorded in the field with a basic analysis provided before the artifacts were reburied in place. Should a site be found with significant numbers of subsurface or surface artifacts suggestive of a major site, then the specifics of this policy may need to be revisited.

As a result of this work, 175 shovel tests were excavated, multiple mounds were observed and tested, and two temporary sites, Temporary Site 1 (TS1) and Temporary Site 2 (TS2), were documented (Figures 6 and 7). Additional work at these two temporary sites determined that one (TS1) was an isolated object and the other (TS2) was a modern trash dump (still in use). These temporary sites are described below.

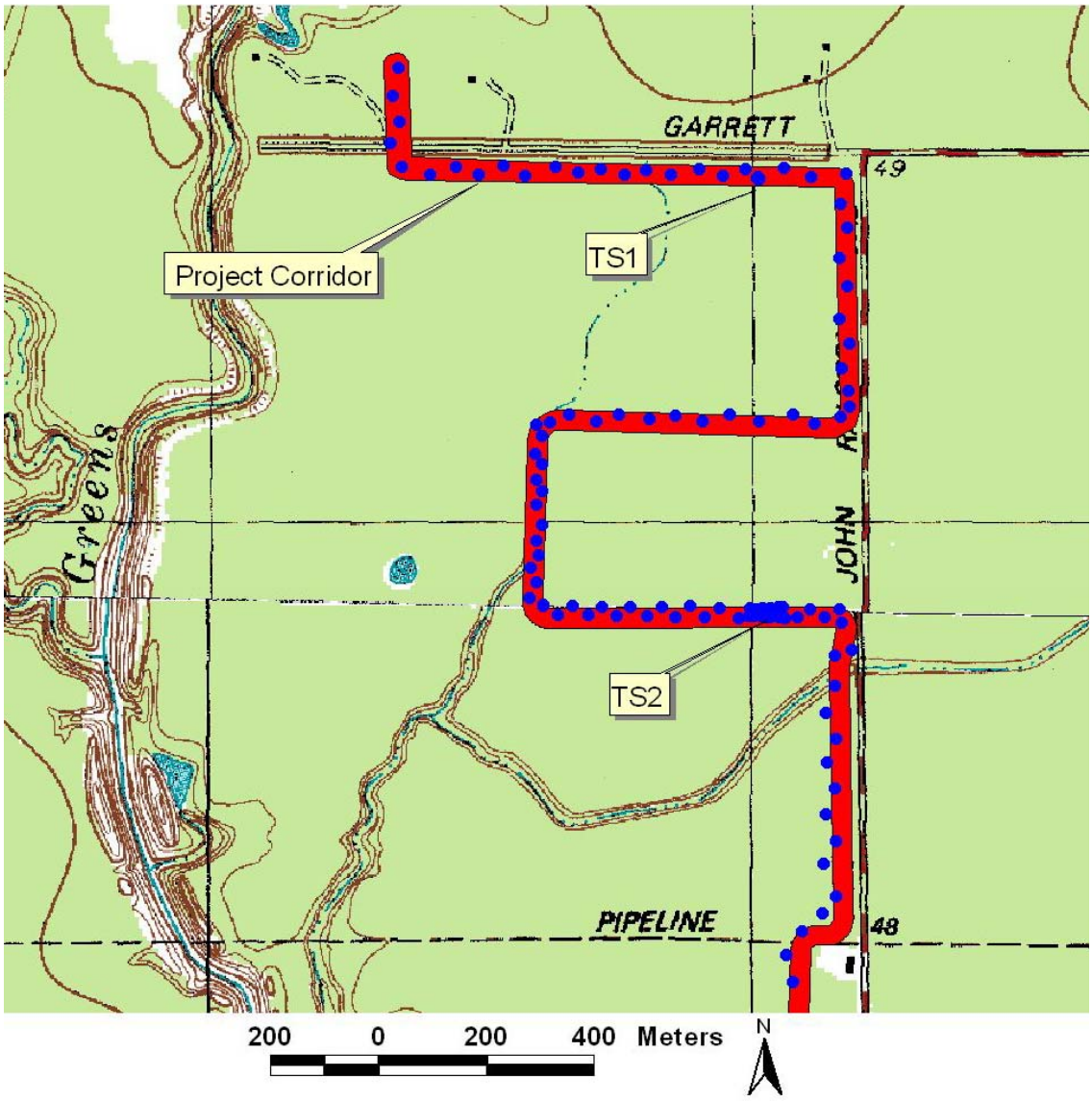

Figure 6: Locations of shovel tests in the north half of the project corridor and locale of TS1 and TS2

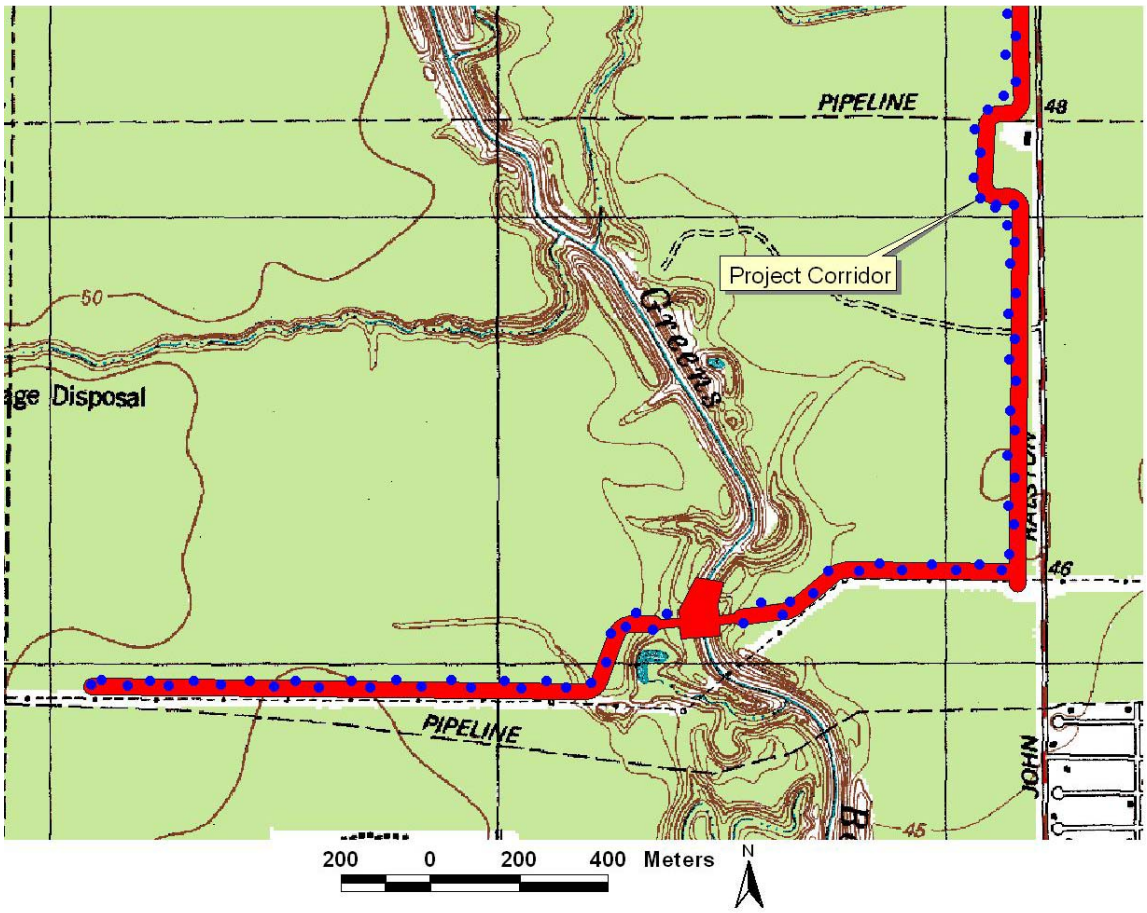

Figure 7: Locations of shovel tests in the south half of the project corridor.

Temporary Site 1

Temporary Site 1 was found a low mound on the south side of the embankment near Garrett Road (Figure 6, 8, and 9). This mound fell within the buffer of the project corridor. The mound is about 8 m wide in either direction and marginally higher on the north side nearest the embankment.

The one positive shovel test (ST20) contained a single piece of lithic debitage (Figure 10). Although numerous additional shovel tests were dug on and around the periphery of this mound, no additional cultural material or features were found. As a result, it was determined that this was an isolated object and not a “site”. The artifact was recorded and reburied in place as per the collection policy we submitted to the THC. No site forms will be submitted and no further work on this location is recommended.

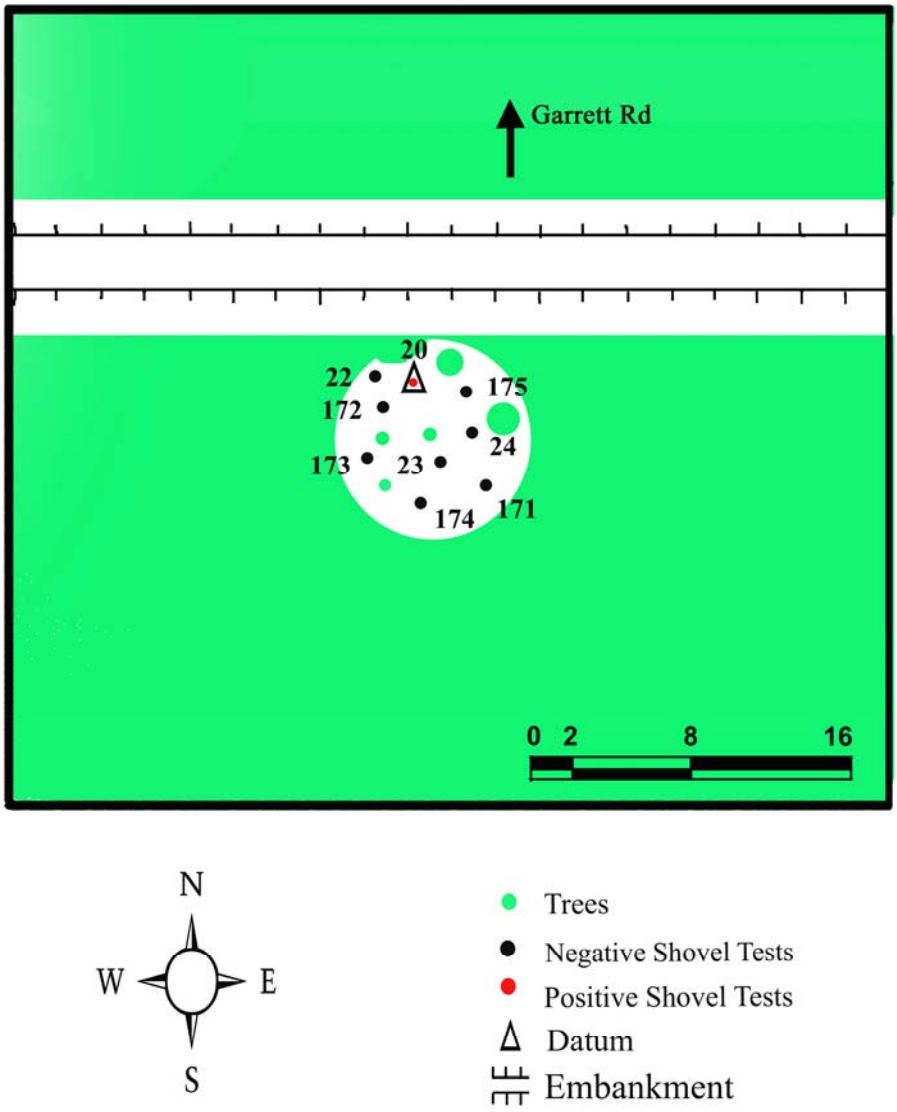

Figure 8: Map of Temporary Site 1.

Figure 9: The mound where Temporary Site 1 was found.

Figure 10: A single tertiary flake found in ST20 (Temporary Site 1). Reburied in place.

Temporary Site 2

Temporary Site 2 was found along both sides of the existing embankment on the south side of where the project corridor wraps around the William Scotsman Inc. property (Figures 6, 11, and 12). The first evidence of this locale was an increase in modern debris or trash, dating to the late twentieth to early twenty-first century, observed on the surface atop the embankment and adjacent to the project corridor. This debris included small brick and mortar fragments that appear to have been part of the roadbed matrix. At shovel test 76 (ST76) these brick fragments began to show up in the subsurface excavations as well. More of the same brick fragments appeared in STs 79, 80, and 81, as did a layer of scattered charcoal and fire stained soil between 10-20 centimeters below surface (cmbs). The evidence of a burning incident was most clear in ST80, which had pieces of burned clay as well as a burned section of a tree branch. Modern debris and trash continued to be found on the surface along this entire segment of the project corridor, including beyond where the shovel tests were finding the same sort of material.

The burned material found in several of the shovel tests was, as previously mentioned, consistently shallow and included modern material. It is most likely that this represents a modern fire incident, either man-made to burn trash, or accidental. This appears to have been covered by a thin layer of colluvial slope wash from the roughly meter high embankment immediately adjacent. It is just such erosional activity that has led to the need for the proposed improvements to the existing structure.

All evidence in the field suggested that the material observed was of recent origin, most likely the result of trash being dumped and, at times, burned in this locale in the late twentieth century and into the twenty-first century. This would coincide with the construction of the embankment and associated road sometime between 1989 and 1995. Examination of aerial imagery and topographical maps dating back to as early as 1944 (in the case of the aerials) and 1920 (USGS quadrangle maps) revealed that there has never been any residential occupation of this locale that would serve as the source of this material and that even commercial activity didn’t begin until a structure was built where the William Scotsman Inc. site now stands somewhere between 1955 and 1967. As a

result, it is highly unlikely that this debris even began to accumulate in the location until sometime in the early 90s. It was noted on approaching the project area that residential trash, broken furniture, defunct appliances, and other debris is commonly dumped along the roadside in this area, so it is most likely that this sort of activity is the source of the items found at TS2.

As a result of this information, the age of the debris, and the shallow nature of the subsurface finds, we determined that this locale is not a “site”. All items were recorded onsite and reburied in place as per the collection policy we submitted to the THC. No site forms will be submitted and no further work on this location is recommended.

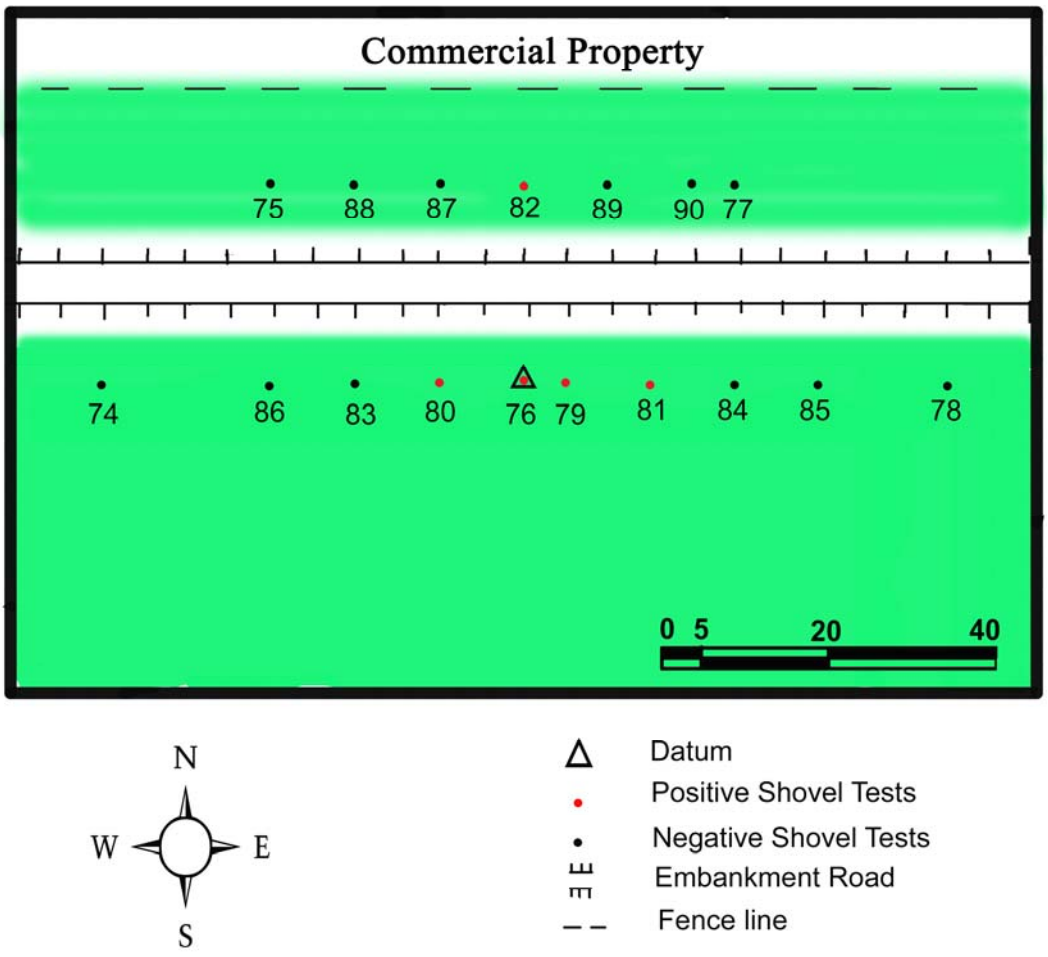

Figure 11: Map of Temporary Site 2

Figure 12: Trash and debris scattered around Temporary Site 2.

Figure 13: Partially burned wood and burned clay from Level 1 of ST80 at TS2. Reburied in place.

Figure 14: Burned wood, brick and mortar fragments, and debris from ST81 at TS2. Reburied in place.

RECOMMENDATIONS

In May of 2017, Moore Archeological Consulting, Inc., conducted an intensive pedestrian survey for the proposed improvements to the earthen embankment and control structure on the Lower Greens Bayou Regional Detention Facility depicted on the aerial map in northeast Harris County, Texas, Texas. The objectives of the investigation were to locate and identify cultural materials, sites, or historic properties within the proposed impact area, and to prepare management recommendations regarding any identified resources. The investigations were conducted for Halff and Associates, Inc. and the Harris County Flood Control District, under Texas Antiquities Permit Number 8021.

An intensive pedestrian field survey of the project area was conducted, and included both surface and subsurface (shovel test) examination. A total of 175 shovel tests were excavated. As a result of the investigation, two locales were initially identified as potential sites. The first, TS1, was identified based on the finding of a single piece of lithic debitage on a mound. However, additional shovel testing in the immediate vicinity found no additional cultural resources and it was finally determined that this was an isolated object and thus not a site. The second, TS2, was initially identified based on brick debris found in shovel tests and with other trash and debris on the surface. Additional shovel testing and examination of the surface around this locale determined that the items found were all late twentieth to early twenty-first century in nature. As a result it was determined that this is not a site.

Based on these finds it is our recommendation that no further archeological investigations need to be conducted prior to the onset of construction. In the event that archeological deposits or features should be encountered during construction, work should cease in the immediate vicinity and the Archeology Division of the Texas Historical Commission contacted for further consultation.

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APPENDIX 1

SHOVEL TEST INVENTORY

TS#	ST #	Status (+/-)	Depth	Description	Comments
	1	Negative	0-6	10yr 6/2 light brownish gray clayey sand, dry and loose.	5m East of embankment
			6-23	10yr 7/2 light gray sandy clay, moist.	
			23-50	10yr 7/2 light gray with 7.5yr 5/8 strong brown mottles, moist clay.	
	2	Negative	0-30	10yr 7/3 slightly moist clay loam	5m West of embankment. Moderately thick wooded area.
			30-50	10yr 7/3 slightly moist clay with 10yr 6/8 mottling.	
	3	Negative	0-2	Humic	Near electric tower in a low area.
			2-50	10yr 7/1 light gray with 7.5yr 5/8strong brown mottles. Loamy, wet and sticky til 20cmbs, clay, moist, and firm from there.	
	4	Negative	0-20	10yr 6/3 pale brown, moist, sandy clay.	5m West of embankment
			20-50	10yr 6/3 pale brown with 10yr 6/8 brownish yellow mottles, moist clay.	
	5	Negative	0-40	10yr 7/3 with 10yr 6/8 dry sandy clay	5m East of embankment, 15m South of road at the curve just outside of wooded area, low area with crawfish holes present.
			40-50	10yr 5/1 with 10yr 6/8 clay	
	6	Negative	0-2	Humic	50m around curve to the East of STP 5.
			2-40	10yr 6/3 pale brown with 7.5yr 5/8 strong brown mottles, loamy clay, moist and friable.	
			40-50	10yr 5/1 gray clay with 10yr 5/8 yellowish brown mottles	
	7	Negative	0-25	10yr 5/2 grayish brown with 10yr 5/8 yellowish brown moist, crumbly clay.	5m North of embankment
			25-50	10yr 4/3 brown, moist clay.	
	8	Negative	0-15	10yr 7/3 slightly moist, clay loam	5m South of embankment. Thick wooded area with thorns and brambles and a lot of insects.
			15-50	10yr 7/3 with 10yr 6/8 slightly moist sandy clay	
	9	Negative	0-14	10yr 4/3 brown with 10yr 8/2 very pale brown moist clay.	7m North of embankment. Delineated due to bypass road off of embankment.
	10	Negative	0-5	10yr 3/2 humic	5m North of embankment, thick woods.
			5-50	10yr 5/2 slightly moist loamy clay.	

	11	Negative	0-28		
			28-50		
	12	Negative	0-17	10yr 6/4 light yellowish brown, dry sand.	5m South of embankment
			17-38	10yr 5/2 grayish brown, sandy clay.	
			38-46	10yr 4/2 dark grayish brown, dry clay.	
	13	Negative	0-50	10yr 5/2 grayish brown, clay, very dry, extremely hard and packed.	5m North of embankment with medium thick woods.
	14	Negative	0-16	10yr 6/2 light brownish gray dry sandy clay.	5m South of embankment. Began encountering charcoal and burnt clay at 10cm. Pieces of clear glass at 20cm. Charcoal and burnt clay ended at 30 cm.
			16-29	10yr 4/2 dark grayish brown, dry sandy clay.	
			29-50	10yr 3/2 very dark grayish brown, loose moist clay.	
	15	Negative	0-7	10yr 3/2 very dark grayish brown, dry loose clayey sand.	5m North of embankment
			7-20	10yr 3/2 very dark grayish brown, dry loose clayey sand.	
			20-50	10yr 5/2 grayish brown, dry loose sand.	
	16	Negative	0-50	10yr 7/3 with 10yr 6/8 very dry sandy clay	5m South of embankment, palmettos and standing water nearby.
	17	Negative	0-38	10yr 5/3 brown clay loam, moist and friable, compact to dig.	On Garrett road side, small pine trees on this side, many palmettos on the other side.
			38-50	10yr 6/2 light brownish gray clay with 7.5yr strong brown mottles.	
	18	Negative	0-50	10yr 7/3 with 10yr 6/8 very dry sandy clay	5m South of embankment with a 50/50 mix of palmettos and trees.
	19	Negative	0-50	10yr 4/2 dark grayish brown with 10yr 5/8 yellowish brown, moist mottled sticky clay.	5m South of embankment.
TS1	20	Positive	0-2	Humic	On mound on the Northern edge high point. Yaupon and maple or oak tree present.
			2-70	10yr 6/3 pale brown fine loamy sand moist and friable.	
			70-80	10yr 7/1 gray with 7.5yr 5/8 strong brown mottles. Clay, moist and firm.	
	21	Negative	0-50	10yr 7/3 with 10yr 6/8 slightly moist sandy clay	5m North of embankment with marshy grass and muddy soil.
TS1	22	Negative	0-30	10yr 5/3 brown sand, loose and dry.	On mound IF 1, 1.5m away.
			30-63	10yr 6/3 pale brown moist sandy clay.	

TS1	23	Negative	0-2	Humic	At high point in middle of the mound.
			2-55	10yr 6/3 pale brown loamy sand, moist and friable.	
			55-70	10yr 7/1 gray with 7.5yr 5/8 strong brown mottles. Clay, moist and firm.	
TS1	24	Negative	0-23	10yr 4/2 dark grayish brown, dry loose sand.	On mound South of embankment.
			23-41	10yr 6/3 pale brown, dry loose clayey sand.	
			41-60	10yr 6/3 pale brown with 10yr 5/8 yellowish brown mottles, moist loose sandy clay.	
	25	Negative	0-22	10yr 5/2 brown sandy clay, dry	5m South of embankment.
			22-40	10yr 7/3 very pale brown, dry sandy clay.	
	26	Negative	0-20	10yr 6/3 pale brown sandy clay, wet and compact with organic matter present.	Bushes and large tree in area.
			20-50	10yr 3/2 very dark grayish brown with 10yr 5/8 yellowish brown mottles and a rusty/iron concentration, compact and sticky clay with roots.	
	27	Negative	0-50	10yr 7/3 very pale brown with 10yr 6/8 brownish yellow mottling, dry sandy clay.	5m West of embankment. Small elevated area (pimple mound). Nothing cultural found.
	28	Negative	0-50	10yr 4/2 dark grayish brown with 10yr gray and 10yr 5/8 yellowish brown mottles. Moist, sticky clay.	5m East of Embankment. Area has had standing water until recently.
	29	Negative	0-60	10yr 6/3 pale brown compact sandy clay.	Palmettos and large trees in area.
			60-70	10yr 3/2 very dark grayish brown with 10yr 5/8 yellowish brown with iron concentration. Compact clay.	
	30	Negative	0-15	10yr 6/3 pale brown dry sandy clay	5m East of embankment. Charcoal found but no evidence of intentional burning or cultural activity. Many low lying palmettos nearby.
			15-37	10yr 6/1 gray with 5yr 6/8 reddish yellow mottles. Moist clay. Many somewhat large femg concretions.	
			37-47	10yr 5/2 grayish brown moist clay.	
	31	Negative	0-15	10yr 5/1 gray dry sandy loamy clay with humic, and charcoal present from a root burn.	5m West of embankment. Wooded area with fallen trees and about 25% palmettos.
			15-50	10yr 7/3 very pale brown with 10yr 6/8 brownish yellow mottling, dry sandy clay.	

32	Negative	0-16	10yr 6/1 gray, dry loose clayey sand.	5m East of embankment.
		16-50	10yr 4/2 dark grayish brown with 10yr 6/1 gray mottles. Moist sticky sandy clay.	
33	Negative	0-20	10yr 6/3 pale brown wet and compact sandy clay.	Grassy area
		20-50	10yr 3/2 very dark grayish brown with 10yr 5/8 yellowish brown with iron concentration. Compact clay.	
34	Negative	0-50	10yr 7/3 very pale brown with 10yr 6/8 brownish yellow mottling, dry sandy clay.	5m East of embankment. Small elevated area (possible pimple mound). Nothing cultural found.
35	Negative	0-23	10yr 6/1 gray, dry loose clayey sand.	10m East of embankment on low mound/slight rise, 7m N/S-4m E/W.
		23-40	10yr 4/2 dark grayish brown with 10yr 5/8 yellowish brown mottles, dry, friable, clay.	
36	Negative	0-21	10yr 5/3 brown sandy clay loam	5m West of embankment
		21-54	10yr 6/1 gray with 10yr 6/8 brownish yellow mottles, moist clay.	
37	Negative	0-10	10yr 6/3 pale brown compact sandy clay.	Bushes and grass
		10-50	10yr 3/2 very dark grayish brown with 10yr 5/8 yellowish brown with iron concentration. Compact clay.	
38	Negative	0-2	10yr 4/2 dark grayish brown loamy humic	5m North of embankment. Large number of palmettos with a few trees.
		2-15	10yr 7/3 very pale brown sandy clay loam lots of roots	
		15-50	10yr 7/3 very pale brown sandy clay.	
39	Negative	0-12	10yr 5/3 brown loamy clay.	5m South of embankment. Surrounded by tall grass and thorns, next to property fence.
		12-50	10yr 6/2 light brownish gray with 10yr 6/8 brownish yellow mottles. Moist clay.	
40	Negative	0-60	10yr 5/4 yellowish brown with 10yr 6/8 brownish yellow compact sandy clay with iron concentration.	Palmettos and large trees.
41	Negative	0-3	10yr 4/2 dark grayish brown loamy humic, some charcoal from tree burn.	5m South of embankment. Small number of trees and large amount of low marsh grass. Water moccasin.
		3-50	10yr 7/3 very pale brown with 10yr 6/8 brownish yellow mottling, dry sandy clay.	
42	Negative	0-9	10yr 6/1 gray, dry loose clayey	5m North of embankment

			sand.	
		9-50	10yr 4/2 dark grayish brown with 10yr 6/1 gray and 10yr 5/8 yellowish brown mottles.	
43	Negative	0-50	10yr 7/3 very pale brown with 10yr 6/8 brownish yellow mottling, dry sandy clay. Very hard to dig past 20 cmbs.	5m South of embankment. No grass, pine trees and needles everywhere.
44	Negative	0-15	10yr 5/4 yellowish brown, compact sandy clay with organic matter.	Palms and large trees. High probability area start.
		15-50	10yr 3/2 very dark grayish brown with 10yr 5/8 yellowish brown mottles with iron concentration.	
45	Negative	0-6	10yr 6/1 gray, dry loose clayey sand.	5m South of embankment. Appears to have been standing water until recently.
		6-55	10yr 4/2 dark grayish brown with 10yr 6/1 gray mottles. Moist sticky clay.	
46	Negative	0-5	10yr 6/2 very pale brown sand.	5m West of embankment
		5-25	10yr 7/2 light gray sandy clay	
		25-50	10yr 6/3 pale brown mostly clay.	
47	Negative	0-50	10yr 7/3 very pale brown with 10yr 6/8 brownish yellow mottling, dry sandy clay. Difficult to dig past 20 cmbs.	5m South of embankment. No grass, pine trees everywhere. Appears to be an excavated ditch.
48	Negative	0-31	10yr 6/3 pale brown with 10yr 8/1 white limestone stains, sandy clay mixed with modern fill (concrete) and organic matter.	Close to a canal with concrete cores. 1 nail at level 3 and concrete pieces levels 1-3.
		31-52	10yr 6/2 light brownish gray with 10yr 3/2 very dark grayish brown and 10yr 5/8 yellowish brown mottles with iron concentration.	
49	Negative	0-13	10yr 6/1 gray, dry loose clayey sand.	East of embankment and next to barbed wire fence. Golf ball size piece of white limestone at 12 cm. Beginning at 13cm some type of rock hard shiny black material encountered fro small to large sizes. Large chunk hit and broken in half that looks like obsidian. (Industrial slag?)
		13-42	10yr 4/2 dark grayish brown with 10yr 6/1 gray mottles. Dry, hard, compact sandy clay.	
50	Negative	0-35	Fill with limestone pieces, metal remnants, layered loamy clay and some industrial byproduct. Hard and dry.	Between drainage and embankment, water moccasin there.

		35-50	10yr 8/1 white with 7.5yr strong brown mottles dry and hard clay.	
51	Negative	0-50	Disturbed, containing chunks of limestone gravel and industrial slag. 10yr 4/2 dark grayish brown, dry loose sandy clay.	East of embankment and next to barbed wire fence.
52	Negative	0-11	10yr 7/3 very pale brown dry and compact sandy clay.	5m West of embankment and 15m East of the drainage with a 32 degree slope.
		11-50	10yr 5/2 grayish brown with 10yr 6/8 brownish yellow mottles, iron concentration and calcium carbonate concretions. Roots present.	
53	Negative	0-40	Highly disturbed/local fill with bucket lid pieces, blue concrete, large calcium carbonate concretions, hard and compact.	1m East of embankment, 10m North of manhole and side drainage.
		40-53	10yr 7/3 pale brown with 10yr 5/8 yellowish brown mottles, clay. Very dry and compact, hard to dig.	
54	Negative	0-29	Disturbed with a few marbles sized pieces of limestone. 10yr 5/3 brown, dry loose clayey sand.	5m West of embankment
		29-50	10yr 6/3 pale brown with 10yr 5/8 yellowish brown mottles, moist sticky clay.	
55	Negative	0-17	Fill, 10yr 7/3 very pale brown dry sandy clay.	5m East of embankment, low grass and 15 degree slope.
		17-50	Fill, 10yr 7/3 very pale brown dry sandy clay with modern fill and very compacted.	
		50-56	10yr 7/3 very pale brown clay with redox staining.	
56	Negative	0-15	10yr 5/3 brown, dry loose clayey sand.	5m West of embankment. Rusty metal strap found (modern).
		15-55	10yr 6/3 pale brown with 10yr 5/8 yellowish brown and 7.5yr 4/8 red mottles, moist sticky clay with small pieces of calcium carbonate.	
57	Negative	0-28	10yr 6/2 light brownish gray dry loose clayey sand.	5m East of embankment
		28-60	10yr 6/3 pale brown with 10yr 5/8 yellowish brown mottles, dry clay.	
58	Negative	0-4	10yr 2/2 very dark brown loam. Moist humic.	5m West of embankment, pine trees and low grass.
		4-17	10yr 7/3 very pale brown dry sandy clay.	
		17-30	10yr 7/3 very pale brown clay with 10yr 6/8 brownish yellow redox staining.	

		30-50	10yr 7/3 very pale brown clay, dry and very compact.	
59	Negative	0-14	10yr 4/2 dark grayish brown dry loose clayey sand.	5m East of embankment.
		14-58	10yr 6/3 very pale brown dry loose clayey sand.	
		58-65	10yr 6/3 very pale brown dry friable sandy clay.	
60	Negative	0-35	10yr 7/3 very pale brown sandy clay with 10yr 5/8 yellowish brown with calcium carbonate and a lot of charcoal.	5m West of embankment, large trees with bushes and grass. Slight slope with modern trash.
		35-50	10yr 7/3 very pale brown clay, dry and very compact.	
61	Negative	0-50	10yr 6/2 light brownish gray with 10yr 5/6 yellowish brown dry sandy clay.	10m North of embankment due to heavy equipment rutting.
62	Negative	0-32	10yr 8/1 white with 10yr 6/8 brownish yellow mottles sandy clay loam, dry and friable.	4m South of embankment, 25m East of 61. Larger pine trees, 1 palmetto, most underbrush along road edge. A few fallen trees and branches in the area.
		32-50	10yr 7/3 light gray with10yr 6/8 brownish yellow clay moist and firm.	
63	Negative	0-7	10yr 6/2 light brownish gray dry loose clayey sand.	North of embankment in edge of woods.
		7-50	10yr 6/2 light brownish gray with 10yr 5/6 yellowish brown and 10yr 6/3 pale brown mottles, dry sandy clay.	
64	Negative	0-50	10yr 7/2 light gray, dry loose sandy clay with some yellowish mottling. 4 small chunks of charcoal found in level 2 but no cultural material found.	5m South of embankment.
65	Negative	0-50	10yr 7/3 very pale brown sandy clay, dry and very compact. More clay with depth.	5m North of embankment, along the northern extent of the ditch. Neighboring property about 1m higher. Pine trees and marsh grass.
66	Negative	0-4	10yr 3/2 very dark grayish brown sandy clay with humic	Road to the West, large trees, bushes, and palmettos.
		4-41	10yr 6/2 light brownish gray wet sandy clay	
		41-52	10yr 5/1 gray with 10yr 5/8 yellowish brown mottles, wet clay, with iron concretions.	
67	Negative	0-50	10yr 7/3 very pale brown sandy clay with 10yr 5/8 yellowish brown moist and highly compacted with tree roots.	5m North of embankment, just North of ditch that embankments soil that probably came from pine trees and palmettos present. Short marsh grass here.

	68	Negative	0-2	Humic	5m South of embankment with more palmettos and underbrush, has a low ditch.
			2-25	10yr 7/1 light gray with 10yr 6/8 brownish yellow mottles, sandy clay moist and friable.	
			25-50	10yr 7/1 light gray with 10yr 6/8 brownish yellow mottles, clay, moist and firm.	
	69	Negative	0-8	10yr 6/2 light brownish gray dry loose clayey sand.	North of embankment in edge of woods.
			8-50	10yr 6/3 pale brown with 10yr 5/6 yellowish brown and 10yr 7/1 light gray.	
	70	Negative	0-50	10yr 6/2 light brownish gray with 10yr 5/8 yellowish brown dry sandy clay.	Road to West, large trees and palmettos.
	71	Negative	0-50	10yr 7/3 very pale brown dry, loose clayey sand.	
			50-70	10yr 4/2 dark grayish brown hard dry clay	
	72	Negative	0-50	10yr 7/3 very pale brown sandy clay with 10yr 5/8 yellowish brown moist.	5m South of embankment between two wooded areas.
	73	Negative	0-4	10yr 3/2 very dark grayish brown humic and sandy clay.	Road to South, large trees.
			4-46	10yr 6/2 light brownish gray with 10yr 5/8 yellowish brown compact and hard sandy clay with iron concretions.	
	74	Negative	0-25	10yr 8/1 white with 10yr 6/8 brownish yellow mottles sandy clay loam, dry and friable.	5m South of embankment, smaller pine trees, more brambles and tree diversity.
			25-50	10yr 7/3 light gray with10yr 6/8 brownish yellow clay moist and firm.	
	75	Negative	0-10	10yr 7/3 very pale brown sandy clay, dry.	5m North of embankment, Wooded area with pine and deciduous trees with marsh grass. Near property line but without the distinguishable slope change as in stp's 67 and 72.
			10-20	Disturbed, 10yr 7/3 very pale brown sandy clay with 10yr 5/8 yellowish brown with calcium carbonate and a lot of charcoal.	
			20-50	10yr 7/3 very pale brown sandy clay with 10yr 5/8 yellowish brown dry.	
TS 2	76	Positive	0-16	10yr 6/2 light brownish gray dry clayey sand.	South of embankment in edge of woods. Level 2=10-20 brick pcs, lvl 3=20-30 brick pcs.
			16-50	10yr 5/6 yellowish brown and 10yr 6/3 pale brown sandy clay.	

	77	Negative	0-35	10yr 7/2 light gray, dry loose clayey sand some charcoal in level 2.	
			35-55	10yr 5/2 grayish brown dry mottled clay.	
	78	Negative	0-3	10yr 3/2 very dark grayish brown humic and sandy clay.	Road to North, large trees with palmettos and grass.
			3-53	10yr 5/1 gray with 10yr 5/8 yellowish brown mottles, wet clay, with iron concretions.	
TS 2	79	Positive	0-20	10yr 7/3 very pale brown sandy clay, dry. Charcoal and burned clay throughout but primarily in level 2.	5m South of embankment and 5m East of 76 for delineation in thick woods.
			20-50	10yr 7/3 very pale brown sandy clay with 10yr 5/8 yellowish brown dry.	Level 3- 1 low fired brick fragment.
TS 2	80	Positive	0-10	10yr 4/3 brown dry clay loam	10m West of 76, delineation
			10-24	Full of charcoal and stained soil from a forest fire burn, possibly after embankment construction.	8 low fire brick fragments found in level 1
			24-50	10yr 7/2 light gray dry loose sandy clay.	
TS 2	81	Positive	0-12	10yr 6/2 light brownish gray dry loose clayey sand.	South of embankment in woods.
			12-50	10yr 6/3 pale brown with 10yr 5/6 yellowish brown dry sandy clay.	Level 1 Burnt clay and brick fragments.
TS 2	82	Positive	0-14	10yr 5/2 grayish brown dry loose clayey sand.	North of embankment in woods.
			14-50	10yr 5/1 brown with 10yr 5/8 yellowish brown mottles, dry clay.	Level 1-brick fragments, Level 2- 1 brick fragment
	83	Negative	0-15	10yr 4/2 dark grayish brown dry loose clay	Some charcoal found in level 1
			15-50	10yr 7/3 very pale brown dry loose sandy clay.	
	84	Negative	0-14	10yr 7/2 light gray sand.	5m South of embankment.
			14-49	10yr 6/3 pale brown with 7.5yr 6/8 reddish yellow mottles, sandy clay.	Charcoal in levels 2-3
	85	Negative	0-4	10yr 4/2 dark grayish brown sandy clay with humic.	West of embankment with large trees, grass, and pines.
			4-38	10yr 7/3 very pale brown dry sandy clay.	
			38-51	10yr 6/2 light brownish gray with 10yr 6/8 brownish yellow, clay.	
	86	Negative	0-5	10yr 5/2 grayish brown dry loose clayey sand.	
			5-15	Burned level with charcoal and burned clay.	
			15-50	10yr 7/3 very pale brown moldable mottled clay.	
	87	Negative	0-50	10yr 5/3 brown with 10yr 7/1 light gray and 10yr 5/8 yellowish brown dry, sandy clay.	North of embankment in woods.

88	Negative	0-4	10yr 4/2 dark grayish brown sandy clay with humic.	
		4-20	10yr 7/3 very pale brown dry sandy clay.	
		20-47	10yr 3/2 very dark grayish brown with iron concretions and 10yr 6/8 brownish yellow compact clay.	
89	Negative	0-23	10yr 7/2 light gray with 7.5yr 6/8 reddish yellow mottles, sandy clay.	5m North of embankment with charcoal and burnt clay from a possible forest fire in levels 2-3.
		23-50	10yr 6/2 light brownish gray clay.	
90	Negative	0-11	10yr 7/1 light gray dry loose sand.	North of embankment in woods.
		11-50	10yr 7/1 light gray with 10yr 5/3 brown and 10yr 5/8 yellowish brown mottles, dry clay.	
91	Negative	0-10	10yr 7/1 light gray dry loose sand.	North of embankment in woods.
		10-50	10yr 7/1 light gray with 10yr 5/3 brown and 10yr 5/8 yellowish brown mottles, dry clay.	
92	Negative	0-30	10yr 6/3 pale brown dry loose clayey sand.	
		30-50	10yr 7/2 light gray dry mottled sandy clay.	
93	Negative	0-3	10yr 4/2 dark grayish brown sandy clay with humic.	Road at South, low grass.
		3-18	10yr 7/3 very pale brown, sandy clay.	
		18-48	10yr 6/2 light brownish gray with 10yr 6/8 brownish yellow, clay with iron concretions.	
94	Negative	0-18	10yr 7/3 very pale brown sand with loam	5m West of embankment with lots fo palmetto nearby and numerous small femg concretions.
		18-50	10yr 6/3 pale brown with 7.5yr 6/8 reddish yellow mottles, sandy clay.	
95	Negative	0-30	10yr 7/1 light gray with 10yr 6/8 brownish yellow mottles, sandy clay dry and friable.	50m South of 94 at top of ditch next to embankment road and next to old access point.
		30-50	10yr 7/1 light gray with 10yr 6/8 brownish yellow mottles, clay, dry and hard.	
96	Negative	0-18	10yr 7/2 light gray very dry, hard mottled sandy clay.	
		18-50	10yr 6/2 light brownish gray sandy clay.	
97	Negative	0-3	10yr 4/2 dark grayish brown sandy clay with humic.	Road to West, canal to the East. 1 screw in level 1.
		3-20	10yr 7/3 very pale brown with 10yr 6/3 pale brown compact sandy clay.	

		20-54	10yr 6/2 light brownish gray compact clay.	
98	Negative	0-8	10yr 7/2 light gray dry loose clayey sand.	West of embankment
		8-34	10yr 7/2 light gray with10yr 6/8 brownish yellow dry loose clayey sand.	
		34-50	10yr 7/2 light gray with 7.5yr 4/6 strong brown, sandy clay.	
99	Negative	0-15	10yr 7/3 very pale brown disturbed, hard loamy clay.	5m East of embankment, soil hard from exposure.
		15-49	10yr 7/2 light gray with 7.5yr 6/8 reddish yellow mottles, clay.	
100	Negative	0-6	10yr 5/2 grayish brown dry loose clayey sand.	West of embankment
		6-50	10yr 7/2 light gray with 7.5yr 4/6 strong brown, sandy clay.	
101	Negative	0-3	10yr 4/2 dark grayish brown sandy clay with humic.	Road to West, canal to the East. Lower grass.
		3-50	10yr 7/3 very pale brown with 2.5yr 4/8 red, sandy clay.	
		50-60	10yr 7/3 very pale brown sandy clay.	
102	Negative	0-50	10yr 5/2 grayish brown with 10yr 7/1 light gray and 10yr 5/8 yellowish brown moist, sticky clay.	West of embankment, muddy from rain.
103	Negative	0-8	10yr 5/4 yellowish brown, moist clay.	5m East of embankment
		8-30	Disturbed 10yr 7/4 very pale brown with 7.5yr 6/8 reddish yellow, loamy clay.	Found limestone, charcoal, and burnt clay in level 2.
		30-50	10yr 5/1 gray clay, undisturbed.	
104	Negative	0-4	10yr 2/2 very dark brown, sandy clay.	Road to the East, palmettos and large trees
		4-55	10yr 6/3 pale brown, wet sandy clay.	
		55-64	10yr 4/2 dark grayish brown, 10yr 6/3 pale brown, and 10yr 6/8 brownish yellow sandy clay.	
105	Negative	0-53	Fill, The top 30 cmbs were a clay loam with femg concretions and 40 was the gray and brownish yellow mottled clay, very dry with small and large calcium carbonate concretions and burned carbon then it moved into sandy clay mixed with a lot of burned wood.	Next to drainage 4m East of the embankment.
		53-70	10yr 7/1 light gray with 10yr 6/8 brownish yellow mottles, moist clay.	

106	Negative	0-50	10yr 5/2 grayish brown with 10yr 7/1 light gray, 10yr 5/8 yellowish brown, and 5yr 5/8 yellowish red moist, sticky clay.	North of embankment. Muddy.
107	Negative	0-6	10yr 2/2 very dark brown, sandy clay with humic.	
		6-29	Disturbed, 10yr 6/2 light brownish gray and 10yr 7/4 very pale brown sandy clay.	
		29-42	10yr 7/4 very pale brown, sandy clay with some gravel.	
		42-53	10yr 7/1 light gray with 10yr 6/8 brownish yellow mottles, very hard clay with some iron concretions.	
108	Negative	0-4	10yr 3/3 dark brown moist, clayey sand.	West of embankment with pc of clear plastick in beginning of level 2.
		4-55	10yr 5/2 grayish brown with 10yr 7/1 light gray and 10yr 5/8 yellowish brown moist, sticky clay.	
109	Negative	0-6	10yr 5/4 yellowish brown, moist clay.	1m East of embankment, next to standing water.
		6-30	10yr 7/4 very pale brown with 7.5yr 6/8 reddish yellow, loamy clay.	
110	Negative	0-2	Humic	4m West of embankment, small palmetto and fallen trees, this is right before it curves to the East.
		2-30	10yr 7/1 light gray and 10yr 5/8 yellowish brown moist, sticky clay.	
		30-52	10yr 7/1 light gray with 10yr 6/8 brownish yellow mottles, moist and friable.	
		52-68	10yr 7/1 light gray clay, moist and firm.	
111	Negative	0-5	10yr 3/3 dark brown moist, clayey sand.	North East of embankment
		5-28	10yr 5/2 grayish brown with 10yr 7/1 light gray and 10yr 5/8 yellowish brown moist, sticky clay.	
		28-38	10yr 8/2 very pale brown, dry powdery sand.	
		38-60	10yr 6/3 pale brown with 5yr 5/8 yellowish red.	
112	Negative	0-9	10yr 5/4 yellowish brown, moist clay.	5m South of embankment on mound North of stp 112. Some charcoal at 12 cmbs and a few femg concretions.
		9-39	10yr 4/2 dark grayish brown sandy loam	

		39-70	10yr 7/6 light gray with 7.5yr 6/8 reddish yellow, moist clay that gets thicker with depth.	
113	Negative	0-4	10yr 2/2 very dark brown, sandy clay with humic.	Mound? Large trees
		4-46	10yr 6/3 pale brown sandy clay.	
		46-60	10yr 7/1 light gray with 10yr 6/8 brownish yellow mottles, very hard clay with some iron concretions.	
114	Negative	0-29	10yr 4/2 dark grayish brown with 10yr 5/8 yellowish brown mottles.	East of embankment
		29-50	10yr 5/2 grayish brown with 10yr 5/8 yellowish brown and 5yr 5/8 yellowish red, moist, sticky clay.	
115	Negative	0-9	10yr 2/2 very dark brown, sandy clay with humic.	Road to East with large trees.
		9-60	10yr 6/3 pale brown sandy clay.	
		60-70	10yr 7/1 light gray with 10yr 6/8 brownish yellow mottles, very hard clay with some iron concretions.	
116	Negative	0-31	10yr 4/2 dark grayish brown with 10yr 5/8 yellowish brown mottles moist sticky clay.	East of embankment
		31-50	10yr 5/2 grayish brown with 10yr 5/8 yellowish brown and 5yr 5/8 yellowish red, moist, sticky clay.	
117	Negative	0-3	10yr 5/3 brown, moist clayey sand.	West of embankment
		3-50	10yr 6/3 pale brown with 10yr 6/1 gray and 5yr 5/8 yellowish red. A few calcium carbonate concretions.	
118	Negative	0-35	Disturbed soil. 10yr 7/3 very pale brown with 5yr 4/6 yellowish red and 10yr 6/8 brownish yellow, hard packed dry sandy clay.	5m East of embankment, soil wet from rain. 3 pieces of modern white plastic and a piece of charcoal found in level 2.
		35-55	10yr 5/2 grayish brown with 2.5yr 4/6 red and 10yr 5/6 yellowish brown.	
119	Negative	0-5	10yr 3/3 dark brown moist, clayey sand.	Large trees and grass, road to East.
		5-48	10yr 7/2 light gray sandy clay	
		48-60	10yr 6/1 gray with 10yr 6/8 brownish yellow mottles with iron concretions and roots.	
120	Negative	0-3	Humic	4m East of embankment between it and the drainage
		3-28	10yr 5/3 brown, sandy clay dry and compact with many small femg concretions and some burned carbon.	
		28-40	10yr 7/2 gray with 10yr 6/8 brownish yellow mottles very dry and hard.	

		40-50	10yr 7/1 light gray with 10yr 6/8 brownish yellow mottles very dry and hard.	
121	Negative	0-4	10yr 5/3 brown, moist clayey sand.	West of embankment
		4-24	10yr 6/3 pale brown with 10yr 6/1 yellowish brown, 10yr 5/8 yellowish brown, and 5yr 5/8 yellowish red moist sticky clay.	
		24-50	10yr 5/3 brown with 10yr 5/8 yellowish brown, moist sandy friable clay.	
122	Negative	0-4	10yr 3/3 dark brown moist, clayey sand.	Embankment to the West and ditch to the South.
		4-17	10yr 7/1 light gray compact clay.	
		17-30	10yr 5/1 gray with 10yr 6/8 brownish yellow mottles, compact and hard clay, with iron concretions.	
123	Negative	0-30	10yr 6/3 pale brown with 10yr 6/1 gray, 10yr 5/8 yellowish brown, and 7.5yr 5/8 strong brown, moist sticky clay.	West of embankment
124	Negative	0-12	10yr 5/3 brown, moist clayey sand.	East of embankment
		12-40	10yr 6/4 light yellowish brown with 10yr 6/2 light gray and 10yr 5/8 yellowish brown.	
125	Negative	0-2	Humic	2m East of Embankment into woods.
		2-24	10yr 5/2 grayish brown sandy loam, moist and friable.	
		24-80	10yr 6/3 pale brown with10yr 5/8 yellowish brown mottles, loamy sand moist and friable.	
		80-100	10yr 7/1 light gray with 7.5yr 5/8 strong brown, and 5yr 5/8 yellowish red mottles, clay.	
126	Negative	0-4	10yr 3/3 dark brown moist, clayey sand.	Road to West and ditch to the South
		4-13	10yr 6/4 light yellowish brown clay mixed with modern fill	
		13-48	10yr 8/4 very pale brown compact sand	
		48-60	10yr 5/1 gray with 10yr 6/8 brownish yellow mottles, compact and sticky clay, with iron concretions.	
127	Negative	0-25	10yr 5/4 yellowish brown, loose moist mottled sandy clay.	West of embankment
		25-35	10yr 6/4 light yellowish brown, very dry very compact mottled clay.	

128	Negative	0-8	10yr 5/3 brown, moist clayey sand.	East of embankment with rectangular piece of cloth in level 2. Separation of soil colors are distinct in profile.
		8-31	10yr 6/3 pale brown with 10yr 6/1 gray and 10yr 5/8 yellowish brown mottles, moist sticky clay.	
		31-39	10yr 6/4 light yellowish brown, powdery sand.	
		39-60	10yr 5/3 brown, dry powdery sand.	
		60-65	10yr 6/4 light yellowish brown, powdery sand.	
		65-85	10yr 6/3 pale brown with 10yr 5/8 yellowish brown mottles, friable clay.	
129	Negative	0-10	10yr 4/3 brown sandy loam with gravel and shell.	West of embankment next to big push pile and areas that have been cleared and dug up for drainage.
		10-30	Disturbed, moist compact clay, 2.5y 6/2 light brownish gray, with 7.5yr 5/4 brown and 2.5yr 4/4 reddish brown.	level 2-2 modern brick fragments and 1 modern piece of glass. Level 4-1 brick fragment found.
		30-37	10yr 5/3 brown, dry sandy clay loam.	
		37-50	2.5yr 3/6 dark red with10yr 6/2 light brownish gray, 2.5y 6/4 light yellowish brown and 10yr 5/6 yellowish brown compact clay.	
130	Negative	0-4	10yr 3/3 dark brown moist, clayey sand.	Electric facilities to the South and road to the North.
		4-17	10yr 7/1 light gray sandy clay.	
		17-64	10yr 6/4 light yellowish brown with 10yr 5/1 gray and 2.5yr 3/6 dark red clay with iron concretions.	
131	Negative	0-5	10yr 2/1 black sandy mud	North of embankment, swampy area with cattails and palmettos.
		5-24	10yr 5/3 brown, moist clayey sand.	
		24-50	10yr 4/3 brown with 10yr 5/8 yellowish brown mottles, moist sticky clay.	
132	Negative	0-4	10yr 3/3 dark brown moist, clayey sand.	Flooded area, large tree
		4-12	10yr 7/2 light gray sandy clay.	
		12-45	10yr 6/1 gray with 10yr 6/8 brownish yellow mottles, wet and sticky clay.	
133	Negative	0-45	10yr 7/1 light gray with 10yr 6/4 light yellowish brown sandy clay somewhat wet and friable.	2m North of embankment in low area that has palmettos and some other water plants and not much other vegetation aside from the trees.

		45-70	10yr 7/1 light gray with 10yr 6/4 light yellowish brown clay, firm.	
134	Negative	0-20	10yr 5/8 yellowish brown, moist sandy clay.	
		20-65	10yr 6/4 light yellowish brown, moist sand.	
		65-80	10yr 5/8 yellowish brown with 2.5yr 3/6 dark red clay.	
135	Negative	0-6	10yr 2/2 very dark brown loamy sand.	North of embankment
		6-31	10yr 6/2 light brownish gray, dry clayey sand.	
		31-50	10yr 6/2 light brownish gray with 10yr 7/1 light gray and 10yr 5/8 yellowish brown.	
136	Negative	0-7	10yr 3/2 very dark grayish brown	Embankment to the North, large trees.
		7-16	10yr 6/3 pale brown sandy clay.	
		16-28	10yr 7/4 very pale brown compact sandy clay.	
		28-40	10yr 7/1 light gray and 10yr 5/8 yellowish brown with iron concretions.	
137	Negative	0-20	10yr 5/4 yellowish brown, moist sandy clay loam	North of embankment
		20-25	10yr 6/3 pale brown compact, dry sandy clay.	
		25-50	10yr 7/3 very pale brown with 10yr 6/6 brownish yellow.	
138	Negative	0-2	humic	In low area w/in 1 m of embankment on S side muddy creek bed
		2-45	10YR 7/1 lt. gray w/ 10YR 6/8 brownish yellow mottles - sandy clay, somewhat wet and sticky, a few mid-sized roots	
		45-60	7.5 YR 5/4 brown sand mixed in w/ above sandy clay	
		60-75	10YR 7/1 lt. gray w/ 10YR 5/8 brownish yellow and 10YR 7/8 yellow mottling - clay moist and firm	
139	Negative	0-4	10yr 3/2 very dark grayish brown with humic	Embankment to the South, large trees.
		4-14	10yr 6/3 pale brown sandy clay.	
		14-40	10yr 6/1 gray with 10yr 5/8 yellowish brown and 2.5yr 5/8 red mottles, compact clay.	
140	Negative	0-3	10yr 6/2 very dark brown mud	South of embankment. Swampy area about 5 feet below top of embankment. Appears to hold standing water occasionally.

		3-26	10yr 6/1 gray, 10yr 7/3 very pale brown moist, sticky clay.	
		26-43	10yr 7/3 very pale brown clayey sand	
		43-65	10yr 7/3 very pale brown with 10yr 6/1 gray, and 7.5yr 4/8 red, moist, sticky clay.	
141	Negative	0-30	10yr 7/3 very pale brown, dry loamy sand.	North of embankment
		30-50	10yr 5/8 yellowish brown with 2.5yr 4/6 yellowish red and 10yr 7/4 very pale brown.	
142	Negative	0-15	10YR 3/3 orange-brown sandy clay loam. Moist and friable w/ many roots and many white gravel pieces, possibly for erosion control or from flooding.	12 m soft embankment where concrete and [illegible] path to dam start moving up. Highest ground point in area above the common flood zone.
		15-35	10YR 5/3 brown sandy clay loam, moist and friable	
		35-50	10YR 5/2 grayish brown w/ 10 YR 6/8 brownish yellow mottles and 5YR4/6 yellow red mottles. Clay moist and firm	
143	Negative	0-21	10yr 5/2 grayish brown, dry powdery sand.	North of concrete embankment West of Greens Bayou. Piece of cloth encountered at 39cm, possibly shoe lace.
		21-41	10yr 5/6 yellowish brown, dry powdery sand.	
		41-60	10yr 5/6 yellowish brown and 10yr 5/8 yellowish brown.	
144	Negative	0-4	10yr 3/2 very dark grayish brown with humic	Embankment to the North
		4-36	10yr 6/3 pale brown sandy clay.	
		36-51	10yr 8/6 yellow with 10yr 7/1 light gray mottles.	
145	Negative	0-20	10yr 5/3 brown, damp loamy sand.	Northwest of embankment
		20-45	10yr 5/8 yellowish brown with 2.5yr 4/6 yellowish red and 10yr 7/4 very pale brown moist compact sandy clay.	
146	Negative	0-15	Moist sandy clay, Dark Brown 10YR 3/3	S of embankment, W of Cedar Bayou
		15-40	Moist sticky clay mottled dark brown 10YR 3/3. Dark yellowish brown 10YR 4/4 and red, 2.5YR 4/8.	Predominate color for 15-40 is 2.5YR 4/8
147	Negative	0-30	10yr 7/3 very pale brown, dry loamy sand.	
		30-45	10yr 7/2 light gray and 10yr 5/8 yellowish brown moist compact sandy clay.	

148	Negative	0-17	10YR 5/3 brown w/ 7.5YR 5/8 strong brown mottles.	50 m S of 147. 3 m E of embankment at tree line next to barbed wire fence.
		17-40	7.5YR 5/4 Brown clayey sand w/ bits of clay in the above color around 30-40 cmbs. Brown with charcoal and yellowish-brown mottles. Some stone at this level	
		60-80	10YR 7/2 Lt grey w/ 10YR 5/8 brownish yellow and 2.5YR 3/6 red clay, moist and firm	
149	Negative	0-6	10yr 3/2 very dark grayish brown with humic	Embankment to the North
		6-13	10yr 6/3 pale brown with 2.5yr 5/8 red mottles and femg concretions. Disturbed clay.	
		13-46	10yr 6/1 gray with 10yr 5/6 yellowish brown. Clay.	
150	Negative	0-13	Moist sandy clay, Dark Brown 10YR 3/3	W of embankment
		13-50	Moist friable mottled clay very pale brown 10YR 7/3. Light Gray 10YR 7/1 and Yellowish Brown 10YR 5/8	
151	Negative	0-5	Loamy sand very dark brown 10YR 2/2.	N of embankment approximately 3 feet below top of embankment
		5-14	Dry powdery sand, grayish brown 10YR 5/2	
		14-28	Dry powdery sand, yellowish brown 10YR 5/6	
		28-50	Dry/ friable sandy clay mottled light brownish gray 10YR 6/2 and Yellowish brown 10YR 5/8	
152	Negative	0-7	Dry sand loamy 10YR 5/2 - grayish brown	5 m S of embankment; Charcoal 4 - 7 cm
		7-30	Dry sand 10YR7/3 - very pale brown	Lots of roots
		30-42	Dry sand starts to clump, mottled 10YR 7/3 very pale brown w/ 7.5YR 5/8 strong brown	
		42-67	Dry clay mottled 10YR 7/3 very pale brown w/ 7.5YR 5/8 strong brown	
153	Negative	0-5	Organic matter, leaves, branches, 10YR 4/1 dark gray	large trees, road at S
		5-56	Sandy clay, fine-grained sand 10YR 7/4 very pale brown	
		56-70	Clay 10YR 7/2 light gray with iron concretion 2.5YR 2/8 red. Roots inclusions	
154	Negative	0-30	very moist soft squishy loamy loose mottled clay, 10yr 5/3 brown with 10yr 5/8 yellowish brown.	South of embankment.

		30-50	Moist compact mottled clay, 7.5yr 5/8 strong brown and 10yr 6/2 light brownish gray.	
				N of embankment. This is a swampy area approximately 3' below top of embankment. Appears to hold water occasionally
155	Negative	0-2	Loamy sand very dark brown 10YR 2/2	
		2-11	Dry powdery sand grayish brown 10YR 5/2	
		11-29	Dry powdery sand yellowish brown 10YR 5/6	
		29-50	Dry friable sandy clay, mottled light brownish gray 10YR 6/2, light gray 10YR 7/1, Yellowish brown 100YR 5/3	
156	Negative	0-55	Moist loose mottled sandy clay with 10yr 7/2 light gray and 10yr 5/8 yellowish brown.	South of embankment and 30 m North of cell phone tower.
157	Negative	0-30	10YR 7/3 very pale brown sandy clay, dry, compact; large number of tree roots	5 m N of embankment; low brush (medium thickness). Scattered pine trees
		30-40	10YR 7/3 very pale brown sandy clay, friable; greater sand content than previous level. Dry	
		40-60	10YR 7/3 very pale brown clay. 97% clay basal; 10YR 6/8 Brownish yellow redox starting	
				5 m S of embankment; lots of low palmettos; road on other side of this stretch of woods at 20 m away
158	Negative	0-33	10YR 6/4 Light yellowish brown loamy sand	
		33-52	10YR 6/8 brownish yellow and 5YR 5/8 Yellow red mottles; clay moist and firm	
159	Negative	0-18	Clayey sand, very dark grayish brown 10YR 3/2	N of embankment approximately 3' below embankment
		18-28	Dry powdery sand light brownish gray 10YR 6/2	
		28-50	Dry friable mottled clay light brownish gray 10YR 6/2 and Yellowish brown 10YR 5/8	
160	Negative	0-5	Sandy loam top soil small burned element, 10yr 4/2 dark grayish brown	South of embankment
		5-40	Moist sticky mottled clay, 10yr 7/2 light gray and 10yr 5/8 yellowish brown.	
161	Negative	0-4	Organic matter, leaves, branches, 10YR 4/1 dark gray	large trees, road at S

		4-62	Sandy clay, fine-grained sand 10YR 8/4 very pale brown	
		62-72	compact clay 10YR 6/1 gray with iron concretions 10YR 5/8 yellowish brown, roots inclusions	
162	Negative	0-9	dry loamy 10YR 5/2 - grayish brown	5 m S of embankment
		9-40	Dry sand 10YR 7/3 very pale brown	Moved 5 m W to investigate [illegible] point
		40-60	Sandy clay mottled 10YR 7/3 - very pale brown, w/ 7.5YR 5/8 strong brown	Scattered FeMg concretions, lots of roots
		60-79	Dry clay mottled 10YR 7/3 - very pale brown, 7.5YR 5/8 - strong brown	
163	Negative	0-10	10YR 4/2, dark grayish brown sandy loam, humic and dry with lots of bush roots.	5 m N of embankment. Leafless bushes everywhere. On a small rise ~ 20 cm above surface in other areas. Good soil possibly mowed but 0 artifacts. Pine trees around.
		10-60	10YR 7/4 very pale brown sand, dry, very friable	
		60-80	10YR 7/3 very pale brown sandy clay, dry, friable	
		80-100	10YR 7/3 very pale brown, clay, dry, friable	
164	Negative	0-25	Very sandy loose mottled clay , 10yr 6/3 pale brown and 10yr 5/8 yellowish brown clay	South of embankment
		25-50	Moist sticky mottled clay, 10yr 7/2 light gray and 10yr 5/8 yellowish brown.	
165	Negative	0-1	Humic	1 m N of embankment; many low palmettos
		1-30	10YR 6/2 light brownish gray w/ 10YR 6/6 brownish yellow mottles clay loam	
		30-50	10YR 7/1 light gray w/ 7.5YR 5/8 strong brown mottles; clay firmer with depth, moist	
166	Negative	0-10	Organic matter, leaves, branches, 10YR 4/1 dark gray	Large trees, flooded area, road at N
		10-21	Wet sandy clay 10YR 8/4 very pale brown	
		21-40	Wet and sticky clay 10YR 6/1 gray with iron concretions 10YR 5/8 yellowish brown, roots inclusions	
167	Negative	0-8	Moist loamy sand dark brown 10YR 2/2	N of embankment; this is a swampy area even with top of embankment. Appears to hold water occasionally

		8-50	Moist sticky mottled clay, light brownish gray 10YR 6/2, Light gray 10YR 7/1, Yellowish brown 10YR 5/8	
168	Negative	0-8	Organic matter, leaves, branches, 10YR 4/1 dark gray	Large trees, flooded area, road at N
		8-19	Wet sandy clay 10YR 8/4 very pale brown	
		19-40	Wet and sticky clay 10YR 6/1 gray with iron concretions 10YR 5/8 yellowish brown and 2.5YR 2/8 red, roots inclusions	
169	Negative	0-19	Loose dry sandy loam 10YR 6/2 light brownish gray	N of embankment
		19-39	Dry loose mottled sandy clay 10YR 6/2, 10YR 5/8	
		39-53	Sticky moist compact mottled clay 10YR 7/2, 10YR 5/8	
170	Negative	0-5	Organic matter, leaves, branches, 10YR 4/1 dark gray	Road at E, large trees
		5-15	Sandy clay 10YR 7/4 very pale brown	
		15-30	Compact clay 10YR 6/1 gray; roots intrusions	
171	Negative	0-11	Loamy sand, very dark brown 10YR 2/2	On mound, S of embankment
		11-33	Loose dry sand, very pale brown, 10YR 7/3	
		33-60	Moist friable sandy clay mottled very dark brown, 10YR 7/3, Light gray 41YR 7/1 and Yellowish brown 10YR 5/8	
172	Negative	0-7	Organic matter, leaves, branches, 10YR 3/3 dark brown	Mount, large trees, road at W
		7-47	Sandy sticky clay 10YR 6/2 light brownish gray with iron concretions	
		47-68	10YR 6/8 brownish yellow roots inclusions	
173	Negative	0-17	10YR 6/3 pale brown and 10YR 4/3 brown sandy clay loam w/ the 4/3 from a very thin humic mixed in from bioturbation. Many roots, wet and friable	On W side of mound on the middle of the 4m swale
		17-38	10YR 7/3 loamy sand w/ a few iron concretions and a small amount of charcoal and low-fired clay that was a hardened version of surrounding soil.	

		38-58	10YR 8/2, pale brown w/ 10YR 6/8 brownish yellow clay, moist somewhat firm	
174	Negative	0-8	Loamy sand very dark brown 10YR 2/2	On mound, W of ST 171
		8-37	Loose dry sand, very pale brown 10YR 7/3	
		37-60	Moist friable clay, mottled very pale brown 10YR 7/3 Light gray 10YR 7/1, Yellowish brown 10YR 5/8	
175	Negative	0-9	Loamy sand very dark brown 10YR 2/2	On mound, N of ST 171
		9-30	Loose dry sand, very pale brown 10YR 7/3	
		30-60	Moist friable clay, mottled very pale brown 10YR 7/3 Light gray 10YR 7/1, Yellowish brown 10YR 5/8	

APPENDIX 2: RECORDED ARTIFACTS

Although 40 artifacts were documented during this investigation, none were kept as per the collections policy described in the Methods section of this report. Below is the documentation of those items that were observed during the fieldwork before reburial.

TS	Shovel Test	Level	Artifact Class	Count	Comments
1	20	2 (10-20)	Debitage	1	Chert
2	76	2 (10-20)	Brick	3	Low fired, very small
2	76	3 (20-30)	Brick	4	Low fired, very small
2	76	3 (20-30)	Mortar	2	Low fired, very small
2	78	3 (20-30)	Brick	1	Low fired, very small
2	80	1 (0-10)	Brick	11	Low fired, very small
2	80	1 (0-10)	Mortar	3	Low fired, very small
2	81	1 (0-10)	Brick	3	Low fired, very small
2	81	1 (0-10)	Mortar	5	Low fired, very small
2	81	1 (0-10)	Charcoal	5	
2	82	1 (0-10)	Brick	1	Low fired, very small
2	82	2 (10-20)	Brick	1	Low fired, very small