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Archeological Survey of Drainage Detention Ponds along FM 1960

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From Wilson Drive to Atascosita Shores Drive, Harris County, Texas. Houston District

CSJs: 1685-03-098, 1685-03-058

Prepared by: Rachel Feit and Brittany McClain
Date: April 2019
Permit No: 8952

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Abstract

In October 2018, AmaTerra Environmental conducted an archeological survey of drainage detention ponds associated with the proposed expansion of FM 1960 from Wilson Drive to Astascosita Shores Drive in Harris County, Texas. The project was conducted in behalf of TxDOT under Texas Antiquities Permit No. 8952. Fieldwork entailed visual inspection and shovel testing at four of five detention pond locations. Two additional detention ponds were assessed through archival research and visual inspection and found to have no potential for archeological resources. AmaTerra excavated 28 shovel tests–none of which contained cultural materials. No archeological sites were documented and this report recommends that the project should proceed to construction with no further archeological work. All notes and records will be permanently curated at the Center for Archeological Studies at Texas State University in San Marcos.

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1. Introduction and Management Summary

The Texas Department of Transportation (TxDOT) is planning an expansion of FM 1960 from Wilson Drive to Atascosita Drive in Harris County, Texas (CSJs:1685-03-098, 1685-03-058). The road expansion for the project was previously reviewed under the National Environmental Policy Act (NEPA), with a Finding of No Significant Effect (FONSI) issued in September 2017. Since that time, TxDOT added five drainage detention ponds at various locations adjacent the roadway (**Figure 1**). The five ponds vary from about 1.8 to 4 acres in size, with a total area of about 16.98 acres. The total depth of each pond will be between six to ten feet based on typical projects of this size. These ponds will be constructed on new right-of-way (ROW) to be acquired by TxDOT.

The proposed project is being funded by the Federal Highway Administration (FHWA) through TxDOT. Since the project is being built with federal transportation money on land owned or controlled by the State of Texas, it is considered an undertaking subject to the provisions outlined under Section 106 of the National Historic Preservation Act (Section 106) and is also subject to the Antiquities Code of Texas (ACT). The Area of Potential Effects (APE) for archeological resources for this undertaking is defined as the footprint of the proposed project to the maximum depth of impact, including all easements, utility relocations, and project specific locations. Thus, the APE for archeological resources covered a total area of 16.98 acres to a maximum depth of about ten feet.

On behalf of TxDOT, AmaTerra undertook background research and conducted an archeological survey for the new proposed drainage ponds. The survey was conducted under Texas Antiquities Permit No. 8952. The initial research found that only four of the five ponds warranted field inspection. Therefore, AmaTerra's field survey involved shovel testing and pedestrian inspection at four detention pond locations (C1, C2, C5a, and C5b). Detention Pond 1 was visually inspected and found to have virtually no potential for intact archeological resources, due mainly to existing concrete structures and land modifications. Investigators excavated 28 shovel tests among the Detention Ponds C1, C2, C5a, and C5b and found no archeological materials in any of the tests. Likewise, no archeological sites were documented at any of the drainage pond locations.

Rachel Feit served as Principal Investigator. Brittany McClain served as Project Archeologist and was assisted in the field by Danielle Blut. All fieldwork was conducted over the course of one day. Although the weather was clear at the time of survey, heavy rains the previous month had left puddles of standing water over some portions of each drainage pond. Waterlogged areas were not subject to shovel tests. Despite areas that could not be tested, given that all of the 28 shovel tests were negative, investigators felt that each pond area was adequately sampled and assessed. This report recommends no further work prior to construction. All work conformed to 36 CFR 800 and 13 TAC 26 which outline the regulations for implementing Section 106 and the ACT. Work was conducted under the terms and conditions of the First Amended Programmatic Agreement for Transportation Undertakings (2005; PA-TU) among the FHWA, TxDOT, the Texas Historical Commission (THC) and the Advisory Council on Historic Preservation, and the Memorandum of Understanding (MOU) between TxDOT and the THC.

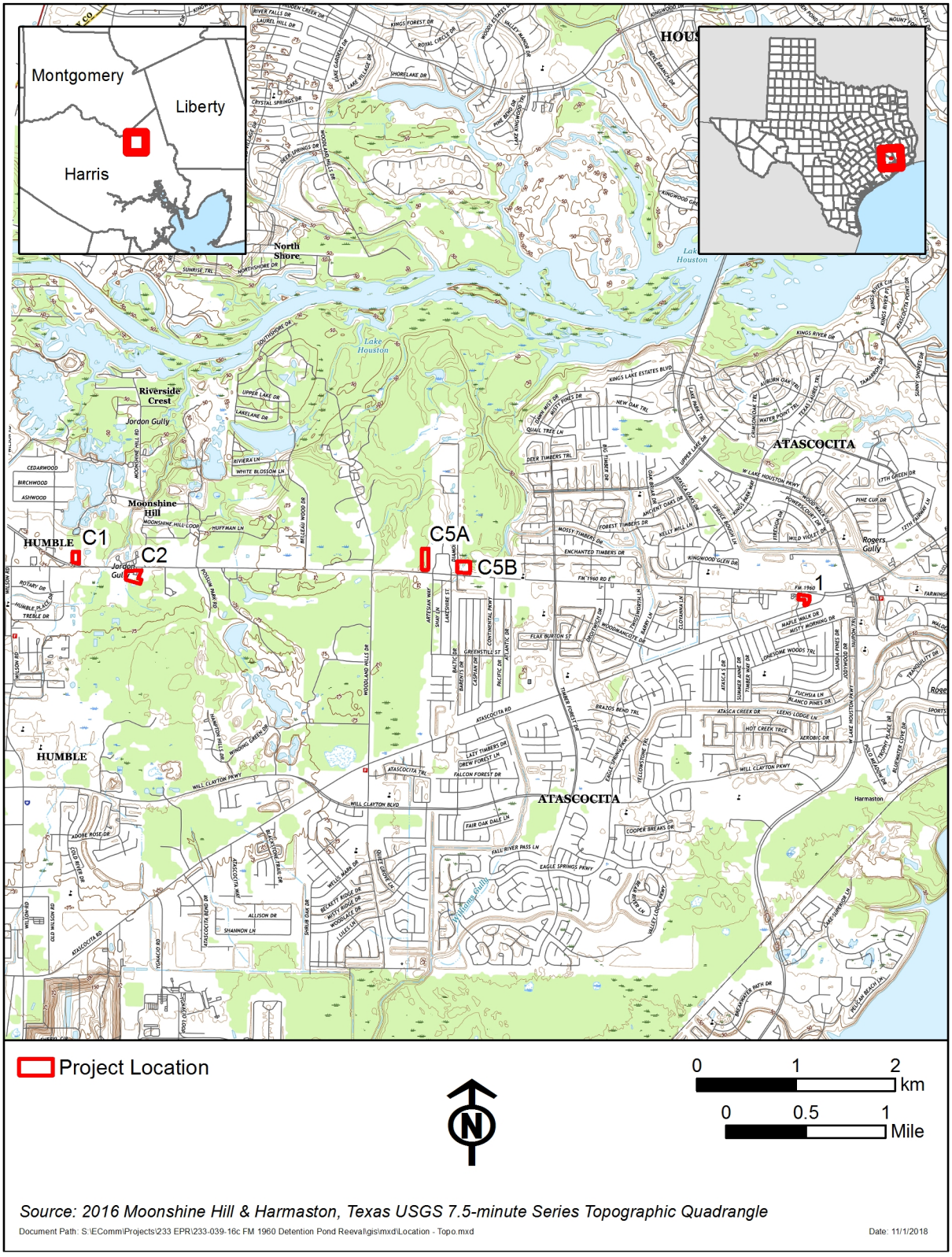

Figure 1. Drainage pond locations depicted of USGS topographical map.

Remaining sections of the report include five additional chapters: Chapter 2. Site Setting and Environmental Background; Chapter 3. Cultural Background; Chapter 4. Field Methods; Chapter 5. Results of Investigations; and Chapter 6. Conclusions and Recommendations.

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2. Project Setting and Environmental Background

The five drainage ponds that comprise the APE are located east of the City of Humble, which is now a rapidly growing suburb of Houston. Prior to suburban development, the APE was within the Humble oilfield and much of the land within and around it was devoted to oil exploration, extraction and support facilities. Land use today is a mix of commercial, residential, forested, or open field properties adjacent to the roadway. Various disturbances include parking lots, existing drainage features, utilities, former petroleum well sites and other support features (**Figures 2 and 3**).

Physiography

The APE is located within the Southern Tertiary Uplands, a sub region of the South Central Plains ecoregion (Griffith et al. 2007). This ecoregion, which is locally known as the "piney woods" (Gould 1975), "represents the western edge of the southern coniferous forest belt" (Griffith et al. 2007:87). Encompassing approximately 7,667 square miles, this subregion is characterized by "dissected irregular plains with some low, rolling hills; low to moderate gradient streams with sandy and silty substrates" (Griffith et al. 2007:91). Elevation within the Southern Tertiary Uplands ranges from 90 to 550 feet Above Mean Sea Level (AMSL).

Vegetation

Historically, natural vegetation within the Southern Tertiary Uplands consisted of upland longleaf pine-bluestem (*Pinus palustris-Schizachyrium* spp. and *Andropogon* spp.) woodlands, shortleaf pine-hardwood (*Pinus echinata-Quercus* spp.) forests, and mixed hardwood-loblolly pine (*Pinus taeda*) forests, as well as American beech (*Fagus grandifolia*) or magnolia-beech-forests, bogs, and sandstone glades. Bog plant species include southern sweetbay (*Magnolia virginiana*), hollies or gallberry (*Ilex* spp.), wax-myrtles (*Morella* spp.), insectivorous plants, orchids, and wild azalea (*Rhododendron* spp.). Today, pine forest is the dominant vegetation type with National Forest land making up large parts of this region. Aside from public land, additional land uses include pine plantations, timber production, and some pasture and livestock production (Griffith et al. 2007).

Geology and Soils

Topography within the APE is relatively flat and drains into the West Fork of the San Jacinto River. Just east of the APE the West Fork of the San Jacinto River joins with White Oak and Luce Creeks to form Lake Houston which was created in 1953. The underlying geology includes the Beaumont and Lissie Formations (**Figure 4**). These are both Pleistocene formations consisting of sand, silt and clay that form along stream channels, point bars, natural levees, backswamps and coastal marshes. Both deposits are can contain iron oxide and calcareous concretions. The Lissie formation is older than the Beaumont formation and is characterized mainly by fluviatile deposits. Soils within the APE are loamy and contain sandy, silt and clay to varying degrees. There are eight mapped soil units within the APE. These are Boy-Urban Land Complex, Edna Loam, Gessner Loam, Lake Charles Clay, Sorter Silt Loam, Texla Silt Loam, Valmont-Urban Land Complex and Wockley Fine Sandy Loam (**Figure 5**).

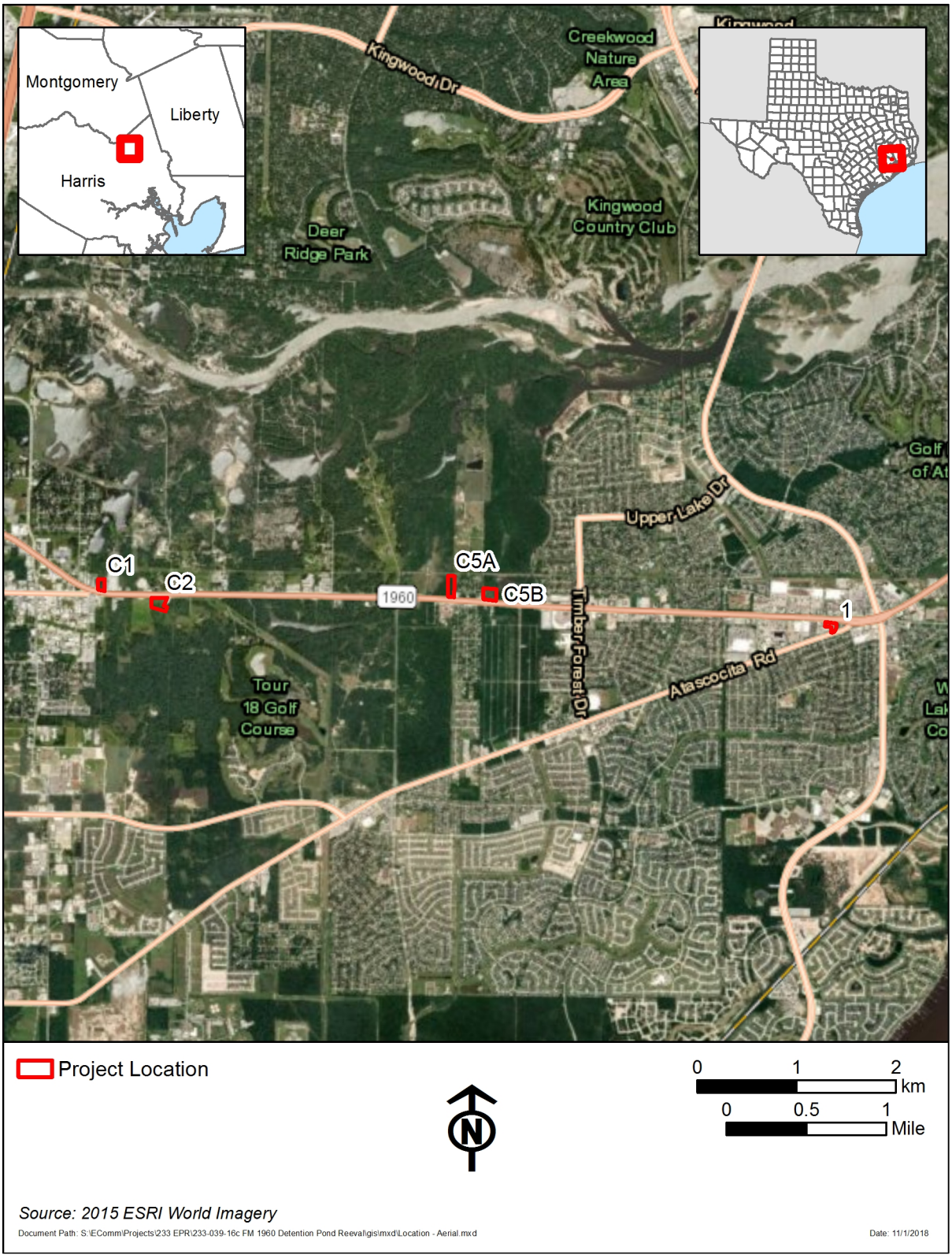

Figure 2. Drainage ponds depicted on aerial photograph showing surrounding modern development.

Figure 3. View from drainage pond looking toward FM 1960, facing south.

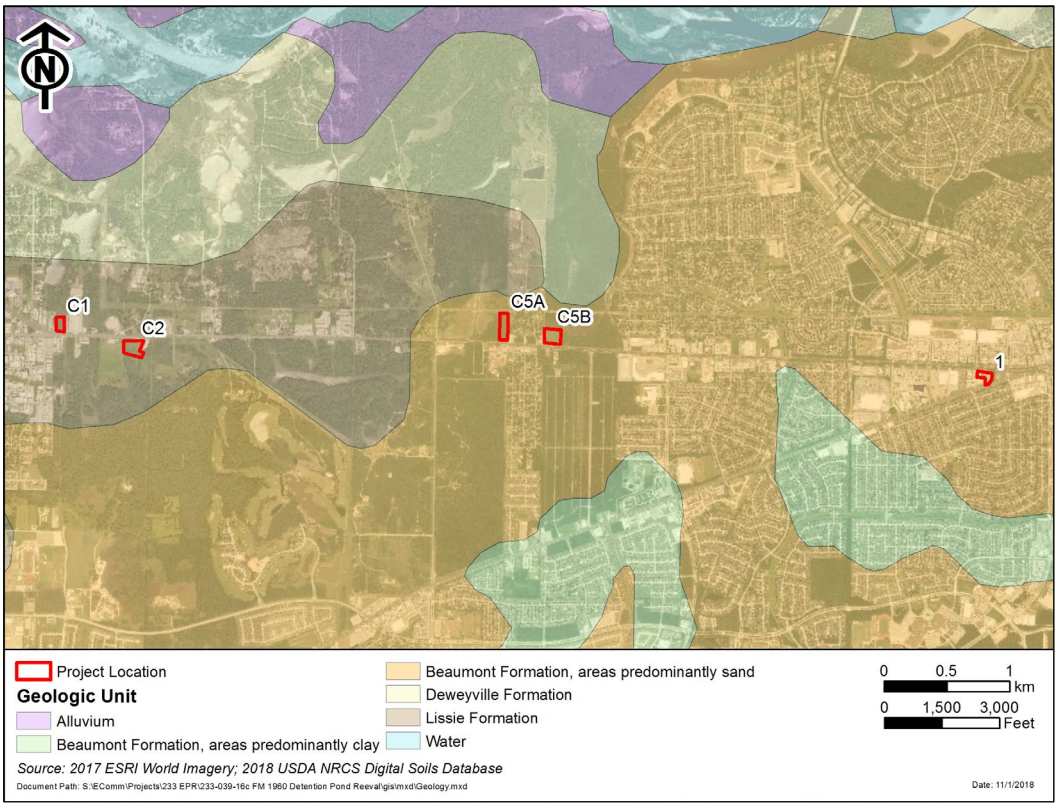

Figure 4. The APE on a geologic map.

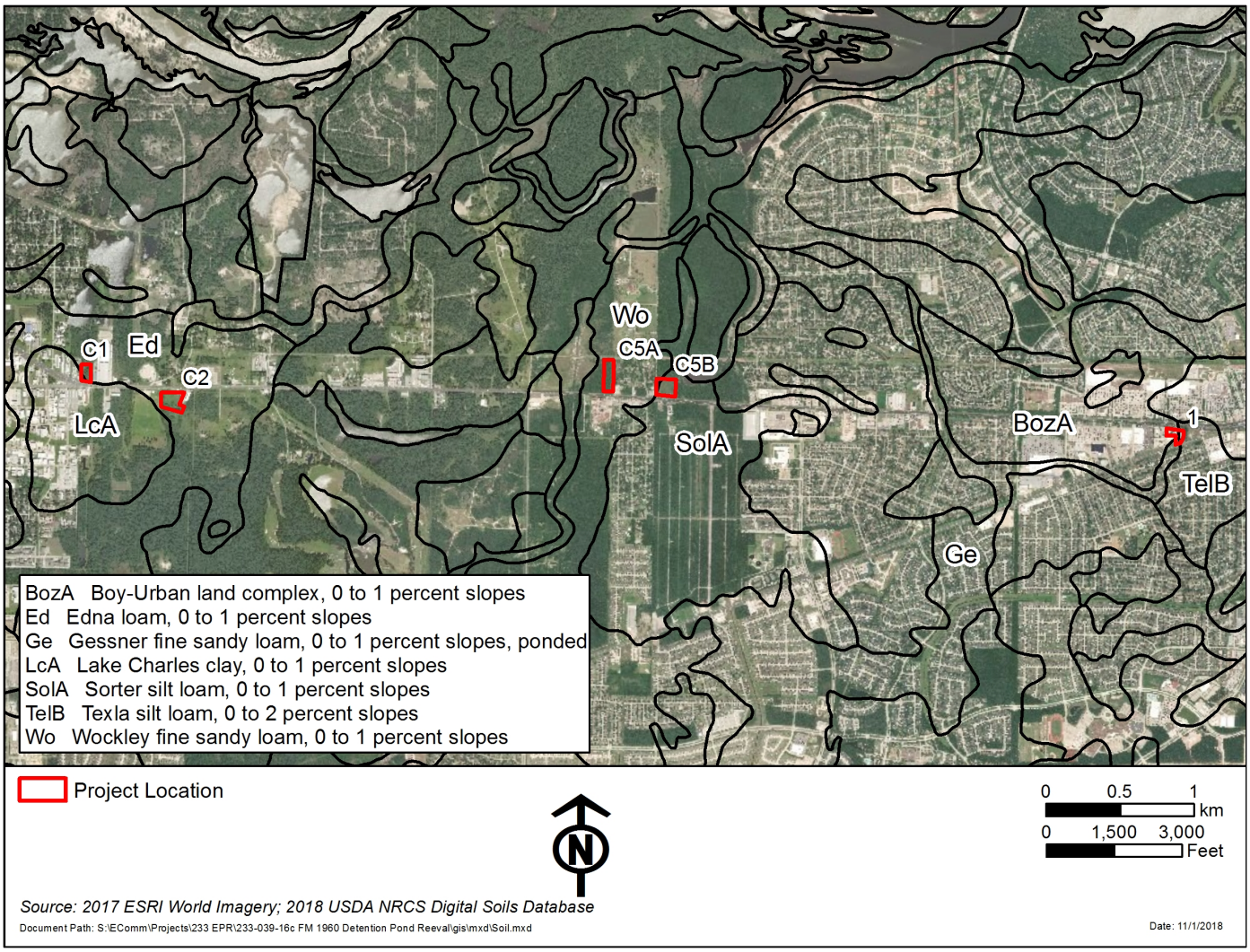

Figure 5. Aerial photograph of the APE depicting associated soil units.

3. Cultural Background

Compared to other regions of Texas, little is known regarding much of the cultural prehistory along the upper Texas coast which forms a part of the Southeast Texas archeological region as defined by Perttula (2004). Even less is known about cultural groups and patterns for inland sites in the Southeast Texas archeological region, which spans from the Sabine River to the Brazos Delta, and extends inland on the coastal plain for approximately 200 miles. The majority of knowledge archeologists have about the prehistory of the region comes from sites along the coast and sites near and within major metropolitan areas. Several key sources of literature have been produced that have helped identify the prehistoric chronology in southeast Texas and Louisiana, including: Aten (1979, 1983), Ensor (1991), Kidder (2002), and Ricklis (1994, 2004).

Paleoindian Period

Traditionally, the Paleoindian Period is the earliest recognized occupation in North America. The initial occupants of Southeast Texas followed now extinct Pleistocene megafauna across vast tracks of land from approximately 12,000–7000 BP (Moore 1994). Although the Paleoindian archeological record along the Southeastern Texas coast is known only through isolated finds, a few patterns can be discerned. First, the use of high-grade lithic material in Paleoindian lanceolate point production indicates a non-geographically tethered and highly mobile lifeway as with other parts of Texas. Paleoindians manufactured distinct, large lanceolate points that are commonly fluted. These points include Clovis, Plainview, Golondrina, Meserve, Scottsbluff, and Angostura projectile points. However, due to poor preservation and almost no documented *in situ* Paleoindian components little can be deduced regarding Paleoindian economies. Archeologists generally assume that Paleoindian lifeways in Southeast Texas mirrored those of Paleoindian groups in central Texas. Based on data from sites like Kincaid Shelter and Horn Shelter No. 2, archeologists assume that big game hunting activities were predominant and that the Paleoindian diet was supplemented by smaller game (Peyton 2007; Ricklis 2004; Texas Beyond History 2012a). Second, based on the current data, it appears Paleoindian cultures preferred locations along major streams and likely Pleistocene coastline settings. Since the Pleistocene/early Holocene sea level was approximately 100 meters lower than present day, many intact Paleoindian sites would now be submerged (Bousman et al. 2004; Ricklis 1994, 2004).

Archaic Period

As with the Paleoindian components, few well-stratified sites dating to the Archaic Period have been excavated in Southeast Texas, which has left the archeological record incomplete. Archeologists believe that the altithermal drying trend became entrenched around 6950 BP (5000 BC) and as a result aboriginal groups drastically reoriented their lifeways across North America. Although far less pronounced than in other regions, this drying trend denotes the onset of the Archaic Period within Texas that lasted to approximately 1850 BP (AD 100) (Brownlow 2003).

Archeological data for the Archaic in southeast Texas and coastal settings is scarce. Nonetheless, the Archaic is "generally defined by pre-or non-horticultural adaptations and pre-ceramic and pre-bow-and-arrow hunting technologies" (Ricklis 2004:184). Based on data obtained from regional comparisons, Archaic Period groups relied on diverse subsistence strategies that were practiced along a migratory seasonal round focused on procuring locally specific flora and fauna along coastal areas and inland riverine settings (Brownlow 2003; Ricklis 1994). Traditionally, the Archaic Period is broken into three sub-periods: Early, Middle, and Late.

Early Archaic (ca. 8000–6950 BP)

Early Archaic groups adapted to the altered climate by expanding their tool kit. Compared to the Paleoindian period, the Early/Middle Archaic assemblage is dominated by smaller points that Ensor (1991) classified as being within the expanded haft cluster. This "cluster" of points spans 4,000 years from approximately 5000–1000 BC (6,950–2,950 BP) and include points like Yarbrough, Trinity, Carrollton, and Late to Middle Archaic Palmillas.

Middle Archaic (ca. 6950–2950)

During the Middle Archaic, it is believed that population levels began to rise from relatively low densities during the Early Archaic due to the change from a cold and moist climate to a warmer and drier climate. Middle Archaic groups intensified efforts to capitalize on marine resources; in particular shellfish and fish. Numerous coastal shell midden sites have been discovered along with fishing implements including bone fishhooks, plummets, and net sinkers (Aten 1983). Axes, nutting stones, and grinding tools from more inland sites indicate that Middle Archaic groups were also well suited for utilizing hardwood forest resources as well. Points from this period include Palmillas, Yarbrough, Kent, Elam, and Carrolton (Brownlow 2003).

Late Archaic (ca. 2950–1550 BP)

Beginning in the Late Archaic (1000 BC–AD 400 or 2,950–1,550 BP) the climate began to stabilize and modern sea levels were attained, which likely aided the apparent population density increase across Texas. The greater population densities may have also facilitated long-distance trading between regions, including the Lower Mississippi Valley. Subsistence economies established earlier in the Archaic Period continued during the Late Archaic and relied on repetitive exploitation along a seasonal circuit. Late Archaic points include Ensor and Godley types (Brownlow 2003; Driver 2009; Ensor 1991; Ricklis 2004).

Woodland Period

The introduction of ceramics into the Archaic tool kit signaled a transition to what several archeologists have called a "Woodland" occupation in southeast Texas. The Woodland tag placed by earlier archeologists like Aten and Shafer was to illustrate affinities to the cultural material observed in the southeastern United States, in particular the Lower Mississippi Valley (Moore 1994, 1995; Perttula 2004). Aten and Shafer use the Woodland term to identify indigenous occupations not only prior to Mississippian or Caddoan cultures, but through historic times. However, Dee Ann Story argued that there are too many differences between southeast United States Woodland groups and

those occupying the Texas coastal region at the same time. Thus, Story coined the term "Mossy Grove" to describe the Woodland period of occupation along the coast and inland within southeast Texas (Story 1990). According to Story (1990:256) "Mossy Grove can be viewed as both a general and cultural pattern, as well as a regional tradition that partly parallels development of the Caddoan tradition to the north. And, like the Caddoan tradition/culture, it encompasses the archeological remains of what were surely different ethnic (and possibly even linguistic) groups."

Although occupation along the upper Texas coast and inland portions has been further divided into more regional specific areas, several general trends during the Mossy Grove occupation can be identified. First, ceramics are commonly associated with Mossy Grove sites. Although the manufacturing of pottery did not appear uniformly across the region (on the Texas–Louisiana border around 20 BP, Galveston Bay at about 1850 BP, and the western coastal margin around 1650 BP along the coast near Galveston Bay and Sabine Lake) it appears that the earliest appearances of ceramics within southeast Texas coincide with early ceramic periods in the Lower Mississippi Valley. From these areas, Tchefuncte, grog–tempered Baytown Plain, and Marksville Stamped are common in Early Ceramic assemblages (Peyton 2007). Based on the current data, Goose Creek ceramics first appeared near the Lake Conroe area around AD 500–600 or 1450–1350 BP (Moore 1994; Story 1990). The Goose Creek Plain variety is considered a utilitarian ware that dominated the archeological ceramic record during this period. Initially, Goose Creek ceramics were constructed using a sandy paste, with little to no additional temper. Later in the period, grog and bone tempers were added.

Late Prehistoric Period

Technological change and stylistic modifications in ceramics mark the change from the Archaic and Ceramic Periods to the Late Prehistoric Period. Eastern influences in pottery making such as grog and bone tempering, as well as elaborate decorations become apparent (Ricklis 2004). Eighteen different styles of ceramics, based on temper, paste, and design, have been documented along the Texas coast in a Late Prehistoric context (Aten 1984). The Late Prehistoric Period in Texas brought intensified group dynamics across the state. Additionally, it appears that after the bow and arrow was introduced around 1450 BP, the atlatl did not leave the archeological record, but overlapped until the Historic Period. Common arrow points recovered from Late Prehistoric Period sites include Perdiz, Alba, and Catahoula. Groups within this period continued the hunter-gatherer lifeways established long ago, with focus on coastal and riverine resources (Moore 1995; Ricklis 1994). With the advent of the bow and arrow came a shift in lithic manufacture, "reflecting a shift from direct core (or very large flake) reduction to the reduction of relatively small flakes" (Story 1990:256). The seasonal migratory circuit tradition continued with Mossy Grove groups. Aten (1983) suggests that smaller bands would have likely joined other bands to form larger communities during the winter months and then disperse back into smaller bands along the seasonal round (Ricklis 1994).

Historic Period

The Historic Period in Texas begins with the arrival of European explorers, notably Spanish explorer Cabeza de Vaca in 1528. Throughout the sixteenth and seventeenth centuries, numerous forays into Texas were made by the French and Spanish for the sake of exploration and trade, although no

permanent European settlements were established until the latter part of the seventeenth century, and there are no Spanish Colonial sites known in Harris County.

Little is known about the effects of European incursion into Texas prior to the 1700s, but what is understood is that the initial arrival of the French and Spanish to the region spread disease, killing and displacing a large percentage of the population. Coahuiltecan groups from Mexico moved northward as a result of Spanish colonization (Nickels et al 1997). Meanwhile other Native groups began moving into Texas from the Northern Plains. This put increasing pressure on Native Americans and led to intense territorial disputes and further destabilizing indigenous groups in Texas.

The region which is present day Harris County Texas was first explored by Anglo-Americans between 1815 and 1920. These various expeditions were organized from New Orleans in neighboring Louisiana in order to provide aid to the Mexican Republicans rebelling against Spanish rule. As compensation for helping Mexico gain independence from Spain, these early settlers were granted land in the area, establishing homesteads. During the 1820s, land titles were issued to a number of settlers, one of which was John Harris who laid out the town of Harrisburg in 1826 at the confluence of Buffalo and Brays Bayou. Harrisburg would later be encompassed by the City of Houston (Henson 2012).

Before the outbreak of the civil war, the economy around Houston depended primarily on cotton and commerce. The city quickly became a center for trade, not only from the coast, but also from inland Texas (McComb 2012). In the 1850s, railroads were constructed to connect Houston to the cotton and sugar plantations in the surrounding areas. Following the Civil War, the San Jacinto was aggressively dredged in order to turn the city of Houston into a deepwater port and to increase trade. The Houston area rose to prominence after the hurricane of 1900 devastated Galveston. Shipping was moved to Houston because it offered a sheltered inland port. After the discovery of oil at Spindletop near Beaumont, Houston became an obvious choice as a shipping center.

Oil has help drive the Houston area economy since the early twentieth century. After Spindletop new fields were drilled throughout Harris County, including those near the town of Humble, which was previously a company timbering town. Humble had been a stop on the Houston East & West Texas Railway, which completed its track through this area in 1878. The town's founder, Pleasant Humble had arrived prior to the Civil War and operated a fruit stand and a ferry over the San Jacinto River. Once the railway was built, Charles Bender constructed a mill and purchased the land for a company townsite. In 1880 there were 50 black and just 10 white residents. Historical maps show lines running from the HE&WT in Humble to sawmills and lumber camps elsewhere. In 1899 the HE&WT became part of the Southern Pacific System (Kleiner 2010a).

When oil was discovered in 1904 the town population soon jumped to 10,000, transforming the once sleepy timber and farming community to an urban boom town. I1905, the Humble Oilfield was the largest producing field in Texas, spawning business, hotels, theaters, saloons, and oilfield camps, the most notorious of which was Moonshine Hill.

Moonshine Hill, located just north of and partially within the project APE was ramshackle tent city pitched among the wooden derricks and metal storage tanks scattered throughout the heart of the Humble Oilfield. The air was noxious, everything was covered in a thick coating of oil and mud,

livestock roamed freely throughout the community (Land 2017). In 1909 the community of Moonshine Hill had at least six saloons and was larger than the more established town of Humble (Kleiner 2010b). Over the years The Humble Oilfield had two additional booms—one in 1914 and another in 1929, which kept the economies of Humble and Moonshine Hill alive through the 1930s (Kleiner 2010b). After that Moonshine Hill was abandoned or subsumed into the adjacent town of Humble.

Existing Cultural Resources and Potential for Archeological Sites

An online records search through the Texas Historical Commission's Archeological Sites Atlas (Atlas; 2018) and a review of historical maps and aerial photographs revealed that no previously recorded archeological sites, State Antiquities Landmarks (SALs), Registered Texas Historic Landmarks (RTHLs), or sites listed on the NRHP fall within one kilometer (0.62 mile) of the APE. However, there is one historical marker located in close proximity to Drainage Pond No. C2. The marker commemorates Moonshine Hill. Moonshine Hill is the name of the tent city community that sprung up in the area in 1905 after the first big oil gusher came in. Practically overnight 10,000 people had come to the area to seek their fortunes in the Humble oilfield, the largest in Southeast Texas. Moonshine hill had hotels, livery stables, saloons, grocery stores, dance halls, drug stores, a one-room school and a church to serve the thousands working in the oilfields (Kleiner 2010). Today almost nothing remains of Moonshine Hill (Land 2017).

Four previous surveys have intersected or overlapped the APE. The most relevant to the current APE was a 2007 survey conducted by PBS&J (now Atkins) along FM 1960 within the current project limits. That survey documented the road expansion only, however, and did not look at any of the newly proposed drainage ponds. Three other linear surveys that intersect the APE include surveys in 1986 and 1993 for road construction/expansion in the City of Humble and a 1986 survey sponsored by the Galveston District of the United States Army Corps of Engineers (USACE). None of these projects recorded sites within or near the APE.

The Potential Archeological Liability Model (PALM) of the Houston District (Abbott 2001) is a predictive model designed to assess potential for buried prehistoric archeological sites. It classifies the APE as Map Units 2, 3a, and 4 (**Figure 6**). No survey is recommended for those areas located within Map Unit 4, surface survey is recommended for areas classified as Map Unit 2, and survey through deep reconnaissance is recommended for Map Unit 3a. Drainage Ponds C1 and C2 fall within Map Unit 3a, while the remainder fall within Map Units 2 and 4. Although Drainage Ponds C5a and C5b fall within Map Unit 4, a historic topographical map shows that both ponds fall along the slope margins overlooking minor drainages or oxbows related to the West Fork of the San Jacinto River. Subsequent aerial photographs suggest that those tracts have never been significantly altered **(Figures 7 and 8).** Therefore, investigators judged there to be some potential for cultural resources in Ponds C5a and C5b. Meanwhile, modern disturbances have visibly altered the surface of the landscape at Drainage Pond 1. Therefore, only Ponds C1, C2, C5a, and C5b have any real potential for prehistoric archeological resources.

With respect to archeological sites of historic period age, the areas of greatest archeological potential were determined to be the ponds located in or near what was formerly Moonshine Hill. Topographical maps and aerial photographs depict oil wells and structures associated with Moonshine Hill within the APE of the drainage Ponds C1 and C2 and archeological remains associated with the oilfield community could be significant. The land for both of these drainage ponds is currently vacant. By contrast, the other ponds fall outside the Moonshine Hill community.

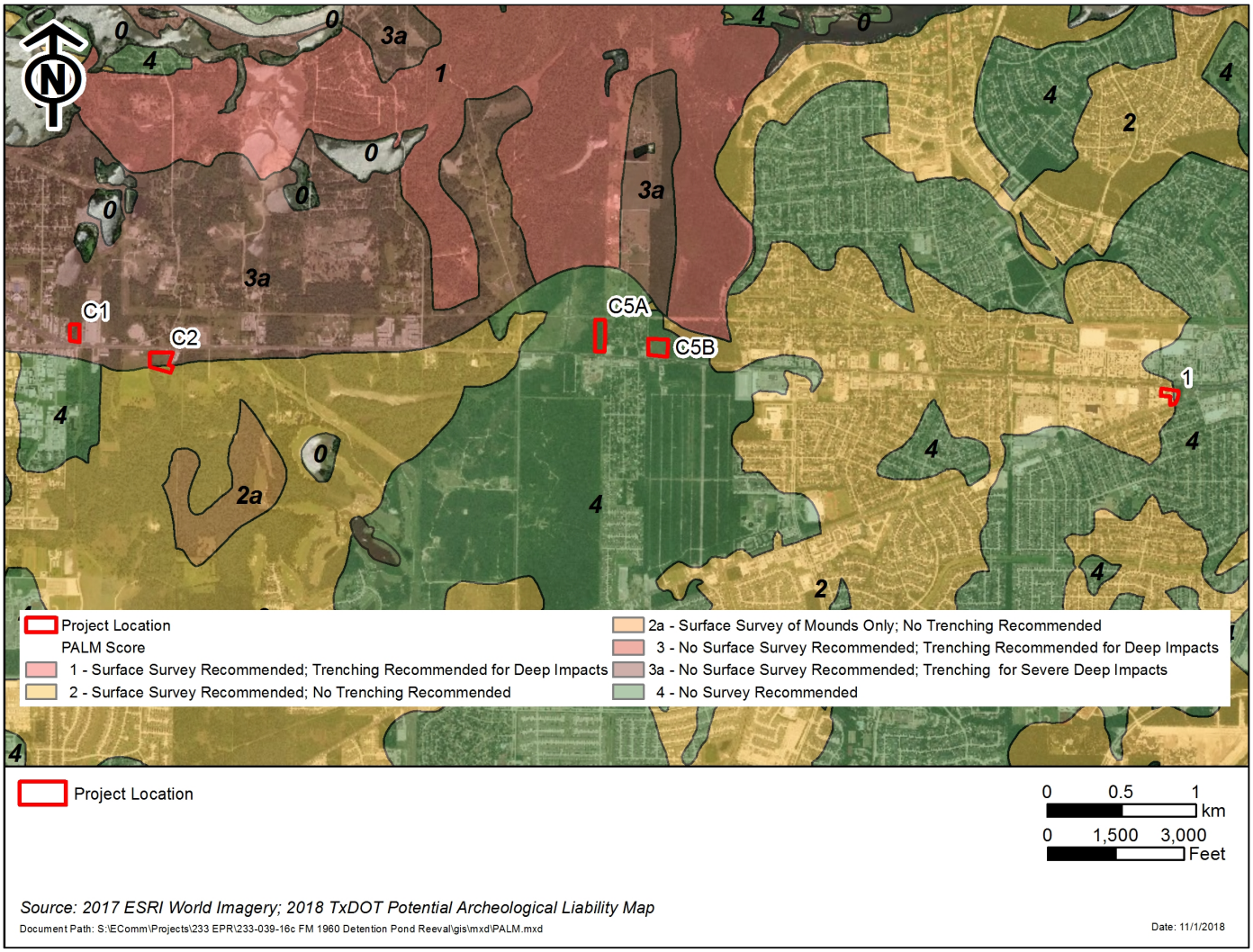

Figure 6. The APE depicted on the Houston PALM map.

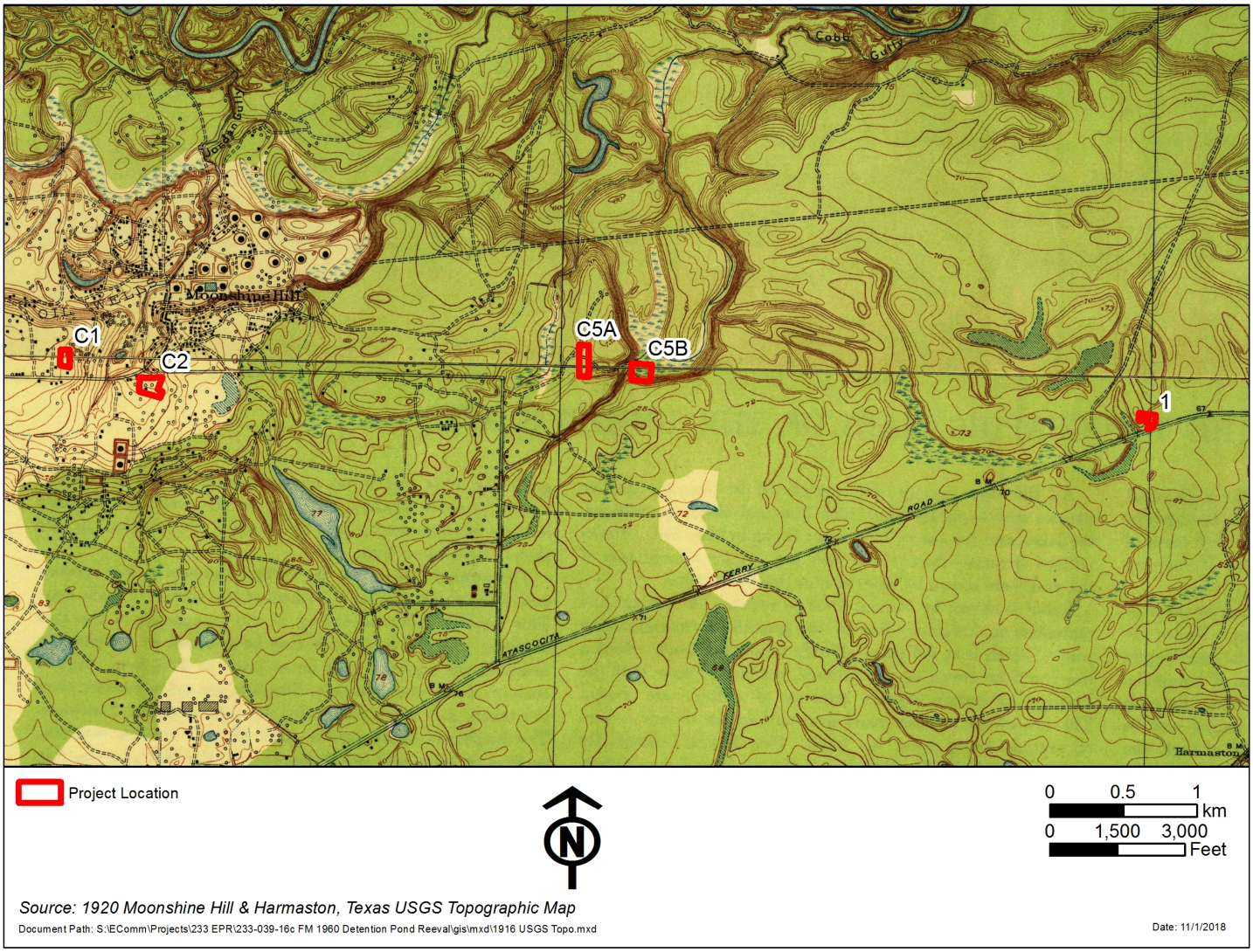

Figure 7. The APE depicted on 1920 Moonshine Hill and Harmaston topographic maps

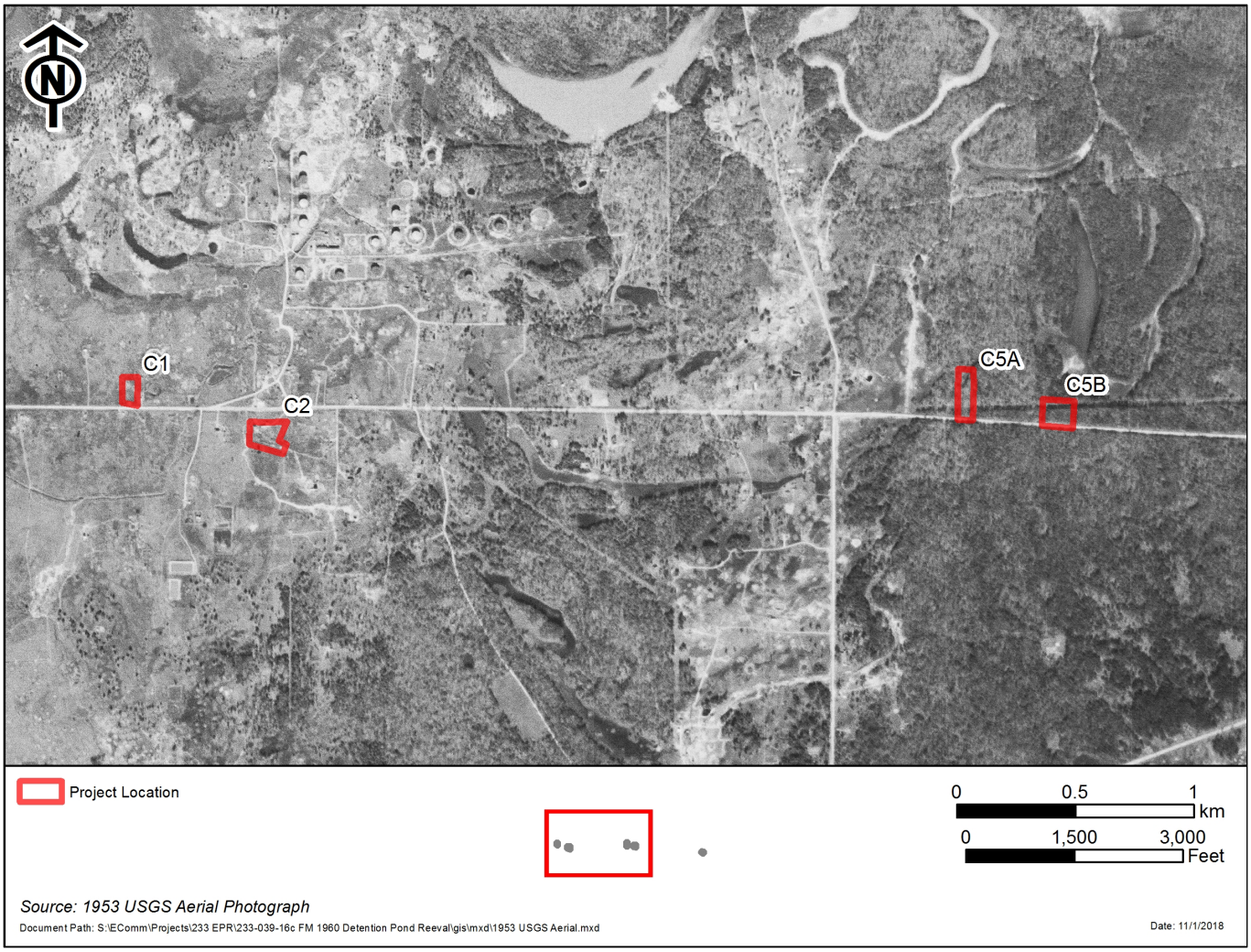

Figure 8. Drainage ponds C1, C2, C5a and C5b depicted on a 1953 aerial photograph.

4. Field Methods

The background research determined that there was almost no potential for the presence of prehistoric or historic archeological sites within Detention Pond #1 Therefore no field investigations took place at this site. However, investigators did photograph it. Meanwhile Detention Ponds C1, C2, C5a, and C5b were judged to have some potential for archeological resources. Detention Ponds C1 and C2 located at the edge of the former Moonshine Hill community, while Detention Ponds C5a and C5b are located along former tributary drainages to the West Fork of the San Jacinto River and appeared not to have been significantly altered during the twentieth century. Therefore, investigations focused on the four pond locations.

It was anticipated that any remains of the Moonshine Hill Community would be shallowly buried due to their recent age; while prehistoric remains at the other detention ponds were also expected to be shallow, based on review of PALM and soils maps. As the project area was unlikely to have deeply buried archeological deposits which would require heavy machinery to uncover, a pedestrian survey with hand excavated tests was deemed sufficient to explore the project area. Archeologists visually inspected and assessed each of the four pond areas of the APE and excavated at least four shovel tests at each (**Figures 9 and 10**). Shovel testing met or exceeded the minimum standards for surveys in Texas outlined by the CTA and adopted by the THC. These standards recommend placement of two shovel tests every acre for areal projects between 3 and 10 acres in size. A total of 28 shovel tests were excavated (**Appendix**). The ponds range in size from 1.8 to about four acres each. Shovel tests measured 30 centimeters (cm) in diameter and extended to basal clay or the water table, which was reached in most instances only about 30-40 centimeters below the surface (cmbs). The shovel tests were excavated in 10-cm increments and all soil was screened through a ¼-inch hardware cloth. Relevant information for all shovel tests was recorded on a standardized form.

For the purposes of this survey, an archeological site had to contain a certain number of cultural materials or features older than 50 years within a given area. The definition of a site is: (1) five or more surface artifacts within a 30-m radius, or (2) a single cultural feature, such as a hearth or burned rock midden, observed on the surface or exposed during shovel testing, or (3) a positive shovel test containing at least three total artifacts, or (4) two positive tests located within 30 m of each other. The survey team did not encounter prehistoric or historic archeological sites. In addition, no above-ground structures, buildings, or objects that were clearly 50 years of age or older were observed in the APE during the survey investigation.

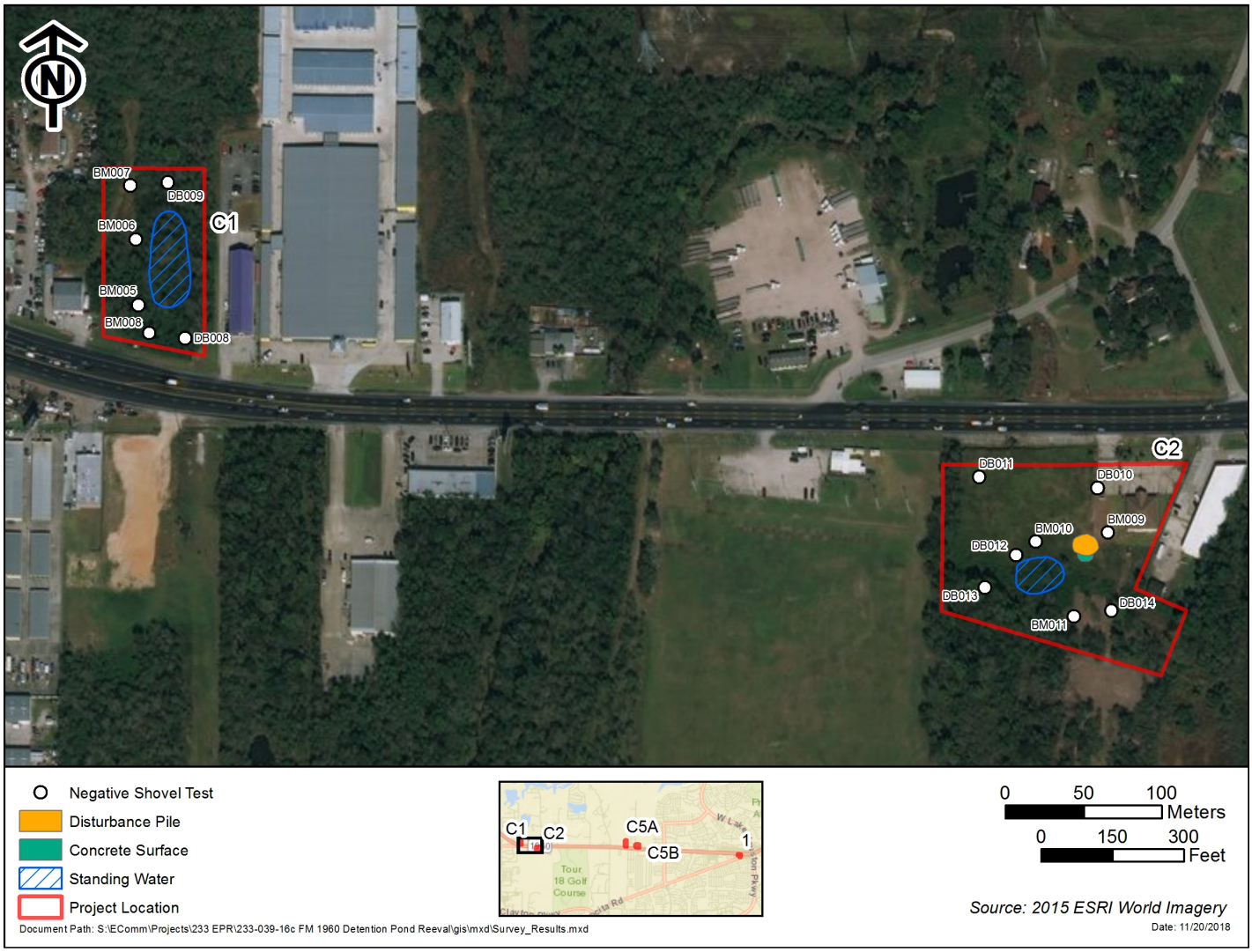

Figure 9. Results of field investigations depicting shovel tests at Ponds C1 and C2.

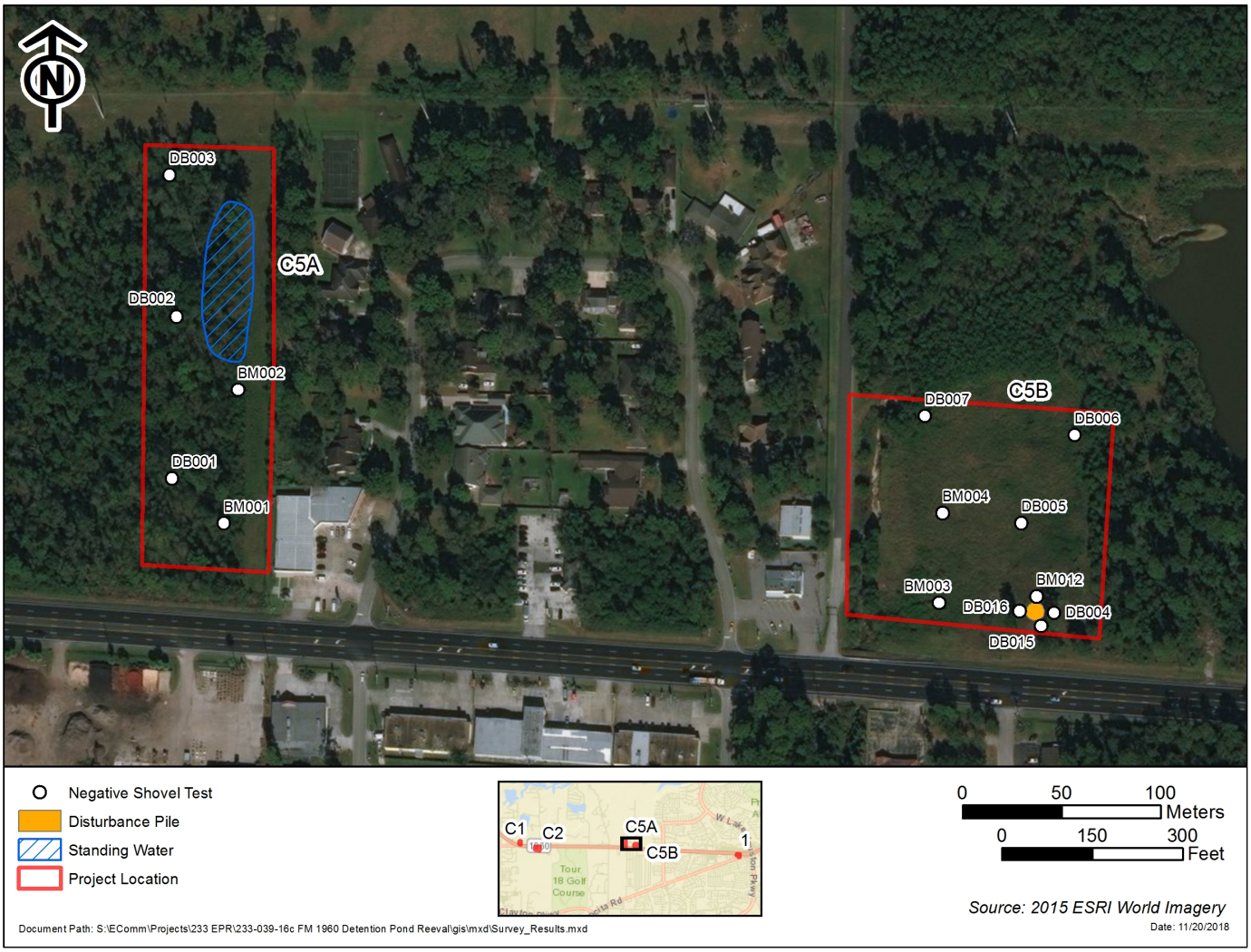

Figure 10. Results of field investigations depicting shovel tests at Ponds C5a and C5b.

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5. Results of Field Investigations

Pond C1

Surrounded by commercial development, Pond C1 is the westernmost pond and is located north of FM 1960. This area contains thick, dense vegetation and overgrowth consisting of trees, tall weeds and grasses, and greenbrier (**Figure 11**). Cutting across the northwest section of the survey was a graded area approximately 10-15 meters (m) wide that runs behind the adjacent business to the west of the survey area. Due to heavy rains prior to the survey, soils within this area were still heavily saturated with water. Large areas of standing water were located within the middle to northeast section of the property creating impassable marshy areas that investigators were unable to place shovel tests in. Despite this, the area was sufficiently investigated with a total of six shovel tests. Shovel tests were excavated to an average depth of 20 cmbs and consisted of a 10YR 3/2 or 10YR 4/4 sandy clay loam. They were terminated when the water table was encountered. No cultural material was found in any of the tests.

Figure 11. View of cleared area of Pond C1 and dense vegetation within it, facing northeast.

Pond C2

Pond C2 is located south of FM 1960 and east of Pond C1. Commercial developments are located on either side of the property. This area consists of very tall grasses and weeds. The northeasternmost section contains an abandoned building with associated parking lot. To the west of the parking lot is a large brush pile approximately 20 x 20 meters (m) wide, which contains piled trees and sediment (**Figure 12**). Investigators noted that immediately south of the brush pile the ground surface was once a paved concrete surface consisting of cement and gravely pebbles. Similar to Pond C1, prior heavy rains have created a large area of standing water within the middle of the project, impeding shovel testing investigations. The typical shovel test within this survey area consisted of 10YR 4/3 sandy clay loam excavated to an average depth of 25 cmbs, and contained many gravels and few instances of cement from construction fill. Shovel tests were terminated at either basal clay and/or the water table. No cultural material was located.

Figure 12. View of Pond C2 with bulldozed tree in foreground, facing northeast.

Pond C5A

Pond C5A is located north of FM 1960 with commercial developments and residential areas to the east. The property boundary is bordered by barbed wire fences along the south and east of the property. Tall trees with abundant vegetation and overgrowth dominate most of the survey area. Within the middle and northeastern sections of the property, standing water is present creating a marshy environment and inhibiting survey within this area (**Figure 13**). Running north to south is a 15-20m wide corridor of land that is been graded and spans the length of the survey area. This graded area consists of taller grasses, and overgrowth along the fence line. In total, five shovel tests were placed within the survey area. A typical shovel test within this survey area consists of thick, saturated 10YR 4/4 silty clay and was excavated to an average depth of 50 cmbs. Shovel tests were terminated at basal clay or the water table. No cultural material was located.

Figure 13. View of Ponds C5A and standing water in the northern portion, facing northwest.

Pond C5B

Pond C5B is located east of C5A and north of FM 1960, with a small commercial development to the west of the property. A large unnamed drainage extending north to south cuts across the west side of the survey area. Vegetation on either side of the drainage is comprised of taller grasses, overgrowth and large trees (**Figure 14**). To the east of the drainage, vegetation consists of tall grasses, sow thistle, and dewberries. In the southeast corner of the survey area is a disturbance pile containing wooden poles and old wooden signs that resemble modern trash. Four shovel tests were placed around the disturbance pile, one in each cardinal direction. In total, nine shovel test were excavated within the survey area and were excavated to an average depth of 35 cmbs. A typical shovel test consisted of 10YR 3/4 sandy clay. Shovel tests were terminated at basal clay or the water table. No cultural material was located within the shovel tests.

Figure 14. View of drainage running through the west side of pond C5b, facing south.

Pond 1

Pond 1 is located in the eastern most section of the project area and bordered by FM 1960 to the north and Atascocita Road to the south (**Figure 15**). The area around the Pond 1 APE comprises two commercial buildings, associated parking lots, internal roads, and a fast-food lane driveway. The commercial building located to the east is a Kentucky Fried Chicken and the one to the west is a CVS Pharmacy. Photos of the survey area were taken. No shovel tests were excavated within the survey area due to low potential for archeological remains of any sort.

Figure 15. South end of Pond 1, facing west.

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6. Conclusions and Recommendations

An archeological survey of the five proposed detention ponds associated with FM 1960 found no archeological remains in any portion of the APE. The survey was conducted in compliance with Section 106 and the ACT under Permit No. 8952. Work consisted of pedestrian inspection supplemented by shovel testing. None of the 28 shovel tests contained any artifacts and no new archeological sites were recorded during this survey. In general, all five of the pond areas exhibited aspects that reduced potential for archeological remains. Four of the ponds are all within low swampy areas that had standing water covering portions of them at the time of survey. Disturbances included push piles, concrete slabs and grading. The easternmost pond, Detention Pond 1 occurs on a flat graded surface that is half-paved and surrounded by commercial development. The principal investigator recommends that based on the survey, there is low potential for any cultural resources to be affected by the proposed project. This report recommends that no further work is warranted to complete Section 106 and ACT requirements as outlined in 36 CFR 800 and 13 TAC 26. No artifacts were collected during the survey. All notes and records will be curated at the Center for Archaeological Studies in San Marcos, Texas.

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Appendix – Shovel Tests Log

Pond	Shovel Test	Depth (cm)	Color	Texture	Observations	Cultural Material
C5a	BM001	0-30	10YR 4/3	silty clay	terminated at basal clay	Negative
C5a	BM002	0-5	10YR 4/3	silty sandy clay	on top of small rise within property; terminated at water table	Negative
		5-30	10YR 5/3	silty sandy clay		
		30-45	10YR 6/4	silty sandy clay		
C5b	BM003	0-5	10YR 3/1	silty clay	very thick clay and very thick vegetation; terminated at basal	Negative
		5-35	10YR 2/1	silty clay		
C5b	BM004	0-25	10YR 3/1	sandy clay	thick saturated clay; terminated at basal clay	Negative
C1	BM005	0-30	10YR 3/3	sandy clay	thick saturated clay; terminated at water table	Negative
C1	BM006	0-10	10YR 3/2	sandy clay	thick saturated clay; terminated at water table	Negative
C1	BM007	0-10	10YR 5/3	sandy clay	terminated at basal clay	Negative
C1	BM008	0-10	10YR 3/3	sandy clay	terminated at basal clay and water table	Negative
	BM009	0-10	10YR 4/3	sandy clay	terminated at compact soil	Negative
C2	BM010	0-35	10 YR 3/2	sandy clay	0-30 cmbs construction cobbles, 30-35 cmbs cement chunk with metal located	Negative
		35+	10YR 5/3	sandy clay	terminated at water table	
C2	BM011	0-35	10YR 4/2 with 10YR 5/3	sandy clay, gravels	in plowed field; terminated at compact soil	Negative
C5b	BM012	0-35	10YR 5/3	silty sandy clay loam	north of sign trash pile; terminated at water table and basal clay	Negative
C5a	DB001	0-10	10YR 4/3	silty clay	overgrowth near standing water	Negative
		10-35	10YR 4/4	clay	terminated at basal clay	
C5a	DB002	0-50	10YR 5/6	silty loam	roots near standing water; terminated at water table	Negative
		50-58	10YR 4/4	silty clay loam		
C5a	DB003	0-50	10YR 4/4 with 10YR 5/3	silty clay loam	rooty, near standing water; terminated at basal clay	Negative
		50-55				
C5b	DB004	0-50	10YR 6/3	sand	roots, next to sign trash dump; terminated at basal clay	Negative
		50-54	10YR 5/6 with 10YR 5/3	sandy clay loam		
C5b	DB005	0-10	10YR 3/4	sandy clay	terminated at water table	Negative
		10-25	10YR 3/1	sandy clay		
C5b	DB006	0-10	10YR 3/4	sandy clay	terminated at basal clay	Negative
		10-25	10YR 3/1	sandy clay		
C5b	DB007	0-10	10YR 3/4	sandy clay	terminated at water table	Negative
		10-25	10YR 3/1	clay		
C1	DB008	0-10	10YR 4/3	sandy clay loam	terminated at water table	Negative
		10-15	10R 4/4	sandy clay loam		
C1	DB009	0-10	10YR 4/3	sandy clay loam	terminated at water table	Negative
		10-15	10R 4/4	sandy clay loam		
C2	DB010	0-10	10YR 4/4	sandy clay, gravels	next to building in plowed field; terminated at compact clay	Negative
		10-20	10YR 4/3			
C2	DB011	0-10	10YR 4/4	clay loam	in plowed field; terminated at basal clay	Negative
		10-25	10YR 4/3	clay		
C2	DB012	0-11	10YR 4/4	clay loam	in plowed field; terminated at basal clay	Negative
		11-36	10YR 4/3	clay		
C2	DB013	0-10	10YR 4/4	clay loam	in plowed field; terminated at basal clay	Negative
		10-25	10YR 4/3	clay		
C2	DB014	0-10	10YR 5/3	clay loam	in plowed field; terminated at basal clay	Negative
		10-30	10YR 4/1	clay		
C5b	DB015	0-55	10YR 5/3 with 6/6	sandy clay loam	east of piled wooden sign trash; terminated at water table	Negative
C5b	DB016	0-40	10 YR 5/4	sandy clay loam	west of piled wooden sign trash; terminated at water table	