Intensive Archaeological Survey For Asphalt Package 4, Precinct 3 (UPIN: 21103N3044-30001), Hockley, Harris County, Texas

Adam T. Birge
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INTENSIVE ARCHAEOLOGICAL SURVEY FOR ASPHALT PACKAGE 4, PRECINCT 3 (UPIN: 21103N3044-30001), HOCKLEY, HARRIS COUNTY, TEXAS

FINAL REPORT (Redacted)

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Texas Antiquities Committee Permit Number 9580

Cultural Resources Report No. 20-019
AHF20-085-01

January 14, 2021
Raba Kistner, Inc. (RKI) was contracted by Harris County Engineering Department (CLIENT), to conduct archaeological investigations in support of road improvements along 7 miles of existing road along Botkins, Roberts, AJ Foyt, Nichols, and Becker Roads, located in northwest Harris County, Texas. The purpose of this investigation was to identify any surface-exposed or shallowly buried cultural deposits within the limits of the proposed undertaking and, if possible, assess their significance and eligibility for inclusion in the National Register of Historic Places (NRHP) and for formal designation as State Antiquities Landmarks (SALs). As the project will be conducted on publicly-owned land and is sponsored by the Harris County Engineering Department, an entity of the State of Texas, the proposed project is subject to review under the Antiquities Code of Texas (ACT) (Texas Natural Resources Code, Title 9, Chapter 191). All work was conducted in accordance with the Archeological Survey Standards for Texas, as set forth by the Council of Texas Archeologists (CTA) and the Texas Historical Commission (THC) under Texas Antiquities Committee Permit Number 9580.

Investigations consisted of a background review and intensive pedestrian survey augmented with shovel testing within the APE. The background review revealed that the majority of the project area is underlain by soils derived from loamy deposits of the Pliocene-age Willis Formation. Only a small portion, approximately 2,313 feet, along Nichols Road contains Holocene-age deposits. As such, in a background review submitted for consultation to the THC, RKI recommended that archaeological investigations focus on the area containing the Holocene-age deposits. Based on the information provided in the background review, the THC concurred with the recommendation. Therefore, the Area of Potential Effects (APE) for the project is defined as the 2,313-feet (705 m) portion of Nichols Road within a 75-foot (22.3 m) corridor, totaling 3.98 acres. The maximum depth of impact for proposed undertaking is 3 feet (0.91 m) below surface.

On September 3, 2020, RKI archaeologists conducted an intensive pedestrian survey augmented with shovel testing of the approximately 3.98-acre APE. Antonio E. Padilla served as the Principal Investigator for the project and all fieldwork was conducted by Staff Archaeologists Adam Birge and Charles Neel. During the survey, the APE was found to be lightly graded for existing roadbed with shoulders on the east side consisting of manicured Bermuda grass and the shoulder on the west consisting of an overgrown hedge. As a result of the survey, 12 shovel tests (AB1–AB8 and CN1–CN4) were excavated which resulted
in the documentation of one isolated find (IF-01). The single IF consisted of a primary reduction flake identified at an approximate depth of 82 centimeters below surface. Due to a lack of additional cultural materials, the single flake was designated as isolated find and was not designated as an archaeological site.

RKI has made a reasonable and good faith effort to identified cultural resources within the given APE. No significant deposits or features were identified during the intensive pedestrian survey of the APE. RKI recommends no further archaeological investigations within the APE. However, should changes be made within the APE, further work may be required. All field records and photographs produced during investigations will be permanently housed at the Center for Archaeological Research at the University of Texas at San Antonio.
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CHAPTER 1. INTRODUCTION

Raba Kistner, Inc. (RKI) was contracted by Harris County Engineering Department (CLIENT), to conduct archaeological investigations in support of road improvement project located in northwest Harris County, Texas (Figure 1-1). The proposed project will involve the widening of 7 miles of existing roads, which will be conducted entirely within existing right-of-way (ROW). As the project will be conducted on publicly-owned land and is sponsored by the Harris County Engineering Department, an entity of the State of Texas, the proposed project is subject to review under the Antiquities Code of Texas (ACT) (Texas Natural Resources Code, Title 9, Chapter 191) by virtue of it representing a public undertaking. Oversight of compliance with the ACT is provided by the Texas Historical Commission (THC).

Investigations consisted of an intensive pedestrian survey augmented with shovel testing. The purpose of this investigation was to identify any surface-exposed or shallowly buried cultural deposits within the limits of the proposed undertaking and, if possible, assess their significance and eligibility for inclusion in the National Register of Historic Places (NRHP) and for formal designation as State Antiquities Landmarks (SALs). All work was conducted in accordance with the Archeological Survey Standards for Texas, as set forth by the Council of Texas Archeologists (CTA) and the Texas Historical Commission (THC) under Texas Antiquities Committee Permit Number 9580.
Figure 1-1. Project location within northwestern Harris County, Texas.
Project Description

The proposed undertaking is located approximately 4.2 miles northeast of the City of Hockley in northwest Harris County, Texas. The project area encompasses approximately 7 miles of road along Botkins, Roberts, AJ Foyt, Nichols, and Becker Roads and will involve the widening of the existing roads from 22 to 24 feet (6.7 to 7.3 meters [m]) (Figure 1-2). No new ROW will be acquired, all proposed work will be conducted within existing ROW.

A review of historic aerial photography from 1944 through 2016, determined that the project area has remained largely undeveloped pasture land. In the 2000s residences to the east of the project area were constructed. The first aerial photographs from 1944, show that roads within the project area remained within their current alignment. Areas adjacent to the project area consists primarily of fields and pasture while the northernmost portion of the project area is forested. The project area and surrounding areas remain more or less the same over the next few decades.

A background review of the project area revealed that the majority of the area is underlain by soils derived from loamy deposits of the Pliocene-age Willis Formation. Only a small portion, approximately 2,313 feet, along Nichols Road contains Holocene-age deposits. As such, in a background review submitted for consultation to the THC, RKI recommended that archaeological investigations focus on the area containing the Holocene-age deposits. Based on the information provided in the background review, the THC concurred with the recommendation.

Although the project area encompasses 7 miles of road, the Area of Potential Effects (APE) for the project is defined as the 2,313-feet (705 m) portion of Nichols Road within a 75-foot (22.3 m) corridor, totaling 3.98 acres. The maximum depth of impact for proposed undertaking is 3 feet (0.91 m) below surface. The APE is located on the Hockley (3095-221), Texas. U.S. Geological Survey 7.5-minute topographic quadrangle map (Figure 1-3).
Figure 1-2. Project area depicted on the Hockley (3095-221), Texas. U.S. Geological Survey 7.5-minute topographic quadrangle map.
Figure 1-3. Area of Potential Effects depicted on the Hockley (3095-221), Texas, U.S. Geological Survey 7.5-minute topographic quadrangle map.
CHAPTER 2. ENVIRONMENTAL SETTING

The APE is mapped within the Northern Humid Gulf Coast Prairies ecoregion, a subdivision of the Western Gulf Coastal Plain ecoregion of southeast Texas (Griffith et al. 2007). The Western Gulf Coastal Plains are characteristically flat and suitable for grassland natural vegetation. The Northern Humid Gulf Coast Prairies ecoregion is a largely flat to gently sloping coastal plain that has poor drainage due to its low topographic relief and clay subsoils. Surface soils of the ecoregion often consist of fine textured clay, clay loam, or sandy clay loam. The natural vegetation was largely tallgrass grasslands occasionally interspersed with oak mottes; however, the ecoregion has been strongly impacted by development and historically native vegetation has largely been extirpated from much of the area.

Geology

The APE is underlain by the Late Pleistocene-aged Beaumont Formation, areas predominantly sand (Qbs). This formation is composed of interbedded and intermixed fine quartz sand, silt, and some fine gravels, forming poorly defined meander-belt ridges and 3–6.5-foot (1–2-m) tall pimple mounds. Its thickness is 10 to 33 feet (3 to 10 m) at outcrop locations, increasing southeastward to more than 328 feet (100 m) below surface (Moore and Wermund 1993).

Soils

Examination of the National Resources Conservation Service (NRCS) identified three soil types within the APE. The soils are mapped as: Hatliff-Pluck-Kian complex (HatA), 0-to 1-percent slopes, frequently flooded; Segno fine sandy loam (SegB), 1-to 3-percent slopes; and Kenney loamy fine sand (Kn), 0-to 2-percent slopes (Figure 2-1) (National Resources Conservation Service [NRCS] 2020). Hatliff-Pluck-Kian complex is comprised of a mix of three soil series: Hatliff, Pluck, and Kian. Hatliff Series soils consists of very deep 203 cm (80 inches), well drained soils formed in loamy alluvial deposits of Holocene-age. Pluck Series soils consists of very deep 203 cm (80 inches), poorly drained soils formed in loamy alluvial deposits of Holocene-age. The Kian Series soils consists of very deep 203 cm (80 inches), poorly drained soils that formed in loamy alluvial deposits of the Holocene-age. Segno fine sandy loam is comprised of the Segno Series soils, which consists of very deep 203 cm (80 inches), well drained soils that formed in loamy
fluviomarine deposits of Pleistocene-age. Kenny loamy fine sand consists of the Kenny series that is comprised of deep (203 cm [80 inches]), well drained soils that formed in loamy alluvium (NRCS 2020).
Figure 2-1. Soils mapped within the Area of Potential Effects.
CHAPTER 3. CULTURAL CONTEXT

Humans have inhabited the southeast region of Texas for at least 11,500 years, adapting to changes in climatic and biotic conditions as they occurred. Archaeologists researching long-term change in settlement structures, subsistence choices, and technological innovation have identified distinct coastal and inland adaptations in this region (Ricklis 2004; Story 1990). Southeastern Texas coastal populations took advantage of the abundant resources of the coastal prairie and nearby estuaries. The cultural chronology of the region is divided into six major time periods: Paleoindian (11,500 to 7,000 BC); Archaic (7,000 to 500 BC); Transitional Late Archaic or Early Ceramic Period (500 BC to AD 700); Late Prehistoric (AD 700 to 1700); Protohistoric (AD 1528-1700) and Historic (AD 1700 to Present). An overview of the sequence of human occupation within the region is presented below.

Paleoindian (11,500 BC – 7000 BC)

The oldest cultural materials found in the region date to the Paleoindian period. The period spans roughly from 11,500–8800 B.P. (Collins 1995, 2004). The Aubrey site in Denton County has one of the earliest occupations, with radiocarbon assays dating to between 11,542 ± 11 B.P. and 11,590 ± 93 B.P. (Bousman et al. 2004:48). Paleoclimatic proxy measures suggest that a cooler climate with increased precipitation was predominant during the Late Pleistocene (Mauldin and Nickels 2001), the later portion of the period.

Initial reconstructions of Paleoindian adaptations typically viewed these hunter-gatherers as traversing extreme distances in pursuit of now extinct mega-fauna such as mammoth and mastodon. While these Paleoindian populations did exploit the Late Pleistocene mega-fauna when it was accessible, a number of faunal assemblages from an increasingly larger number of sites indicate that the Paleoindian diet was more varied and consisted of a wide range of resources, including small game and plants. The Lewisville (Winkler 1982) and the Aubrey sites (Ferring 2001) produced faunal assemblages that represented a wide range of taxa, including large, medium, and small species. Information on the consumption of plant resources during the Paleoindian period is lacking. Bousman et al. (2004) reported that the late Paleoindian component at the Wilson-Leonard site reflected the exploitation of riparian, forest, and grassland species. Analysis of Paleoindian skeletal remains indicates that the diets of the Paleoindian populations may have been similar to Archaic period hunter-gatherer populations (Bousman et al. 2004; Powell and Steele 1994).
The early portion of the Paleoindian period was characterized by the appearance of Clovis and Folsom fluted projectile points that were used for hunting mega-fauna. Typical projectile points produced at sites with occupations dating to the later portion of the Paleoindian period included the Plainview, Dalton, Angostura, Golandrina, Meserve, and Scottsbluff types. Meltzer and Bever (1995) have identified 406 Clovis sites in Texas. One of the earliest, 41RB1, yielded radiocarbon assays that put the maximum age for the Paleoindian component at 11,415 ± 125 B.P. (Bousman et al. 2004:47).

Unfortunately, the Paleoindian Period is poorly represented across the state, including Southeast Texas. This can be attributed to two factors: issues pertaining to projectile point temporal classifications; and climatic and geologic processes during the Pleistocene-Holocene transition. Typological issues have made it difficult to distinguish between point types and styles in the region (see Bousman et al. 2004 and Story 1990). Furthermore, the number of Paleoindian sites in Southeast Texas is small, relative to the numerous sites in the Balcones Escarpment. Geologic explorations of ancient shorelines indicate that Paleoindian sites are most likely submerged due to the advance of the Gulf of Mexico inland. The occasional Paleoindian artifact and remains of Pleistocene fauna, which wash ashore at McFaddin Beach, Texas, confirms the presence of sites offshore (Abbott 2001:105-107; Story 1990:24-25).

**Archaic Period**

The Archaic period dates between ca. 8800 to 1200 B.P. It is divided into three sub-periods: Early, Middle, and Late. During the Archaic, mobility strategies may have shifted to more frequent short distance movements that allowed the exploitation of seasonal resource patches. The intermittent presence of bison in parts of Texas, combined with changes in climatic conditions and the primary productivity of the plant resources may have contributed to shifts in subsistence strategies and associated technological repertoire. When bison were not present in the region, hunting strategies focused on medium to small game along with continued foraging for plant resources. When bison were available, hunter-gatherers targeted the larger-bodied prey on a regular basis.

**Early Archaic**

Collins (1995, 2004) suggests that the Early Archaic spans from 8800 to 6000 B.P. Projectile point styles characteristic of the Early Archaic include Angostura, Early Split Stem, Martindale, and Uvalde (Collins 1995, 2004). The Early Archaic climate was drier than the Paleoindian period and witnessed a return to
grasslands (Bousman 1998). Mega-fauna of the Paleoindian period could not survive the new climate and ecosystems, therefore eventually dying out. Early Archaic exploitation of medium to small fauna intensified.

The Wilson-Leonard excavation produced a wealth of cultural materials representative of a lengthy period in regional prehistory. The projectile point assemblages from the site indicate that the lanceolate Paleoindian point forms, such as Angostura, continue from the Paleoindian into the Early Archaic. However, these forms are replaced by corner- and basally-notched and shouldered forms (Early Triangular, Andice, Bell), and these quickly become the dominant points tipping the atlatl-thrown darts. In addition, the uses of small to medium hearths similar to the previous period were noted too. The appearance of earth ovens suggests a shift in subsistence strategies. The earth ovens encountered at the Wilson-Leonard site were used to cook wild hyacinth along with aquatic and terrestrial resources (Collins et al. 1998). Analyses of Early Archaic human remains encountered in Kerr County (Bement 1991) reveal diets low in carbohydrates in comparison to the Early Archaic populations found in the Lower Pecos region.

**Middle Archaic**

The Middle Archaic sub-period spans from 6000 to 4000 B.P. (Collins 1995, 2004; Weir 1976). Archaeological data indicates that populations may have increased during this time. Climate was gradually drying leading to the onset of a long drought period. Changes to the demographics and cultural characteristics were likely in response to the warmer and increasingly arid conditions. Projectile point styles included in this sub-period include Bell, Andice, Calf Creek, Taylor, Nolan, and Travis.

Subsistence during the Middle Archaic includes an increased reliance on nuts and other products of riverine environments (Black 1989). The upsurge of burned rock middens during the Middle Archaic represented the increased focus on the use of plant resources (Black 1989; Johnson and Goode 1994). Little is known about burial practices during the Middle Archaic, however an excavation of an Uvalde County sinkhole (41UV4) contained 25–50 individuals (Johnson and Goode 1994:28).
Late Archaic

The Late Archaic spans from 4000 to 1200 B.P. (Collins 1995, 2004). It is represented by the Bulverde, Pedernales, Kinney, Lange, Marshall, Williams, Marcos, Montell, Castroville, Ensor, Frio, Fairland, and Darl projectile points. The early part of the Late Archaic exhibited fluctuations in the temperature and rainfall. There appears to have been an increase in population at this time (Nickels et al. 1998).

While some researchers believe that the use of burned rock middens decreased during the Late Archaic, recent research has challenged this notion (Black and Creel 1997; Mauldin et al. 2003). Johnson and Goode (1994) discuss the role of burned rock middens in relation to acorn processing.

Burials related to the Late Archaic in Central and South Texas suggests the region saw an increase in population. This increase may have prompted the establishment of territorial boundaries which resulted in boundary disputes (Story 1985). Human remains dating to this sub-period have been encountered near the Edwards Plateau.

Large cemeteries located in the coastal plain have provided insight into the Middle and Late Archaic. The Harris County Boy’s School site provided insight into how evolving estuaries changed site function and use over time. During the Middle Archaic, the site was located inland from the Galveston Bay estuary. Estuaries were exploited during mid-summer, but by late summer to early fall, people moved inland. The exploration of shell middens and fish otolith studies revealed that this subsistence strategy continued through the Late Archaic (Aten 1983:158-159). The Ernest Witte Site (41AU36) provided insight into long-distance trade during the Late Archaic. Items such as sting ray spines and columella atlatl weights from either the Texas or Florida Gulf Coast, corner tang knives from the Edwards Plateau, and stone gorgets from the Ouachita Mountains of Arkansas, were found at the site (Story 1990:237-243).

Late Prehistoric Period

The Late Prehistoric period begins ca. 1200 B.P. (Collins 1995, 2004), and appears to continue until the Protohistoric period (ca. A.D. 1700). A series of traits characterize the shift from the Archaic to the Late Prehistoric period. The main technological changes were the adoption of the bow and arrow and the introduction of pottery. The period is divided into two phases: The Austin phase and the Toyah phase.
At the beginning of this period, environmental conditions were warmer and dryer. However, moister conditions appear after 1000 B.P. (Mauldin and Nickels 2001). Plant and faunal remains at Late Prehistoric sites indicate that subsistence practices are similar to that of the Late Archaic. Projectile points associated with the Austin phase include the Scallorn and Edwards types. The Toyah phase is characterized by the prominence of the Perdiz point (Collins 1995, 2004).

Most researchers concur that the early portion of the Late Prehistoric period saw a decrease in population density (Black 1989:32). Radiocarbon dates from some sites have indicated that the middens were utilized during the Late Prehistoric. Some archaeologists feel the peak of midden use was after A.D. 1 and into the Late Prehistoric (Black and Creel 1997:273). Radiocarbon dates from Camp Bowie middens provide evidence that supports Black and Creel’s arguments that burned rock middens were a primarily Late Prehistoric occurrence (Mauldin et al. 2003).

Beginning rather abruptly at about 650 B.P., a shift in technology occurred. This shift is characterized by the introduction of blade technology, the first ceramics in Central Texas (bone-tempered plainwares), the appearance of Perdiz arrow points, and alternately beveled bifaces (Black 1989:32; Huebner 1991:346). Prewitt (1981) suggests this technology originated in north-central Texas. Patterson (1988), however, notes that the Perdiz point was first seen in southeast Texas by about 1350 B.P., and was introduced to west Texas some 600 to 700 years later.

Early ceramics in Central Texas (ca. A.D. 1250 to 1300) are associated with the Toyah phase of the Late Prehistoric and are referred to as Leon Plain ware. The Leon Plain ceramic types are undecorated, bone-tempered bowls, jars, and ollas with oxidized, burnished and floated exterior surfaces (Ricklis 1995). There is notable variation within the type (Black 1986; Johnson 1994; Kalter et al. 2005). This variation can be attributed to differences in manufacturing techniques and cultural affiliation. Analysis of residues on ceramic sherds suggests that vessels were used to process bison bone grease/fat, mesquite bean/bison bone grease and deer/bison bone grease (Quigg et al. 1993).

The return of bison to South and Central Texas during the Late Prehistoric resulted from a drier climate in the plains located to the north of Texas and increased grasses in the Cross-Timbers and Post Oak Savannah in north-central Texas (Huebner 1991). The increased grasses in the two biotas formed the “bison corridor” along the eastern edge of the Edwards Plateau and into the South Texas Plain (Huebner
1991:354–355). Rock shelter sites, such as Scorpion Cave in Medina County (Highley et al. 1978) and Classen Rock Shelter in northern Bexar County (Fox and Fox 1967), have indicated a shift in settlement strategies (Skinner 1981). Burials encountered that dated to this period often reveal evidence of conflict (Black 1989).

**Historic Period**

The Historic period is marked by the first European contact with indigenous populations in Texas. During this period, there was intermittent contact between the native groups and Spanish explorers. The period encompasses the approximately 175 years before the Spanish significantly impacted the indigenous groups in the area. A few encounters between the indigenous communities and Europeans were recorded, including those of Cabeza de Vaca (1528-1536) and the French settlement of Fort Saint Louis established by Rene Robert Cavelier, Sieur de La Salle (1685-1689) (Weddle 2001).

French explorers and traders encountered Atakapan groups, including the Arkokisas (Orcoquisacs) and Bidai in the 1730s and 1740s. French trade items, including glass beads and nails, are found at Arkokisas sites from this time period (Ricklis 2004:198). From early ethnohistoric accounts, it is clear that sub-groups of the Atakapans utilized coastal and inland resources, and the confluences of streams and rivers for camps (Anderson 1999:154-176; Aulbach 2012:15). A French presence in the region spurred the Spanish to establish missions and marks the start of the Historic period. However, these settlements were short-lived and the Spanish left the region by 1756.

In 1824, Stephen F. Austin issued land grants along the Brazos, Colorado, and San Bernard Rivers to Anglo immigrants who are called the Old Three Hundred (Long 2020). Part of this settlement included future Harris County, which would become the southeastern border for Austin's colony (Henson 2020). In 1826, John R. Harris founded Harrisburg near Brays Bayou and Buffalo Bayou that was later established as a port of entry for the region in 1833. Due to its location and port, Harrisburg served as the home for President David G. Burnet and Vice President Lorenzo de Zavala of the Republic of Texas. Harrisburg was burned down by Santa Anna shortly before the battle of San Jacinto. Following the Texas Revolution, the county of Harrisburg—later Harris County—was created and the small city of Houston was recognized as a county seat. Development of the area through railroads, canals, and other industry started following the Civil War.
Harris County truly emerged as an important industrial zone in 1911 with the approval for the formation of the Harris County Ship Channel Navigation District. By 1914, the U.S. Army Corps of Engineers had completed a 50-mile long and 25-feet deep channel that ran from the Gulf of Mexico to its terminus at the Port of Houston (Henson 2020). The addition of oil refineries in the area along Buffalo Bayou and the San Jacinto River prompted both the deepening and widening of the channel to accommodate larger vessels. The Harris County Navigation District has since become highly profitable and owns several facilities related to shipping such as the Long Reach Docks, the container facility at the Bayport Industrial Complex, and a bulk handling plant at Greens Bayou. Additionally, in the 1950’s the Harris County Navigation District partnered with both the national and state government to construct the Washburn Tunnell under Buffalo Bayou as well as the Baytown-La Porte Tunnel beneath the San Jacinto River (Henson 2020). Another engineering feat accomplished in Harris County was the construction of the Astrodome in 1965, which was the first stadium of its kind with air conditioning and facilities for multiple sports (Chandler 2020). Also in the 1960’s, the land east of Webster, Texas became the home of the National Aeronautics and Space Administration (NASA) Manned Spacecraft Center, which was later renamed the Lyndon B. Johnson Space Center in 1973 (Alexander and Kleiner 2020).

The ship channel has attracted numerous industries, which caused a surge in population. The census of 1930 recorded 359,328 people in Harris County, which surpassed both Dallas and Bexar Counties by more than 100,000 people (Henson 2020). By 1960, the population of Harris County was over 1 million people. In 1990, the population of Harris County reached 2,818,199 people, the majority of which were both Anglo and Hispanic (Henson 2020). The most recent population estimate for Harris County shows that it has approximately 4,713,325 people living within the county (United States Census Bureau 2020).

Closer to the project area is the town of Hockley, Texas. It is thirty-six miles northwest of Houston on highway 6, U.S. Highway 290 and the Southern Pacific line in northwestern Harris County. The earliest settler to the vicinity was Sam McCurley in 1829. In 1835, the community was established by George Washington Hockley. In the 1860’s there was a movement to create a new county called Hockley, with the town as the new county seat, though the efforts failed. In 1890 the community population was 296 with two general stores and a hotel by 1892. The town remained mostly the same through until the 1990’s when the population rose slightly and businesses increased to around 45 (Kleiner 2020).
Previous Archaeological Investigations and Cultural Resources

RKI conducted a desktop review to determine if any previously conducted archaeological investigation or any cultural resources had been documented within the APE. Examination of the Texas Archeological Sites Atlas (*Atlas*), an online database maintained by the THC, revealed that portions of the western APE may have been surveyed before, although details are missing in the *Atlas* (*Figure 3-1*). No previously documented archaeological sites are recorded within the APE. Based on this limited information, it seems that the parcel of land immediately to the west of the APE was surveyed (see *Figure 3-1 and Table 3-1*).

In addition to identifying previously conducted investigations and cultural resources within the APE, a 1-mile (1.6 kilometer) radius of the APE was examined for cultural resources. Within 1-mile of the APE, one previous archaeological investigation, one historical marker, and one cemetery were identified (see *Figure 3-1 and Tables 3-1 and 3-2*). The survey was conducted by LCRA in 2003 and was a linear transect. The historical marker is to commemorate the homesite of Samuel McCarley where Sam Houston’s army camped for a night on April 15th, 1836 shortly before the Battle of San Jacinto. The cemetery within the 1-mile radius is Hegar Cemetery, WL-C010, which is a small cemetery of 21 graves that date back as early as 1862 and is still used today.
Figure 3-1. Previously conducted archaeological investigations and cultural resources within 1-mile of the APE.
### Table 3-1. Summary of Previously Conducted Investigations Within 1-mile (1.6 km) of the APE.

<table>
<thead>
<tr>
<th>Year of Investigation</th>
<th>Distance from APE</th>
<th>Investigative Firm/TAC Permit No.</th>
<th>Brief Summary of Investigations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>0.8 mile to the west</td>
<td>LCRA/TAC No. 3043</td>
<td>Linear survey conducted under the sponsorship of LCRA.</td>
</tr>
<tr>
<td>Not listed</td>
<td>Within north APE</td>
<td>Not listed in <em>Atlas</em></td>
<td>A linear or possibly area survey without any additional details in the <em>Atlas</em>.</td>
</tr>
</tbody>
</table>

### Table 3-2. Summary of Known Cultural Resources Within 1-mile (1.6 km) of the APE.

<table>
<thead>
<tr>
<th>Cultural Resource</th>
<th>Distance from Project Area</th>
<th>Resource Description</th>
<th>Eligibility Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hegar Cemetery (WL-C010)</td>
<td>0.85 mile north</td>
<td>Small 19th century cemetery that is still used today.</td>
<td>N/A</td>
</tr>
<tr>
<td>Samuel McCarley Homesite (10726)</td>
<td>0.66 mile southeast</td>
<td>Marker for a homesite of Samuel McCarley where Sam Houston’s army camped on the night of April 15th, 1836.</td>
<td>N/A</td>
</tr>
</tbody>
</table>
CHAPTER 4. METHODS OF INVESTIGATION

To ensure the project adhered to the requirements of the regulating agencies, RKI performed an intensive pedestrian survey augmented with shovel testing of the APE. All work complied with THC and CTA guidelines and standards. Investigations ensured that if historic or prehistoric deposits and/or features were present within the APE, they were properly recorded and evaluated prior to negative impacts associated with the proposed project. One isolated find consisting of a single primary reduction flake was identified during the survey. The ground surface inspection along the direct APE was accomplished with archaeologists walking transects spaced approximately 30 meters (m) apart with shovel tests being placed at intervals of approximately 100 m.

Shovel Testing

The THC minimum survey standards recommended for linear surveys of project areas is one shovel test every 100 m. The direct APE was approximately 705 m, thus requiring 7 shovel tests. During the survey, RKI archaeologists were able to put in 7 shovel test along the total length of the APE as well as 5 additional shovel test to delineate a positive shovel test (CN-02).

Shovel tests measured from 12 to 13 inches (30 to 33 cm) in maximum diameter and were excavated in 8-inch (20-cm) levels with all soils screened through a ¼-inch mesh to observe artifacts. Depths of shovel tests varied, ranging between 15 inches (40 cm) to 39 inches (100 cm) below surface. A shovel test form was completed for each excavated shovel test. Data collected from the shovel test included the final excavation depth, reason for termination, disturbances noted, and references a brief soil description (texture, consistency, Munsell color, inclusions). The location was recorded using a sub-meter accurate, hand-held Trimble GPS unit. A shovel test log containing data from each shovel test is provided in Appendix A.
CHAPTER 5. RESULTS OF INVESTIGATIONS

On September 3 2020, RKI conducted an intensive cultural resources survey of the approximately 3.98-acre APE for the proposed Asphalt Package 4 project. The investigation consisted of a pedestrian survey augmented by shovel testing. As a result of the investigations, 12 shovel tests (AB1–AB8 and CN1–CN4) were excavated within the APE (Figure 5-1). One shovel test (CN2) was positive for cultural materials and an additional five shovel tests were placed to delineate the extent of cultural materials. This positive shovel test was recorded as an isolated find (IF-01).

The APE was situated along the existing ROW of Nichols Road with the north end of the APE ending at Spring Creek (Figures 5-2 and 5-3). The western shoulder was approximately 6.6 feet (2 m) wide and consisted of a large, recently trimmed hedge (Figure 5-4). The eastern shoulder was approximately 33 feet (10 m) wide and consisted of Bermuda grass and several live oak trees (Figure 5-5). The northern portion of the APE consisted of a slopping flood terrace of Spring Creek with a more pronounced elevation increase of approximately 20 feet (6 m). The primary vegetation throughout the APE consisted of recently cut Bermuda grass along with oaks and other mixed hardwood trees and hedges allowing for no ground surface visibility. The southeastern portion of the APE had previously been impacted by at least three separate utility lines (Figure 5-7).

Pedestrian Survey and Shovel Testing

As part of the pedestrian survey, RKI excavated a total of 12 shovel tests within the APE. Depths of shovel tests varied, ranging between 8 inches (20 cm) to 39 inches (1 m) below surface. Six of the shovel tests reached the maximum depth of 39 inches (1 m), while others were terminated at compact sandy soils. Soils encountered during this survey varied, but the average shovel tests had a level of a brown (10YR 4/3) sandy loam over a light yellowish brown (10YR 6/4) fine sand with the only inclusions being some gravels near the surface (Figure 5-6). Four shovel tests (AB8, CN2, CN3, and CN4) had redder soils but with the still general pattern of darker sandy loam over a lighter sand. One shovel test (AB4) excavated near the southern end of the APE had sorted, mixed soils comprised of three different colors that possible indicate previous disturbances within the ROW, possibly the utility lines installed along the APE.
Figure 5-1. Results of the investigation.
Figure 5-2. View along centerline of APE at the northern end; facing south.

Figure 5-3. View along centerline of APE at the southern end; facing north.
Figure 5-4. Overview of western edge of APE with overgrown hedge; facing southwest.

Figure 5-5. Overview of eastern edge of APE; facing southeast.
Figure 5-6. Shovel test AB2 terminated at 1 m below surface at maximum depth; facing west.

Figure 5-7. Overview of utility impacts to southeastern portion of APE; facing south.
Isolated Find-01

A single Isolated Find (IF) 01 was identified near the central eastern boundary of the APE within shovel test CN2. The find consisted of a single primary reduction flake identified between 80 to 100 cmbs (Figures 5-8 and 5-9). The IF was located near the upper terrace Spring Creek near an oak tree in a relatively open grassy area (Figure 5-10). A ground surface inspection was conducted within the immediate vicinity of the IF; however no additional artifacts were observed. Due to the narrow boundaries of the APE, five additional shovel tests were excavated, two to the north, two to the south, and one to the west. All the shovel tests were negative for cultural materials. Due to a lack of additional cultural materials, IF-01 was designated as isolated find and was not designated as an archaeological site.
Figure 5-9. Primary reduction flake found in CN2.

Figure 5-10. Overview of the shoulder where CN2 was excavated; facing east.
Figure 5-11. Overview of the area to the east of CN2; facing southeast.
CHAPTER 6. SUMMARY AND RECOMMENDATIONS

Raba Kistner, Inc. (RKI) was contracted by Harris County Engineering Department (CLIENT), to conduct archaeological investigations in support of road improvements along 7 miles of existing road along Botkins, Roberts, AJ Foyt, Nichols, and Becker Roads, located in northwest Harris County, Texas. The purpose of this investigation was to identify any surface-exposed or shallowly buried cultural deposits within the limits of the proposed undertaking and, if possible, assess their significance and eligibility for inclusion in the National Register of Historic Places (NRHP) and for formal designation as State Antiquities Landmarks (SALs). As the project will be conducted on publicly-owned land and is sponsored by the Harris County Engineering Department, an entity of the State of Texas, the proposed project is subject to review under the Antiquities Code of Texas (ACT) (Texas Natural Resources Code, Title 9, Chapter 191). All work was conducted in accordance with the Archeological Survey Standards for Texas, as set forth by the Council of Texas Archeologists (CTA) and the Texas Historical Commission (THC) under Texas Antiquities Committee Permit Number 9580.

Investigations consisted of a background review and intensive pedestrian survey augmented with shovel testing within the APE. The background review revealed that the majority of the project area is underlain by soils derived from loamy deposits of the Pliocene-age Willis Formation. Only a small portion, approximately 2,313 feet, along Nichols Road contains Holocene-age deposits. As such, in a background review submitted for consultation to the THC, RKI recommended that archaeological investigations focus on the area containing the Holocene-age deposits. Based on the information provided in the background review, the THC concurred with the recommendation. Therefore, the Area of Potential Effects (APE) for the project is defined as the 2,313-feet (705 m) portion of Nichols Road within a 75-foot (22.3 m) corridor, totaling 3.98 acres. The maximum depth of impact for proposed undertaking is 3 feet (0.91 m) below surface.

On September 3, 2020, RKI archaeologists conducted an intensive pedestrian survey augmented with shovel testing of the approximately 3.98-acre APE. Antonio E. Padilla served as the Principal Investigator for the project and all fieldwork was conducted by Staff Archaeologists Adam Birge and Charles Neel. During the survey, the APE was found to be lightly graded for existing roadbed with shoulders on the east side consisting of manicured Bermuda grass and the shoulder on the west consisting of an overgrown hedge. As a result of the survey, 12 shovel tests (AB1–AB8 and CN1–CN4) were excavated which resulted
in the documentation of one isolated find (IF-01). The single IF consisted of a primary reduction flake identified at an approximate depth of 82 centimeters below surface. Due to a lack of additional cultural materials, the single flake was designated as isolated find and was not designated as an archaeological site.

RKi has made a reasonable and good faith effort to identified cultural resources within the given APE. No significant deposits or features were identified during the intensive pedestrian survey of the APE. RKI recommends no further archaeological investigations within the APE. However, should changes be made within the APE, further work may be required. All field records and photographs produced during investigations will be permanently housed at the Center for Archaeological Research at the University of Texas at San Antonio.
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APPENDIX A
Shovel Test Log
## Shovel Test Log

<table>
<thead>
<tr>
<th>Shovel Test No.</th>
<th>Site</th>
<th>Depth (cm)</th>
<th>Munsell</th>
<th>Soil Color</th>
<th>Soil Texture</th>
<th>Inclusions</th>
<th>Positive/Negative</th>
<th>Cultural Materials</th>
<th>Reason for Termination/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB1</td>
<td>-</td>
<td>0–20</td>
<td>10YR 4/3</td>
<td>Brown</td>
<td>Sandy Loam</td>
<td>Gravels 5%</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20–40</td>
<td>10YR 6/3</td>
<td>Pale Brown</td>
<td>Sandy Loam</td>
<td>Mottling</td>
<td>Negative</td>
<td>-</td>
<td>Compacted soils at 37 cmbs</td>
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<tr>
<td>AB2</td>
<td>-</td>
<td>0–20</td>
<td>10YR 4/3</td>
<td>Brown</td>
<td>Sandy Loam</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20–40</td>
<td>10YR 5/3</td>
<td>Brown</td>
<td>Sandy Loam</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
</tr>
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<td></td>
<td></td>
<td>40–60</td>
<td>10YR 5/3</td>
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<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>10YR 5/3</td>
<td>Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
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<tr>
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<td></td>
<td>80–100</td>
<td>10YR 6/3</td>
<td>Pale Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>Max depth 100 cmbs</td>
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<td>AB3</td>
<td>-</td>
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<td>10YR 4/3</td>
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<td>Sandy Loam</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20–40</td>
<td>10YR 6/4</td>
<td>Light Yellowish Brown</td>
<td>Sandy Loam</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40–60</td>
<td>10YR 6/4</td>
<td>Light Yellowish Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
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<td></td>
<td>60–80</td>
<td>10YR 6/4</td>
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<td>Sand</td>
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<td>Negative</td>
<td>-</td>
<td>-</td>
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<td></td>
<td>80–100</td>
<td>10YR 6/4</td>
<td>Light Yellowish Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>Max depth 100 cmbs</td>
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<tr>
<td>AB4</td>
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<td>10YR 3/3</td>
<td>Dark Brown</td>
<td>Loam</td>
<td>Mixed soils: 10YR 5/4 and 5YR 5/6</td>
<td>Negative</td>
<td>-</td>
<td>Compacted soils at 20 cmbs</td>
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<tr>
<td>AB5</td>
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<td>10YR 6/4</td>
<td>Light Yellowish Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>Compacted soils at 40 cmbs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20–40</td>
<td>10YR 6/4</td>
<td>Light Yellowish Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>Compacted soils at 40 cmbs</td>
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<tr>
<td>Shovel Test No.</td>
<td>Site</td>
<td>Depth (cm)</td>
<td>Munsell</td>
<td>Soil Color</td>
<td>Soil Texture</td>
<td>Inclusions</td>
<td>Positive/Negative</td>
<td>Cultural Materials</td>
<td>Reason for Termination/Comments</td>
</tr>
<tr>
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<td>-------</td>
<td>------------</td>
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<td>------------------</td>
<td>--------------</td>
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<td>-------------------</td>
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<td>--------------------------</td>
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<tr>
<td>AB6 IF-01</td>
<td>0–20</td>
<td>10YR 4/3</td>
<td>Brown</td>
<td>Sandy Loam</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td></td>
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<tr>
<td></td>
<td>20–40</td>
<td>10YR 6/4</td>
<td>Light Yellowish Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40–60</td>
<td>10YR 6/4</td>
<td>Light Yellowish Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60–80</td>
<td>10YR 6/4</td>
<td>Light Yellowish Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>80–100</td>
<td>10YR 6/4</td>
<td>Light Yellowish Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>Max depth 100 cmbs</td>
<td></td>
</tr>
</tbody>
</table>

| AB7 IF-01      | 0–20  | 10YR 4/3   | Brown   | Sandy Loam       | -            | Negative   | -                 | -                  |                          |
|                | 20–40 | 10YR 6/4   | Light Yellowish Brown | Sand | - | Negative | -                  | -                  |                          |
|                | 40–60 | 10YR 6/4   | Light Yellowish Brown | Sand | - | Negative | -                  | Compact soils at 52 cmbs |

| AB8 IF-01      | 0–20  | 10YR 6/4   | Light Yellowish Brown | Sandy Loam   | - | Negative | -                  | -                  |                          |
|                | 20–40 | 5YR 4/4    | Reddish Brown         | Sand          | - | Negative | -                  | -                  |                          |
|                | 40–60 | 5YR 4/4    | Reddish Brown         | Sand          | - | Negative | -                  | Compact soils at 53 cmbs |

<p>| CN1            | 0–20  | 10YR 5/2   | Grayish Brown         | Sandy Loam   | - | Negative | -                  | -                  |                          |
|                | 20–40 | 10YR 5/2   | Grayish Brown         | Sandy Loam   | - | Negative | -                  | -                  |                          |
|                | 40–60 | 10YR 6/2   | Light Brownish Gray   | Sandy Loam   | - | Negative | -                  | -                  |                          |
|                | 60–80 | 10YR 6/2   | Light Brownish Gray   | Sand          | - | Negative | -                  | -                  |                          |
|                | 80–100| 10YR 7/2   | Light Gray            | Sand          | - | Negative | -                  | Max depth 100 cmbs  |</p>
<table>
<thead>
<tr>
<th>Shovel Test No.</th>
<th>Site</th>
<th>Depth (cm)</th>
<th>Munsell</th>
<th>Soil Color</th>
<th>Soil Texture</th>
<th>Inclusions</th>
<th>Positive/Negative</th>
<th>Cultural Materials</th>
<th>Reason for Termination/Comments</th>
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<tbody>
<tr>
<td>CN2 IF-01</td>
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<td>7.5YR 5/4</td>
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<td>Negative</td>
<td>-</td>
<td>-</td>
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<tr>
<td></td>
<td></td>
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<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
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<tr>
<td></td>
<td></td>
<td>40–60</td>
<td>7.5YR 4/4</td>
<td>Brown</td>
<td>Sand</td>
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<td>-</td>
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<td></td>
<td></td>
<td>60–80</td>
<td>7.5YR 4/6</td>
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<td></td>
<td></td>
<td>80–100</td>
<td>7.5YR 4/6</td>
<td>Strong Brown</td>
<td>Sand</td>
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<td>Positive</td>
<td>Primary Reduction Flake</td>
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<td>80–100</td>
<td>7.5YR 5/4</td>
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<td>Max depth 100 cmbs</td>
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<td>CN4 IF-01</td>
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<td>Sand</td>
<td>-</td>
<td>Negative</td>
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<tr>
<td></td>
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<td>20–40</td>
<td>5YR 4/3</td>
<td>Reddish Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40–60</td>
<td>5YR 4/3</td>
<td>Reddish Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
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<td>-</td>
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<tr>
<td></td>
<td></td>
<td>60–80</td>
<td>5YR 4/4</td>
<td>Reddish Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
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<tr>
<td></td>
<td></td>
<td>80–100</td>
<td>5YR 4/4</td>
<td>Reddish Brown</td>
<td>Sand</td>
<td>-</td>
<td>Negative</td>
<td>Max depth 100 cmbs</td>
<td>-</td>
</tr>
</tbody>
</table>