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Intensive Cultural Resources Survey for the Proposed Old Spanish Trail Roadway Improvements Project, Orange County, Texas

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Texas Antiquities Permit No. 8874
LJA B879-1001.300

Prepared for:

LJA Engineering, Inc.
Beaumont, Texas

Prepared by:

Horizon Environmental Services, Inc.
Austin, Texas

November 2019

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MANAGEMENT SUMMARY

Horizon Environmental Services, Inc. (Horizon) was selected by LJA Engineering, Inc. (LJA) on behalf of Orange County to conduct an intensive cultural resources inventory and assessment for the proposed Old Spanish Trail Roadway Improvements Project south of Vidor in Orange County, Texas. The proposed undertaking would involve expanding and improving the existing two-lane gravel roadway of Old Spanish Trail. The project area extends approximately 0.8 kilometer (0.5 mile) in length from the intersection of Old Spanish Trail and Red Oak Street northwestward to a flood-control levee located approximately 0.2 kilometer (0.1 mile) south of Ofiel Road. The existing right-of-way (ROW) of Old Spanish Trail measures roughly 10.0 meters (32.8 feet) in width. The proposed roadway improvements would involve construction within an expanded ROW measuring approximately 50.0 meters (164.0 feet) in width, including a combination of existing and proposed new ROW. For purposes of the cultural resources survey, the project area is considered to consist of the 0.8-kilometer- (0.5-mile-) long by 50.0-meter- (164.0-foot-) wide project area, covering a total area of approximately 4.0 hectares (9.9 acres).

The proposed undertaking is being sponsored by Orange County, a political subdivision of the state of Texas; as such, the project would fall under the jurisdiction of the Antiquities Code of Texas (Natural Resources Code, Title 9, Chapter 191). At this time, no federal permits, licenses, or funds have been identified for the project. As the project represents a publicly sponsored undertaking, the project sponsor is required to provide the Texas Historical Commission (THC), which serves as the State Historic Preservation Office (SHPO) for the state of Texas, with an opportunity to review and comment on the project's potential to adversely affect historic properties listed on or considered eligible for inclusion in the National Register of Historic Places (NRHP) and for designation as State Antiquities Landmarks (SAL).

On April 19, 2019, Horizon archeologist Charles E. Bludau conducted an intensive cultural resources survey of the project area. The survey was conducted under the overall direction of Jeffrey D. Owens, Principal Investigator, under Texas Antiquities Permit no. 8874. The purpose of the survey was to locate any significant cultural resources that potentially would be impacted by the proposed undertaking. Horizon's archeologist traversed the tract and thoroughly inspected the modern ground surface for aboriginal and historic-age cultural resources. The existing ROW of Old Spanish Trail consists of a two-lane gravel road with no shoulders. The proposed new ROW to the east of the existing roadway consists of short-grass pastures. A large pond is present to the southwest. Visibility of the modern ground surface was typically fair to good (30 to 60%).

In addition to pedestrian walkover, the Texas State Minimum Archeological Survey Standards (TSMASS) require a minimum of 16 shovel tests per mile per 30.5-meter (100.0-foot) width of proposed ROW or fraction thereof for linear projects. As such, a minimum of 16 shovel tests would be required within the 0.8-kilometer- (0.5-mile-) long by 50.0-meter- (164.0-foot-) wide project area. Horizon excavated a total of 17 shovel tests during the survey, thereby exceeding the TSMASS requirements for a project area of this size. Shovel testing typically revealed shallow to moderately deep deposits of sandy loam overlying sandy clay at depths ranging from 5.0 to 60.0 centimeters (1.9 to 23.6 inches) below surface (typically in the range of 30.0 to 60.0 centimeters [11.8 to 23.6 inches] below surface), though deep sandy sediments were observed in two shovel tests extending to a depth of 1.0 meter (3.3 feet) or more below surface. Sediments in a few than half of the shovel tests exhibited iron staining, suggesting that the project area experiences at least seasonally, if not permanently, high water tables. It is Horizon's opinion that sediments with the potential to contain subsurface archeological deposits were fully penetrated and that the project area was adequately assessed for cultural resources.

No cultural resources of historic or prehistoric age were observed on the modern ground surface or within any of the shovel tests excavated within the project area during the survey.

Based on the results of the survey-level investigations documented in this report, no potentially significant cultural resources would be affected by the proposed undertaking. Horizon has made a reasonable and good-faith effort to identify historic properties within the project area. No cultural resources were identified within the project area that meet the criteria for designation as SALs according to 13 TAC 26 or for inclusion in the NRHP under 36 CFR 60.4. Horizon recommends a finding of "no historic properties affected," and no further archeological work is recommended in connection with the proposed undertaking. However, human burials, both prehistoric and historic, are protected under the Texas Health and Safety Code. In the event that any human remains or burial objects are inadvertently discovered at any point during construction, use, or ongoing maintenance in the project area, even in previously surveyed areas, all work should cease immediately in the vicinity of the inadvertent discovery, and the Texas Historical Commission (THC) should be notified immediately.

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1.0 INTRODUCTION

Horizon Environmental Services, Inc. (Horizon) was selected by LJA Engineering, Inc. (LJA) on behalf of Orange County to conduct an intensive cultural resources inventory and assessment for the proposed Old Spanish Trail Roadway Improvements Project south of Vidor in Orange County, Texas. The proposed undertaking would involve expanding and improving the existing two-lane gravel roadway of Old Spanish Trail. The project area extends approximately 0.8 kilometer (0.5 mile) in length from the intersection of Old Spanish Trail and Red Oak Street northwestward to a flood-control levee located approximately 0.2 kilometer (0.1 mile) south of Ofiel Road. The existing right-of-way (ROW) of Old Spanish Trail measures roughly 10.0 meters (32.8 feet) in width. The proposed roadway improvements would involve construction within an expanded ROW measuring approximately 50.0 meters (164.0 feet) in width, including a combination of existing and proposed new ROW. For purposes of the cultural resources survey, the project area is considered to consist of the 0.8-kilometer- (0.5-mile-) long by 50.0-meter- (164.0-foot-) wide project area, covering a total area of approximately 4.0 hectares (9.9 acres) (Figures 1 to 3).

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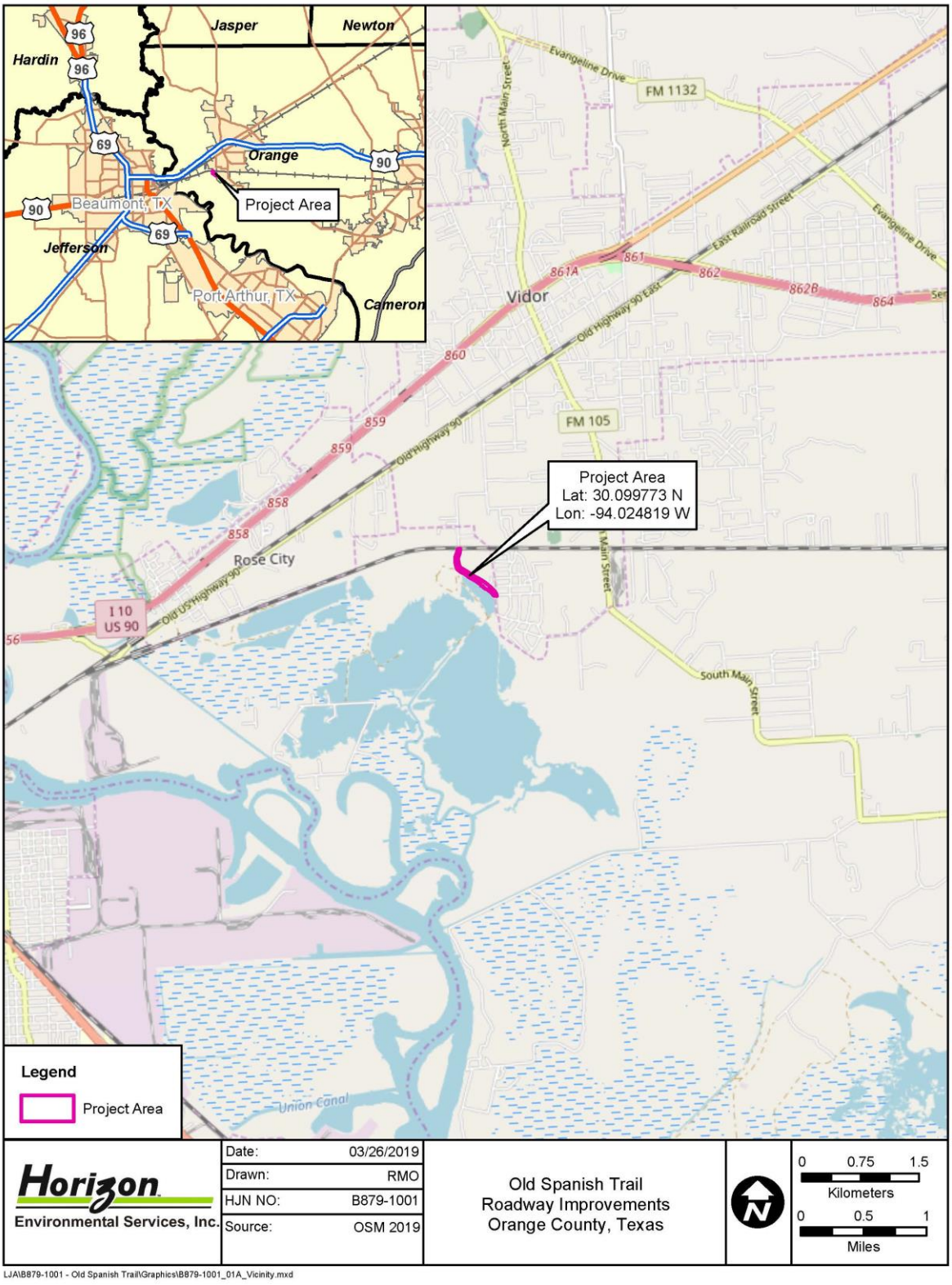

Figure 1. Vicinity Map of Project Area

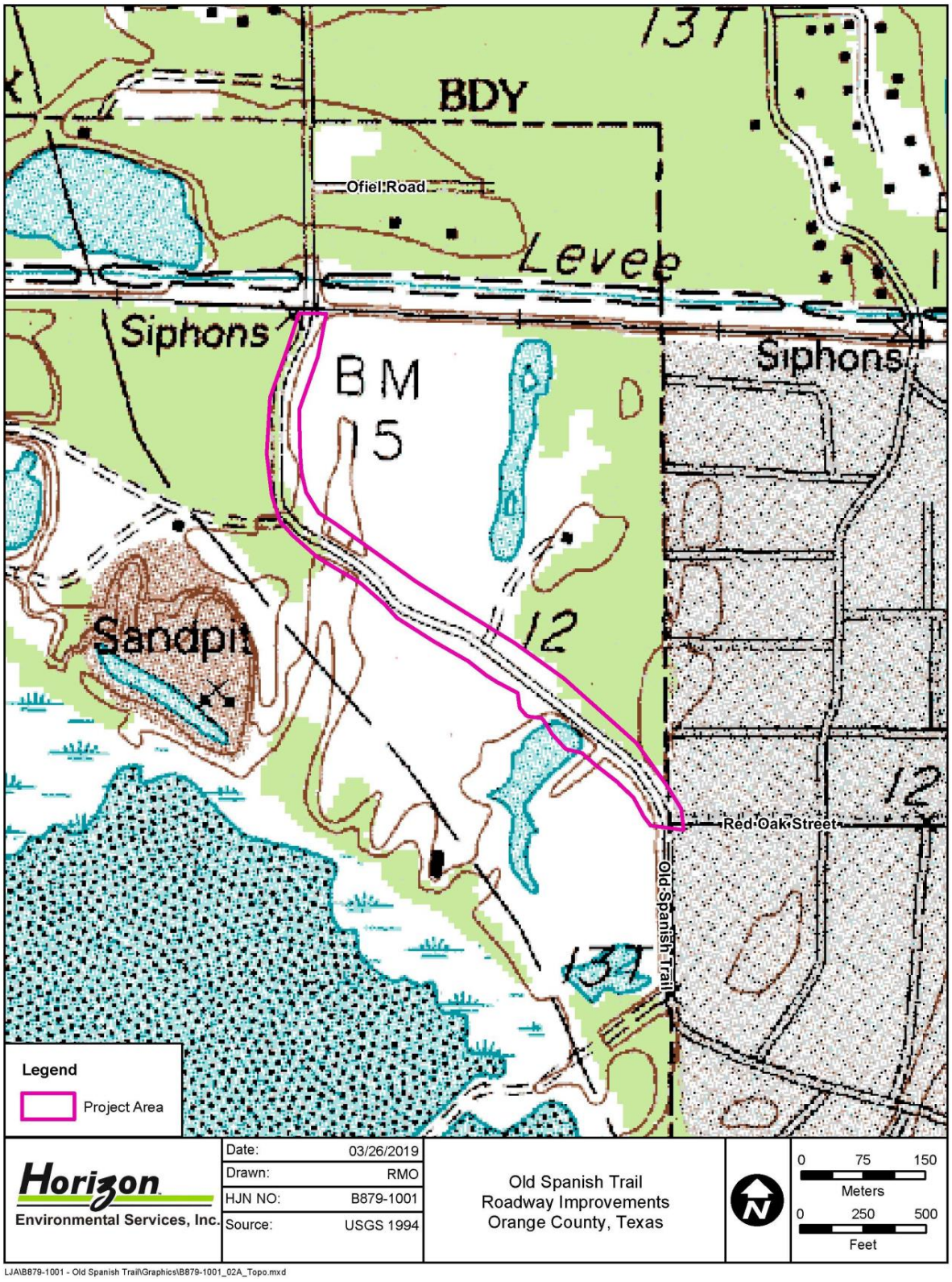

Figure 2. Location of Project Area on USGS Topographic Map

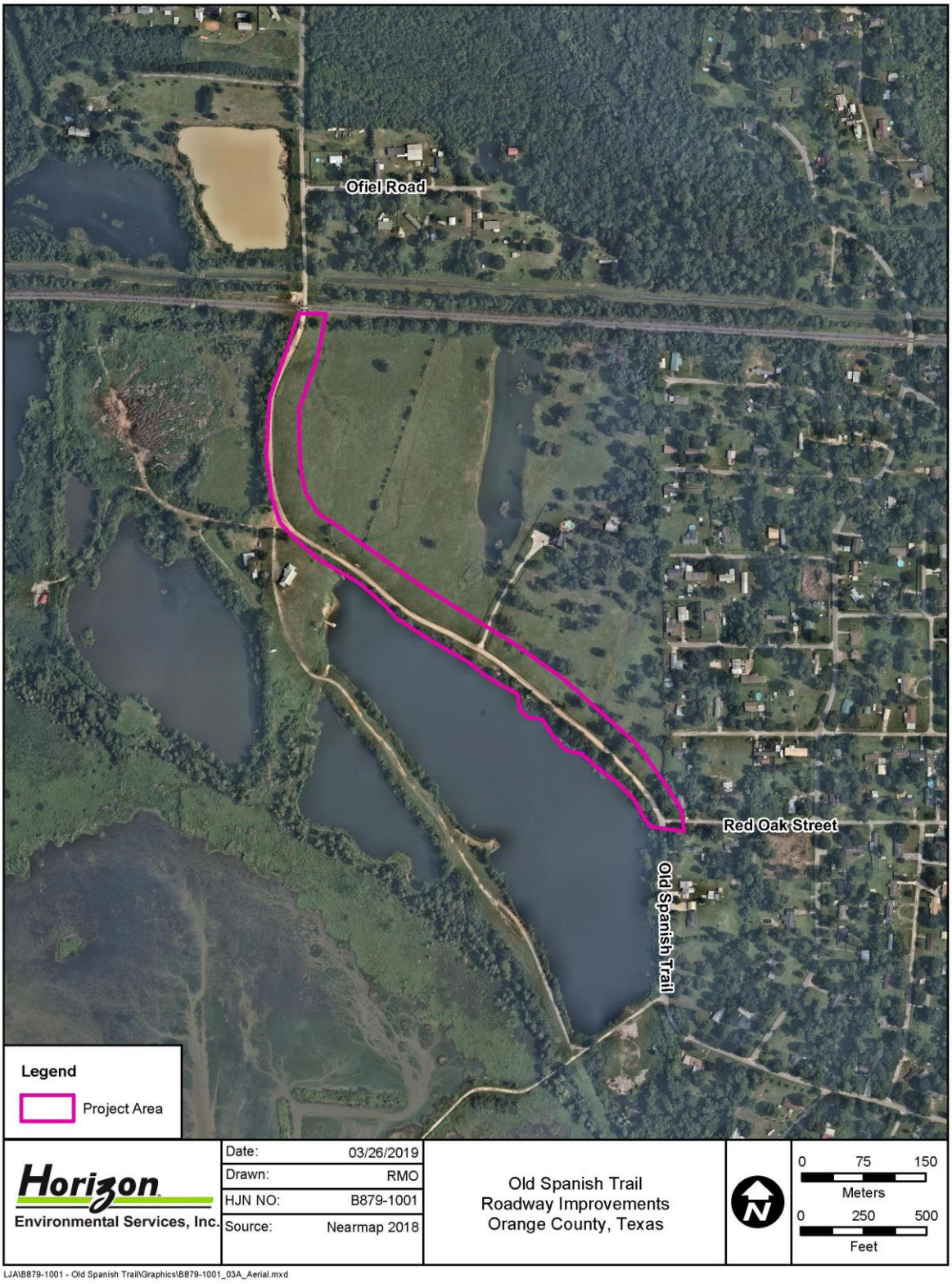

Figure 3. Location of Project Area on Aerial Photograph

Practice and Procedure, Chapter 26, Section 27, and the Council of Texas Archeologists (CTA) Guidelines for Cultural Resources Management Reports.

Following this introductory chapter, Chapters 2.0 and 3.0 present the environmental and cultural backgrounds, respectively, of the project area. Chapter 4.0 describes the results of background archival research, and Chapter 5.0 discusses cultural resources survey methods. Chapter 6.0 presents the results of the cultural resources survey, and Chapter 7.0 presents cultural resources management recommendations for the project. Chapter 8.0 lists the references cited in the report, Appendix A summarizes shovel test data, and Appendix B contains a supplemental memorandum prepared by Eugene Foster that presents supplemental historical research on the project area requested by the client.

2.0 ENVIRONMENTAL SETTING

2.1 PHYSIOGRAPHY AND HYDROLOGY

The project area is located in southwestern Orange County, Texas. Orange County is situated on the Gulf Coastal Plain in southeastern Texas, and the project area is located about 48.3 kilometers (30.0 miles) northwest of the Gulf of Mexico shoreline. The Gulf of Mexico represents a structural basin formed by lithosphere deformation. The Texas Coastal Plain, which extends as far north as the Ouachita uplift in southern Oklahoma and westward to the Balcones Escarpment, consists of seaward-dipping bodies of sedimentary rock, most of which are of terrigenous clastic origin, that reflect the gradual infilling of the basin from its margins (Abbott 2001). The Beaumont area is underlain by rocks and unconsolidated sediments that are quite young in a geological sense, ranging from modern to Miocene in age. These consist predominantly of a series of fluviodeltaic bodies arranged in an offlapped sequence, with interdigitated and capping eolian, littoral, and estuarine facies making up a relatively minor component of the lithology. Major bounding disconformities between these formations are usually interpreted to represent depositional hiatuses that occurred during periods of sea level low stand. The oldest rocks in this fill are of Late Cretaceous age. As a result of the geometry of basin filling, successively younger rock units crop out in subparallel bands from the basin margin toward the modern coastline.

The project area is situated on a flast coastal terrace that forms the northeastern margin of a broad mud flat on the floodplain of the Neches River to the southwest. No natural streams cross the project area, though several large ponds and marshy features are located nearby. Local topography is relatively flat, and elevations across the project area range from approximately 3.6 to 4.6 meters (12.0 to15.0 feet) above mean sea level (amsl) with minimal natural topographic relief. Drainage is generally to the southwest toward the Neches River floodplain.

2.2 GEOLOGY AND GEOMORPHOLOGY

The project area is underlain by the Beaumont Formation (Shelby et al. 1968). The Beaumont, or Prairie, terrace is the youngest continuous coastwise terrace fronting the modern Gulf (Abbott 2001). The Beaumont Formation consists of clay, silt, and fine sand arranged in spatial patterns that reflect the distribution of fluvial (e.g., channel, point bar, levee, and backswamp) and mudflat/coastal marsh facies (Van Siclen 1985). Sandy deposits associated

with littoral facies are also frequently considered part of the Beaumont. Many investigators (cf. DuBar et al. 1991; Fisk 1938, 1940) have correlated the Beaumont terrace with the Sangamon Interglacial (ca. 130 to 75 thousand years ago [kya]), although age estimates range from Middle Wisconsinan (Alford and Holmes 1985) to 100 to 600 kya (Blum and Price 1994). While debate about the temporal affiliations of and correlations among the deposits that underlie the major coastline terraces remains active, they are of little direct geoarcheological relevance because virtually all investigators agree that these deposits considerably predate the earliest demonstrated dates of human occupation in North America.

The project area is characterized by two separate soil units (Table 1; Figure 4) (NRCS 2019). The vast majority of the project area is characterized by Belrose loamy fine sand, 0 to 3% slopes (BelB), while a very small area at the northern end of the project area is mapped as Belrose-Caneyhead frequently ponded complex, 0 to 1% slopes (BemA). Both soil units are composed of Quaternary-age loamy and sandy alluvial deposits.

Aboriginal cultural resources are commonly encountered in deep alluvial sediments adjacent to major streams in Texas; however, the relative antiquity of the alluvial soil units within the project area suggests that any cultural resources would be constrained to the modern ground surface or in shallowly buried contexts. Intact, deeply buried archeological deposits may occur within alluvial sediments of Holocene age near major streams. However, the alluvial sediments within the project area are relatively mature and appear to pre-date the Holocene epoch. Historic-age cultural resources may occur in any physiographic setting but are comparatively rare in the remote, marshy lowlands of the coastal plain.

Table 1. Summary of Mapped Soils within Project Area

NRCS Soil Code	Soil Name	Parent Material	Typical Profile (inches)
BelB	Belrose loamy fine sand, 0 to 3% slopes	Loamy alluvium on terraces	0-5: Loamy fine sand (A) 5-20: Loamy very fine sand (E) 20-63: Loamy very fine sand (Bt/E1) 63-80: Loamy fine sand (Bt/E2)
BemA	Belrose-Caneyhead frequently ponded complex, 0 to 1% slopes	Loamy alluvium on terraces	Belrose: 0-5: Loamy fine sand (A) 5-36: Very fine sandy loam (E) 36-51: Very fine sandy loam (Bt/E1) 51-80: Very fine sandy loam (Bt/E2) Caneyhead: 0-4: Silt loam (A) 4-18: Silt loam (E/Btg) 18-27: Loam (Btg/E1) 27-61: Clay loam (Btg/E2) 61-80: Silt loam (E/B'tg)

Source: NRCS 2019

NRCS = Natural Resources Conservation Service

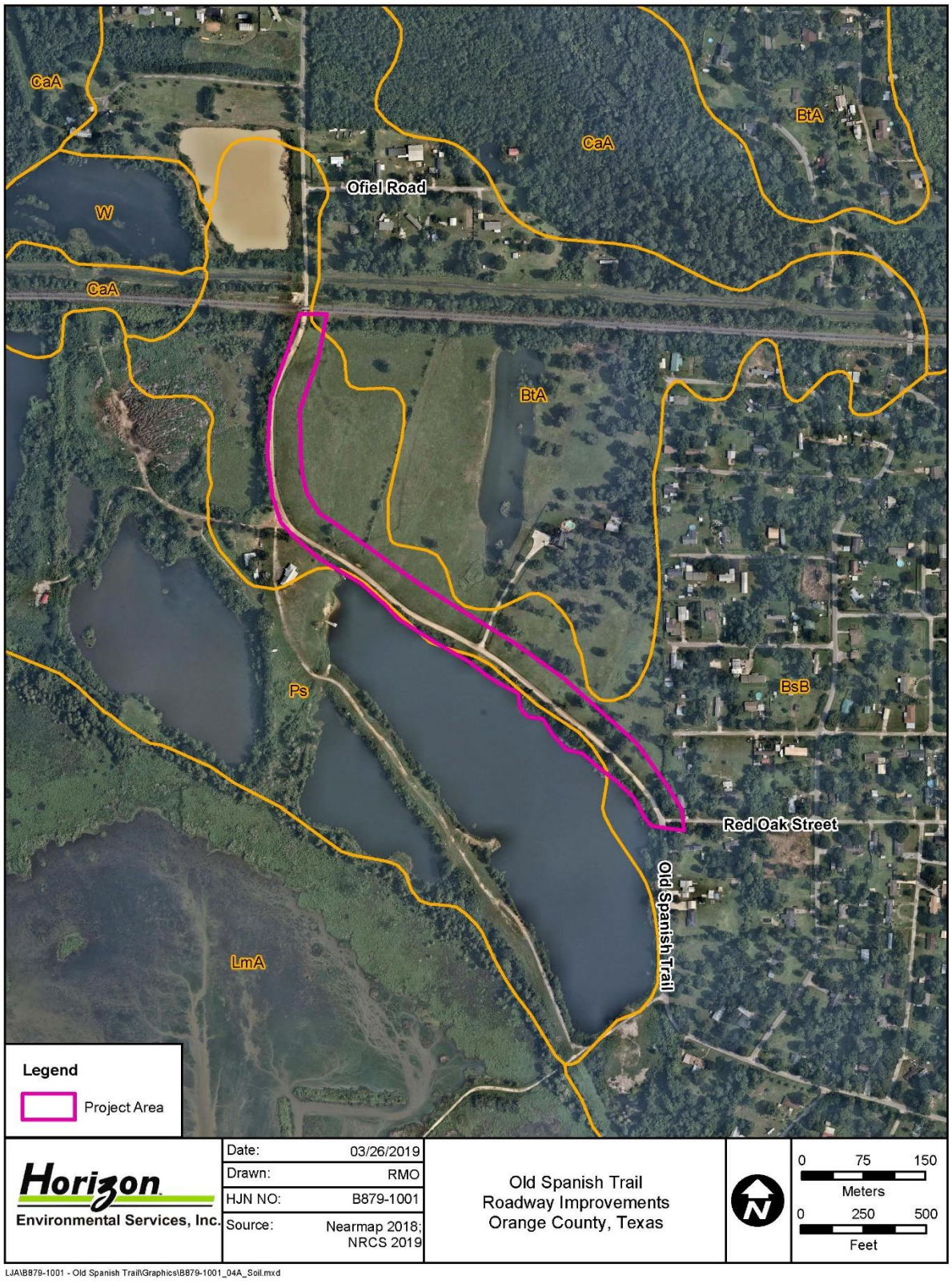

Figure 4. Soils Mapped within Project Area

2.3 CLIMATE

Evidence for climatic change from the Pleistocene to the present is most often obtained through studies of pollen and faunal sequences (Bryant and Holloway 1985; Collins 1995). While the paleoclimatic history of the coastal region remains unclear, Bryant and Holloway (1985) present a sequence of climatic change for nearby east-central Texas that includes three separate climatic periods—the Wisconsin Full Glacial Period (22,500 to 14,000 B.P.), the Late Glacial Period (14,000 to 10,000 B.P.), and the Post-Glacial Period (10,000 B.P. to present). Evidence from the Wisconsin Full Glacial Period suggests that the climate in east-central Texas was considerably cooler and more humid than at present. Pollen data indicate that the region was more heavily forested in deciduous woodlands than during later periods (Bryant and Holloway 1985). The Late Glacial Period was characterized by slow climatic deterioration and a slow warming and/or drying trend (Collins 1995). In east-central Texas, the deciduous woodlands were gradually replaced by grasslands and post oak savannas (Bryant and Holloway 1985). During the Post-Glacial Period, the east-central Texas environment appears to have been more stable. The deciduous forests had long since been replaced by prairies and post oak savannas. The drying and/or warming trend that began in the Late Glacial Period continued into the mid-Holocene, at which point there appears to have been a brief amelioration to more mesic conditions lasting from roughly 6000 to 5000 B.P. Recent studies by Bryant and Holloway (1985) indicate that modern environmental conditions in east-central Texas were probably achieved by 1,500 years ago.

The modern climate of the upper Texas coast is classified as subtropical humid (Abbott 2001; Larkin and Bomar 1983), forming a transitional zone between the humid southeastern US and the semiarid to arid west. The climate reflects the influences of latitude, low elevation, and proximity to the Gulf of Mexico, which combine with the urban heat islands formed by the tremendous concentrations of asphalt and concrete in the larger cities, such as Houston and Beaumont, to create a notorious modern climate that is oppressively warm and moist throughout much of the year. As a result of proximity to the Gulf and the abundance of surface water, humidity in the early morning can approach 100% even on cloudless summer days, and it often exceeds 50% even on the warmest afternoons. Largely as a consequence of the relatively high humidity characteristic of the region, temperature patterns exhibit a moderate annual range and a modest diurnal range that increases slightly with distance from the coast. Average monthly high temperature ranges from a low of 17 to 19°Celcius (°C) (59 to 63°Fahrenheit [°F]) in January to a high of 38 to 40°C (89 to 96°F) in August. Average monthly lows range from 4 to 9°C (38 to 47°F) in January to 25 to 29°C (72 to 79°F) in July and August. Annually, average low temperatures range from 15 to 21°C (56 to 65°F), and average high temperatures range from 27 to 29°C (75 to 79°F) (Abbott 2001; Larkin and Bomar 1983).

The region experiences two precipitation peaks throughout the year (Abbott 2001). The first occurs in the late spring (i.e., May to June) due to the passage of infrequent cold fronts that spawn chains of powerful frontal thunderstorms. The second occurs in the late summer to early autumn (i.e., August to September) due to the incidence of tropical storms and hurricanes from the Atlantic and, occasionally, Pacific oceans. In contrast, winter and early spring are relatively dry, and high summer rainfall is dominated by convectional thunderstorms that are relatively brief

and localized, albeit frequently intense. Average annual precipitation varies from a low of approximately 101.6 centimeters (40.0 inches) to a high of more than 132.1 centimeters (52.0 inches). Average monthly precipitation varies from less than 5.1 to 7.6 centimeters (2.0 to 3.0 inches) in March to more than 19.1 centimeters (7.5 in) occurring locally on the coast during September. Almost all of the measurable precipitation falls as rain—snowfall is extremely rare, occurring in measurable amounts in only 1 in 10 years.

2.4 FLORA AND FAUNA

Orange County is situated near the southeastern edge of the Texan biotic province (Blair 1950), an intermediate zone between the forests of the Austroriparian and Carolinian provinces and the grasslands of the Kansan, Balconian, and Tamaulipan provinces. Some species reach the limits of their ecological range within the Texas province. McMahan et al. (1984) further define four broad communities that characterize that portion of the Texas biotic province that lies on the Gulf Coastal Plain: (1) coastal marsh/barrier island, (2) coastal prairie, (3) coastal gallery forest, and (4) pine-hardwood forest (cf. Abbott 2001:24-26).

The coastal marsh/barrier island category includes well-drained, sandy, coastal environments and saline and freshwater wetlands in the coastal zone (Abbott 2001:24). Marsh vegetation is typical of areas that are seasonally wet and have substrates composed primarily of sands and silts, clays, or organic decomposition products. Vegetation assemblages are strongly controlled by texture, salinity, frequency and duration of inundation, and depth of the seasonal water table. Sandy, relatively well-drained, freshwater environments are typically dominated by little bluestem, switchgrass, Florida paspalum, and brownseed paspalum. Wetter environments are often dominated by marshhay cordgrass, seashore saltgrass, saggitaria, bulrushes, smooth cordgrass, seashore paspalum, seashore dropseed, olney bulrush, saltmarsh bulrush, saltmarsh aster, longtom, sprangletop, burhead, arrowhead, coastal waterhyssop, needlegrass rush, and other sedges and rushes. Slightly higher, better-drained environments are characterized by such taxa as seashore saltgrass, seashore paspalum, gulfdune paspalum, shoregrass, gulf cordgrass, red lovegrass, bushy sea-oxey, and glasswort. A variety of fauna are characteristic of the shore zone. Important larger taxa include raccoon, nutria, alligators, turtles, swamp rabbit, and many birds, including ducks, geese, herons, and many smaller species. Aquatic taxa, including a wealth of fish and shellfish adapted to brackish to hypersaline conditions, are also important in the coastal zone.

The coastal prairie category consists primarily of grasses with minor amounts of forbs and woody plants in areas that are not saturated on a seasonal basis (Abbott 2001:24-26). This community is characteristic of upland areas and grades into the pine-hardwood forest to the north and east and into the coastal marsh/barrier island to the south. A wide variety of grasses are found in the prairie environments, but the principal taxa include big bluestem, little bluestem, indiangrass, eastern grama, switchgrass, brownseed paspalum, sideoats grama, silver bluestem, buffalograss, threeawn, and Texas wintergrass. Common forbs include Maximilian sunflower, Engelmann daisy, blacksalmon, penstemon, dotted gayfeather, bundleflower, yellow neptunia, snoutbean, prairie clover, tickclover, wildbean, western indigo, paintbrush, bluebonnet, ragweed, croton, milkweed, vetch, verbena, and winecup. Woody plants occurring in the coastal prairie

include mesquite, honey locust, huisache, eastern baccharis, sesbania, live oak, elm, hackberry, bumelia, and coralberry. The frequency of trees increases dramatically as the coastal prairie grades into the pine-hardwood forest, forming an open woodland environment with common stands of hardwood trees and occasional pines. The coastal prairie is home to a diverse fauna, including coyote, white-tailed deer, skunks, cottontail rabbit, many small rodents, amphibians, reptiles, and a variety of permanent and migratory birds. Bison and pronghorn were also present at various times in the past.

The coastal gallery forest consists of diverse, principally deciduous trees and associated understory in floodplains and streams that traverse the outer coastal plain (Abbott 2001:26). Important taxa include water oak, pecan, poplar, American elm, cedar elm, sugarberry, ash, loblolly pine, post oak, cherrybark oak, mulberry, swamp chestnut oak, willow oak, sweetgum, hawthorn, dogwood, hickory, bois d'arc, sassafras cypress, willow, cottonwood, and sumac. Shrubs and vines such as mustang grape, greenbrier, yaupon, coralberry, possumhaw, elderberry, honeysuckle, dewberry, and blackberry are common in the understory, as are grasses such as little bluestem, big bluestem, and indiangrass. The fauna of the gallery forest include white-tailed deer, opossum, raccoon, squirrel, turkey, a variety of small mammals and rodents, turtles, snakes, and many birds. A number of fish and a few varieties of shellfish are present in the streams.

The pine-hardwood forest is characterized by a mix of coniferous and deciduous trees, including longleaf pine, shortleaf pine, loblolly pine, post oak, red oak, white oak, blackjack oak, willow oak, and live oak (Abbott 2001:26). Riparian environments often support larger deciduous trees like pecan, cottonwood, hickory, beech, and American elm. Understory vegetation varies from relatively open to quite dense, and consists of shrubs, vines, forbs, and young trees. Common shrubs include acacia, yaupon, mayhaw, wild persimmon, myrtle, greenbrier, Virginia creeper, blackberry, dewberry, trumpet vine, gourd, and poison ivy. A variety of fauna is also present, including white-tailed deer, opossum, raccoon, squirrel, rabbit, mink, skunk, various small rodents, turtles, reptiles, and many different birds. Black bears were also present at times in the past, and bison and pronghorn were occasionally present in the transition zone to the coastal prairie environment.

3.0 CULTURAL BACKGROUND

The project area is located within the Southeast Texas Archeological Region, a 21-county area extending from the Colorado River on the west to the Sabine River on the east and measuring about 200.0 kilometers (124.0 miles) inland from the Gulf of Mexico coastline. Much of the archeological record in Southeast Texas represents an interface between the Southern Great Plains and the Southeastern Woodlands (Aten 1983, 1984; Patterson 1995; Story 1990). Further distinctions are often made between the inland and coastal margin subregions of Southeast Texas. These two subregions are somewhat culturally distinct, and the inland subregion has a much longer chronological record. The coastal margin of Southeast Texas comprises a zone about 25.7 kilometers (16.0 miles) inland from the coast that covers the area influenced by Gulf tidal flows on the salinity of streams, lakes, and bays. Considerable ecological variability characterizes this subregion, including woodlands, coastal prairie, lakes, wetlands, marine coastline, and barrier islands. The inland subregion also encompasses considerable ecological diversity, including mixed woodlands, coastal prairies, and dense piney woods.

The human inhabitants of Southeast Texas practiced a generally nomadic hunting and gathering lifestyle throughout all of prehistory. While many of the same labels are used to denote Southeast Texas cultural/chronological periods, the timeframe and cultural characteristics of Southeast Texas culture periods are often different than in neighboring regions. For instance, the Archaic and Late Prehistoric time periods are different in Central and Southeast Texas, and Central Texas lacks the Early Ceramic period that has been defined for Southeast Texas.

Mobility and settlement patterns do not appear to have changed markedly through time in Southeast Texas. Inland sites are usually found near a water source, usually exhibit evidence of reoccupation through time, have well-defined intrasite activity areas, tend not to be associated with satellite activity sites or separate base camps, and exhibit a range of subsistence-related activities. Inland sites also tend to contain modest pottery assemblages, fired clay balls (at some sites), abundant lithic material, and an absence of shell tools. Coastal sites tend to consist of multicomponent *Rangia* shell middens that contain oyster shell tools, large quantities of pottery (in later cultural components), numerous bone tools, and only a few lithic artifacts.

3.1 PALEOINDIAN PERIOD (10,000 TO 5000 B.C.)

The initial human occupations in the New World can now be confidently extended back before 10,000 B.C. (Dincauze 1984; Haynes et al. 1984; Kelly and Todd 1988; Lynch 1990;

Meltzer 1989). Evidence from Meadowcroft Rockshelter in Pennsylvania suggests that humans were present in Eastern North America as early as 14,000 to 16,000 years ago (Adovasio et al. 1990), while more recent discoveries at Monte Verde in Chile provide unequivocal evidence for human occupation in South America by at least 12,500 years ago (Dillehay 1989, 1997; Meltzer et al. 1997). Most archeologists presently discount claims of much earlier human occupation during the Pleistocene glacial period.

The earliest generalized evidence for human activities in Southeast Texas is represented by the PaleoIndian period (10,000 to 5000 B.C.) (Patterson 1995). This stage coincided with ameliorating climatic conditions following the close of the Pleistocene epoch that witnessed the extinction of herds of mammoth, horse, camel, and bison. Cultures representing various periods within this stage are characterized by series of distinctive, relatively large, often fluted, lanceolate projectile points. These points are frequently associated with spurred end-scrapers, gravers, and bone foreshafts.

PaleoIndian groups are often inferred to have been organized into egalitarian bands consisting of a few dozen individuals that practiced a fully nomadic subsistence and settlement pattern. Due to poor preservation of floral materials, subsistence patterns in Southeast Texas are known primarily through the study of faunal remains. Subsistence focused on the exploitation of small animals, fish, and shellfish, even during the PaleoIndian period. There is little evidence in this region for hunting of extinct megafauna, as has been documented elsewhere in North America; rather, a broad-based subsistence pattern appears to have been practiced during all prehistoric time periods.

In Southeast Texas, the PaleoIndian stage is divided into two periods based on recognizable differences in projectile point styles (Patterson 1995). These include the Early PaleoIndian period (10,000 to 8000 B.C.), which is recognized based on large, fluted projectile points (i.e., Clovis, Folsom, Dalton, San Patrice, and Big Sandy), and the Late PaleoIndian period (8000 to 5000 B.C.), which is characterized by unfluted lanceolate points (i.e., Plainview, Scottsbluff, Meserve, and Angostura).

3.2 ARCHAIC PERIOD (5000 B.C. TO A.D. 100)

The onset of the Hypsithermal drying trend signaled the beginning of the Archaic stage (5000 B.C. to A.D. 100) (Patterson 1995). This climatic trend marked the beginning of a significant reorientation of lifestyle throughout most of North America, but this change was far less pronounced in Southeast Texas. Elsewhere, the changing climatic conditions and corresponding decrease in the big game populations forced people to rely more heavily upon a diversified resource base composed of smaller game and wild plants. In Southeast Texas, however, this hunting and gathering pattern is characteristic of most of prehistory. The appearance of a more diversified tool kit, the development of an expanded groundstone assemblage, and a general decrease in the size of projectile points are hallmarks of this cultural stage. Material culture shows greater diversity during this broad cultural period, especially in the application of groundstone technology.

Traditionally, the Archaic period is subdivided into Early, Middle, and Late subperiods. In Southeast Texas, the Early Archaic period (5000 to 3000 B.C.) is marked by the presence of Bell, Carrollton, Morrill, Trinity, Wells, and miscellaneous Early Stemmed projectile points. The Bell point is the only type in this period that is closely associated with the Southern Plains. Many of the latter point types continue into the Middle Archaic period (3000 to 1500 B.C.) and several new types appear, including Bulverde, Lange, Pedernales, Williams, Travis, and probably the Gary-Kent series. The Late Archaic period (1500 B.C. to A.D. 100) is characterized by Gary, Kent, Darl, Yarbrough, Ensor, Ellis, Fairland, Palmillas, and Marcos points.

In the western part of inland Southeast Texas, a Late Archaic mortuary tradition developed in the lower Brazos and Colorado river valleys and in the intervening area (Hall 1981; Patterson 1995). Organized burial practices actually started during the Middle Archaic period but reached full development in the Late Archaic with the use of exotic grave goods such as boatstones and bannerstones (probably used as atlatl weights), stone gorgets, corner-tang knives, stingray spines, shark teeth, and marine shell beads and pendants. Other burial practices included the systematic orientation of burial direction, body position, use of red ochre, and use of locally made grave goods, such as longbone implements and bone pins. Most burials are found in extended supine position, though some extended prone and bundle burials are also known. Burial direction is usually consistent within single sites but varies from site to site. Patterson et al. (1993) report that at least 11 sites are associated with this mortuary tradition in Austin, Fort Bend, and Wharton counties.

3.3 EARLY CERAMIC PERIOD (A.D. 100 TO 600)

The use of pottery did not start uniformly throughout Southeast Texas. Pottery manufacture appears to have diffused into this region from adjacent regions, primarily from the east along the coastal margin. Aten (1983:297) argues that pottery was being manufactured on the coastal margin of the Texas-Louisiana border by about 70 B.C., in the Galveston Bay area by about A.D. 100, in the western part of the coastal margin by about A.D. 300, and in the Conroe-Livingston inland area by about A.D. 500. The practice of pottery manufacture appears to have progressed first along the coastal margin and then moved inland (Patterson 1995). Southeastern Texas ceramic chronologies are best known in the Galveston Bay area, where Aten (1983) established a detailed chronological sequence.

The earliest ceramic periods in the Galveston Bay and neighboring Sabine Lake areas appear to be approximately contemporaneous with the earliest ceramic periods of the lower Mississippi Valley (Aten 1984). Early assemblages contain substantial quantities of Tchefuncte ceramics. In the Sabine Lake region, grog-tempered varieties of Baytown Plain and Marksville Stamped are common, while grog-tempered ceramics do not occur in the Galveston Bay area 128.7 kilometers (80.0 miles) to the west until several hundred years later. With the principal exception of a few Tchefuncte ceramic types, other southern Louisiana ceramics are not found on the Gulf coast west of the Sabine Lake area.

Goose Creek sandy-paste pottery was used throughout Southeast Texas and somewhat farther north in the Early Ceramic, Late Prehistoric, and the early part of the Historic periods (Aten 1984; Patterson 1995; Pertulla et al. 1995). The Goose Creek series is the primary utility ware

throughout the prehistoric sequence in Southeast Texas, though it gives way to Baytown Plain for about 200 years during the transition between the Late Prehistoric and Historic periods before once again becoming predominant into the Historic period (Aten 1984). A minor variety, Goose Creek Stamped, occurs only in the Early Ceramic period (Aten 1983). Three other minor pottery types—Tchefuncte (Plain and Stamped), Mandeville, and O'Neal Plain *variety Conway* (Aten 1983)—were used only during the Early Ceramic period. The Mandeville and Tchefuncte types are characterized by contorted paste and poor coil wedging. Mandeville has sandy paste (like Goose Creek), while Tchefuncte paste has relatively little sand. Given their technological similarities, Mandeville and Tchefuncte may represent different clay sources rather than distinct pottery types (Patterson 1995). The bone-tempered pottery that characterizes ceramic assemblages elsewhere in Texas is not common in Southeast Texas.

3.4 LATE PREHISTORIC PERIOD (A.D. 600 TO 1500)

The onset of the Late Prehistoric period (A.D. 600 to 1500) (Patterson 1995) is defined by the appearance of the bow and arrow. Elsewhere in Texas, pottery also appears during the latter part of the Late Prehistoric period, but, as already discussed, ceramics appear earlier in Southeast Texas. Along the coastal margin of Southeast Texas, use of the atlatl (i.e., spearthrower) and spear was generally discontinued during the Late Prehistoric period, though they continued to be used in the inland subregion along with the bow and arrow through the Late Prehistoric period (Ensor and Carlson 1991; Keller and Weir 1979; Patterson 1980, 1995; Wheat 1953). In fact, Patterson (1995:254) proposes that use of the bow and arrow started in Southeast Texas as early as the end of the Middle Archaic period, using unifacial arrow points that consisted of marginally retouched flakes. In contrast, Prewitt (1981) argues for a generalized date of adoption of the bow-and-arrow hunting system at about the same time (ca. A.D. 600) in Central and Southeast Texas. In Southeast Texas, unifacial arrow points appear to be associated with a small prismatic blade technology. Bifacial arrow point types include Alba, Catahoula, Perdiz, and Scallorn. A serial sequence for these point types has not been established in Southeast Texas, though Scallorn points appear to predate Perdiz points throughout the rest of Texas.

Grog- (i.e., crushed-sherd-) tempered pottery was used in the Late Prehistoric and Protohistoric periods in Southeast Texas. The grog-tempered varieties include San Jacinto Plain and Baytown Plain *variety Phoenix Lake*. San Jacinto pottery contains a relatively small proportion of small-sized temper, while Baytown Plain has larger amounts of sherd pieces that are often visible on vessel surfaces. As previously mentioned, sandy-paste Goose Creek pottery remained in use throughout the Late Prehistoric period. Rockport Plain and Asphalt Coated pottery from the Central Texas Coast (Ricklis 1995) are found at a few sites in Southeast Texas during the Late Prehistoric and Protohistoric periods.

3.5 PROTOHISTORIC PERIOD (A.D. 1500 TO 1700)

For the most part, Protohistoric and early Historic Indian sites in Southeast Texas have not been articulated with the ethnographic record (Story 1990:258). Similarly, reconciling the ethnographic record to prehistoric Indian groups in this region is problematic. Late Prehistoric and Historic population movements further complicate this issue. Aten (1983) has reconstructed

the territories of native groups present in this region in the early 18th century, including the Akokisa, Atakapa, Bidai, Coco (possibly Karankawa), and Tonkawa. The presence of the Tonkawa in Southeast Texas may be due to their rapid expansion from Central Texas in the 17th and 18th centuries (Newcomb 1993:27). The Karankawa Indians are thought to have occupied the coastal margin of this region as far east as Galveston Island and the corresponding mainland (Aten 1983). Judging by the scarcity of Rockport pottery on sites east of the San Bernard River, the ethnic association of the Karankawa Indians with the Coco tribe may be in doubt.

Protohistoric and Historic Indian sites may not be systematically recognized as such because few aboriginal artifact types changed from the Late Prehistoric to the Historic periods (Patterson 1995). Only a few non-European artifact types are useful in identifying Historic Indian sites, including Bulbar Stemmed and Guerrero arrow points and possibly Fresno and Cuney points after A.D. 1500 (Hudgins 1986). Historic period Indian sites are usually identified by the presence of glass and metal artifacts, gunflints, and European types of pottery.

3.6 HISTORIC PERIOD (CA. A.D. 1700 TO PRESENT)

The first European incursion into what is now known as Texas occurred in 1519, when Álvarez de Pineda explored the northern shores of the Gulf of Mexico. In 1528, Álvar Núñez Cabeza de Vaca crossed South Texas after being shipwrecked along the Texas Coast near Galveston Bay; however, European settlement did not seriously disrupt native ways of life until after 1700. The first half of the 18th century was the period in which the fur trade and mission system, as well as the first effects of epidemic diseases, began to seriously disrupt the native culture and social systems. This process is clearly discernable at the Mitchell Ridge site, where the burial data suggest population declines and group mergers (Ricklis 1994), as well as increased participation on the part of the Native American population in the fur trade. By the time heavy settlement of Texas began in the early 1800s by Anglo-Americans, the indigenous Indian population was greatly diminished. The Alabama/Coushatta Indians who currently reside in Southeast Texas are migrants who were displaced from the east in the late 18th to early 19th centuries (Newcomb 1961).

Orange County was carved from Jefferson County on January 5, 1852, and its county seat was located at Madison[1]. Confusion with Madisonville prompted the name change to Orange in 1858 at the time of the town's incorporation. Orange had been known by a variety of names—Strong's Bluff, Huntley, Green's Bluff, Jefferson, and Madison. Most sources cite the orange grove planted by early settlers at the mouth of the Sabine River for explanation of the town's name. County growth centered on Orange. Because of its proximity to the Gulf and serving as gateway to Texas and the West, the city quickly developed as both a maritime and cultural center. Although only a small percentage of land was devoted to cotton farming, by 1861 over 20,000 bales of cotton were shipped from this growing port city. In 1857, the population was

[1] The following historical summary of Orange County has been adapted from TSHA (2019).

1,277, including 282 slaves and 26 freed blacks. True to its predominantly southern majority, Orange County voters supported the Democratic party in the elections just prior to the Civil War.

Orange County mustered several military units during the Civil War, including the Orange Greys and the Orange Light Guard. A nearby naval encounter in 1863, the battle of Sabine Pass, successfully halted the Union army's advance into Texas. Orange survived the war intact but was decimated only five months after the armistice, when a major hurricane hit the town on September 13, 1865. The county population in 1870 dropped to 1,255. The Texas and New Orleans Railroad, which had arrived in Orange in 1861 and then closed during the war, began operating again in 1876. Also that year, Henry Jacob Lutcher and G. Bedell Moore visited Orange from Pennsylvania and decided to open a sawmill and lumber plant. Lutcher moved to Orange the following year and began operations. The opening of the Lutcher-Moore Lumber Company began the slow but steady rebirth of the area. County population grew to 2,938 by 1880 as jobs became available in lumber and related areas, including building construction and ship-building. In 1881, C.P. Huntington brought the Southern Pacific to Orange, forming a direct route from San Francisco to New Orleans. Orange became a major rail and port center. The Opelousas or Old Spanish Trail crossed the Sabine only 16.1 kilometers (10.0 miles) north of the city. Cattle drives frequently ended at the Orange terminals. Manufacturing became a major contributor to the local economy as establishments increased from eight in 1880 to 27 in 1890, the largest percentage increase on record. The Orange Rice Mill was formed in 1901. The Yell Mill (Equitable Bag), the only mill in the world that used yellow pine shavings as a raw product, followed in 1904. That year, county population was 5,905, and expectations for the future remained high, despite the knowledge that the once abundant surrounding forests were becoming depleted. By 1900, most religious groups were represented in the county. Catholics were there during the Spanish colonial period, and Mexico required a pledge of Catholicism to obtain land grants, although most of the early American arrivals to the area were at least nominally Protestant. According to a state census of 1887, Baptist, Episcopal, Methodist, Presbyterian, and Catholic were all represented.

The discovery of oil at the Bland Well in 1913 and the Oscar Chesson Well in 1922 ushered in a new era and a new economy. The county grew to a record population high of 15,379 in 1920. That year, 32 manufacturers processed and refined oil in the county for a product total of $17,154,779, compared with the 1900 value of $1,762,161. The number of employees at local plants increased during this period from 894 in 1900 to 4,130. The Lutcher-Moore Lumber Company donated land to the city of Orange in 1916 for port expansion. Both public and private wharf space was improved and expanded. That year, the Sabine-Neches Waterway was dredged through Sabine Lake past Sabine Pass to the Gulf of Mexico, and the Port of Orange attained deep-water operations and invited the further expansion of oil operations and chemical industries.

The Great Depression marked a very difficult period for Orange County. The population remained relatively stable (15,149 in 1930 to 17,382 in 1940), but industrial establishments declined to 25 by 1930 and employed only 938 workers. By 1940, the figure had fallen further to 16 manufacturers and 527 employees. World War II and its defense needs led Orange County to a recovery. Shipbuilding, long a local staple but moribund since 1918, reached new heights. The population more than doubled to a record 40,567 in 1950, and manufacturing activity grew to 33 establishments employing 3,835 by 1947. DuPont moved to Orange in 1944 followed by Allied,

Spencer, Firestone, and Goodrich-Gulf, among other chemical and petrochemical manufacturers. Farming and ranching played a diminishing role in the county's economy. Farms produced oranges and fruits, rice, Indian corn, oats, grass, cotton wool, peas and beans, potatoes, sweet potatoes, soy beans, nursery stock, vegetables, and cattle. Crayfish, also raised commercially, were featured during the annual Gumbo Cookoff held each May. Unlike many of its neighbors in Texas and Louisiana, Orange County remained a bastion of Democratic strength throughout its history. Presidential returns from 1968 to 1992 indicated a strong Democratic plurality, with only the 1972 Nixon-McGovern election showing a GOP selection. The population of the county grew from 40,567 in 1950 to 71,170 in 1970 and 83,838 in 1980 before declining slightly to 80,509 in 1990. County population centers with 1980 population figures include Orange (23,628), Vidor (12,117), Bridge City (7,667), West Orange (4,610), and Pinehurst (3,055). Recreational facilities include boating and fishing on Lake Sabine and the museums and historic homes of the city of Orange.

4.0 ARCHIVAL RESEARCH

Prior to initiating fieldwork, Horizon personnel reviewed the THC's online *Texas Archeological Sites Atlas* (TASA) and *Texas Historic Sites Atlas* (THSA), the National Park Service's (NPS) online *National Register Information System* (NRIS), and the Texas Department of Transportation's (TxDOT) *Historic Districts & Properties of Texas* and *Historic Bridges of Texas* online databases for information on previously recorded archeological sites and previous archeological investigations conducted within a 1.6-kilometer (1.0-mile) radius of the project area. Based on this archival research, one cemetery (the Mansfield Cemetery) is located within a 1.6-kilometer (1.0-mile) radius of the project area (Table 2; Figure 5) (THC 2019; TxDOT 2019a, 2019b). The Mansfield Cemetery is located well outside of the project area and would not be disturbed as a result of the proposed undertaking. No previous cultural resources surveys have been conducted within or near the project area (THC 2019).

A review of historical aerial photographs dating from 1959 to the present and US Geological Survey (USGS) topographic maps dating from 1926 to the present indicates that no historic-age structures have stood within the project area since at least the early 20th century. One structure, apparently a domicile, is depicted a short distance to the west of the project area on USGS topographic maps dating from 1960 to 1991 and on aerial photographs dating from

Table 2. Summary of Known Cultural Resources within 1.0 Mile of Project Area

Site No./Name	Site Type	NRHP/SAL Eligibility Status[1]	Distance/Direction from Project Area	Potential to be Impacted by Project?
Cemeteries				
Mansfield Cemetery (OR-C023)	Cemetery	N/A	0.7 mile east	No

[1] *Determined eligible/ineligible* = Site determined eligible/ineligible by SHPO
Recommended eligible/eligible = Site recommended as eligible/ineligible by site recorder and/or sponsoring agency but eligibility has not been determined by SHPO
Undetermined = Eligibility not assessed or no information available

NRHP National Register of Historic Places

SAL State Antiquities Landmark

SHPO State Historic Preservation Office

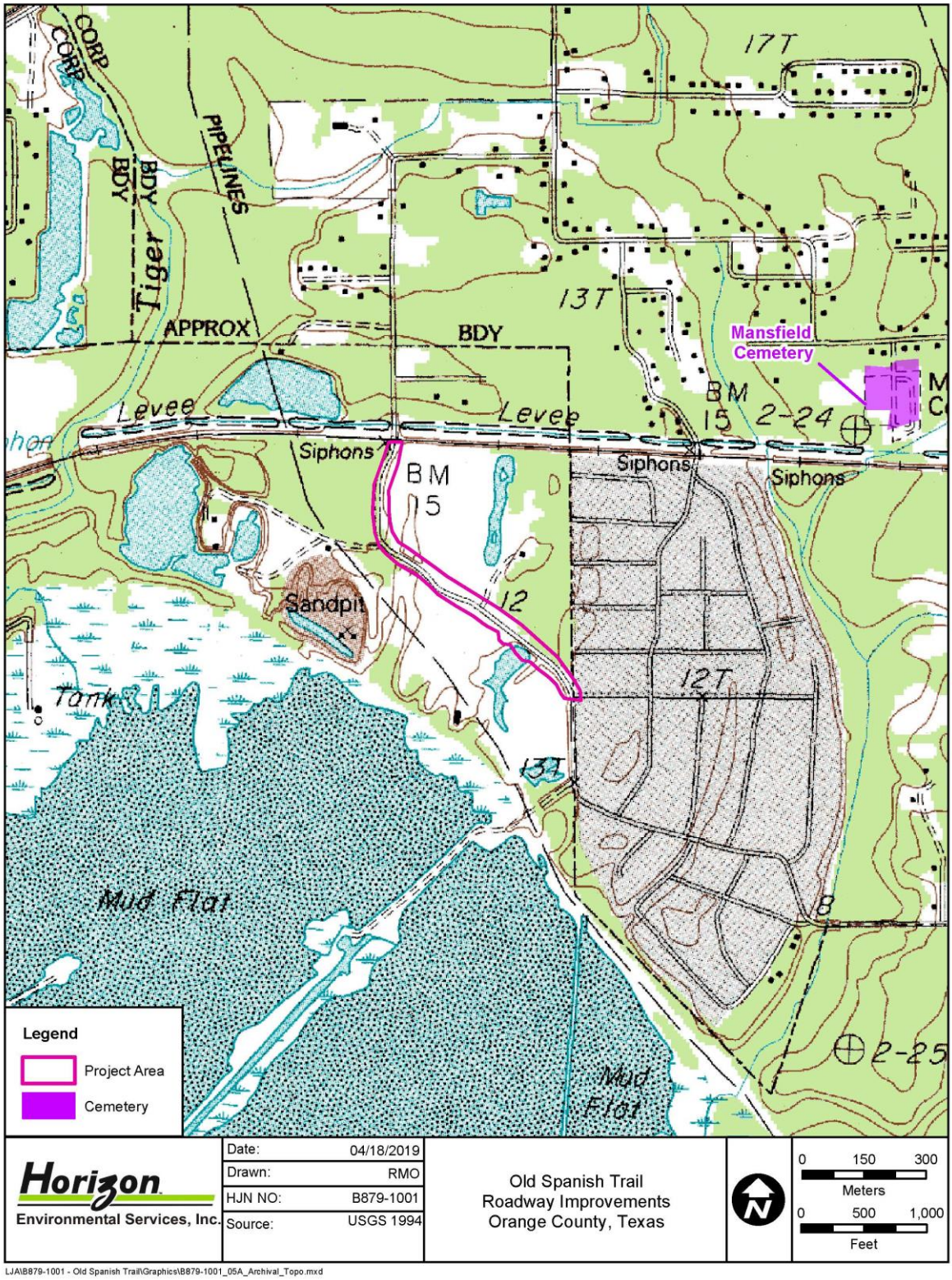

Figure 5. Known Cultural Resources within 1.0 Mile of Project Area

1959 and 1970. The structure does not appear on subsequent maps, though modern aerial imagery suggests there is a small farmstead at this location. Most of the buildings on this farmstead appear to be modern.

At the request of the client, supplemental historical research was conducted focusing on the potential relationship between the eponymously named Old Spanish Trail gravel road proposed for expansion and the Old Spanish Trail National Highway or its historical predecessors, such the El Camino Real de los Tejas, Opelousas Cattle Trail, Atascocita Road, or the Old Spanish Trail. Presented as a stand-alone memorandum in Appendix B of this report, the supplemental historical research concluded that the current gravel roadway does not appear to be associated with any of the major roads or trails historically associated with this region.

5.0 SURVEY METHODOLOGY

On April 19, 2019, Horizon archeologist Charles E. Bludau conducted an intensive cultural resources survey of the project area. The survey was conducted under the overall direction of Jeffrey D. Owens, Principal Investigator, under Texas Antiquities Permit no. 8874. The purpose of the survey was to locate any significant cultural resources that potentially would be impacted by the proposed undertaking. Horizon's archeologist traversed the tract and thoroughly inspected the modern ground surface for aboriginal and historic-age cultural resources. The existing ROW of Old Spanish Trail consists of a two-lane gravel road with no shoulders. The proposed new ROW to the east of the existing roadway consists of short-grass pastures. A large pond is present to the southwest. Visibility of the modern ground surface was typically fair to good (30 to 60%) (Figures 6 to 9).

In addition to pedestrian walkover, the Texas State Minimum Archeological Survey Standards (TSMASS) require a minimum of 16 shovel tests per mile per 30.5-meter (100.0-foot) width of proposed ROW or fraction thereof for linear projects. As such, a minimum of 16 shovel tests would be required within the 0.8-kilometer- (0.5-mile-) long by 50.0-meter- (164.0-foot-) wide project area. Horizon excavated a total of 17 shovel tests during the survey, thereby exceeding the TSMASS requirements for a project area of this size (Figure 10). Shovel tests generally measured 30.0 centimeters (11.8 inches) in diameter and were excavated to a target depth of 1.0 meter (3.3 feet) below surface, to the top of pre-Holocene deposits, or to the maximum depth practicable. In practice, shovel tests were terminated at depths ranging from 50.0 to 100.0 centimeters (19.7 to 39.4 inches) below surface due to the presence of dense, sandy clay sediments. All sediments were screened through 6.35-millimeter (mm) (0.25-inch) hardware cloth. Standard shovel test logs were completed for each shovel test describing the location, strata, soil texture and color, archeological materials (if present), and any unusual characteristics of the surrounding landscape. All sediments excavated from shovel tests were replaced in the shovel test hole upon completion of recording. The Universal Transverse Mercator (UTM) coordinates of each shovel test were determined using hand-held Garmin Foretrex or eTrex Global Positioning System (GPS) devices using the North American Datum of 1983 (NAD 83). Shovel testing typically revealed shallow to moderately deep deposits of sandy loam overlying sandy clay at depths ranging from 5.0 to 60.0 centimeters (1.9 to 23.6 inches) below surface (typically in the range of 30.0 to 60.0 centimeters [11.8 to 23.6 inches] below surface), though deep sandy sediments were observed in two shovel tests extending to a depth of 1.0 meter (3.3 feet) or more below surface. Sediments in a few than half of the shovel tests exhibited iron

Figure 6. Existing Old Spanish Trail Right-of-Way (Facing Southeast)

Figure 7. Existing Old Spanish Trail Right-of-Way (Facing Northwest)

Figure 8. Proposed New Old Spanish Trail Right-of-Way (Facing Northwest)

Figure 9. Area Between Old Spanish Trail and Large Pond (Facing Northwest)

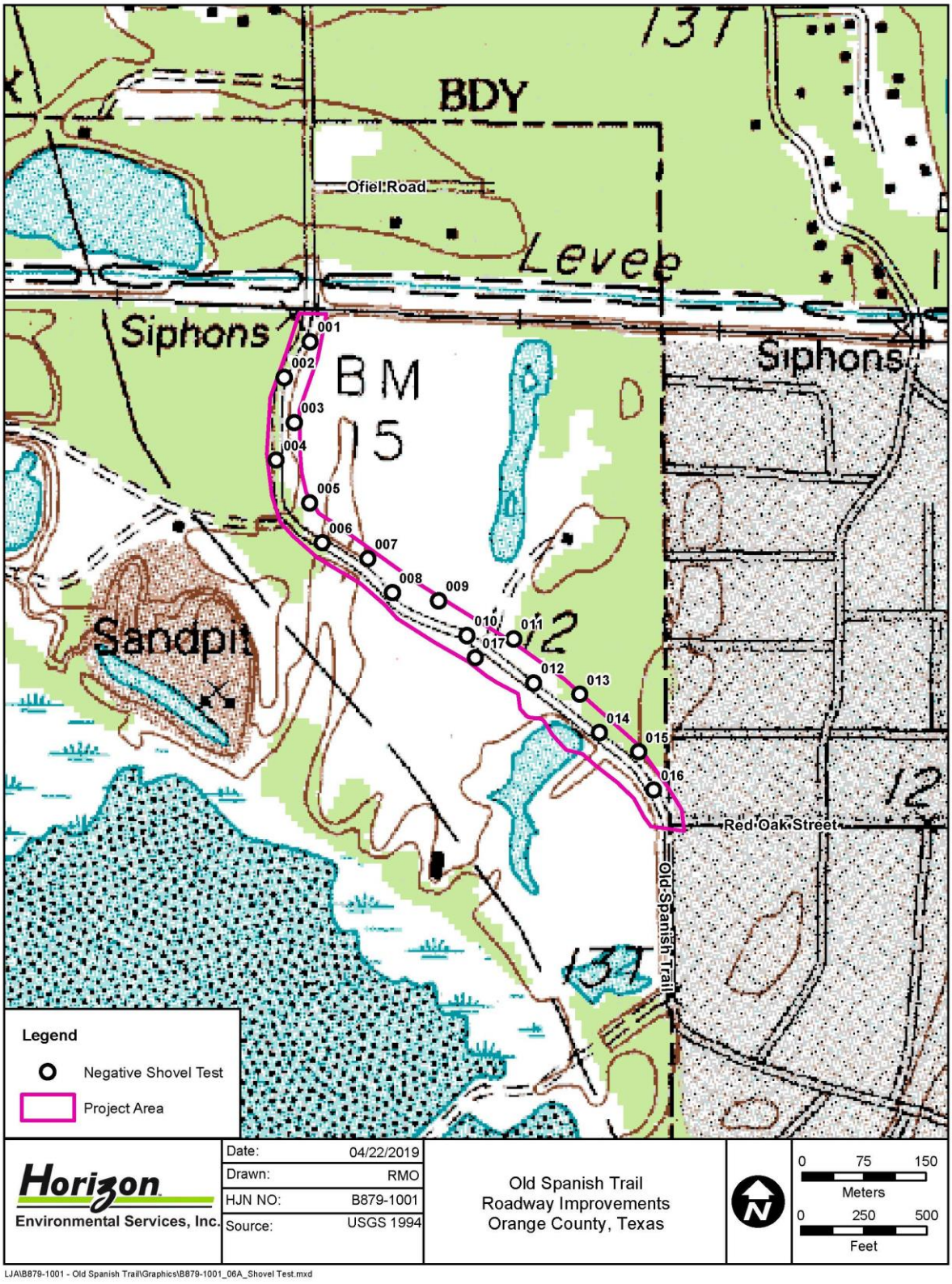

Figure 10. Locations of Shovel Tests Excavated within Project Area

staining, suggesting that the project area experiences at least seasonally, if not permanently, high water tables. It is Horizon's opinion that sediments with the potential to contain subsurface archeological deposits were fully penetrated and that the project area was adequately assessed for cultural resources. Specific shovel test data are summarized in Appendix A.

During the survey, field notes were maintained on terrain, vegetation, soils, landforms, survey methods, and shovel testing and backhoe trenching results. Digital photographs were taken, and a photographic log was maintained. Horizon employed a non-collection policy for cultural resources. Diagnostic artifacts (e.g., projectile points, ceramics, historic materials with maker's marks) and non-diagnostic artifacts (e.g., lithic debitage, burned rock, historic glass, and metal scrap) were to be described, sketched, and/or photo-documented in the field and replaced in the same location in which they were found. As no cultural materials were observed during the survey, the collection policy was not brought into play.

The survey methods employed during the survey represented a "reasonable and good-faith effort" to locate significant archeological sites within the project area as defined in 36 CFR 800.3.

6.0 RESULTS OF INVESTIGATIONS

On April 19, 2019, Horizon archeologist Charles E. Bludau conducted an intensive cultural resources survey of the project area. The survey was conducted under the overall direction of Jeffrey D. Owens, Principal Investigator, under Texas Antiquities Permit no. 8874. The purpose of the survey was to locate any significant cultural resources that potentially would be impacted by the proposed undertaking. Horizon's archeologist traversed the tract and thoroughly inspected the modern ground surface for aboriginal and historic-age cultural resources. The existing ROW of Old Spanish Trail consists of a two-lane gravel road with no shoulders. The proposed new ROW to the east of the existing roadway consists of short-grass pastures. A large pond is present to the southwest. Visibility of the modern ground surface was typically fair to good (30 to 60%) (Figures 6 to 9).

In addition to pedestrian walkover, the TSMASS require a minimum of 16 shovel tests per mile per 30.5-meter (100.0-foot) width of proposed ROW or fraction thereof for linear projects. As such, a minimum of 16 shovel tests would be required within the 0.8-kilometer- (0.5-mile-) long by 50.0-meter- (164.0-foot-) wide project area. Horizon excavated a total of 17 shovel tests during the survey, thereby exceeding the TSMASS requirements for a project area of this size. Shovel testing typically revealed shallow to moderately deep deposits of sandy loam overlying sandy clay at depths ranging from 5.0 to 60.0 centimeters (1.9 to 23.6 inches) below surface (typically in the range of 30.0 to 60.0 centimeters [11.8 to 23.6 inches] below surface), though deep sandy sediments were observed in two shovel tests extending to a depth of 1.0 meter (3.3 feet) or more below surface. Sediments in a few than half of the shovel tests exhibited iron staining, suggesting that the project area experiences at least seasonally, if not permanently, high water tables. It is Horizon's opinion that sediments with the potential to contain subsurface archeological deposits were fully penetrated and that the project area was adequately assessed for cultural resources.

No cultural resources of historic or prehistoric age were observed on the modern ground surface or within any of the shovel tests excavated within the project area during the survey.

7.0 SUMMARY AND RECOMMENDATIONS

7.1 CONCEPTUAL FRAMEWORK

The archeological investigations documented in this report were undertaken with three primary management goals in mind:

- Locate all historic and prehistoric archeological resources that occur within the designated survey area.
- Evaluate the significance of these resources regarding their potential for inclusion in the NRHP and for designation as SALs.
- Formulate recommendations for the treatment of these resources based on their NRHP and SAL evaluations.

At the survey level of investigation, the principal research objective is to inventory the cultural resources within the project area and to make preliminary determinations of whether or not the resources meet one or more of the pre-defined eligibility criteria set forth in the state and/or federal codes, as appropriate. Usually, management decisions regarding archeological properties are a function of the potential importance of the sites in addressing defined research needs, though historic-age sites may also be evaluated in terms of their association with important historic events and/or personages. Under the NHPA and the Antiquities Code of Texas, archeological resources are evaluated according to criteria established to determine the significance of archeological resources for inclusion in the NRHP and for designation as SALs, respectively.

Analyses of the limited data obtained at the survey level are rarely sufficient to contribute in a meaningful manner to defined research issues. The objective is rather to determine which archeological sites could be most profitably investigated further in pursuance of regional, methodological, or theoretical research questions. Therefore, adequate information on site function, context, and chronological placement from archeological and, if appropriate, historical perspectives is essential for archeological evaluations. Because research questions vary as a function of geography and temporal period, determination of the site context and chronological placement of cultural properties is a particularly important objective during the inventory process.

7.2 ELIGIBILITY CRITERIA FOR INCLUSION IN THE NATIONAL REGISTER OF HISTORIC PLACES

Determinations of eligibility for inclusion in the NRHP are based on the criteria presented in 36 CFR §60.4(a-d). The four criteria of eligibility are applied following the identification of relevant historical themes and related research questions:

> The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> a. [T]hat are associated with events that have made a significant contribution to the broad patterns of our history; or,
>
> b. [T]hat are associated with the lives of persons significant in our past; or,
>
> c. [T]hat embody the distinctive characteristics of a type, period, or method of construction, or that represent a significant and distinguishable entity whose components may lack individual distinction; or,
>
> d. [T]hat have yielded, or may be likely to yield, information important in prehistory or history.

The first step in the evaluation process is to define the significance of the property by identifying the particular aspect of history or prehistory to be addressed and the reasons why information on that topic is important. The second step is to define the kinds of evidence or the data requirements that the property must exhibit to provide significant information. These data requirements in turn indicate the kind of integrity that the site must possess to be significant. This concept of integrity relates both to the contextual integrity of such entities as structures, districts, or archeological deposits and to the applicability of the potential database to pertinent research questions. Without such integrity, the significance of a resource is very limited.

For an archeological resource to be eligible for inclusion in the NRHP, it must meet legal standards of eligibility that are determined by three requirements: (1) properties must possess significance, (2) the significance must satisfy at least one of the four criteria for eligibility listed above, and (3) significance should be derived from an understanding of historic context. As discussed here, historic context refers to the organization of information concerning prehistory and history according to various periods of development in various times and at various places. Thus, the significance of a property can best be understood through knowledge of historic development and the relationship of the resource to other, similar properties within a particular period of development. Most prehistoric sites are usually only eligible for inclusion in the NRHP under Criterion D, which considers their potential to contribute data important to an understanding of prehistory. All four criteria employed for determining NRHP eligibility potentially can be brought to bear for historic sites.

7.3 ELIGIBILITY CRITERIA FOR LISTING AS A STATE ANTIQUITIES LANDMARK

The criteria for determining the eligibility of a prehistoric or historic cultural property for designation as an SAL are presented in Chapter 191, Subchapter D, Section 191.092 of the Antiquities Code of Texas, which states that SALs include:

> Sites, objects, buildings, artifacts, implements, and locations of historical, archeological, scientific, or educational interest including those pertaining to prehistoric and historical American Indians or aboriginal campsites, dwellings, and habitation sites, their artifacts and implements of culture, as well as archeological sites of every character that are located in, on, or under the surface of any land belonging to the State of Texas or to any county, city, or political subdivision of the state are state antiquities landmarks and are eligible for designation.

For the purposes of assessing the eligibility of a historic property for designation as an SAL, a historic site, structure, or building has historical interest if the site, structure, or building:

1. [W]as the site of an event that has significance in the history of the United States or the State of Texas;
2. [W]as significantly associated with the life of a famous person;
3. [W]as significantly associated with an event that symbolizes an important principle or ideal;
4. [R]epresents a distinctive architectural type and has value as an example of a period, style, or construction technique; or,
5. [I]s important as part of the heritage of a religious organization, ethic group, or local society.

The Antiquities Code of Texas establishes the THC as the legal custodian of all cultural resources, historic and prehistoric, within the public domain of the State of Texas. Under Part II of Title 13 of the Texas Administrative Code (13 TAC 26), the THC may designate a historic building, structure, cultural landscape, or non-archeological site, object, or district as an SAL if it meets at least on one of following criteria:

A. [T]he property is associated with events that have made a significant contribution to the broad patterns of our history, including importance to a particular cultural or ethnic group;

B. [T]he property is associated with the lives of persons significant in our past;

C. [T]he property embodies the distinctive characteristics of a type, period, or method of construction, represents the work of a master, possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction;

D. [T]he property has yielded, or may be likely to yield, information important in Texas culture or history.

Furthermore, the THC may designate an archeological site as an SAL if the site meets one or more of the following criteria:

1. [T]he site has the potential to contribute to a better understanding of the prehistory and/or history of Texas by the addition of new and important information;
2. [T]he site's archeological deposits and the artifacts within the site are preserved and intact, thereby supporting the research potential or preservation interests of the site;
3. [T]he site possesses unique or rare attributes concerning Texas prehistory and/or history;
4. [T]he study of the site offers the opportunity to test theories and methods of preservation, thereby contributing to new scientific knowledge; or,
5. [T]he high likelihood that vandalism and relic collecting has occurred or could occur, and official landmark designation is needed to ensure maximum legal protection, or alternatively further investigations are needed to mitigate the effects of vandalism and relic collecting when the site cannot be protected.

7.4 SUMMARY OF INVENTORY RESULTS

On April 19, 2019, Horizon archeologist Charles E. Bludau conducted an intensive cultural resources survey of the project area. The survey was conducted under the overall direction of Jeffrey D. Owens, Principal Investigator, under Texas Antiquities Permit no. 8874. The purpose of the survey was to locate any significant cultural resources that potentially would be impacted by the proposed undertaking. Horizon's archeologist traversed the tract and thoroughly inspected the modern ground surface for aboriginal and historic-age cultural resources. The existing ROW of Old Spanish Trail consists of a two-lane gravel road with no shoulders. The proposed new ROW to the east of the existing roadway consists of short-grass pastures. A large pond is present to the southwest. Visibility of the modern ground surface was typically fair to good (30 to 60%) (Figures 6 to 9).

In addition to pedestrian walkover, the TSMASS require a minimum of 16 shovel tests per mile per 30.5-meter (100.0-foot) width of proposed ROW or fraction thereof for linear projects. As such, a minimum of 16 shovel tests would be required within the 0.8-kilometer- (0.5-mile-) long by 50.0-meter- (164.0-foot-) wide project area. Horizon excavated a total of 17 shovel tests during the survey, thereby exceeding the TSMASS requirements for a project area of this size. Shovel testing typically revealed shallow to moderately deep deposits of sandy loam overlying sandy clay at depths ranging from 5.0 to 60.0 centimeters (1.9 to 23.6 inches) below surface (typically in the range of 30.0 to 60.0 centimeters [11.8 to 23.6 inches] below surface), though deep sandy sediments were observed in two shovel tests extending to a depth of 1.0 meter (3.3 feet) or more below surface. Sediments in a few than half of the shovel tests exhibited iron staining, suggesting that the project area experiences at least seasonally, if not permanently, high water tables. It is Horizon's opinion that sediments with the potential to contain subsurface archeological deposits were fully penetrated and that the project area was adequately assessed for cultural resources.

No cultural resources of historic or prehistoric age were observed on the modern ground surface or within any of the shovel tests excavated within the project area during the survey.

7.5 MANAGEMENT RECOMMENDATIONS

Based on the results of the survey-level investigations documented in this report, no potentially significant cultural resources would be affected by the proposed undertaking. Horizon has made a reasonable and good-faith effort to identify historic properties within the project area. No cultural resources were identified within the project area that meet the criteria for designation as SALs according to 13 TAC 26 or for inclusion in the NRHP under 36 CFR 60.4. Horizon recommends a finding of "no historic properties affected," and no further archeological work is recommended in connection with the proposed undertaking. However, human burials, both prehistoric and historic, are protected under the Texas Health and Safety Code. In the event that any human remains or burial objects are inadvertently discovered at any point during construction, use, or ongoing maintenance in the project area, even in previously surveyed areas, all work should cease immediately in the vicinity of the inadvertent discovery, and the THC should be notified immediately.

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APPENDIX A:

Shovel Test Data

Table A-1. Shovel Test Summary Data

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
CB1	401142	3330598	0-5	10YR 4/3 sandy loam	No
			5-55	10YR 5/4 loamy sand	No
			55-70+	10YR 5/4 with 10YR 5/6 sandy clay with iron stains	No
CB2	401111	3330554	0-10	10YR 4/3 sandy loam	No
			10-35	10YR 5/4 loamy sand	No
			35-60+	7.5YR 4/6 with 10YR 5/4 sandy clay	No
CB3	401122	3330500	0-10	10YR 4/3 sandy loam	No
			10-35	10YR 5/4 loamy sand	No
			35-60+	7.5YR 4/6 with 10YR 5/4 sandy clay	No
CB4	401101	3330454	0-10	10YR 4/3 sandy loam	No
			10-35	10YR 5/4 loamy sand	No
			35-60+	7.5YR 4/6 with 10YR 5/4 sandy clay	No
CB5	401141	3330403	0-10	10YR 4/3 sandy loam	No
			10-60	10YR 5/4 loamy sand	No
			60-80+	10YR 5/4 with 10YR 5/6 sandy clay	No
CB6	401157	3330354	0-5	10YR 4/3 sandy clay	No
			5-50+	7.5YR 4/6 with 10YR 5/4 sandy clay	No
CB7	401212	3330335	0-5	10YR 4/3 sandy clay	No
			5-50+	7.5YR 4/6 with 10YR 5/4 sandy clay	No
CB8	401241	3330294	0-5	10YR 4/3 sandy clay	No
			5-50+	7.5YR 4/6 with 10YR 5/4 sandy clay	No
CB9	401298	3330284	0-30	10YR 4/3 sandy loam with iron	No
			30-60+	10YR 7/2 with 10YR 5/8 sandy clay with iron stains	No
CB10	401332	3330242	0-10	10YR 4/3 sandy loam	No
			10-55	10YR 4/4 sand	No
			55-70+	Wet 10YR 4/2 sandy clay	No
CB11	401388	3330238	0-10	10YR 4/3 sandy loam	No
			10-70	10YR 4/4 sandy loam	No
			70-100+	10YR 5/2 sand	No
CB12	401413	3330184	0-10	10YR 4/3 sandy clay	No
			10-50+	10YR 4/6 with 10YR 5/8 sandy clay with iron stains	No

Table A-1. Shovel Test Summary Data (cont.)

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
CB13	401468	3330171	0-10	10YR 4/3 sandy clay	No
			10-50+	10YR 4/6 with 10YR 5/8 sandy clay with iron stains	No
CB14	401492	3330124	0-5	10YR 4/3 sandy loam	No
			5-100	10YR 4/4 sandy loam	No
CB15	401539	3330101	0-5	10YR 4/3 sandy loam	No
			5-100+	10YR 4/4 sandy loam	No
CB16	401558	3330055	0-5	10YR 4/3 sandy loam	No
			5-70	10YR 4/4 sandy clay	No
			70-100+	Wet 10YR 4/2 sand	No
CB17	401342	3330215	0-40	10YR 4/4 sandy loam	No
			40-60+	10YR 4/6 with 10YR 5/8 sandy clay with iron	No

[1] All UTM coordinates are located in Zone 15 and utilize the North American Datum of 1983 (NAD 83).

cmbs = Centimeters below surface

ST = Shovel test

UTM = Universal Transverse Mercator

APPENDIX B:

Supplemental Historical Research

Supplemental Historical and Archival Research
Old Spanish Trail Roadway Improvements Project
Orange County, Texas

By Eugene Foster

The Orange County Road and Bridge Department is proposing to relocate/expand a 853.4-meter-(2,800.0-foot-) long segment of county-owned roadway known as Old Spanish Trail (OST) in western Orange County, approximately 2.4 kilometers (1.5 miles) east of Rose City and 3.2 kilometers (2.0 miles) south-southeast of Vidor, Texas (Figure B-1). The subject portion of the current OST roadway meanders along the northeastern bank of a man-made lake that is eroding at a rate sufficient to threaten the long-term stability of the public roadway. The county's proposed relocationexpansion project would be designed and constructed entirely with local bond funding with LJA Engineering, Inc. (LJA) providing professional engineering design services and Horizon Environmental Services, Inc. (Horizon) providing environmental permitting support. The goal of Horizon's archival research was to confirm whether the current OST roadway is or was directly associated with The Old Spanish Trail National Highway or its historical predecessors, the Old Spanish Trail, Atascosita-Opelousas Road, or the La Bahia route of El Camino Real de los Tejas. This memorandum documents Horizon's research results, assessments, and recommendations based on its interpretation of the archival data obtained from primary and secondary source documents.

Horizon's research approach initially focused on Orange County real property records, specifically real property records for three tracts encompassing the current OST roadway. Horizon reviewed the deed and plat records as well as surveyor's metes-and-bounds descriptions for those property tracts, searching for references to older roadways that may correlate with the current OST roadway. Horizon extended its property history research to include Spanish-era, Mexican-era, and Republic of Texas-era property records archived at the Texas General Land Office (GLO). A second line of research focused on historical maps illustrating the routes of roads, trails, and highways passing near the project vicinity from the Spanish Colonial era to the present. A third line of research focused on the Old Spanish Trail National Highway, its origins, and its geographic relationship to the current OST roadway.

Briefly summarized, the current OST roadway alignment does not appear to correlate directly with any of several major roads and trails historically associated with Orange County and the project vicinity. Instead, the current OST roadway appears to have originated as part of a peripheral network of unimproved roads and trails that branched from or crossed the primary east-to-west oriented roadway known variously over time as the Old Spanish Trail National Highway, the Old Spanish Trail, the Atascosita-Opelousas Road, and the La Bahia Road or lower route of El Camino Real de los Tejas. A wide variety of historical sources and maps from the Spanish Colonial era to the 20th century identify a major east-to-west trail or road located north of the current OST project area. The earliest records identify the road as the Opelousas Road, an eastward extension of the Atascosita Road. French Colonial traders, Spanish Colonial missionaries, and subsequent American colonists continued using the old trail or road that crossed the Neches at Tevis Bluff (later Beaumont) on its way to Ballou's Ferry on the Sabine River. Over time, the Opelousas Road became known as the old Spanish Trail, which provided

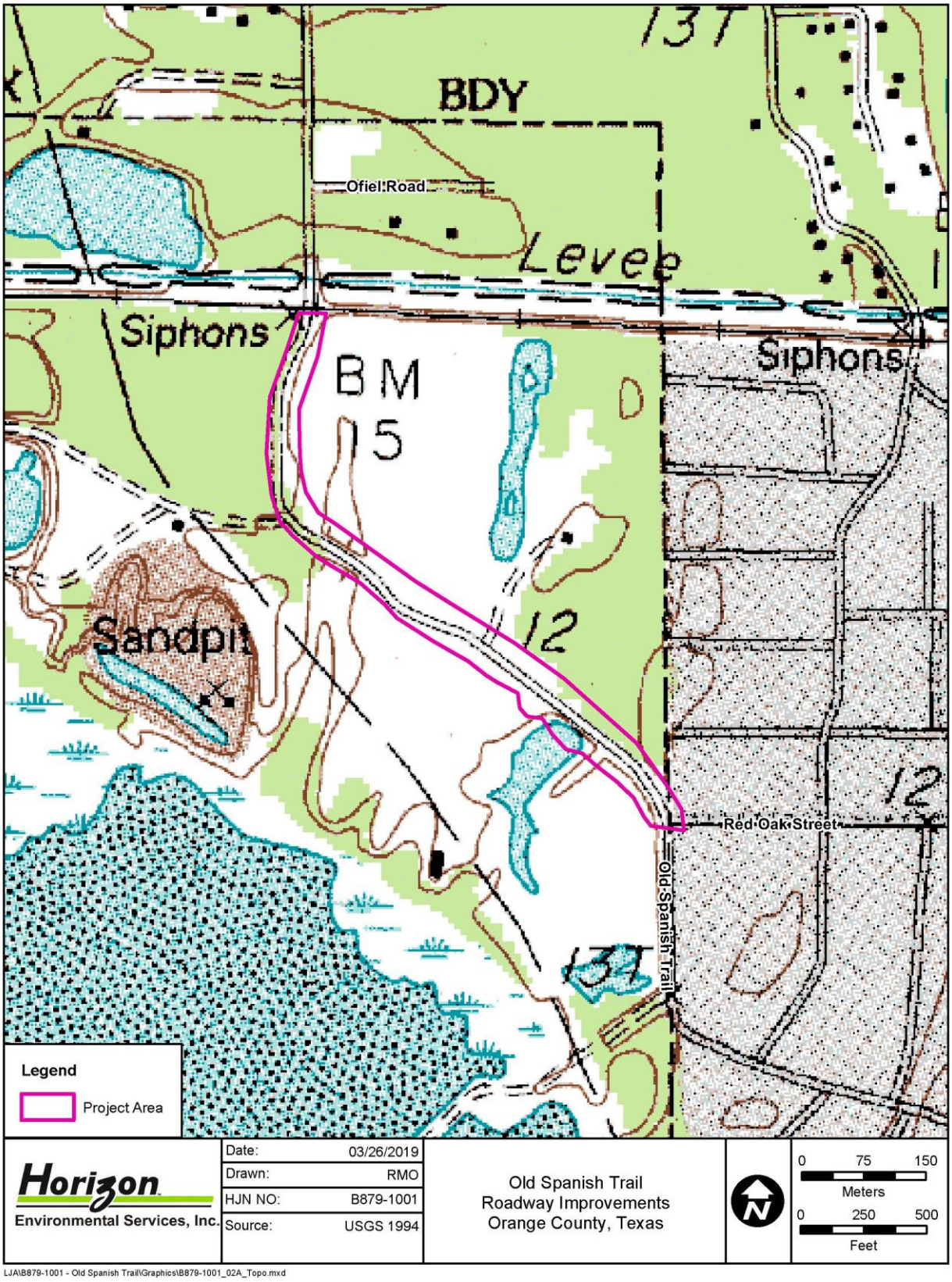


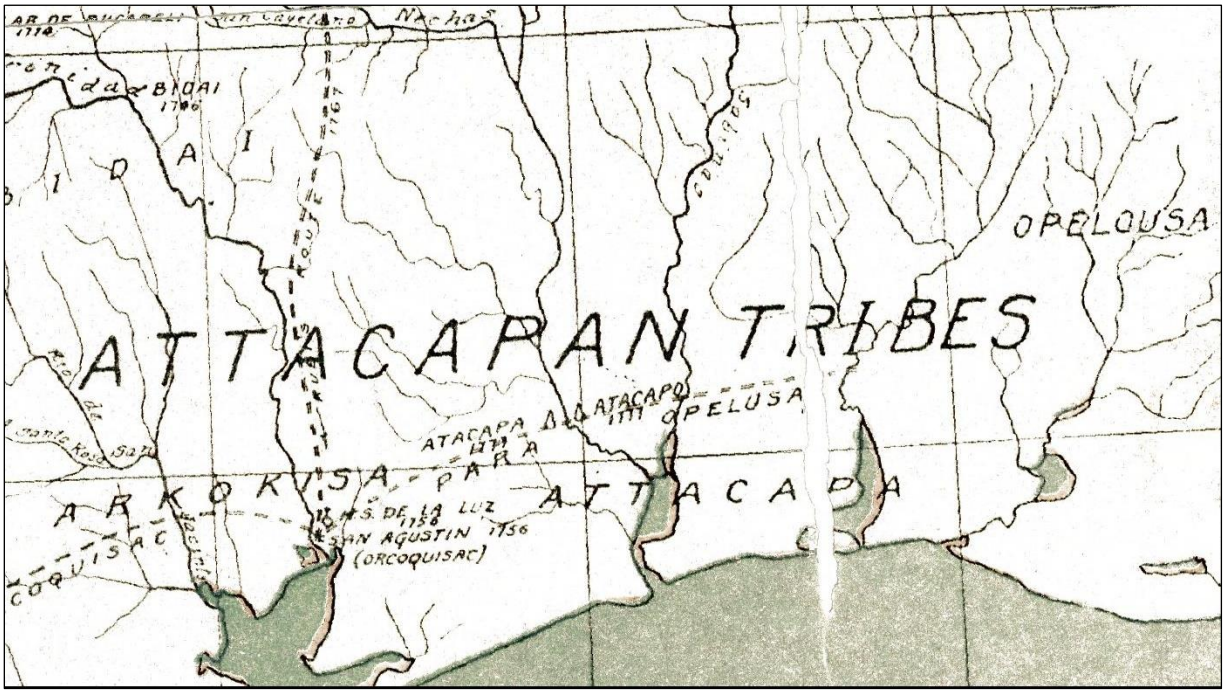
Figure B-1. Project Location

the conceptual basis for an early nation-wide automotive highway—the Old Spanish Trail or Southern National Highway. A variety of sources provide more specific evidence of the current OST roadway as early as 1838, when the county surveyor recorded the Road to Jasper along the northern boundary of the Gilbert Stephenson Survey at or near the current OST roadway crossing, with subsequent maps of the area showing local roads crossing the Texas and New Orleans Railroad on their way south around G. Stephenson's swamp tracts on the way to places like Duncans Woods and the Mansfield Ferry on the east bank of the Neches River.

Historical Background

Prehistory—Findings of Clovis points and spearheads provide evidence that the area was occupied 12,000 to 15,000 years ago. By the historic-contact period, Native Americans in the area were Atakapan Indians. These early inhabitants left shell remains of houses and burial mounds. Much evidence has been gleaned from these sources indicating a hunting, gathering, and fishing culture. By the late 19th century, little besides their mounds remained, and by 1908 the population had dwindled to nine known Atakapans in the area (TSHA 2019d). Figure B-2 depicts the Atakapan Tribes east of Orcoquisac on the Trinity River and a major trail crossing the Neches and Sabine rivers on the way to the Opelousas territory in Louisiana.

European Colonial Era—The coastal region that includes the project area was highly contested during European colonization of the New World. Alonso Álvarez de Pineda came to the area under the Spanish flag in 1519 to map the coastline. He named the Sabine River (San Francisco de Sabenas) after the cypress trees he found. Between 1685 and 1687, René Robert Cavalier, Sieur de La Salle's ill-fated expedition in search of the Mississippi River ended with



Source: Foster et al. (2006)

Figure B-2. Map of Texas in the 18th Century

LaSalle falling victim to hostility within his own party somewhere east of the Trinity River, possibly as far east as the Neches River (Stratton 1925; TSHA 2019c).

To address the French incursions, the Spanish established a number of missions throughout the region. By 1718, numerous French traders had crossed the Sabine and were freely operating in the region. Relations were generally peaceful, and France ceded the area to Spain in 1763 at the Treaty of Paris. Louisiana was returned to Napoleon in 1800, and he promptly resold it to the US in 1803. Thereafter, border disputes between Spain and the US continued until the Adams-Onís Treaty was signed in 1819, fixing the western border of the US at the mouth of the Sabine River (TSHA 2019d).

Movement through the region generally followed well established trails and roads dating from prehistoric times. The La Bahía Road, also known as Lower Road (meaning the lower major branch of the El Camino Real de los Tejas) was originally an east-to-west Indian trail that connected Atakapan or Akokisa villages in southeastern Texas to the Opelousas settlement in southwestern Louisiana during prehistoric times. The portion of the road west of the Neches River was identified by the Spanish and subsequent Mexican Republic-era colonists as the Atascosita Road. The eastern extension of that trail extended into southwestern Louisiana and was known as the Opelousas Road. This early historic-period route was presumably known as early as 1690, when it was traveled by Alonso De León (TSHA 2019c). Most historical accounts agree that the Opelousas Road, later called the Old Spanish Trail, extended from Beaumont (formerly Tevis Bluff) on the Neches River to Ballou's ferry crossing on the Sabine River about 16.1 kilometers (10.0 miles) north of present-day Orange, Texas (TSHA 2019b).

Republic of Mexico Era—Seeking to populate the area, the newly established Republic of Mexico sought to increase settlement in the region by appointing *empresarios*, such as Stephen F. Austin and Lorenzo de Zavala, who were authorized by the Mexican State of Coahuila and Texas to award generous land grants to immigrant Anglo-American and other European settlers. Lorenzo de Zavala was authorized in 1829 to settle 500 families on a large tract of land between the lower Sabine and Neches rivers. A number of early Republic of Mexico-era land grants were issued to incoming settlers from de Zavala's headquarters in Nacogdoches before he transferred his interest in the grants to the Galveston Bay and Texas Land Company in 1830. Among those Mexican-era land grants was a one-half league tract, approximately 896.0 hectares (2,214.0 acres), granted to Noah Tevis along the Neches River in 1835. The settlement was then called Tevis Bluff and later became the town of Beaumont (Stratton 1925).

Figures B-3 and B-4 show the Atascosita Road west of "Tivis's ferry" on the Neches River and the "Camino a las Opelousas," or Opelousas Road, extending east from the Neches River into Louisiana. Figure B-5, published in 1834, shows Lorenzo de Zavalla's Mexican Republic-era colony boundaries between the Neches and Sabine rivers. Figure B-6, published just a few years later, shows the original boundaries of Jefferson County as it was established under the Republic of Texas in 1837 and before Orange County was created in 1852. The "Altascasetto Road" is shown on this map crossing the Neches River at "Tivis" ferry on its way eastward to Ballou's Ferry on the Sabine River.

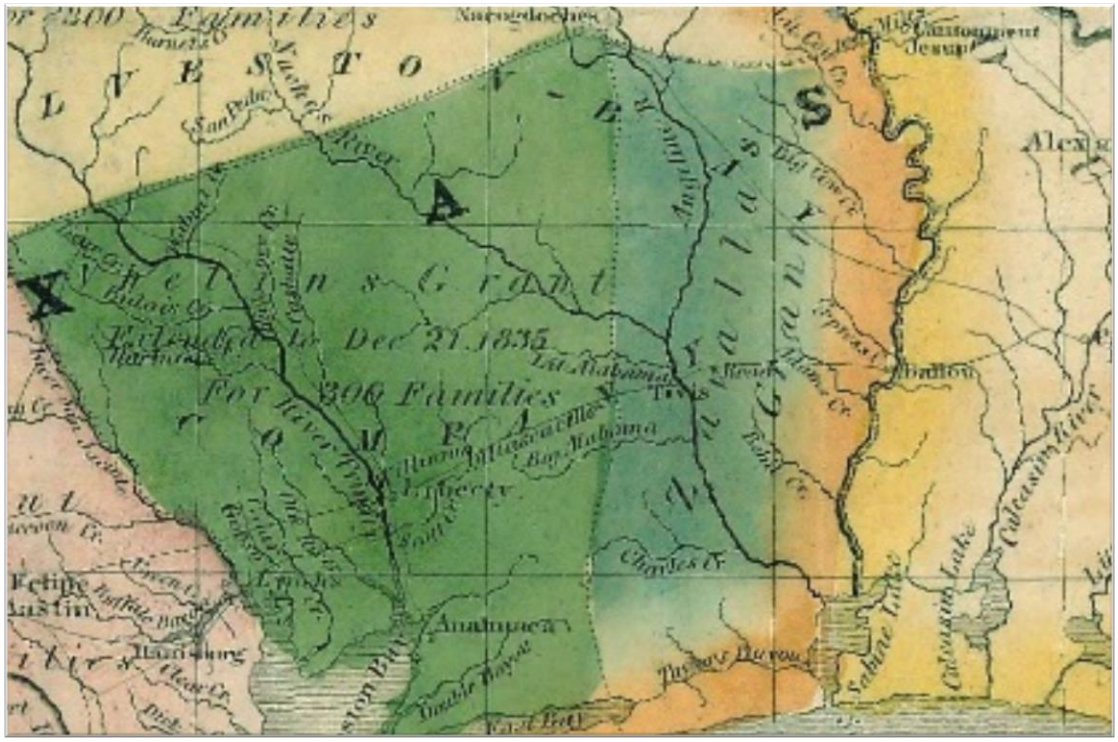
Republic of Texas Era—Beaumont was incorporated as a town on December 16, 1838, and its first elected officials were sworn into office on August 8, 1840. In 1839, the members of the town site company—Nancy Tevis, Joseph Grigsby, and the Pulsifer Company—subdivided

Source: Foster et al. (2006)

Figure B-3. Memorandum [for Map of Texa]s (1827)

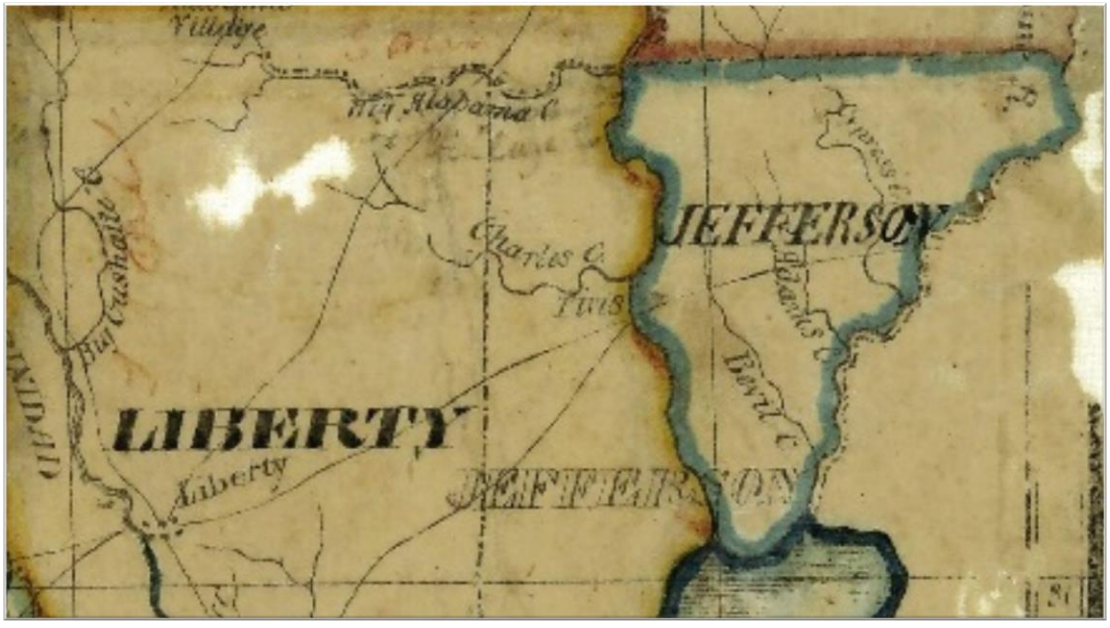
Source: Foster et al. (2006)

Figure B-4. Mapa Original de Texas por el Ciudadano Estevan F. Austin Presentado al Exmo. Sor. Presidente por su Autor (1829)



Source: Foster et al. (2006)

Figure B-5. Texas (1834)



Source: Foster et al. (2006)

Figure B-6. Map of the Republic of Texas (1837)

the town, designating the personal property of each of the three members in the deed of partition. Additionally, certain tracts of land were designated for "public roads and commons," with the partition deed stating:

> And the said parties of the three parts do hereby covenant and agree that all streets, commons, lots of ground within the limits of the said town of Beaumont…are hereby given, granted, released and forever quitclaimed into the corporation of the town of Beaumont…for the purposes of said streets, highways, and commons of said town and shall be forever kept open for the free use of the citizens thereof (Stratton 1925).

Figure B-7 shows Beaumont at the juncture of four roadways within Noah Tevis' grant, one of which crosses the Neches River at Tevis' Ferry and extends east through Gilbert Stephenson's land grant. As the only major road crossing the Neches River from Beaumont, this route seems to correlate well with the roadway identified more than a century earlier by Stephen F. Austin and others as the Atascosita-Opelousas Road.

American-era—As described by historian W.T. Block, the Opelousas Trail retraced or ran parallel to the Old Spanish Trail and was used as a trail for cattle drives as early as 1779 when

Source: GLO (2019b)

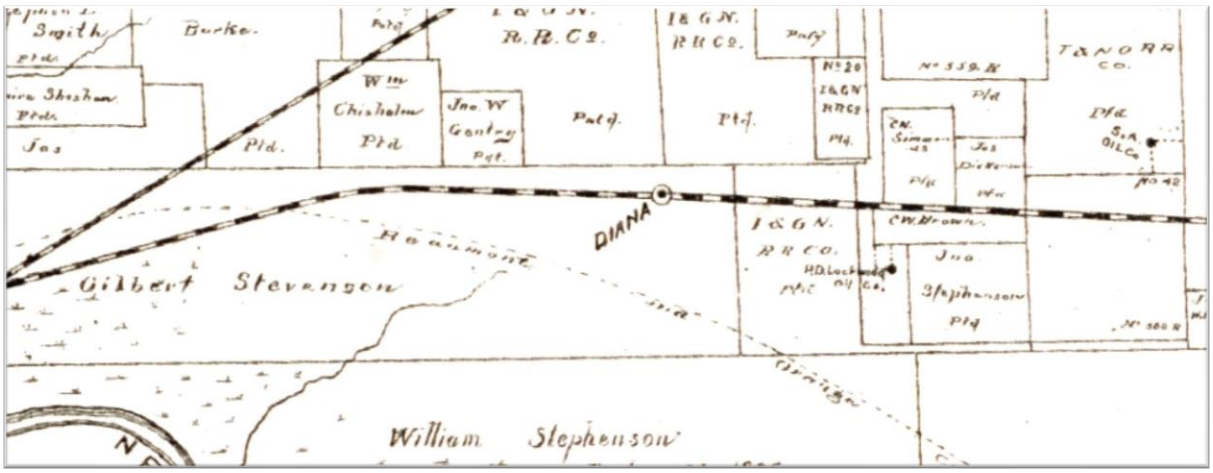
Figure B-7. Map of Jefferson County (1840)

Francisco Garcia left San Antonio with 2,000 steers bound for beef-hungry New Orleans (Block 1975). By 1861, the Texas and New Orleans (T&NO) Railroad arrived, connecting Beaumont to New Orleans. Though the T&NO Railroad ceased operations during the Civil War, Beaumont on the Atascosito-Opelousas Road or Old Spanish Trail continued to serve as a major waypoint for cattle drives from Texas to New Orleans. After the war, the T&NO Railroad resumed operations and Beaumont's history as a cattle town faded away.

By 1881, the Southern Pacific Railroad acquired and integrated the former T&NO Railroad into its nationwide railway from San Francisco to New Orleans. By 1897, the Kansas City Southern Railroad also extended its system to Beaumont. Figures B-8 and B-9 illustrate the east-to-west route of the T&NO/Southern Pacific Railroad through the "Stevenson" (sic) survey and the Kansas City Southern Railroad branching to the northeast.

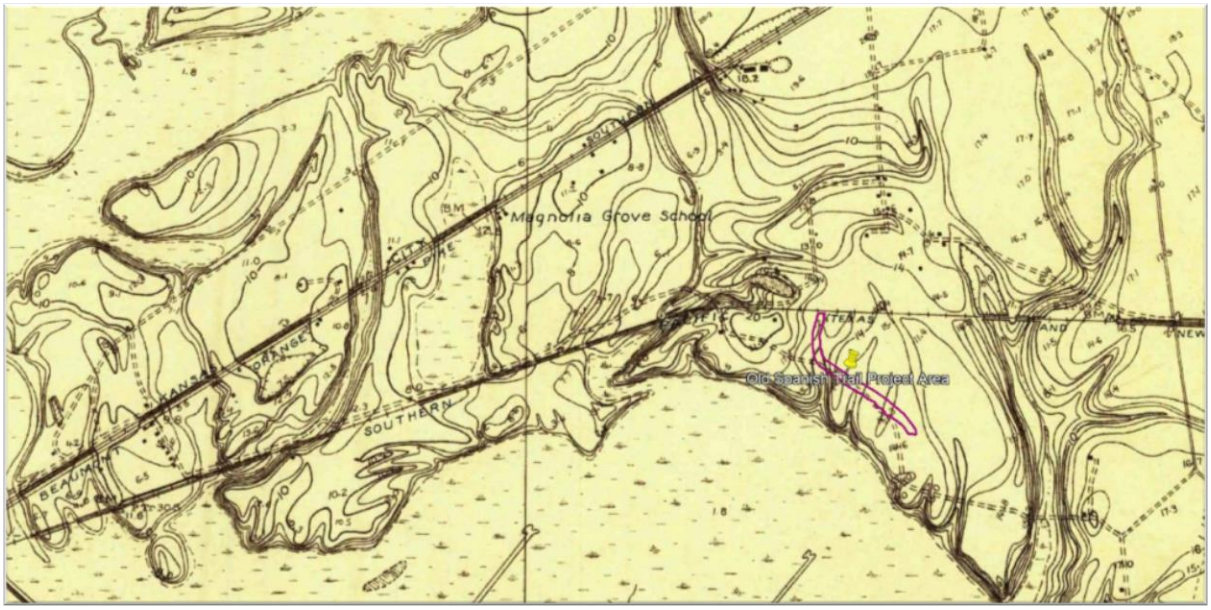
As automotive transportation technology and roadways developed across the nation in the early 20th century, the Good Roads movement promoted much needed improvement and expansion of the nation's automotive highways. Among the earliest national-scale highway projects was the Old Spanish Trail or Southern National Highway. The Old Spanish Trail Highway was envisioned by the Old Spanish Trail Association in 1915 as a southern transcontinental highway. In 1919, the group established headquarters at the Gunter Hotel in San Antonio. By 1929, the highway was completed, running from St. Augustine, Florida, across the southern US to San Diego, California. The Texas portion of the road began at the southwestern Louisiana border near Orange and passed through Beaumont, Houston, and San Antonio on its route to El Paso (Figure B-10). The Old Spanish Trail Association publicized the route to local communities and tourists and had distributed 83,000 maps and travel service booklets by August 1926 (THC 2019).

Close examination of Figure B-8 shows the unimproved Hammond-Orange Road extending southeast across the Stephenson survey as well as the main Beaumont to Orange



Source: Foster et al. (2006)

Figure B-8. Stark's Map of the oil Field Comprising Orange and Jefferson Counties, Texas, and Calcasieu and Cameron Parishes, Louisiana (1901)

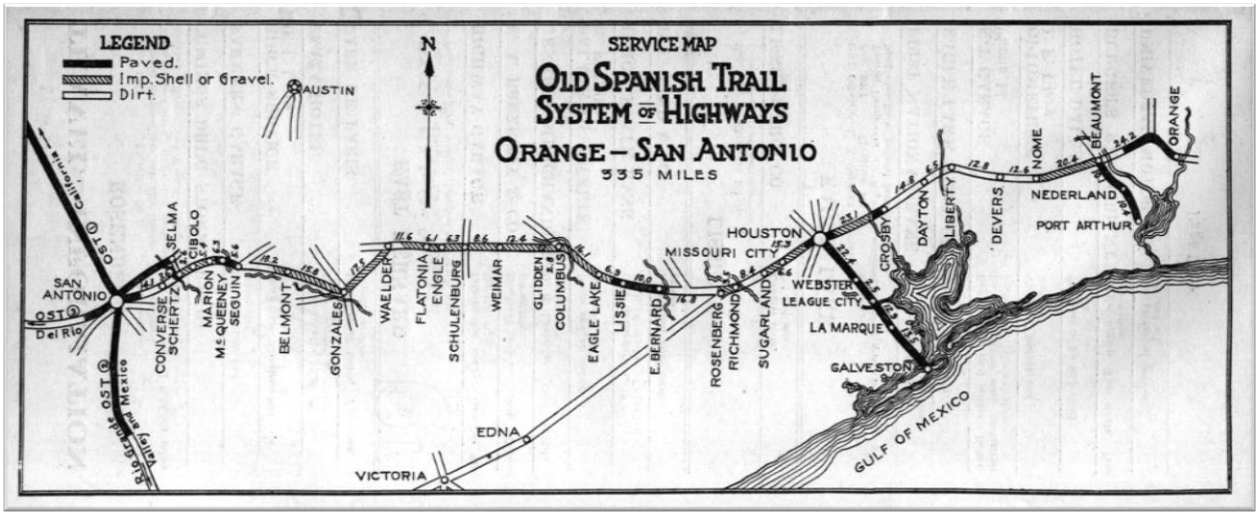


Source: USGS (1926)

Figure B-9. Location of Project Area on Vidor, Texas, USGS Topographic Map (1926)

Road running northeast along the Kansas City-Southern Railroad route. Figure B-9 shows an unimproved road or trail that crosses the Kansas City-Southern Railroad near the lower left corner of the image, which then follows the northern side of the Southern Pacific/T&NO Railroad before crossing the railroad and meandering southeast around the edge of a large marsh and into the proposed Old Spanish Trail project area.

However, the use of named highways was sometimes confusing, prompting the Texas Highway Commission to adopt a numbered system for its state highways. For example, the



Source: OST100 (2019)

Figure B-10. Old Spanish Trail System of Highways, Orange-San Antonio, 535 Miles

highway route known as the Old Spanish Trail/Southern National Highway from Beaumont to Orange did not follow the similarly named route of the Old San Antonio Road from San Antonio to Nacogdoches (TSHA 2019a). As a numbered highway, the Old Spanish Trail/Southern National Highway was first designated State Highway (SH) 3 but was later renamed SH 27 and again later as SH 90.

Figure B-10 shows the primary route of the Old Spanish Trail Highway between Orange and Beaumont circa 1930 as well as a lateral branch from Beaumont to Port Arthur along the western side of the Neches River. Notably, no similar branches are shown along the eastern side of the Neches River in the vicinity of the current OST roadway project area.

The Texas GLO maintains original documents documenting Gilbert Stephenson's arrival in Texas in 1828, his award of 1st-Class Headright Certificate No. 64, an 1834 order to survey Stephenson's grant, the surveyor's field notes, and the date his grant was finally patented on 11 December 1841 (Figure B-11). The survey order refers to a *sitio* (one league) of land in Zavala's Grant to be selected by Gilbert Stephenson. As selected by Stephenson and surveyed by Benjamin Hart in 1838, the Gilbert Stephenson survey was laid out as a long lot fronting on the east bank of the Neches River and extending eastward toward the Sabine River. Hart's Field Notes of 1838 refer to an intersection with the "Jasper Road" along the Gilbert Stephenson's northern boundary, 3202 varas (8,894.5 feet) west of the northeastern corner of Gilbert Stephenson's league (Figure B-12). Correlation of current the GLO's GIS Map Viewer (GLO 2019) and Google Earth's January 2018 imagery places the northeastern corner of the G. Stephenson Survey, as indicated on Figure B-13, and the current "Old Spanish Trail" 2,713.0 meters (8,901.0 feet) west along G. Stephenson's northern boundary line, within approximately 3.0 meters (10.0 feet) of Hart's 1838 field note reference to the Jasper Road intersection.

Texas General Land Office Land Grant Records
Survey Name: **Gilbert Stevenson**
Grantee Name: **Stevenson, Gilbert**
Abstract: **167**
Original Acres: **4428.40 (1 league)**
Patent Information
Patentee Name: **Stevenson, Gilbert**
District: **Jefferson**
Classification: **Jefferson 1st**
File Number: **000007**
Patent Date: **11 Dec 1841**
Certificate: **64**
Patent Number: **703**
Patent Volume: **1**
Page: **738**

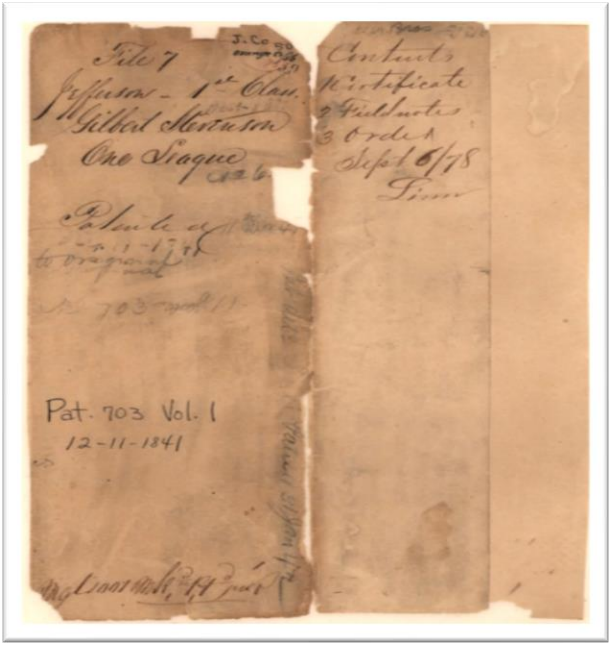
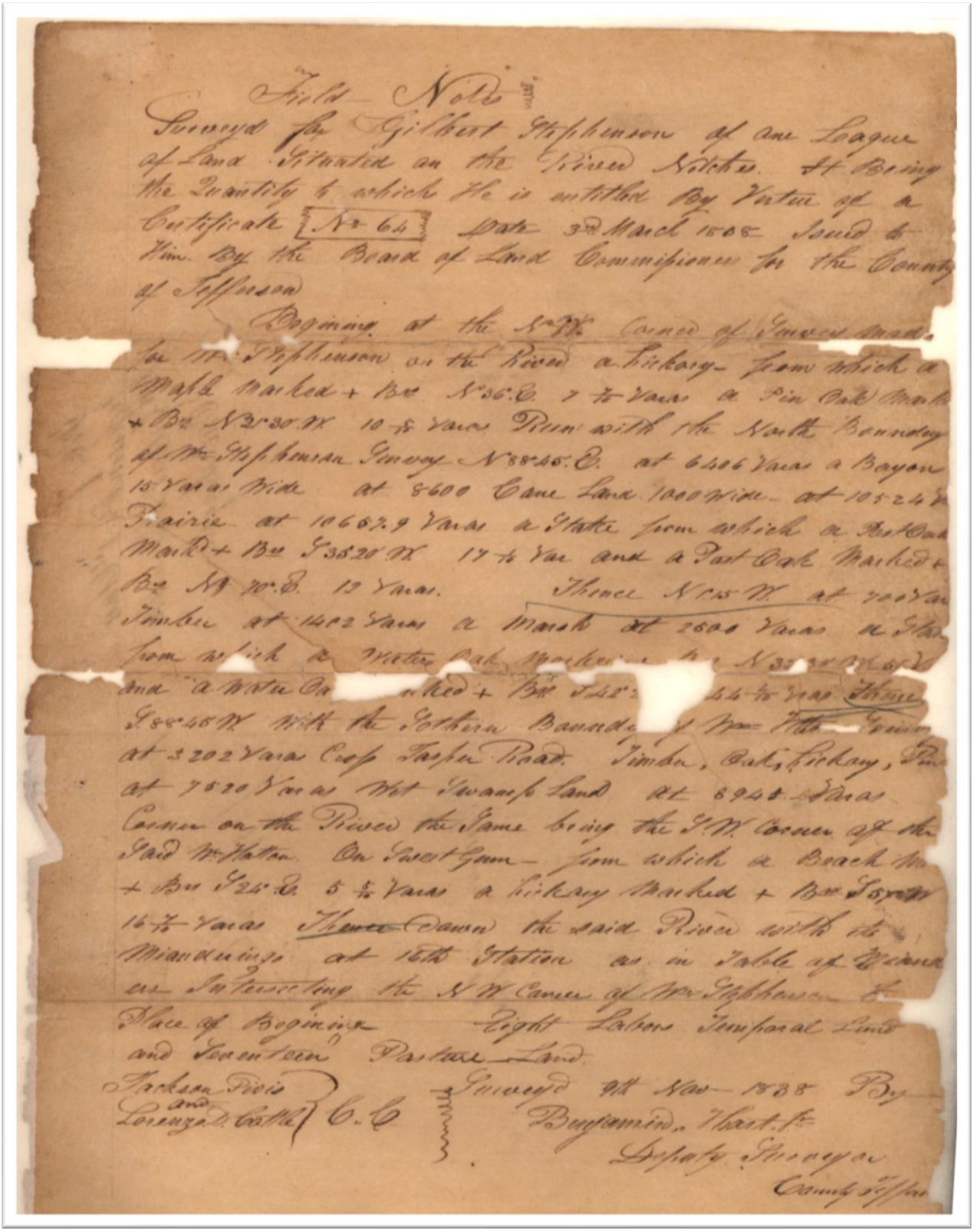


Figure B-11. GLO Texas Gilbert Stephenson File Certificate 64, Abstract 167



Field Notes

Surveyed for Gilbert Stephenson of one League of Land Situated on the Sabine River. It Being the Quantity to which He is entitled By Virtue of a Certificate [No 64] Date 3rd March 1838 Issued to Him By the Board of Land Commissioners for the County of Jefferson

Beginning at the S.W. Corner of Survey made for Mr. Stephenson on the River a Pickery from which a Maple Marked + Brs S 36 E 7 ½ Vrs a Pin Oak Mark + Brs S 2 W 10 ½ Vrs Runs with the North Boundary of Mr. Stephenson Survey N 88 45 E at 6406 Vrs a Bayou 15 Vrs Wide at 8600 Cane Lake 1000 Wide at 10524 Vrs Prairie at 10607.9 Vrs a Stake from which a Post Oak Mark + Brs S 35 W 17 ½ Vrs and a Post Oak Marked + Brs S 89 W 12 Vrs. Thence N 0 15 W at 7202 Vrs Timber at 1402 Vrs a Mark at 2800 Vrs a Stake from which a Water Oak Marked + Brs N 35 W 6 Vrs and a Water Oak Marked + Brs [illegible] ½ Vrs Thence S 88 45 W with the Northern Boundary of Mr. Stephenson Survey at 3202 Vrs Cross Jasper Road. Timber, Oak, Pickery, Pine at 7020 Vrs Wet Swamp Land at 8948 Vrs a Corner on the River the Same being the S.W. Corner of the said Mr. Hatton. On Sweet Gum from which a Beech Mk + Brs S 24 E 8 ½ Vrs a Pickery Marked + Brs S 57 W 16 ½ Vrs Thence Down the said River with its Meanderings at 16th Station as in Table of Distances Intersecting the S.W. Corner of Mr. Stephenson & Place of Beginning Eight Labors Timbered Land and Fourteen Pasture Land.

Jackson Davis and Lorenzo D. Castle } C. C

Surveyed 9th Nov 1838 By
Benjamin F. Hart
Deputy Surveyor
County of Jefferson

Source: GLO (2019)

Figure B-12. Surveyor's Field Notes, G. Stephenson Survey, Jefferson County, Texas

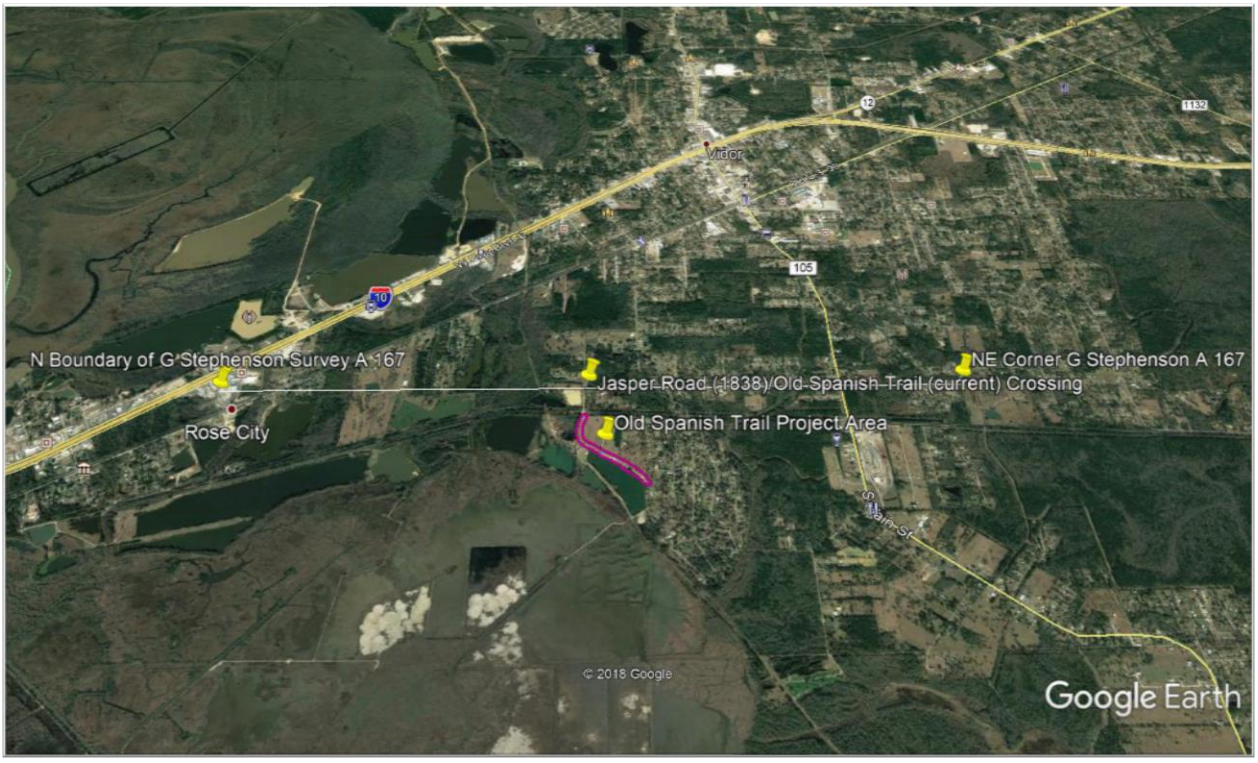


Figure B-13. Jasper Road (1838) and Old Spanish Trail (Current) crossing on Northern Boundary of G. Stephenson Survey (Google Earth Aerial Imagery)

Orange County Property Records

Following Gilbert Stephenson's death in 1882, his original land grant was divided into two sets of seven subdivided tracts, with one set designated as the "dry" or "high" tracts and the other set as the "swamp" tracts (Figure B-14). Among Gilbert Stephenson's many heirs, his daughter Louisa Adcock received Division 3 of the Stephenson Estate swamp tracts (OROPR, Vol. H, page 375), a 91.5-hectare (226.0-acre) tract that encompasses the current OST project area. By 1932, a meandering, unimproved roadway is depicted on the US Geological Survey (USGS) Beaumont, Texas, 1:62,000 topographic quadrangle at a location that correlates in part with the alignment of the current OST roadway (Figure B-15). An unimproved road that correlates with the current OST roadway is depicted on a 1961 Tobin Property ownership map within N.N. Adcock's 91.5-hectare (226.0-acre) tract (Figure B-16). Google Earth's 2018 aerial photo imagery (Figure B-17) indicates that a large lake has been created along the southwestern edge of the OST roadway in recent years, while the remainder of Louisa Adcock's 91.5-hectare (226.0-acre) swamp tract appears to have remained in agricultural use for more than 100 years. Current Orange County tax appraisal district records (Figure B-18) indicate that Adcock's portion of her father's original land has remained largely intact with only limited subdivision of the property among a few apparently related heirs of the Davis family.

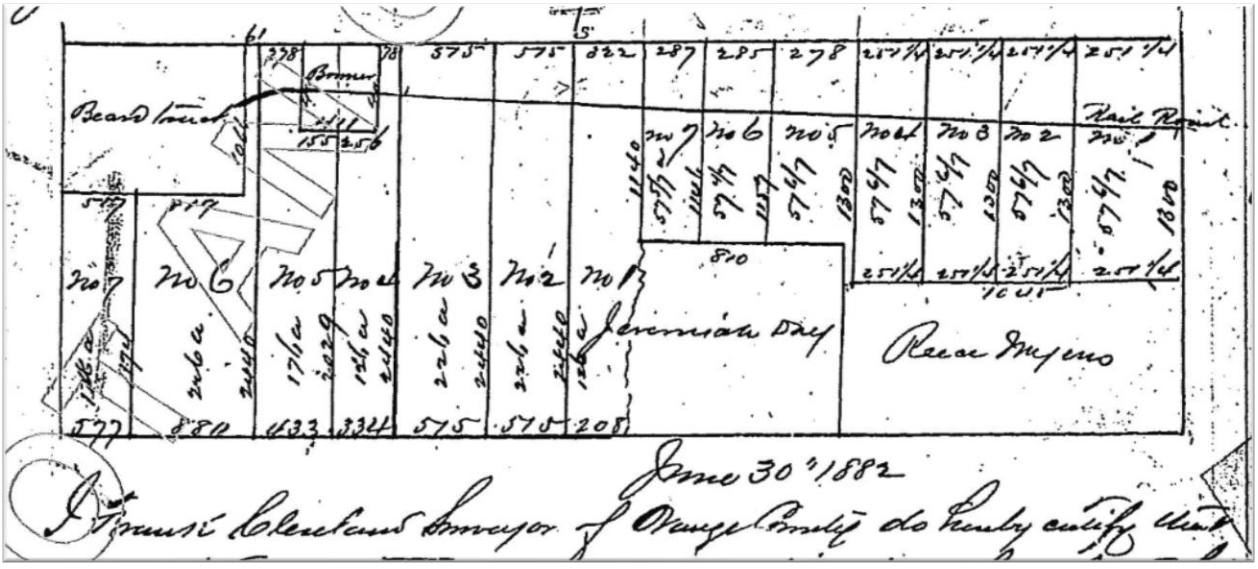
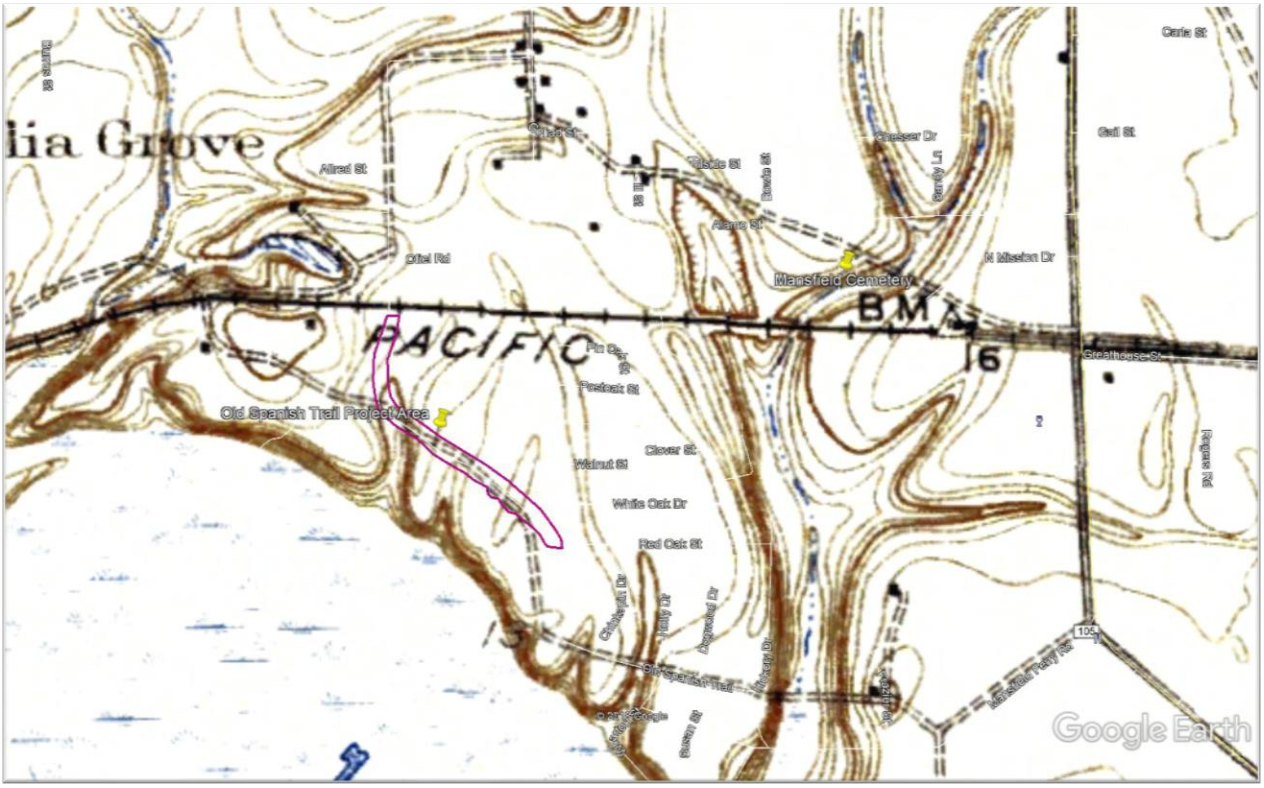


Figure B-14. County Surveyor's Partition Plat of G. Stephenson Estate (1882)



Source: Foster et al. (2006)

Figure B-15. Location of Project Area on USGS Beaumont, Texas (1:62,000) Topographic Quadrangle (1932)

Figure B-16. Tobin Property Ownership Map for Orange County, Texas (1961)

Figure B-17. Proposed Old Spanish Trail Project Area (2018) (Google Earth Aerial imagery)

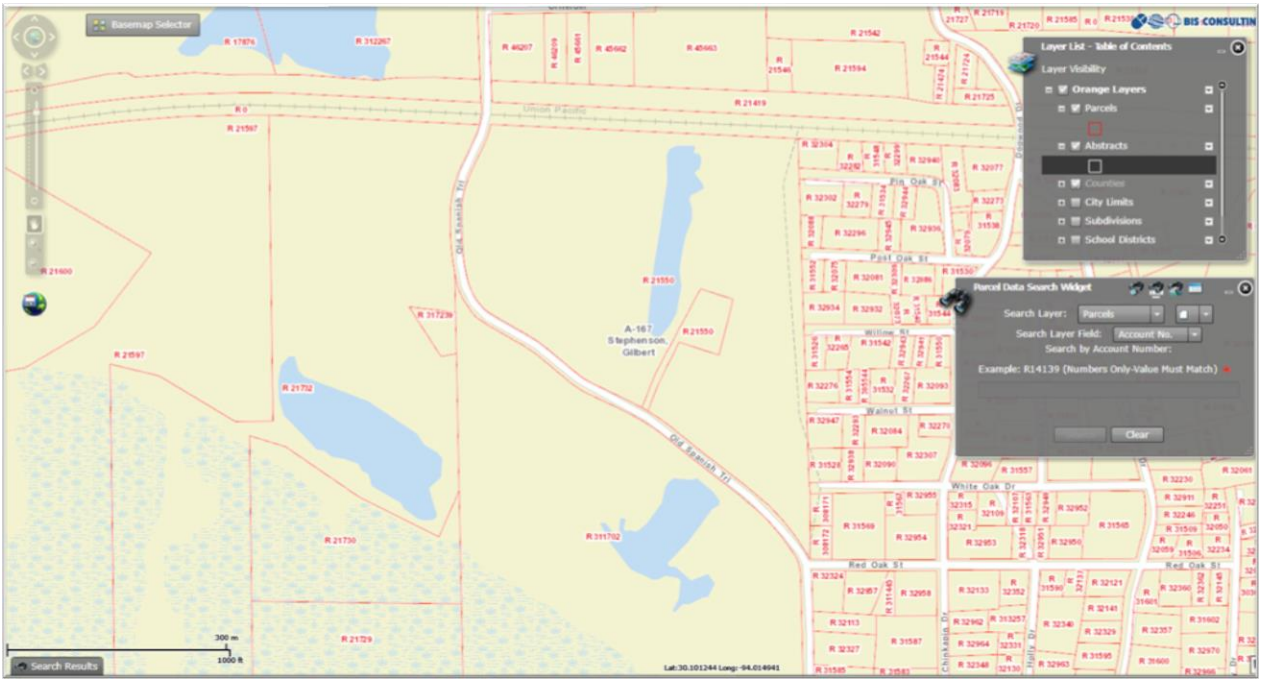


Figure B-18. Orange County, Texas, Tax Appraisal District Property Map of Project Area (2019)

Conclusions and Recommendations

Horizon's archival research into the history of the proposed OST roadway relocation/expansion project included examination of official archival records, library special collections, and a wide variety of historical maps and aerial photographs. The information sources cited in this report provided information related to the initial question raised by the project sponsor: Is the current OST roadway part of the Old Spanish Trail and/or the more recent Old Spanish Trail Highway system? Though documentary sources identify the "Old Spanish Trail" under a variety of names, they consistently locate it on an east-to-west alignment connecting Beaumont (previously Tevis' bluff or Tevis' ferry) on the Neches River to a ferry crossing on the Sabine River most often referred to as Ballou's Ferry. All cartographic depictions of the "Old Spanish Trail" place it north of the Texas and New Orleans/Southern Pacific Railroad and therefore north of the current OST roadway relocation/expansion project area.

As transportation technology evolved beyond railroads and toward automobiles, the route of the "Old Spanish Trail" of the 18th and 19th centuries was adopted as the conceptual basis for an Old Spanish Trail Highway in the early 20th century. The Old Spanish Trail Association publicized maps showing the main route as well as lateral connecting roads comprising what they called the Old Spanish Trail System of Highways rather than a single route. All evidence reviewed by Horizon places the main route of the Old Spanish Trail north of the T&NO Railroad and north of the current OST road relocation/expansion project. The only lateral branch from the main route is a roadway connecting Beaumont to the Port Arthur area along the western bank of the Neches

River. No evidence was found indicating that a branch of the Old Spanish Trail Highway ever extended along the eastern bank of the Neches River in the OST roadway project vicinity.

Certain records, however, did provide evidence of other old, unnamed roads or trails extending into the OST roadway project vicinity. As early as 1838, surveyor's field notes for the Gilbert Stephenson survey recorded an intersection with the "Jasper Road" at a location that correlates well with the current OST roadway but well to the north of the current project area (see Figure B-13). Between 1901 and 1961, a series of maps were found showing several unimproved and unnamed roads or trails following various alignments that generally passed near or along the route of the current OST roadway (see Figures B-8, B-9. B-15, and B-16). Though it remains unclear whether the 1838 Jasper Road extended into the current OST roadway relocation/expansion project vicinity, it is clear that a variety of unimproved local roads and trails have passed though the project vicinity over time, probably to provide access to settlements and ferries located farther south along the eastern bank of the Neches River.

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