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Intensive Archaeological Survey of the Nacogdoches to Nacogdoches SE 138 kV Transmission Line Improvements Project on Stephen F. Austin State University Land

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Texas Antiquities Permit Number: 8267

FINAL DRAFT

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Management Summary

Oncor Electric Delivery Company LLC (Oncor) has contracted with HDR, Inc. (HDR) to conduct an intensive archaeological survey in advance of proposed improvements to the existing Nacogdoches to Nacogdoches SE 138 kV transmission line that runs through property owned by Stephen F. Austin State University (SFASU) (Figure 1). The proposed improvements would involve replacing 13 existing electric transmission structures with new structures. The replacement structures will be located within the existing Oncor right-of-way (ROW) that is approximately 100 feet (ft; 30.5 meters [m]) wide. Because SFASU is a state university, the proposed developments are required to be in compliance with Chapter 191 of the Texas Natural Resources Code, also known as the Antiquities Code of Texas (13 TAC 26.12).

The portion of the transmission line on SFASU property is approximately 1 mile (1.6 km) long and 100 ft (30.5 m) wide. The dimensions of the replacement tower foundations are anticipated to range from approximately 4 to 9 ft (1–2.7 m) in diameter and 20 to 30 ft (6–9 m) in depth, but foundations could ultimately be deeper or shallower depending on the soil conditions in the area. The total Area of Potential Effects (APE) is 12.12 acres (4.9 hectares).

The purpose of the cultural resources investigation is to determine the presence/absence of cultural resources within the APE and to evaluate identified resources for their eligibility for inclusion in the National Register of Historic Places (NRHP) or as a designated State Antiquities Landmark (SAL) under the Antiquities Code of Texas (13 TAC 26.12). The survey was conducted under permit number 8267. The survey was conducted by principal investigator Melanie Johnson and crew chief Amy Leuchtmann on February 12–13, 2018, resulting in a total of 16 person-hours.

During the cultural resources survey of the APE, a total of 21 shovel tests were excavated, and the previously recorded site 41NA78 was revisited. No archaeological materials were found during the course of the survey.

In accordance with 13 TAC 26.12, no further cultural resources investigations are recommended for the presently-defined APE, and the proposed improvements project on SFASU property may proceed. However, in the event that any archaeological deposits are encountered during construction, work should cease, and the THC should be notified.

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Contents

Figures

Tables

1 Introduction

Oncor Electric Delivery Company LLC (Oncor) has contracted with HDR, Inc. (HDR) to conduct an intensive archaeological survey in advance of proposed improvements to the existing Nacogdoches to Nacogdoches SE 138 kV transmission line that runs through property owned by Stephen F. Austin State University (SFASU) (Figure 1). The proposed improvements would involve replacing 13 existing electric transmission structures with new structures. The replacement structures will be located within the existing Oncor right-of-way (ROW) that is approximately 100 feet (ft; 30.5 meters [m]) wide. Because SFASU is a state university, the proposed developments are required to be in compliance with Chapter 191 of the Texas Natural Resources Code, also known as the Antiquities Code of Texas (13 TAC 26.12).

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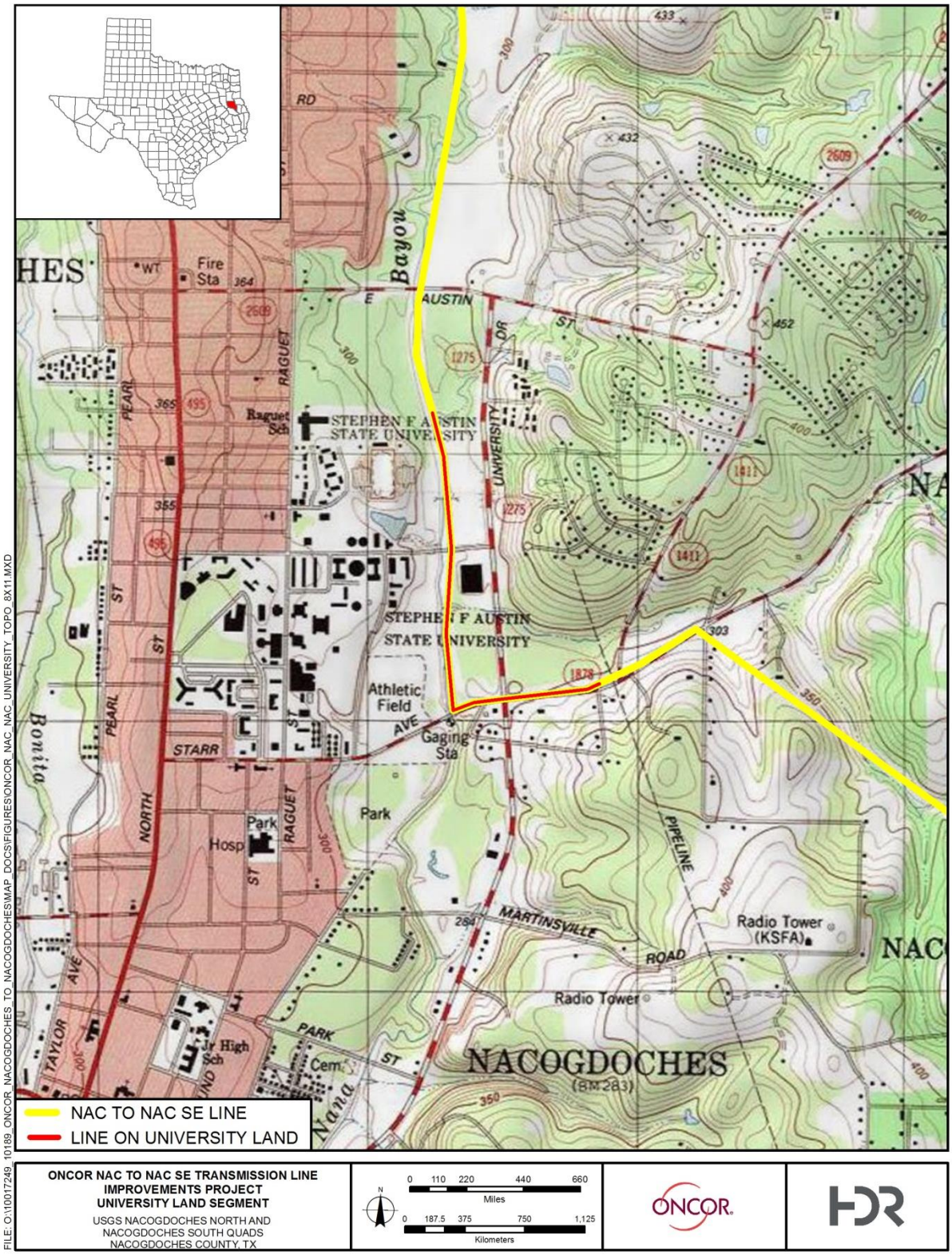
The survey resulted in no significant cultural resources being recorded within the APE. It is concluded that the proposed project will not impact recorded cultural resources, and construction may proceed.

This report contains geologic and cultural background information for the region, the survey methods employed, the results of the archaeological survey, and recommendations based on the results.

All records and materials generated by this project will be permanently curated at the Center for Archaeological Studies (CAS) at Texas State University in San Marcos, Texas.

Figure 1-1. Topographic Map of the Area of Potential Effects.



2 Background

2.1 Geology and Soils

The majority of the APE that runs along the eastern bank of La Nana Bayou is underlain by alluvium of Holocene age (USGS 2018). The eastern leg of the APE is underlain by the Weches Formation of Eocene age (USGS 2018).

According to data from the Natural Resources Conservation Service (NRCS), the project area contains three soil map units: Hannahatchee-Urban land complex, frequently flooded; Trawick-Urban land complex, 8 to 20 percent slopes; and Attoyac-Urban land complex, 0 to 4 percent slopes (NRCS 2017). The soil descriptions over the majority of the project area indicate loam or sandy loam is present at depths up to 40–50 cm (15.7–19.7 in) with sandy clay loam present below up to 200 cm (78.7 in) (NRCS 2017). In the Trawick unit, clay begins to appear at 15 cm (5.9 in) (NRCS 2017). The urban component of each of these complexes introduces a highly disturbed surface layer at least 50 cm (19.7 in) deep due to the human activities involved in urban areas (Craul 1992).

2.2 Cultural History

The East Texas cultural region is bounded by the Red River on the north, by the Trinity River and its tributaries on the west, by the Arkansas and Louisiana state lines on the east, and by swampland along the Neches and Angelina rivers on the south (Pertulla 2004). The region contains three physiographic zones: the Post Oak Savanna or Oak Woodlands, the Blackland Prairie, and the Pineywoods (Perttula 2004). The regional chronology is divided into four basic periods: Paleoindian, Archaic, Woodland, and Late Prehistoric (Table 2-1).

Table 2-1. General Cultural Chronology for East Texas.

(After Perttula 2004, 2012a)

Period	Age (B.C. / A.D.)
Paleoindian	ca. 10,000–6000 B.C.
Archaic	6000–200 B.C.
Woodland	200 B.C.–A.D. 800
Late Prehistoric/Caddo	A.D. 800–1680

Some of the earliest attempts to synthesize the prehistory of East Texas include E. B. Sayles' (1935) *An Archaeological Survey of Texas* and Alex D. Krieger's (1946) *Culture Complexes and Chronology in Northern Texas*. While Sayles (1935) referred to the "Caddoan groups" of Northeast Texas composed of the Red River Caddo, the Hasinai, the Wichita, and the Jumano; Krieger (1946) classified the Caddo as part of the larger Mississippian "pattern" of the eastern United States. He defined this Mississippian pattern as the cultures who built temple mounds, made a great variety of pottery vessel shapes and decorations, packed their graves with large amounts of objects, and made distinct items of bone, stone, shell, and pottery (Krieger 1946). The Sanders Site in

Lamar County is used as the type site for the Caddo in Krieger's (1946) volume. Krieger's Sanders focus, or phase, has since been used as the traditional model for Caddo archaeology (Schambach 2000).

Other early, hallmark cultural contexts for East Texas include Story's 1990 article, *Cultural History of the Native Americans*, and *Archaeology in the Eastern Planning Region* edited by Kenmotsu and Perttula (1993). Early publications on Caddo archaeology include several works by Perttula (1988, 1992, 1993, 1996, and 1998) and Thurmond (1985, 1988, and 1990). While all of the aforementioned works had their place in the evolution of archaeology in East Texas, the most recent comprehensive synthesis of East Texas culture history is contained in *The Prehistory of Texas* edited by Timothy K. Perttula (2004). In addition, the latest compilation of Caddo history is *The Archaeology of the Caddo* edited by Perttula and Walker (2012).

2.2.1 Paleoindian (10,000–6000 B.C.)

The Paleoindian period can be divided into two subperiods: Early Paleoindian (ca. 10,000–8,000 B.C.) and Late Paleoindian (ca. 8,000–6,000 B.C.) (Bousman et al. 2004). Human occupation in Texas is generally agreed to have begun during the terminal Pleistocene. Absolute dating from three prominent Clovis sites in Texas (Aubrey, Lubbock Lake, and Miami) date this earliest occupation to 11,415 ± 125 B.P. (Bousman et al. 2004). Paleoindian peoples across Texas mainly subsisted on a variety of large and small game with an emphasis on mammoth and bison, but also utilized marine and riverine resources (Bousman et al. 2004). The main Paleoindian artifact assemblage included anvils, blades, bifaces, flakes, ground stone, hammerstones, points, and unifaces (Bousman et al. 2004).

Occupation in East Texas began around 10,000 B.P. and consisted of mobile hunter-gatherer groups (Perttula 2004). Paleoindian sites in East Texas consisted of small camps in valleys of major stream basins (Perttula 2004). Groups were very mobile hunter-gatherers that targeted a variety of resources and tended to use local materials for lithic production (Ferring 1989; Pertulla 2004). The Paleoindian period is marked by the presence of Clovis, Folsom, Scottsbluff, Plainview, and Dalton point traditions (Perttula 2004; Schaffer 1977). In addition to these points, the typical Paleoindian artifact assemblage in East Texas also included drills, bifaces, knives, and scrapers (Pertulla 2004). Despite the fact that very few intact Paleoindian sites have been located in East Texas, notable sites in the region include the Forrest Murphey, Delta Bone Quarry 5, and John Pearce sites.

2.2.2 Archaic (6000–200 B.C.)

The Archaic period is divided into three subperiods based on dart point typologies: Early (6000–4000 B.C.), Middle (4000–2000 B.C.), and Late (2000–200 B.C.). Straight or expanding-stem dart points were characteristic of the Early and Middle Archaic, while contracting stem darts were unique to the Late Archaic (Perttula 2004). The beginning of the Archaic period was ushered in by a dryer climate, a reduction of biomass, and an expansion of prairie habitats across East Texas (Perttula 2004). With this environmental change came the extinction of the mega-fauna that dominated the Paleoindian diet (Bousman et al. 2004). All of these changes forced the Archaic people to adapt their lifestyle.

Early Archaic (6000–4000 B.C.)

During the Early Archaic period in East Texas, inhabitants maintained the mobile hunter forager lifestyle of the Paleoindian period. Resources exploited during this period included hardwood nuts, deer, shellfish, turtles, and small mammals (Perttula 2004). Sites were used repeatedly and tended to be concentrated in the uplands of large drainage areas of the Red River and the central Sabine River (Perttula 2004; Story 1981).

Middle Archaic (4000–2000 B.C.)

During the Middle Archaic, settlements shifted away from smaller tributaries and headwaters and toward major basins (Perttula 2004). There appears to have been a stronger focus on hunting during this period, indicated by the dominance of hunting tools including blade-notched Evans points, cutting/scraping tools, debris, groundstone tools, and cores (Perttula 2004). Although non-local lithic materials were more common during the Middle Archaic than the Early Archaic, the majority of lithics were still made from local material (Perttula 2004). Burned rock features (possibly hearths, ovens, and cooking pits) also appear frequently during this period (Perttula 2004). In addition, the presence of mounds signals a more complex social organization of inhabitants of East Texas during the Middle Archaic (Perttula 2004).

Late Archaic (2000–200 B.C.)

In contrast to the Middle Archaic, sites during the Late Archaic were widely distributed and are found in almost every part of East Texas (Perttula 2004). While sites were concentrated in major basins during the Middle Archaic, sites during the Late Archaic are found near virtually every water source (Perttula 2004). Burned rock features consist mostly of ovens, and pits appear to have been used consistently for cooking and bulk food processing (Perttula 2004). In addition, the means of subsistence appears to have been the same during the Late Archaic as it was during the Middle Archaic (Perttula 2004).

The data gathered from Late Archaic sites in East Texas suggests higher population densities, limited group mobility, increased foraging areas, possible establishment of definable territories, and a well-developed foraging economy (Perttula 2004; Story 1985). In addition, the widespread use of local lithic material suggests reduced interregional interaction during the Late Archaic (Perttula 2004).

2.2.3 Woodland (200 B.C.–A.D. 800)

The Woodland period in East Texas is marked by the presence of ceramics, smaller and thinner Gary projectile points, double-bitted axe heads, and corner-notched arrow points (Perttula 2004). The production of pottery signals several changes in lifestyle including more intensive occupations, decreased mobility, and consumption of carbohydrate-rich foods (Ellis and Smith 2013; Perttula 2004). While pottery was used across East Texas during the Woodland period, the differences in abundance across the region suggest differences in levels of sedentism and intensity of food processing habits (Perttula 2004). Villages became larger, and multiple mound centers were built during the Woodland period (Perttula 2004). In addition, paleobotanical evidence and the presence of hoe-shaped tools suggest that horticulture was introduced to East Texas during this period

(Perttula 2004). East Texas inhabitants cultivated squash, beans, and maize; foraged seeds and tubers; exploited aquatic animal resources; and hunted woodland animals (Perttula 2004, 2012a). Mound building and trade were also important aspects of Woodland life in East Texas (Perttula 2004). Increasing social complexity can also be inferred by the fact that elite individuals were buried in or in association with mounds, while the non-elite were buried in family or community cemeteries (Perttula 2012a). Several Woodland period cultures in this area that are considered ancestral to the Caddo include the Fourche Maline, Mill Creek, and Mossy Grove cultures (Perttula 2012a; Perttula and Nelson 2004; Rogers et al. 2001).

2.2.4 Late Prehistoric/Caddo (A.D. 800–1680)

The Prehistoric period, also called the Caddo period, can be divided into four subperiods: Formative (A.D. 800–1000), Early (A.D. 1000–1200), Middle (A.D. 1200–1400), and Late (A.D. 1400–1680) (Perttula 2012a). The following discussion of the Prehistoric Caddo attempts to generally characterize their culture through a discussion of a few of its major components including settlement pattern, subsistence, trade, and social organization.

Settlement Pattern

During the Formative to Early Caddo period, settlements were located on uplands near major rivers: the Red, Arkansas, Little, Ouachita, and Sabine Rivers (Perttula 2004, 2012a). Settlements during these periods were permanent, small hamlets and isolated farmsteads scattered across the region (Perttula 2004, 2012a; Perttula and Rogers 2012). However, continuity in ceramic styles during these periods suggests extensive interaction despite the distance between communities (Perttula and Rogers 2012). Structures were typically rectangular, and family cemeteries are found at some sites (Perttula 2004; Perttula and Rogers 2012). Large villages, civic-ceremonial centers, temples, and burial mounds began to appear after A.D. 800 (Perttula 2004, 2012b).

During the Middle Caddo period, the number of Caddo sites in East Texas began increasing; communities, hamlets, and farmsteads were established all over the region at much closer intervals than earlier periods (Perttula and Rogers 2012). Larger communities, or mound centers, were located along tributaries to main rivers and signaled an increased importance of the community over the individual family (Perttula and Rogers 2012). During this period, populations increased, maize agriculture intensified, and ceramic stylistic changes suggest a development of local ethnic identification (Perttula and Rogers 2012). Structures at these sites tended to be rounded, and included pole and grass residences arranged around plazas or community spaces, cemeteries, pits, mounds, and middens (Perttula 2004; Perttula and Rogers 2012; Walker and McKinnon 2012).

Mounds are one of the identifying features of Caddo sites as well as other Mississippian cultures. Beginning around A.D. 800, the Caddo built earthen mounds at community centers and along the larger rivers in the region (Perttula 2012b). These mounds were used for burials and a variety of ritual activities (Perttula 2012b). Mounds were a prominent feature of Caddo culture and served as political statements, territorial markers, and social icons (Perttula 2012b). However, during the Late Caddo period, most mound centers were abandoned, and mound building among the Caddo ceased (Perttula 2012b).

A climate change during the Late Caddo period caused regional abandonment of periphery sites around A.D. 1450 (Perttula and Rogers 2012). Multiple lines of evidence suggest that the climate underwent a cooling and drying period across East Texas beginning around A.D. 1375 which lasted well into the early sixteenth century (Perttula and Rogers 2012). This change would have resulted in a shorter growing season and multiple droughts—placing a tremendous amount of stress on the agriculture-based economy of the Caddo (Perttula and Rogers 2012). During this time, sites in marginal areas were abandoned for more centrally-located communities.

Successful sites during the Late Caddo period were dispersed along secondary streams and spring-fed branches (Perttula 2012b). It appears that the Big Cypress Creek basin was the most popular spot during the Late Caddo period (Perttula 2012b). This area contained a large number of Late Caddo "political communities" which consisted of a "cluster of interrelated settlements and associated cemeteries that are centered on a key site or group of sites distinguished by public architecture and large domestic village areas" (Perttula 2012b:367). These communities were extensive and are referred to as the Titus phase (Perttula 2012b).

The prehistoric Caddo remained in parts of East Texas as late as A.D. 1842 until they were moved to the Brazos River Valley in the 1840s and 1850s, and then to Oklahoma in 1859 (Perttula 2004).

Subsistence

The Formative–Middle Caddo groups cultivated maize, beans, and squash in addition to native plants like maygrass, amaranth, chenopods, and sunflowers (Perttula 2012a). Early Caddo people also fished and hunted a variety of woodland animals, the largest of which included deer, bison, and bear (Perttula 2004, 2012a). Botanical evidence suggests that maize did not become a staple part of the diet until A.D. 1300—after which it became an increasingly important part of the Caddo subsistence and economy (Perttula 2004, 2012; Wilson 2012). However, increased emphasis and importance of maize did not eclipse the Caddo diet. Bioarchaeological data confirms that the economy during the Late Caddo period was agriculture-based, but also shows that the diet was relatively balanced and diversified across East Texas (Perttula 2004; Wilson 2012). While maize was important to their diet, the Late Caddo also grew beans and squash, fished, and hunted, which helped balance out their diet (La Vere 1998).

Trade

One of the most distinct features of Caddo material culture is ceramics. Caddo ceramics are quite distinct. Vessel forms include utilitarian jars and bowls plus fineware bottles, bowls, jars, beakers, and compound vessels (Early 2012). Caddo pottery is most typically tempered with grog or bone, although burned and crushed shell was used after A.D. 1300 (Perttula 2004). Ceramics were formed using coils and then smoothed with pebbles before firing (Perttula 2004). Decorative motifs were diverse and included the following, either by themselves or in any combination: incised, engraved, brushed, punctated, appliquéd, stamped, and fingernail impressed (Early 2012; Perttula 2004). Vessels were often slipped and/or painted (Perttula 2004).

Earlier Caddo ceramic wares were traded extensively throughout Texas—showing up as far as the Upper Trinity and Brazos River basins of north central Texas and inland

southeastern Texas (Perttula 2004). Late Caddo ceramics (after A.D. 1300) seem to have been mostly traded with east-central and central Texas groups. However, Caddo ceramics are found in the Midwest and southeastern U.S. after circa A.D. 1300–1400 (Perttula 2004).

Other long-distance trade items included bison hides, salt, bois d'arc bows, copper, stone, turquoise, marine shell, and large ceremonial bifaces (Perttula 2012a). The reaches of Caddo trade included distances as far as New Mexico, the Great Lakes region, the Gulf Coast, and the Cahokia region (Perttula 2012a).

Social Organization

Caddo ceramics also give us a glimpse into Caddo social organization. The distinct decorative motifs and styles used on Caddo ceramics can be interpreted as social identifiers of different groups or communities (Perttula 2004). However, the general uniformity of finewares across the East Texas region also suggests widespread interaction and a sense of unity among Caddo groups (Early 2012; Perttula 2004).

The Caddo people were divided into several clans, each of which had ranked religious and political leaders (Perttula 2012a). The main three positions of authority included a religious leader, a "principal headman of the community," and village elder (Perttula 2012a:9). There also appears to be a ranking of sites into centers, large "towns," and rural communities (Perttula 2004). Large towns were distributed along major rivers, while rural communities tended to be located along secondary streams (Perttula 2004). These sites were ranked as civic-ceremonial centers, towns, hamlets, farmsteads, and specialized processing/procurement locations (Perttula 2004).

Another avenue in understanding social complexity is through burials. The burials of high-ranked individuals are identified through the type of burial (shaft tomb), the number of interments (multiple), quantities of grave goods (particularly of arrowheads) and ceramic vessels, type of grave goods, and the sex of the adult (male) (Perttula 2004). However, Brown (2012:121) has challenged the traditionally accepted idea that the "accumulation of valuables in the context of socially exclusive mortuary display" is an expression of a prestige goods economy. Instead, he argues that the Caddo had a "sacred economy" in which valuable items were displayed in mortuary practices in order to showcase the collective wealth and identity of the Caddo people as a whole rather than a statement of political structure (Brown 2012).

2.3 Historic Period

Nacogdoches County

Probably the first Europeans to reach the area of present-day Nacogdoches County were an expedition of early Spanish explorers led by Luis de Moscoso Alvarado in 1542. By that time, four major tribes of the Caddo confederacy were living in the area: the Hasinai along the Angelina River, the Nasoni in what is now northern Nacogdoches County, the Nacao in the northeast, and the Nacogdoche near the site of the modern city of Nacogdoches (Long 2016). The Spanish claimed the region as part of New Spain upon their arrival in the sixteenth century, but little attention was paid to Texas in general until Rene Robert Cavelier, Sieur de La Salle established a French colony on Texas' coast in

1685 and claimed the entire region for France. The Spanish responded to this threat to their claim on Texas by founding missions in the area. In 1690, the first mission was founded on San Pedro Creek in what is now Houston County, but a permanent mission in the Nacogdoches area was not founded until 1716 when Domingo Ramon led an expedition to the area (Long 2016). This mission was followed by others founded in the same year, including Nuestra Senora de Guadalupe de los Nacogdoches on the site of the present-day city of Nacogdoches (Blake 2010a).

In 1763, France ceded Louisiana to Spain, removing the French threat to Spanish land claims. With the need to stake Spanish claims ended, Spanish settlers in East Texas were ordered back to San Antonio or the Rio Grande communities, where the safety of the settlers was more assured. The settlers petitioned to return to their homes in East Texas, and in 1774 they were permitted to return as far as the Trinity River under the leadership of Antonio Gil Ibarvo (Long 2016). Five years later, they returned to Nacogdoches, and the town was rebuilt using the abandoned mission as a nucleus (Blake 2010a). Ibarvo built a stone house to use as a trading post at the intersection of the Old San Antonio Road and la Calle del Norte, later Fredonia Street. The two-story building remained the tallest structure in Nacogdoches for nearly a century and was frequently the seat of local government affairs (McDonald 2016). Nacogdoches, located along the Old San Antonio Road, quickly developed into an important trading center. By 1800, the town had a diverse population of 660 inhabitants that included Spanish-speaking, French-speaking, and English-speaking settlers, including four Americans who had established a key trading company, the House of Barr and Davenport, which held a virtual monopoly on trade with Louisiana (Long 2016).

The Mexican War of Independence created upheaval in the area, especially after a Spanish force crushed local opposition in 1812 and sent many of the local residents fleeing into Louisiana. In 1820, a traveler passing through described Nacogdoches as a settlement of only 100 people. The next year, following Mexican independence, Nacogdoches was included within the new state of Coahuila and Texas. In 1831, Nacogdoches became its own political department, covering most of present East Texas and serving as the precursor to Nacogdoches County (Long 2016). The government was seated in the town of Nacogdoches. The town's location on one of the principal roads into Texas used by American immigrants helped revive its fortunes, and by 1828, it was described as a town of 600 men and 100 women, many of them Anglo-American immigrants. By the early 1830s, Americans dominated the local ayuntamiento (town council) (Long 2016). One of those American immigrants was Thomas J. Rusk, who permanently settled in Nacogdoches in 1835, established a substantial estate, and quickly became one of Texas' most prominent citizens. Rusk was heavily involved in the Texas Revolution, acting as a delegate from Nacogdoches to the Convention of 1836, signing the Texas Declaration of Independence, assuming the role of secretary of war for the interim government, and being named the commander-in-chief of Texas' army. He briefly served as chief justice of Texas' Supreme Court and would go on to head the bar in Texas and to be president of the Convention of 1845 that accepted American annexation (Benham 2017).

Following the Texas Revolution, Nacogdoches County, containing much of the former department of Nacogdoches, was established in 1836. The following year, the city of

Nacogdoches was incorporated. After the annexation of Texas by the United States in 1845, the local Native American tribes were removed to the Brazos Reservation west of the Brazos River, and in 1859, they were again removed north to Indian Territory (in present-day Oklahoma) (Meredith 2009). In 1846, Nacogdoches County was subdivided into twenty-one counties, including the portion constituting present-day Nacogdoches County (Long 2016). The city of Nacogdoches remained as the seat of the modern county. Rusk again figured prominently, helping establish Nacogdoches University, the first nonsectarian college in Texas (Benham 2017). The college was originally located in a former army building, then moved to Washington Square, and in 1858 was relocated to a new, purpose-built structure. In 1895, as increasing numbers of high schools within the state made much of the curriculum redundant so enrollment decreased, Nacogdoches University closed when its charter expired (Blake 2010b).

The city of Nacogdoches prospered after the Civil War, especially after the Houston East and West Texas Railway line was completed through the city in 1883, connecting Nacogdoches to Houston, and extended in 1886 to Shreveport (Young 2017). By 1890, the city's population had reached almost 1,150—nearly trebling its pre-war population of approximately 400 (Texas Almanac 2018). In 1903, the Texas and New Orleans Railroad built a line through Nacogdoches between Beaumont and Dallas, and the city became an important crossroads. The Texas and New Orleans was a subsidiary company of the Southern Pacific, which since 1961 has owned the line in its own name (Williams 2017).

After the turn of the twentieth century and the arrival of the second railroad line, growth increased in Nacogdoches. By 1920, more than 3,500 people lived in the town (Texas Almanac 2018). In 1917, the state legislature authorized the establishment of two new normal colleges, one of which was to be named after Stephen F. Austin. Nacogdoches offered a 200-acre site for one of the colleges to be established there, which the state accepted after consideration of the proposed locations. Most of the land was formerly part of the Thomas Rusk estate: his home, named "Santa Domingo," had been torn down after the Civil War, and the estate had fallen into disuse, providing an available and convenient large tract in Nacogdoches (Stephen F. Austin State University 2018). Funding for the college—halted temporarily with American entrance into World War I—was resumed following the war, and in 1923, Stephen F. Austin State Teachers College opened with 158 students (Chamberlain 2010). The college quickly became one of the largest sectors of the local economy and helped drive population growth. By World War II, enrollment had reached approximately 1,000 students (Chamberlain 2010).

By 1950, approximately 12,700 people resided in Nacogdoches, and by the 1970 census, the population had reached more than 22,500 (Texas Almanac 2018). This period of rapid growth in the city corresponded to rapid expansion of the college. In 1949, the college's name was changed to Stephen F. Austin State College, and in the 1950s and 1960s, it was one of the fastest growing state colleges in Texas (Chamberlain 2010). In 1969, reflecting its broadening curriculum due to the increasing demand of the growing student body, the school was renamed again as Stephen F. Austin State University. By the early 1970s, enrollment had exceeded 10,000 students (Chamberlain 2010). The university expanded its campus to accommodate the expanding student body, specifically, realigning and straightening La Nana Bayou to permit development east of the existing buildings such as the William R. Johnson Coliseum, completed in 1974 just

east of the current alignment of La Nana Bayou. By the end of the twentieth century approximately 11,500 students were attending. Population growth in the City of Nacogdoches similarly slowed after the early 1970s. By 1990, the city's population stood at 30,000, with moderate growth carrying the number to just under 33,000 residents in 2010 (Texas Almanac 2018; U.S. Census Bureau 2012:108). Today, Nacogdoches' primary economic sectors are education, agriculture, agricultural services, and manufacturing. The city is headquarters for Texas Farm Products, a leader in the manufacture of animal feed, animal health products, and fertilizer. It is also a major center of the poultry industry and an important trade and distribution center in East Texas (McDonald 2010).

3 Methods

3.1 Previous Investigations near the APE

A review of the Texas Historical Commission's (THC) Archeological Sites Atlas (Atlas) indicates that, within the one-mile buffer zone, there have been 25 cultural resources surveys conducted, 19 archaeological sites recorded, one State Archeological Landmark (SAL), 15 Official Texas Historical Markers (OTHMs), one Recorded Texas Historic Landmarks (RHTLs), two cemeteries, two National Register (NRHP) listed properties, two NRHP listed districts, and 336 structure surveys (Figure 2).

The 25 cultural resources surveys completed within the one-mile buffer zone are listed in Table 3-1. Three of these surveys (ID: 8400004942, 850012286, and 8500005560) overlap the current APE.

Table 3-1. Previous Cultural Resources Surveys Conducted within One Mile of the Project Area.

ID	Agency	Report Title	Contractor	Year	Comments / Recommendations
8400004959	TxDOT	—	—	1975	—
8400004960	TxDOT	—	—	1979	—
8400004942	FTWCE	—	—	1981	Crosses APE
8500005561	Corps of Engineers-Fort Worth District	—	—	1981	—
8500005560	Corps of Engineers-Fort Worth District	A Cultural Resources and Geoarcheological Investigation of the University Woods 52-acre Tract Development, Nacogdoches County, Texas	—	1981	Crosses APE
8400004937	FERC	—	—	1983	—
8400004951	EPA	—	—	1983	—
8400004952	THD	—	—	1984	—
8400004958	THD	—	—	1984	—
8500005562	FHWA	—	—	1985	—
8400004945	EPA	—	—	1989	—
8400004949	FHWA	An Archaeological Assessment of a Portion of the Washington Square Mound Site (41NA49), Nacogdoches County, Texas	SFASU	1989	TAC# 213

Table 3-1. Previous Cultural Resources Surveys Conducted within One Mile of the Project Area.

ID	Agency	Report Title	Contractor	Year	Comments / Recommendations
8400004950	FHWA	An Archaeological Assessment of a Portion of the Washington Square Mound Site (41NA49), Nacogdoches County, Texas	SFASU	1989	TAC# 213
8400004938	FHWA	—	—	1989	—
8400004946	—	—	—	1989	—
8400004957	FHWA	—	—	1991	—
840009621	City of Nacogdoches	Cultural Resources Survey of Additional and Replacement Waterlines to the City of Nacogdoches Water System, Nacogdoches County, Texas	Deep East TX Archaeological Consultant	2001	TAC# 2728
8500013577	City of Nacogdoches	Cultural Resources Survey and Monitoring of Waterline Excavations for the City of Nacogdoches Water System Nacogdoches County, Texas	DETAC, Inc.	2003	TAC# 3079
8500013552	City of Nacogdoches	Cultural Resources Survey and Monitoring of Waterline Excavations for the City of Nacogdoches Water System Nacogdoches County, Texas	DETAC, Inc.	2003	TAC# 3079
8400010572	City of Nacogdoches	Cultural Resources Survey and Monitoring of Waterline Excavations for the City of Nacogdoches Water System Nacogdoches County, Texas	DETAC, Inc.	2003	TAC# 3079
8400010795	City of Nacogdoches	Cultural Resources Survey and Monitoring of Waterline Excavations for the City of Nacogdoches Water System Nacogdoches County, Texas	DETAC, Inc.	2003	TAC# 3079
8500012286	TPWD	—	DETAC, Inc.	2005	Crosses APE TAC# 3649
8500024867	City of Nacogdoches	Intensive Cultural Resources Survey of the La Nana Bayou Detention Ponds, Nacogdoches County, Texas.	Horizons Environmental Services	2006	TAC# 4125
8500017248	Housing and Urban Development	—	DETAC, Inc.	2009	—
8500020435	TPWD	—	SFASU	2012	TAC# 6179

Table 3-2 lists the 19 archaeological sites previously recorded within one mile of the project area. None of the sites are located within the APE. Of the total sites within one mile of the APE, one (41NA49) is considered eligible for listing in the NRHP, two (41NA140 and 41NA154) have potential to be considered eligible for inclusion in the NRHP, nine are ineligible for listing in the NRHP, and seven have unknown eligibility statuses. One site (41NA49) is listed as an SAL, and one site (41NA140) is listed as having SAL potential. Although none of the sites are located within the APE, one site (41NA78) is located approximately 200 feet east of the APE. Caddo pottery was discovered at site 41NA78, which is located on a rise east of La Nana Bayou. The location was bulldozed and used as a dump site for SFASU until the University constructed a Grounds and Transportation building over the site. Site 41NA78 is recorded as being destroyed due to bulldozing and construction at this location.

Table 3-2. Previously Recorded Archaeological Sites Located within One Mile of the Project Area.

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In addition to the archaeological sites, the Atlas search revealed the presence of 15 OTHMs and 1 RTHL within one mile of the project area (Table 3-3). None of these historical markers are located within the APE. All of the markers are located between 0.4 and 1 mile from the APE.

Table 3-3. Official Texas Historical Markers Located within One Mile of the Project Area.

Marker Number	Marker Title	Location	Year Erected	Comments / Recommendations
9263	Christ Episcopal Church	502 E. Starr Ave., Nacogdoches, Texas	1973	—
9243	Ancient Mound	516 Mound St., Nacogdoches, Texas	1966	—
9245	Austin Building	SFA Campus on Vista Dr., Nacogdoches, Texas	1993	RTHL
9246	Stephen Fuller Austin	Nacogdoches, Texas	1993	—
9250	100th Anniversary of Oil in Nacogdoches County	Nacogdoches, Texas	1966	—
9281	La Calle Real del Norte	304 North St., Nacogdoches, Texas	1936	1936 Centennial-Grave Marker (gray granite)
9286	Site of the Mission Nuestra Senora de Guadalupe	Nacogdoches, Texas	1936	1936 Centennial-Subject Marker (gray granite)
9300	Nacogdoches University	Nacogdoches, Texas	1936	1936 Centennial-Subject Marker (gray granite)
9349	Homesite of Thomas J. Rusk	Nacogdoches, Texas	1936	—
9350	Shay Locomotive No. 2005	Nacogdoches, Texas	1973	—

Table 3-3. Official Texas Historical Markers Located within One Mile of the Project Area.

Marker Number	Marker Title	Location	Year Erected	Comments / Recommendations
9399	Site of the Home of Charles S. Taylor	Nacogdoches, Texas	1936	1936 Centennial-Subject Marker (gray granite)
9401	Washington Square	Nacogdoches, Texas	1999	—
9402	Women's Army Corps School	1936 North St., Nacogdoches, Texas	1994	—
13945	Karle Wilson Baker	1936 North St., Nacogdoches, Texas	2007	—
14842	Stone Fort Museum	1936 North St., Nacogdoches, Texas	2008	—
15425	Birdwell Field, Aikman Gym, and the Women's Recreation Center	1936 North St., Nacogdoches, Texas	2008	—

The Atlas review identified two cemeteries within one mile of the APE (Table 3-4). The cemeteries are located between 0.8 and 1 mile from the proposed APE.

Table 3-4. Cemeteries Located within One Mile of the Project Area.

Cemetery ID	Name	Location	Comments / Recommendations
NA-C136	Oak Grove Cemetery	200 block of N Lanana St. From 59 north go east on Hospital St. which dead-ends at Lanana St., Nacogdoches, Texas	—
NA-C138	Zion Hill Baptist Church Cemetery	South of Park St and Park Pl intersection, Nacogdoches, Texas	—

According to the Atlas review, two NRHP-listed properties and two NRHP-listed districts are located within one mile of the APE (Table 3-5). While these resources are historically significant, they are all located over 0.6 mile from the APE.

Table 3-5. National Register Listed Properties or Districts Located within One Mile of the Project Area.

ID	Name	Location	Year Listed
71000956	Old Nacogdoches University Building	Washington Sq., Nacogdoches, Texas	1971

Table 3-5. National Register Listed Properties or Districts Located within One Mile of the Project Area.

ID	Name	Location	Year Listed
92000014	Eugene H. Blount House	1801 North St., Nacogdoches, Texas	1991
92000019	Washington Square Historic District	Roughly bounded by Houston, Logansport, N. Lanana, E. Hospital, and N. Fredonia Sts., Nacogdoches, Texas	1992
92001759	Zion Hill Historic District	Roughly bounded by Park St., Lanana Cr., Oak Grove Cemetery and N. Lanana St., Nacogdoches, Texas	1993

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Figure 3-1.Previously Recorded Cultural Resources and Previous Surveys within One Mile of the Project Area.

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3.2 Survey Methods

The field methodology, previously approved by the THC in *Generic Research Design for Archaeological Surveys of ONCOR Electric Delivery Electric Transmission Line Projects in Texas* (PBS&J 2008), calls for the ROW to be stratified into High Probability Areas (HPAs), Moderate Probability Areas (MPAs), and Low Probability Areas (LPAs) on the basis of perceived likelihood for the occurrence of unidentified cultural resources properties. HPAs are defined as possessing the greatest cultural resources potential. Site integrity is also presumed to be highest in these areas. HPAs will include areas of interfluve summits and shoulder slopes, which contain deep soils and lie within 305 m (1,000 ft) of natural water sources. These also will include levee remnants and rises within floodplains, toeslopes, and lower alluvial terraces. HPAs will be initially defined on maps prior to the field effort and will be adjusted during the actual survey based on microtopography, soil conditions, and the degree of surface erosion or disturbance. MPAs will be defined in the field as areas of undisturbed uplands, undisturbed areas greater than 305 m (1,000 ft) from water, and non-bedrock or undisturbed slopes of greater than 20 percent but less than 45 percent. LPAs will also be defined in the field as areas of very steep slopes (i.e., greater than 45 percent), exposed bedrock, modern development, or extensive ground disturbance, such as mass wasting or sheet erosion.

In this particular case, approximately 1.3 km (0.81 mi; 78.3 percent) of the APE from the northern end to N University Drive was identified as possible HPAs because it lies along the natural waterway, La Nana Bayou, with the presence of deep soils. The eastern 0.36 km (0.22 mi; 21.7 percent) of the APE, from N University Drive to the eastern end of the line on university land, was identified as MPAs due to ground disturbance associated with parking lot and road construction (Figure 2). Due to the presence of floodplain soils within the project area, geoarchaeological monitoring may be necessary during future drilling operations within the project area. The recommendations for monitoring will be determined by the results of shovel testing and inspection of cutbank exposures (if any).

HDR conducted an intensive archaeological survey within the APE. One transect was walked with shovel tests excavated at staggered intervals. In HPAs, the interval for shovel tests was 30 m (98 ft). In MPAs, the interval between shovel tests was 100 m (327 ft).

In addition, a reconnaissance was conducted to investigate whether or not site 41NA78 extended into the APE. No boundary was recorded in the Atlas for site 41NA78 and, due to its proximity to the APE, judgmental shovel testing was conducted where the APE is closest to the recorded site location to determine if deposits are present within the APE.

Each shovel test was approximately 30 cm (12 in) in diameter and was excavated in 20-cm (8-in) arbitrary levels to a depth of 80 cm (32 in) below surface in undisturbed soils and a depth of 50 cm (20 in) in disturbed soils. The soil removed was screened through 0.635-cm (0.25-in) mesh screen, and soil descriptions followed the guidelines and terminology established by the National Soil Survey Center (Schoeneberger et al. 2002). Soil colors were recorded using a Munsell Soil Color Chart. All excavated shovel tests were recorded on shovel test forms that note depth, soil matrix descriptions, and cultural materials recovered. Digital photographs were used to document the survey conditions, disturbances, and any cultural features observed. Details of each photograph were recorded on standardized forms. All shovel test locations were recorded using a Global Positioning System (GPS) unit.

4 Results

On February 12–13, 2018, the HDR survey crew conducted an intensive archaeological survey of the portion of the proposed Nacogdoches to Nacogdoches SE 138 kV transmission line improvements project that falls within SFASU property. The APE measures 1 mile (1.6 km) in length and 100 ft (30.5 m) in width and is located within the existing transmission line corridor that runs along La Nana Bayou and E Starr Ave (FM 1878). The survey resulted in the pedestrian survey of the entire APE and the systematic excavation of a total of 21 shovel tests (Figure 4-1 through Figure 4-4).

The APE consists of the existing cleared transmission corridor and existing transmission towers (Figure 4-5 and Figure 4-6). Buried utilities were located within the APE (Figure 4-7 through Figure 4-9) and a buried sewer pipeline runs along the east side of the transmission line corridor (Figure 4-10). The APE crosses several drainages into La Nana Bayou (see Figure 4-10), the Army Reserve Officers' Training Corps (ROTC) training grounds (Figure 4-11), agricultural gardens (Figure 4-12), and the Ruby M. Mize Azalea Garden (Figure 4-13). In addition, construction on the E Starr Ave bridge where it crosses La Nana Bayou restricted access to the portion of the APE from La Nana Bayou to N University Drive (Figure 4-14).

The survey resulted in a total of 21 shovel tests being excavated within the APE. Locations not shovel tested included areas with a slope greater than 20 percent, areas with buried utilities or pipelines, and areas previously disturbed due to construction (see Figure 4-1 through Figure 4-4). These areas not allowing shovel testing comprised approximately 70 percent of the APE.

Shovel testing revealed almost entirely disturbed soils throughout the APE. The soil original to the area consists of yellowish red (5YR 5/6) sandy clay loam (Figure 4-15). Within the shovel tests, the soil was often capped by, undercut by, or mixed in with red (2.5YR 4/6) sandy clay loam/clay or brownish yellow (10YR 6/8) sand and gravel/asphalt (Figure 4-16 and Figure 4-17).

One shovel test (ST 3) revealed a top layer (0–30 cm) that contained charcoal and burnt clay (Figure 4-18). Due to a pipeline access port to the east, drainage to the south, and La Nana Bayou to the west, it was possible only to delineate this shovel test to the north. In addition, only one delineation shovel test 10 m to the north was possible since another test located 20 m farther north would have been located outside the APE. This delineation shovel test (ST 3+10N) revealed 0–10 cm of yellowish red (5YR 5/6) sandy clay loam with charcoal and burnt clay, 10–30 cm yellowish red (5YR 5/6) sandy clay loam, and 30–50 cm of disturbed soil containing mixed soils and gravel (Figure 4-19). Due to the lack of intact soils, it is most likely that this burning episode was conducted in order to clear the corridor when the transmission line was originally built.

Two shovel tests (ST 19 and ST 20) were placed where the APE runs closest to the previously recorded site 41NA78 (see Figure 4-33). When originally recorded in 1974, the site included Caddo ceramics (Atlas 2015). Since that time, the location of site 41NA78 has been leveled, used as a dumping ground, and is currently covered by the SFASU Grounds and Transportation Building and parking lot (Figure 4-20). Shovel tests

19 and 20 placed near the recorded location of site 41NA78 revealed highly disturbed soils consisting of construction fill and gravel (Figure 4-21 and Figure 4-22).

All shovel tests were negative for cultural materials, and no cultural materials were discovered within the APE during the survey.

Figure 4-1. Results of the Archaeological Survey, Page 1.

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Figure 4-2. Results of the Archaeological Survey, Page 2.

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Figure 4-3. Results of the Archaeological Survey, Page 3.

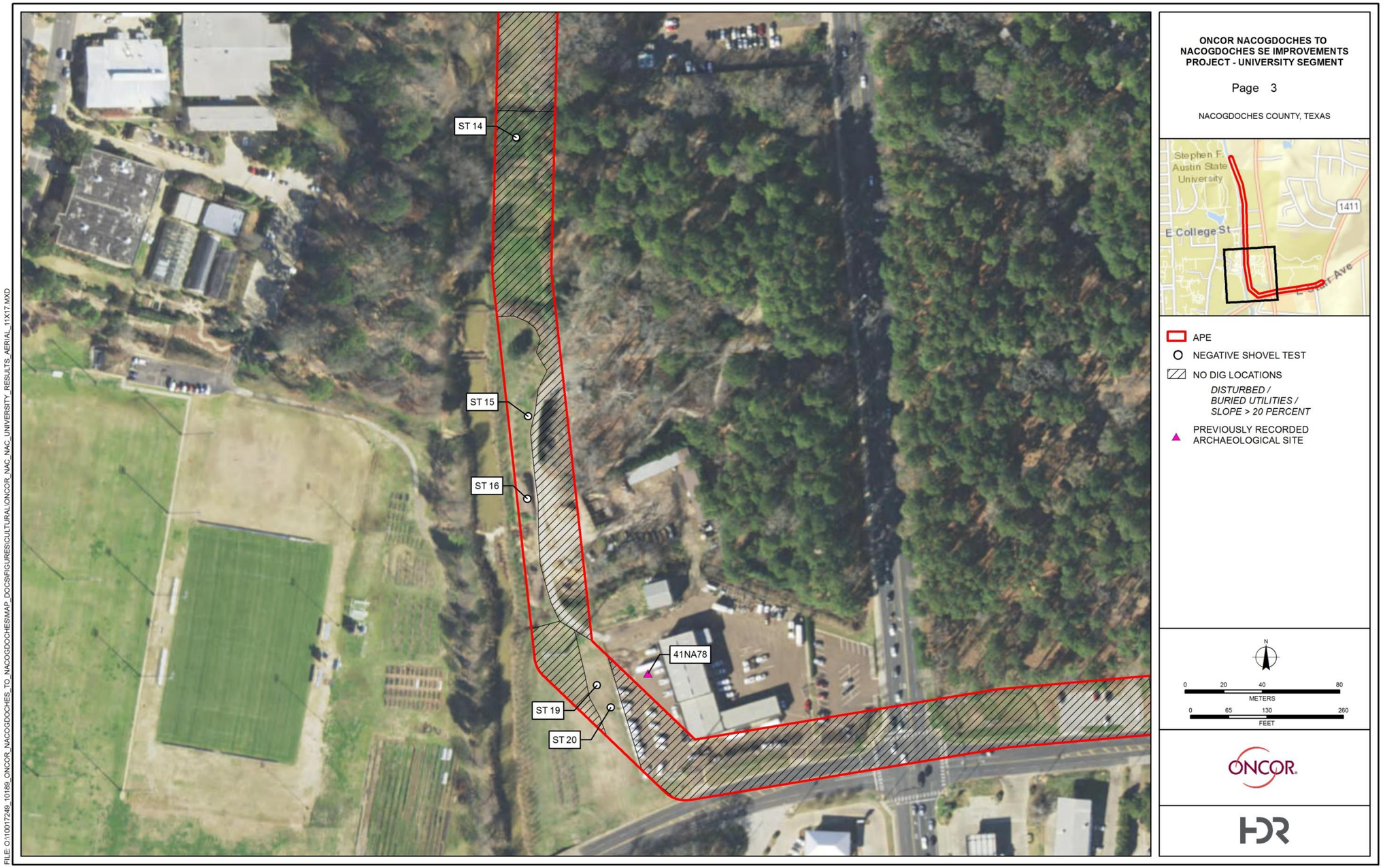

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Figure 4-4. Results of the Archaeological Survey, Page 4.

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Figure 4-5. Overview of the APE, Facing South.

Figure 4-6. View of La Nana Bayou and APE to the East, Facing South.

Figure 4-7. Oncor Access Port for Buried Utility Located within APE.

Figure 4-8. High Voltage Utility Box Located within APE, Facing East.

Figure 4-9. Buried Gas Pipeline Marker within APE, Facing Northwest.

Figure 4-10. Sewer Pipeline on East Side of APE and Example of Drainage into La Nana Bayou, Facing South.

Figure 4-11. ROTC Training Grounds within APE, Facing South.

Figure 4-12. Garden with Sprinkler Lines Located within APE, South.

Figure 4-13. Walking Path in Ruby M. Mize Azalea Garden Located within APE, Facing South.

Figure 4-14. Construction on E Starr Ave within APE, Facing West.

Figure 4-15. Representative Shovel Test Showing Undisturbed Soil Profile (ST 2).

Figure 4-16. Shovel Test Showing Disturbed Soil (ST 4). Note asphalt and sand inclusions.

Figure 4-17. Representative. Shovel Test Showing Disturbed Soil (ST 6). Note mottled soil.

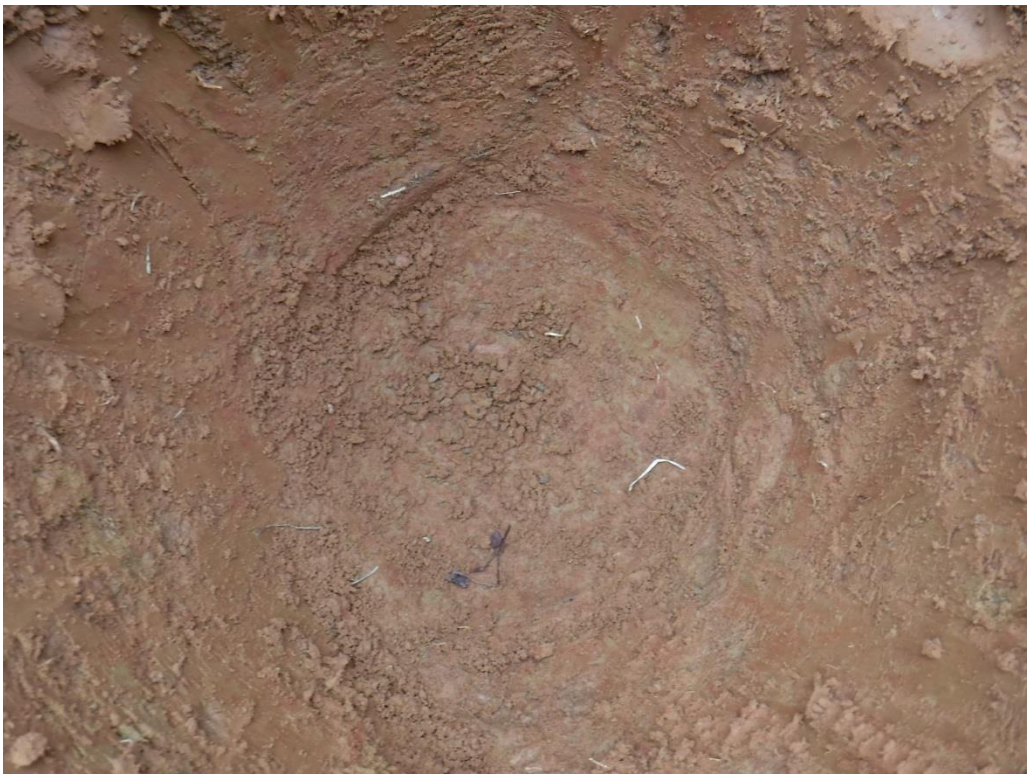

Figure 4-18. Shovel Test 3 Soil Profile. Note layer of charcoal and burnt clay on top.

Figure 4-19. Shovel Test 3 + 10 N Soil Profile. Note mottled soil beneath layer containing charcoal and burnt clay.

Figure 4-20. Overview of Recorded Location of Site 41NA78, Facing East.

Figure 4-21. Shovel Test 19 Soil Profile.

Figure 4-22. Soil from ST 19 in the Screen.

5 Summary and Recommendations

5.1 National Register Eligibility

5.1.1 Criteria for Evaluation of Eligibility

As part of the Section 106 review process, cultural resources investigations are undertaken with the purpose of identifying resources that are listed in, or eligible for listing in, the NRHP. The assessment of significance of cultural resources is based on federal guidelines and regulations. Any cultural resource that is listed in or eligible for inclusion in the NRHP is known as a "historic property," and the term "eligible for inclusion in the NRHP" includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet NRHP-listing criteria (36 CFR 800.2). The criteria for evaluating properties for inclusion in the NRHP (36 CFR 60.4 [a–d]) are codified under the authority of the National Historic Preservation Act of 1966, as amended, and the Advisory Council on Historic Preservation has set forth guidelines to use in determining site eligibility. Subsequent to the identification of relevant historical themes and related research questions, these four criteria for eligibility are applied:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, material, workmanship, feeling, and association and

A. that are *associated with events* that have made a significant contribution to the broad patterns of our history; or

B. that are *associated with the lives of persons* significant in our past; or

C. that *embody the distinctive characteristics* of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. that have yielded, or may be likely to *yield, information important in prehistory or history*. Note that the application of Criterion D presupposes that the information imparted by the site is significant in history or prehistory [36 CFR 60.4, emphasis added].

The physical characteristics and historic significance of the overall property are examined when conducting NRHP evaluations. Although a property in its entirety may be considered eligible based on Criteria A, B, C, and/or D, specific data are also required for individual components therein based on date, function, history, physical characteristics, and other information. Resources that do not relate in a significant way to the overall property may contribute if they independently meet the NRHP criteria.

For a historic resource, district, or landscape to be determined eligible for the NRHP, it must retain enough of its historic integrity to convey its significance. For the NRHP, there are seven aspects of integrity:

1. Location
2. Design
3. Setting
4. Materials
5. Workmanship
6. Feeling
7. Association

Occasionally, certain resources fall into categories in which they must be evaluated further using one or more of the following Criterion Considerations. If a resource identified during the reconnaissance-level survey falls into one of these categories, the following Criterion Considerations will be applied in conjunction with one or more of the four National Register criteria:

A. A religious property deriving primary significance from architectural or artistic distinction or historical importance, or

B. A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event, or

C. A birthplace or grave of a historical figure of outstanding importance if there is no other appropriate site or building directly associated with his or her productive life, or

D. A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events, or

E. A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived, or

F. A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own historical significance, or

G. A property achieving significance within the past 50 years if it is of exceptional importance (36 CFR 60.4).

The scientific value of archaeological sites is often assessed under Criterion D. With regard specifically to this criterion, the goal of prehistoric archaeological research and management is to fill gaps in the knowledge about specific research domains. Scientific importance is driven, in part, by the research paradigms of the time and in part by the amount of information available about a particular research topic in a specific geographic area. The most robust forms of scientific importance should honor diverse and occasionally competing schools of research interests and their attendant approaches. In order to fulfill Criterion D, a site must possess certain attributes (e.g., intact buried

cultural strata with functionally and temporally diagnostic materials, datable cultural features), such that further intensive research at the site could be expected to add additional information to relevant research questions.

5.1.2 State Antiquities Landmark

At the state level, archaeological sites may be considered significant and be recognized or designated as an SAL, provided that at least one of the following conditions is met:

1. The archaeological site is situated on lands owned or controlled by the State of Texas or one of its political subdivisions; or
2. The archaeological site is situated on private land which has been specifically designated as an SAL and fits at least one of the following criteria:
    A. Preservation of materials must be sufficient to allow application of standard archaeological techniques to advantage;
    B. The majority of artifacts are in place so that a significant portion of the site's original characteristics can be defined through investigation;
    C. The site has the potential to contribute to cumulative cultural history by the addition of new information;
    D. The site offers evidence of unique or rare attributes; and/or
    E. The site offers a unique and rare opportunity to test techniques, theories, or methods of preservation, thereby contributing to scientific knowledge [Texas Natural Resources Code 1977; Title 9, Chapter 191, Texas Antiquities Committee, Section 191.094 and Chapter 41.7, Antiquities Code of Texas].

Buildings, structures, cultural landscapes, and non-archaeological sites, objects, and districts may be designated as an SAL, provided that the following conditions are met:

1. The property fits within at least one of the following criteria:
    A. The 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. The property is associated with the lives of persons significant in our past;
    C. The 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. The property has yielded, or may be likely to yield, information important in Texas culture or history;
2. The property retains integrity at the time of the nomination, as determined by the executive director of the commission; and
3. For buildings and structures only, the property must be listed in the NRHP, either individually, or as a contributing property within a historic district. Contributing status may be determined by the Keeper of the National Register or the executive director of the commission.

5.2 Conclusion and Recommendation Summary

A total of 21 shovel tests were excavated during the intensive archaeological survey of the APE which consists of the 1 mi (1.6 km) portion of Oncor's Nacogdoches to Nacogdoches SE 138 kV transmission line improvements project that crosses SFASU property. Shovel tests revealed that the majority of the soils within the APE are not intact but have been previously disturbed. No archaeological materials were found during the course of the survey.

In accordance with 13 TAC 26.12, no further cultural resources investigations are recommended for the presently-defined APE, and the proposed improvements project on SFASU property may proceed. However, in the event that any archaeological deposits are encountered during construction, work should cease, and the THC should be notified.

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Appendix A.
Shovel Test Table

NOTE: Although the below table is arranged by natural levels in order to show stratigraphy, all shovel tests were excavated in 20-cm arbitrary levels.

Shovel Test (ST) Number	Matrix Description	Contents
1	0–80 cmbs: yellowish red (5YR 5/6) sandy clay loam *charcoal flecking at 70 cmbs:	No cultural materials
2	0–10 cmbs: dark brown (7.5YR 3/4) sandy clay loam 10–30 cmbs: yellowish red (5YR 4/6) sandy clay loam 30–80 cmbs: yellowish red (5YR 5/6) sandy clay loam	No cultural materials
3	0–30 cmbs: yellowish red (5YR 5/6) sandy clay loam with charcoal and burnt clay 30–50 cmbs: yellowish red (5YR 4/6) sandy clay loam	No cultural materials
3 + 10 N	0–10 cmbs: yellowish red (5YR 5/6) sandy clay loam with charcoal and burnt clay 10–30 cmbs: yellowish red (5YR 4/6) sandy clay loam 30–50 cmbs: construction fill	No cultural materials
4	0–30 cmbs: dark brown (7.5YR 3/4) sandy clay loam with brownish yellow (10YR 6/6) sand 30–80 cmbs: yellowish brown (5YR 4/6) sandy clay loam	0–30 concrete present
5	0–10 cmbs: dark brown (7.5YR 3/4) sandy clay loam 10–80 cmbs: yellowish red (5YR 4/6) compact sandy clay loam	No cultural materials
6	0–40 cmbs: yellowish red (5YR 4/6) sandy clay loam 40–55 cmbs: red (2.5YR 5/6) sandy clay loam with brownish yellow (10YR 6/8) sand	No cultural materials
7	0–80 cmbs: yellowish red (5YR 5/6) sandy clay loam	No cultural materials
8	0–47 cmbs: yellowish red (5YR 4/6) sandy loam with red (2.5YR 5/6) sandy loam and brownish yellow (10YR 6/8) sandy loam with gravel	No cultural materials
9	0–50 cmbs: yellowish red (5YR 4/6) sandy loam with red (2.5YR 5/6) sandy loam and brownish yellow (10YR 6/8) sandy loam with gravel	No cultural materials
10	0–50 cmbs: yellowish red (5YR 4/6) sandy loam with red (2.5YR 5/6) sandy loam and brownish yellow (10YR 6/8) sandy loam with gravel	No cultural materials
11	0–30 cmbs: yellowish red (5YR 4/6) sandy loam with red (2.5YR 5/6) sandy loam and brownish yellow (10YR 6/8) sandy loam with gravel	No cultural materials
12	0–50 cmbs: yellowish red (5YR 4/6) sandy loam with red (2.5YR 5/6) sandy loam and brownish yellow (10YR 6/8) sandy loam with gravel	No cultural materials
13	0–30 cmbs: dark yellowish brown (10YR 3/6) sandy loam with dark brown (7.5YR 3/4) sand 30–80 cmbs: strong brown (7.5YR 5/8) sandy clay loam	No cultural materials

Shovel Test (ST) Number	Matrix Description	Contents
14	0–5 cmbs: dark yellowish brown (10YR 3/6) sand 5–20 cmbs: strong brown (7.5YR 5/8) sand 20–25 cmbs: dark yellowish brown (10YR 3/6) sandy clay loam 25–40 cmbs: dark yellowish brown (10YR 3/6) sandy clay loam with yellowish red 5YR 4/6 sandy clay loam	No cultural materials
15	0–10 cmbs: dark brown (7.5YR 3/4) sandy clay loam 10–60 cmbs: yellowish red (5YR 4/6) sandy clay loam	No cultural materials
16	0–40 cmbs: dark yellowish brown (10YR 3/4) compact sandy loam with strong brown (7.5YR 4/6) sandy clay loam with gravel	No cultural materials
17	0–25 cmbs: dark yellowish brown (10YR 3/4) compact sandy loam with strong brown (7.5YR 4/6) sandy clay loam with gravel	Large metal piece from machinery (n=1) [discarded]
18	0–75 cmbs: red (2.5YR 4/6) sandy clay loam 75+ cmbs: dark yellowish brown (10YR 3/4) clay with 20 percent gravel	modern ceramic (n=1) modern glass (n=1) [discarded]
19	0–50 cmbs: construction fill	No cultural materials
20	0–30 cmbs: construction fill	No cultural materials