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Intensive Archeological Survey on County Road 151 at the Nueces River, Live Oak County, Texas

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Report for Archeological Survey

Intensive Archeological Survey on County Road 151 at the Nueces River, Live Oak County, Texas

Corpus Christi District

Eric Oksanen, Principal Investigator, Antiquities Permit No. 8113

CSJ: 0913-29-013
August 31, 2017

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated 12-16-14, and executed by FHWA and TxDOT.

Abstract

On behalf of the Texas Department of Transportation, SWCA Environmental Consultants (SWCA) conducted an intensive cultural resources survey on July 25, 2017, of 1.13 acres of along County Road (CR) 151, southeast of George West in Live Oak County, Texas. As the project will receive funding from the Federal Highways Administration, it qualifies as an undertaking as defined in Title 36 Code of Federal Regulations (CFR) Part 800.16(y); therefore, the archeological survey was conducted in compliance with Section 106 of the National Historic Preservation Act (54 U.S. Code 306108). Furthermore, the project must also comply with the Antiquities Code of Texas (9 Natural Resources Code 191). Eric Oksanen served as Principal Investigator under Texas Antiquities Code Permit No. 8113.

The project area is defined as the existing CR 151 ROW beginning 508 feet (154 meters [m]) southwest of the south bank of the Nueces River, and ending 175 feet (53 m) northeast of the intersection of the north bank of the Nueces River. The area of potential effects (APE) for archeological resources consists of 0.93 acres of existing ROW and 0.2 acres of additional right of way (contiguous to and extending approximately 10 feet in added width on the east side) along 841 feet (256 m) of CR 151 with depths of impacts ranging from 3 feet (1 m) on the approaches to 40 feet (12 m) for the proposed bridge.

Background research identified one archeological site (41LK286) within 0.6 mile (1 kilometer [km]) of the proposed project APE. Site 41LK286 is located 0.32 miles (0.51 km) southwest of the proposed APE. No archaeological surveys are mapped within a 0.6-mile (1-km) search radius of the proposed project APE. The historic map review identified no potentially historic structures within the current project APE and 48 potentially historic structures within a 0.6-miles (1-km) radius of the current APE. Additionally, two cemeteries, and one historic marker are located within 0.6 mile (1 km) of the project area.

The field investigation consisted of two backhoe trench excavations. The existing ROW has been modified by the construction of CR 151, existing buried utilities, the current concrete span bridge, and disturbances from the active floodplain of the Nueces River. Portions of the ROW consist of tall grasses and dense riparian vegetation near the Nueces River. Outside the APE, the landscape comprises a densely-vegetated floodplain. The trenches and pedestrian survey identified no cultural materials or features in the project APE. One of the trenches uncovered an abandoned buried utility; the cumulative impacts from the roadway and existing utilities indicate a negligible potential for intact archeological resources within the APE.

SWCA made a reasonable and good faith effort as per 36 CFR Part 800.4(b)(1) to identify and locate prehistoric and historic archeological properties within the proposed project APE. The field investigation discovered no cultural resources; therefore, SWCA recommends a finding of “no historic properties affected”.

Project Identification

Date: August 31, 2017

Date(s) of Survey: July 27, 2017

Archeological Survey Type: Reconnaissance ☐ Intensive ☒

Report Version: Draft ☐ Final ☒

Jurisdiction: Federal ☒ State ☒

Texas Antiquities Permit Number: 8113

District: Corpus Christi

County or Counties: Live Oak

USGS Quadrangle(s): George West (2898-141)

Highway: County Road (CR) 151

CSJ: 0913-29-013

Report Author(s): Mary Rodriguez and Christina Nielsen

Principal Investigator: Eric Oksanen, Texas Department of Transportation (TxDOT)

Texas Historical Commission Approval

Signature Date

Project Description

Project Type: Roadway improvement, bridge replacement

Total Project Impact Acreage: 1.13 acres

New Right of Way (ROW) Acreage: 0.2 acres

Easement Acreage: 0 acres

Area of Pedestrian Survey: 1.13 acres

Project Description and Impacts: The total project area for roadway improvements measures 842 feet (256 meters[m]) in length and includes a 42 to 96-foot-wide (13 to 29.5 m) ROW. These roadway improvements would replace the existing bridge with a pre-stressed concrete span bridge. The proposed project would also improve the approaches in each direction to match previous road widening where new ROW is proposed. All construction activities will take place within the 1.13 acres of APE; the project is in Live Oak County (Figure 1).

Area of Potential Effects (APE): The APE is defined as the existing CR 151 ROW beginning 508 feet (154 m) southwest of the south bank of the Nueces River, and ending 175 feet (53 m) northeast of the intersection of the north bank of the Nueces River (Figure 2). The APE for archeological resources consists of 0.93 acres of existing ROW and 0.2 acres of proposed ROW along 842 feet (256 m) of CR 151. Based upon typical roadway design, the depth of impacts is anticipated to be no more than 3 feet (1 m) below the current ground surface for the roadway and 40 feet (12 m) for the proposed bridge.

Project Area Ownership: The entire ROW is currently owned and managed by Live Oak County.

Project Setting

Topography: The linear APE runs roughly southwest to northeast across the floodplain of the Nueces River. Elevation ranges from a maximum of 117 feet above mean sea level (amsl) at the northeastern end of the APE to a low of 104 feet amsl on the southwestern end of the APE.

The proposed APE is located within the South Texas Plains ecoregions and more specifically the Tamaulipas Thornscrub ecoregion of Texas (Griffith et al. 2004). The Tamaulipas Thornscrub consists of gently undulating plains. Soils are alkaline to acidic and range from deep sandy loams to clayey, poorly drained soils. The vegetation in this region is varied, although it is dominated by drought-tolerant thorny trees and shrubs. Land use is typically ranching and agriculture, along with commercial or residential developments.

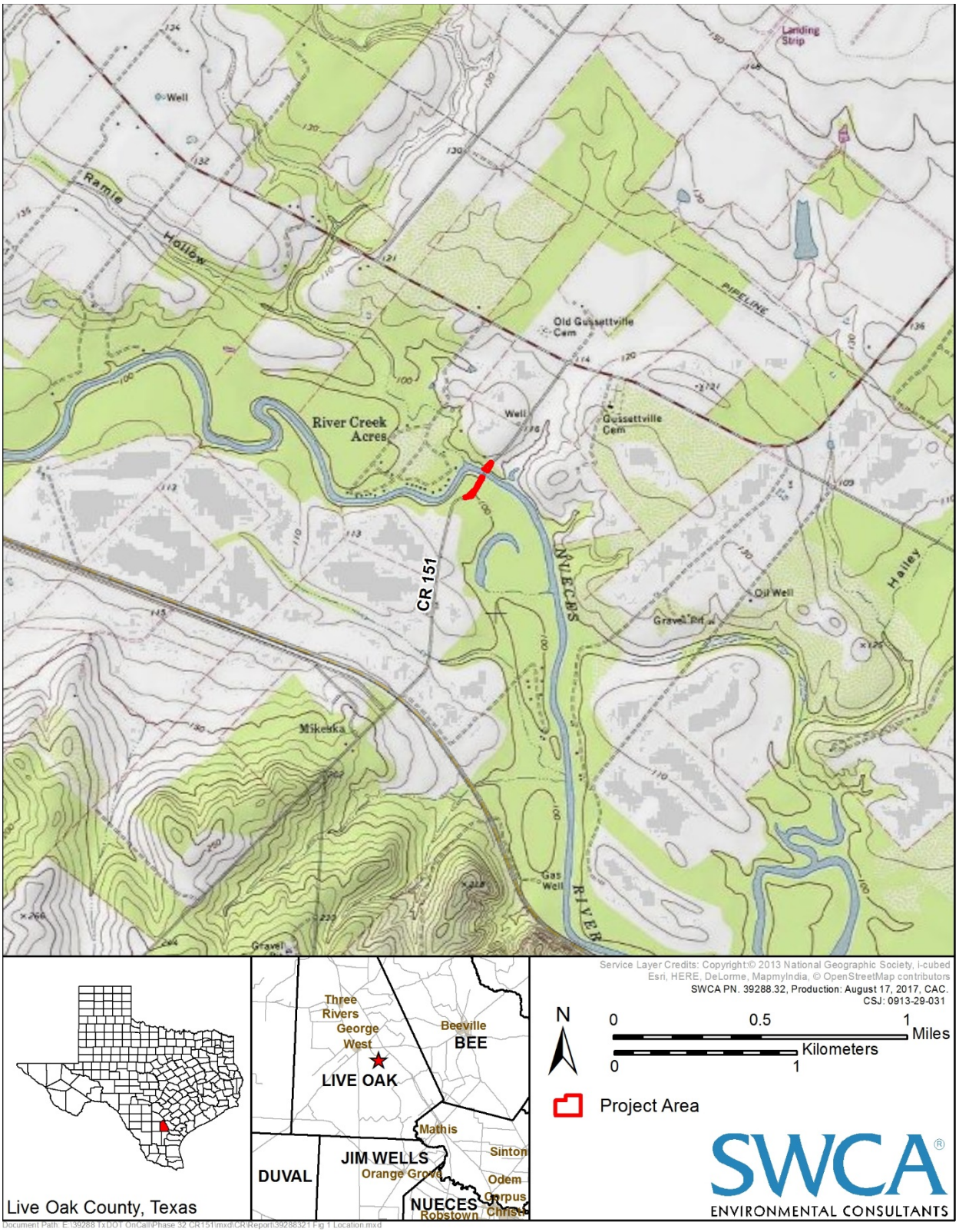

Figure 1. Project location map.

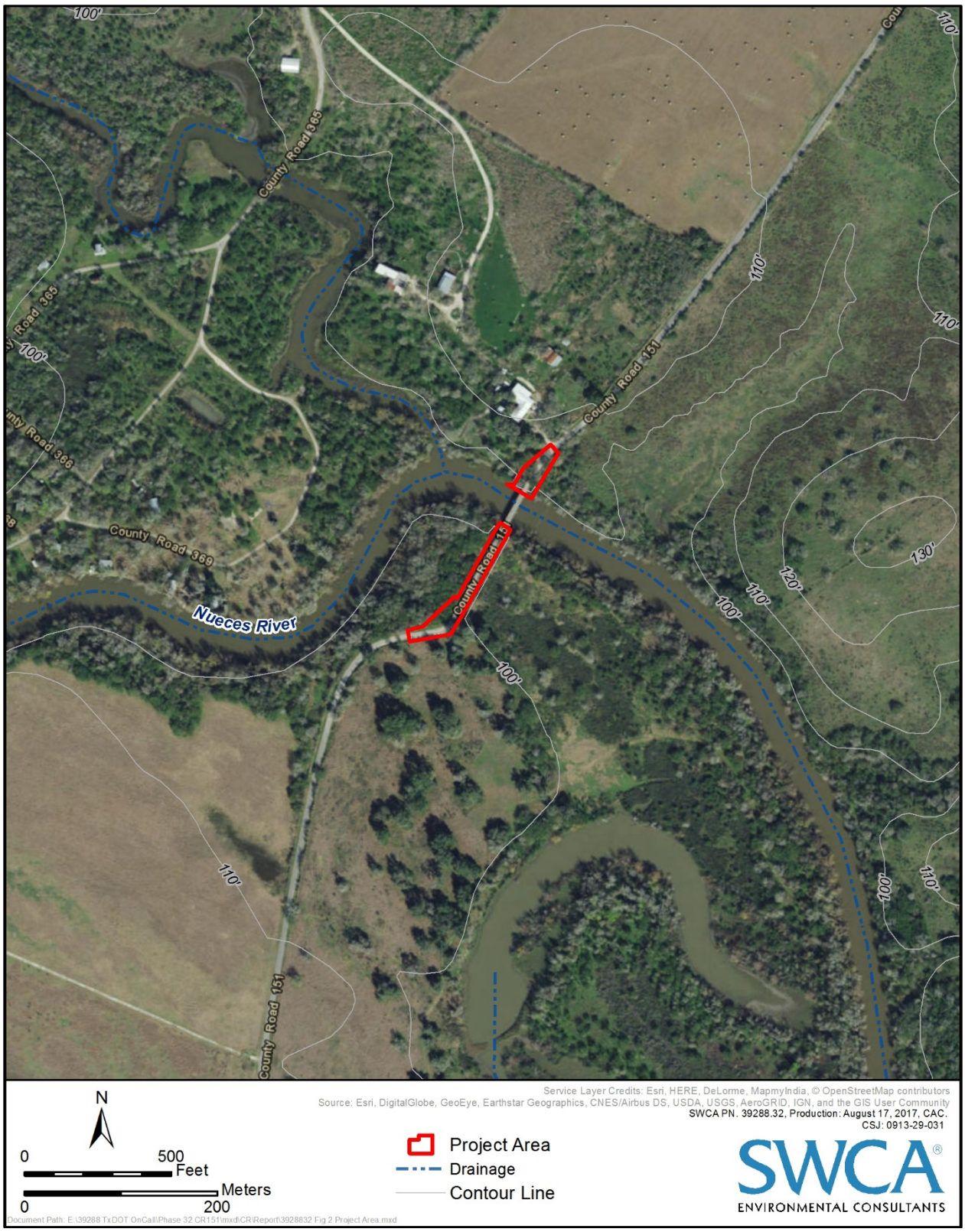

Figure 2. Project area.

Geology: According to the Geologic Atlas of Texas, the project area is composed of Holocene-age alluvium and low terrace deposits along streams consisting of sand, silt, clay and gravel (Barnes 2016; U.S. Geological Survey [USGS] 2017).

Soils: The U.S. Department of Agriculture – Natural Resources Conservation Service (NRCS) Web Soil Survey, indicates that the APE is mapped within the Buchel and Odem soil series (Figure 3). The Buchel series consists of very deep, very slowly permeable, moderately well drained soils that formed in recent calcareous clayey alluvium. The Odem series consists of very deep, well drained soils that formed in loamy alluvial sediments on natural levees of Holocene age (NRCS 2017).

Land Use: The existing CR 151 ROW contains roadway, ditches, and approaches; sand and gravel fill is also present where the bridge support structures are situated. The APE land use patterns consist of a cleared pastureland in the southeast quadrant and riparian vegetation consisting primarily of oak.

Vegetation: The existing APE consists of tall grasses in the floodplain, along with oak and mesquite stands with dense undergrowth (Figures 4 and 5).

Estimated Ground Surface Visibility: 10 percent, not including the existing roadway.

Previous Investigations and Known Archeological Sites:
SWCA conducted a background cultural resources review of the project area in July 2017. An SWCA archeologist reviewed the George West (2898-141) USGS 7.5-minute topographic quadrangle map and records pertaining to the project area on the Texas Historical Commission's (THC's) Archeological Sites Atlas online database (THC 2017a). These sources provided information on the nature and location of previously conducted cultural resources surveys, previously recorded prehistoric and/or historic archeological sites, National Register of Historic Places districts and properties, State Antiquities Landmarks (SALs), Official Texas Historical Markers, Registered Texas Historic Landmarks, cemeteries, and local neighborhood surveys in or within 0.6 mile (1 kilometer [km]) of the proposed project APE.

No previously conducted archeological surveys and one archeological site (41LK286) are located within 0.6 mile (1 km) of the proposed project APE. Site 41LK286 is located 0.32 mile (0.51 km) southwest of the APE. There is no data for site 41LK286 on the Texas Archaeological Site Atlas (THC 2017a).

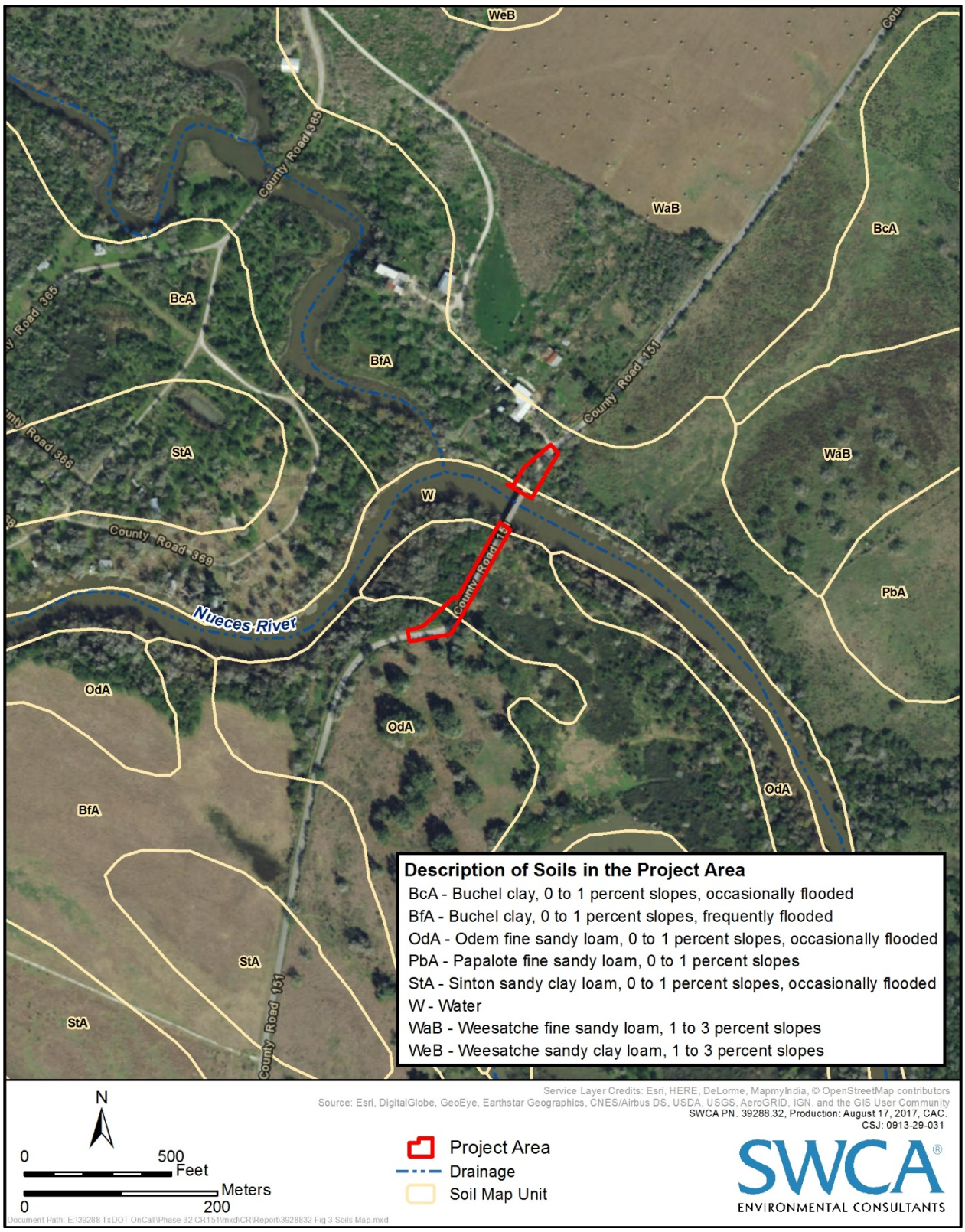

Figure 3. Mapped soils within the APE.

Figure 4. Overview of tall grasses within the floodplain of the Nueces River, facing north.

Figure 5. Overview of trash littering existing ROW within northeast quadrant, facing east.

Comments on Project Setting: The project area is located along the floodplain of the Nueces River. The area is heavily disturbed by the construction of the CR 151 bridge and two buried telephone lines on the east side of CR 151. The northeastern portion of the ROW has a slope of approximately 35 to 45 percent, and the portion of the APE west of CR 151 was not suitable for trenching, due to excessive slope and dense vegetation.

Survey Methods

Surveyors: Daniel Rodriguez

Methodological Description: The field investigations complied with the THC Archeological Field Survey Standards (THC 2017b). The investigations entailed an intensive pedestrian survey of 1.13 acres, augmented with backhoe trenching in locations that appeared most favorable to contain intact cultural resources (e.g., areas with less visible disturbance or fewer utilities). Trench locations were chosen at the discretion of the project archeologist and focused on areas with the least disturbance within the APE, as well as areas with alluvial deposits and the potential for deeply buried cultural materials. Survey efforts resulted in the excavation of two backhoe trenches (BHTs) (Table 1).

Table 1. Excavations in Project APE

Method	Quantity in Existing ROW	Quantity in Proposed New ROW	Quantity in Temporary Easements	Total Number per Acre
Shovel Test Units	0	0	0	0
Auger Test Units	0	0	0	0
Mechanical Trenching	2	0	0	2

SWCA archeologists excavated two BHTs within the existing ROW along CR 151 within the Nueces River floodplain (Table 2). Archeologists thoroughly documented and photographed the entire excavation process. Additionally, archeologists recorded BHT locations on a handheld GPS device with sub-meter accuracy. Upon completion of the individual trenches, all BHTs were backfilled, levelled, and returned as much as possible to their original state. SWCA performed all work in accordance with Occupational Safety and Health Administration regulations (29 Code of Federal Regulations [CFR] 1926).

Other Methods: None

Collection and Curation: NO ☒ YES ☐ If yes, specify facility.

Comments on Methods: THC survey standards for a project of this size (i.e., less than 2 acre) require a minimum of three shovel tests per acre. Due to the existing roadway and heavy

disturbance within the APE, two (2) backhoe trenches were excavated (see Table 1). THC archeological survey standards do not specify a density of BHTs per unit area (THC 2017b).

Survey Results

Project Area Description: SWCA archeologists conducted backhoe trenching, and pedestrian survey throughout the APE. Trenching efforts were focused within the southeastern portion of the APE where the ground was flat and less disturbed. Two trenches were excavated in the southeast quadrant of the APE, whereas no trenches were excavated in the other quadrants due to excessive slope and dense vegetation (Figures 6 and 7). The active floodplain of the Nueces River is covered with short grasses and the area has been disturbed by construction of elevated roadway and in-filling from bridge construction, modern trash dumps, and active erosion and deposition in the floodplain. Modern cultural materials (e.g., glass soda and beer bottles, and plastic fragments) were observed on the surface along the south side of the APE (see Figure 5); however, no historic-age or prehistoric-age materials were encountered. The number of trenches excavated was limited by the inability to traverse sloped areas with the backhoe.

Figure 6. Overview of mesquite stand within APE, facing west.

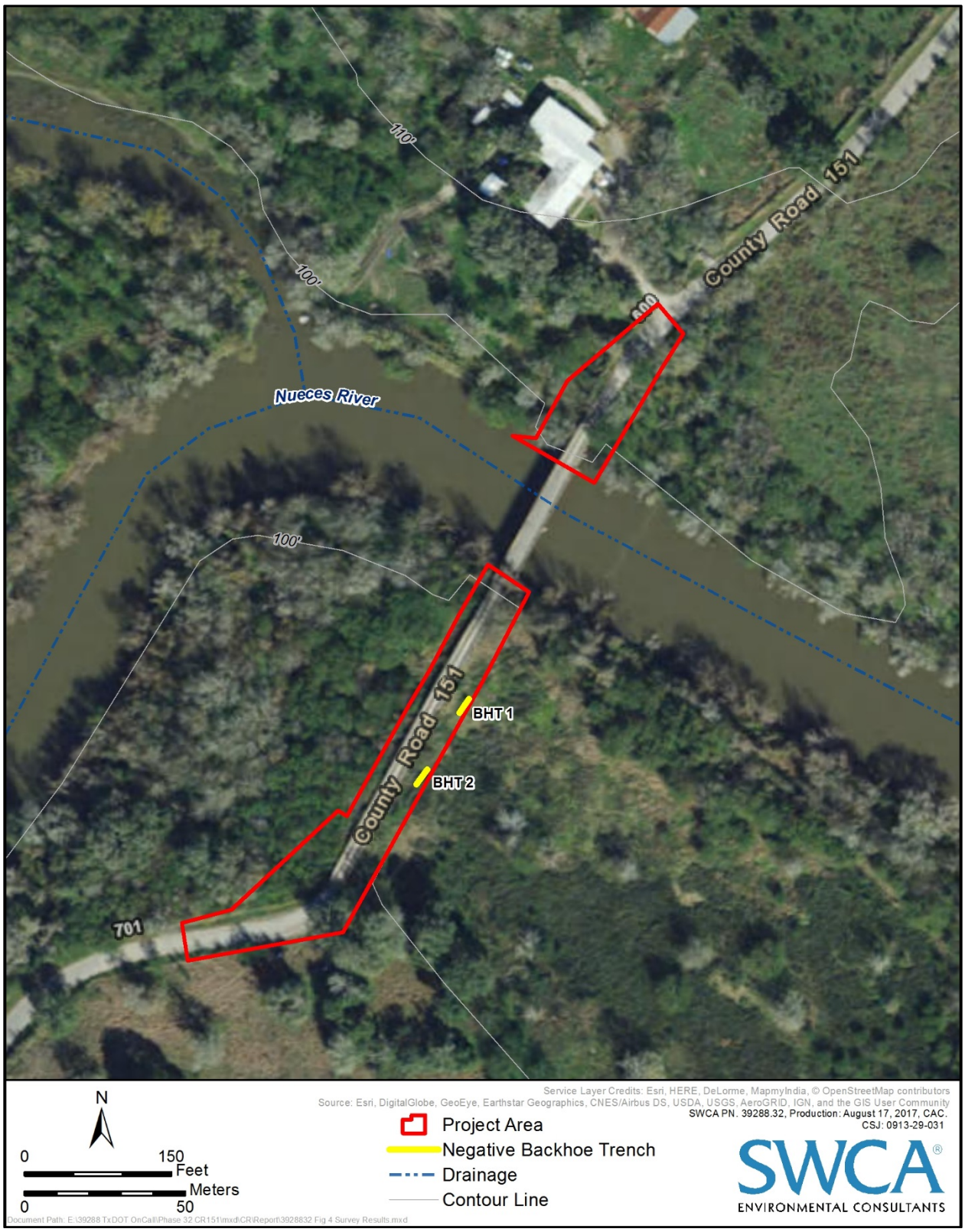

Figure 7. Survey results map.

Backhoe Trenching

The BHTs were excavated to varying depths, ranging from a minimum of 3.2 feet (1.0 m) to a maximum of 6.5 feet (2.0 m) to encounter strata that predated human occupation in the area. The trench dimensions were typically 2.95 feet (0.9 m) wide and 10 feet (3 m) long.

The APE is located on a T_0 terrace and is subject to frequent flooding and the deposition of alluvium (see Figure 4). The natural stratigraphy within the existing ROW consisted of six alluvial strata with a maximum depth of 200 centimeters below surface (cmbs). The top two strata of BHT01 consisted of a yellowish brown (10YR 5/4-5/6) sandy loam with mottles of pale brown (10YR 6/3) overlying a light gray (10YR 7/1) sand lens measuring 10 cm (Figure 8). The third stratum consists of a light yellowish brown (10YR 6/4) silt loam. The fourth, fifth, and sixth strata are all very similar dark yellowish brown (10YR 4/4) loams and are differentiated by the amount of clay in the matrix. One modern brown bottle glass fragment was found at 90 cmbs and one wire nail was found at 200 cmbs (Figure 9). These two artifacts were attributed to disturbance from road construction and the installation of a nearby buried telephone line. BHT02 is composed of a single stratum similar matrix to BHT01 stratum 1, although it was more disturbed with evidence of mottling up to 100 cmbs where an abandoned buried telephone line was encountered (Figure 10). The strata were all alluvial in nature and no clear evidence of a buried soil was observed. No cultural materials were encountered during the trenching efforts.

Archeological Materials Identified: SWCA did not encounter any cultural resources other than modern roadside debris including glass soda and beer bottles, a buried abandoned phone cable, and plastic fragments, within the project area.

APE Integrity: The existing CR 151 APE exhibits extensive prior disturbance from road construction the installation of a telephone cable thereby compromising the integrity of the survey area and any cultural resources that might be present within them.

Figure 8. Overview of BHT01, plan view.

Figure 9. Overview of brown bottle glass and wire nail found in BHT01.

Figure 10. Overview of abandoned telephone line encountered in BHT02.

Table 2. BHT excavations in Project APE.

BHT	Strat	Depth (cmbs)	Munsell	Soil Color	Soil Texture	Horizon Discussion	Lower boundary	Comments
BHT01	1	0-45	10YR 5/4-5/6	Yellowish brown	Sandy Loam	Friable, sub-rounded, medium, moderate to strong, mottles of 10YR 6/3 10 to 20 percent, moderate contrast, roots 15%, rootlets 15%, shell (rabdotus?) 2% (<1mm)	Clear, irregular	No cultural material (NCM)
	2	45-55	10YR 7/1	Light gray	Sand	Loose, crumb, structureless, roots 2%, rootlets 2%, charcoal <1mm <1%	Clear, Wavy	NCM
	3	55-65	10YR 6/4	Light yellowish brown	Silt Loam	Firm to Friable, Platy, massive, strong to moderate, beetle husks 2%, rootlets 5%, snail shell fragments 1% <1mm	Clear, smooth	NCM
	4	65-110	10YR 4/4	Dark yellowish brown	Clay loam	Firm, subangular, medium, moderate, beetle husks 2%, rootlets 5%, snail shell fragments 1% <1mm	Clear, irregular	Modern brown bottle glass at 90cmbs
	5	110-125	10YR 4/4	Dark yellowish brown	Sandy Loam	Firm to friable, platy, massive, strong to moderate, beetle husks 2%, rootlets 5%, snail shell fragments 1% <1mm, numerous dark lamina	Clear, smooth	NCM
	6	125-200+	10YR 4/4	Dark yellowish brown	Sandy Loam	Firm to friable, platy, massive, strong to moderate, beetle husks 2%, rootlets 5%, snail shell fragments 1% <1mm, numerous light lamina	Unobserved	Observed from above, iron nail at 200 cmbs
BHT02	1	0-100	10YR 5/4-5/6	Yellowish brown	Sandy Loam	Friable, sub-rounded, medium, moderate to strong, mottles of 10YR 6/3 10 to 20 percent, moderate contrast, roots 15%, rootlets 15%, shell (rabdotus?) 2% (<1mm), very disturbed	Unobserved	Telephone cable observed at 100 cmbs

Recommendations

Further Work: No further work is recommended within the APE.

Justification: Investigations were conducted in compliance with the Antiquities Code of Texas and Section 106 of the National Historic Preservation Act (NHPA). Although a marked, buried telephone line, a narrow right of way, and excessive slope constrained the placement of subsurface trenches, two trenches were excavated within the APE. Investigators did not encounter any historic or prehistoric cultural materials during intensive investigations of the APE. Cultural materials (e.g., glass soda and beer bottles, a buried abandoned phone cable, and plastic fragments) were observed on the ground surface within the APE, but all were recent (modern) in age. The backhoe trenching revealed disturbed fill above an intermittent *in situ* alluvial deposit. No cultural materials were observed in these soils. Additionally, the extensive roadway construction and disturbances on the active floodplain of the Nueces River throughout the existing ROW has greatly decreased the potential for encountering intact cultural deposits. No further investigations are recommended within the 1.13 acres of the APE.

There is little probability that archeological deposits occur in the APE with integrity sufficient to meet the criteria of eligibility (36 CFR § 60.4) for listing in the National Register of Historic Places as archeological historic properties (36 CFR § 800.16.(l)) or that would meet the criteria for designation as State Antiquities Landmarks (13 TAC 26.8). Furthermore it is also unlikely cemeteries occur in the APE and that the project will have no effect on a marked or unmarked cemetery (Health and Safety Code, Title 1, Chapter 711. 010, and Title 1, Chapter 711.035).

As per the federal and state implementing regulations at 36 CFR 800.4(b)(1) and 13 Texas Administrative Code 26, SWCA has made a reasonable and good faith effort to identify all cultural resources within the APE and recommends no further cultural resources investigation prior to construction.

Pursuant to Stipulation VI of the PA-TU, TxDOT finds that the APE does not contain archeological historic properties (36 CFR 800.16(l)), and the proposed undertaking would not affect archeological historic properties. In addition, the project does not merit additional field investigations in compliance with the MOU (43 TAC 2.24(f)(1)(C). The project will have no effect on archeological historic properties. In the event that unanticipated archeological deposits are encountered during construction, work in the immediate area will cease and TxDOT archeological staff will be contacted to initiate post-review discovery procedures under the provisions of the PA and MOU.

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This report was written on behalf of the Texas Department of Transportation by

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