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Report for Archeological Survey

Intensive Archeological Survey for the Barton Oaks Road at Bartons Creek Bridge Replacement, Bastrop County

Austin District

Jon Budd Principal Investigator, Antiquities Permit No. 7555

CSJ: 0914-18-091

March 10, 2016

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by Texas Department of Transportation (TxDOT) pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by the Federal Highway Administration and TxDOT.

Abstract

On March 3, 2016, SWCA Environmental Consultants conducted an intensive cultural resources survey of new bridge installation and associated roadway approaches (approximating 1 acre) along Barton Oaks Drive in Bastrop County, Texas. These investigations for the Austin District were conducted for the proposed bridge replacement across Bartons Creek. The work was conducted in compliance with Section 106 of the National Historic Preservation Act (54 United States Code 306108) and the Antiquities Code of Texas (9 Natural Resources Code 191). Jon Budd served as Principal Investigator under Texas Antiquities Code Permit No. 7555.

The area of potential effects (APE) comprises new and existing right-of-way (ROW). The survey area includes a proposed 733-foot-long by 50-foot-wide new road ROW measuring 0.84 acre. An additional 0.397 acre of new ROW is located between the existing and proposed ROW on the southwest side of the project area, and 0.545 acre of new ROW located on the northeast side of the project area between the existing and proposed roads. According to typical roadway design, the depth of impacts is estimated to be no more than 40 feet below the current ground surface for the bridge supports and no more than 6 feet for the remainder of the project. The total acreage of the APE measures approximately 2 acres.

The field investigations consisted of excavation of three backhoe trenches around the drainage crossing of Bartons Creek. All trenches revealed deep sands but were negative for cultural material. As such, no further work is recommended.

Project Identification

Date: 03/10/2016

Date(s) of Survey: 03/03/2016

Archeological Survey Type: Reconnaissance ☐ Intensive ☒

Report Version: Draft ☒ Final ☐

Jurisdiction: Federal ☐ State ☒

Texas Antiquities Permit Number: 7555

District: Austin

County or Counties: Bastrop

USGS Quadrangle(s): Togo (2997-443)

Highway: Barton Oaks Drive

CSJ: 0914-18-091

Report Author(s): Daniel Rodriguez

Principal Investigator: Jon Budd

Texas Historical Commission Approval

Signature Date

Project Description

Project Type: Road improvement

Total Project Impact Acreage: Approximately 2 acres

New Right of Way (ROW) Acreage: Approximately 2 acres

Easement Acreage: N/A

Area of Pedestrian Survey: Approximately 2 acres

Project Description and Impacts: The proposed improvement project would install a new two-lane bridge (300 feet long, 24 feet wide) approximately 20 to 100 feet south of the existing bridge crossing Barton Creek and create new curving road approaches on either side of the new bridge. Construction activities will include grading, bridge replacement, and roadway rehabilitation. These construction activities will take place within intact and partially disturbed proposed new ROW.

Area of Potential Effects (APE): The APE is defined as the proposed project length (733 feet long by 50 feet wide), which includes approximately 1 acre of existing ROW and the new ROW (0.397-acre section to the southwest and 0.545-acre section to the northeast). Depth of construction impacts is up to 40 feet. The total APE acreage is approximately 2 acres (Figures 1 and 2).

Parcel Number(s): Not available.

Project Area Ownership: The new and existing ROW is owned or controlled by the Texas Department of Transportation (TxDOT).

Project Setting

Topography: The bridge and road approaches are located on a flat to gently sloping floodplain on both sides of Bartons Creek (see Figure 1).

Geology: The Geologic Atlas of Texas, Austin Sheet, depicts the APE as alluvium. This formation is of Holocene age with clay, silt, sand, and gravel deposited by fluvial processes (Barnes 1974).

Soils: The survey area is situated entirely in the Uhland soil series (Figure 3). The Uhland loam is a very deep, moderately slowly permeable soil formed in alluvium. Uhland is located on nearly level floodplains with slopes ranging from 0 to 1 percent. Notably, the Uhland series contains buried A horizons of Holocene age (Natural Resources Conservation Service 2016).

Land Use: The proposed new ROW is undeveloped floodplain on the periphery of agricultural fields. The land has been disturbed by past clearing, road and bridge construction, and flood erosion.

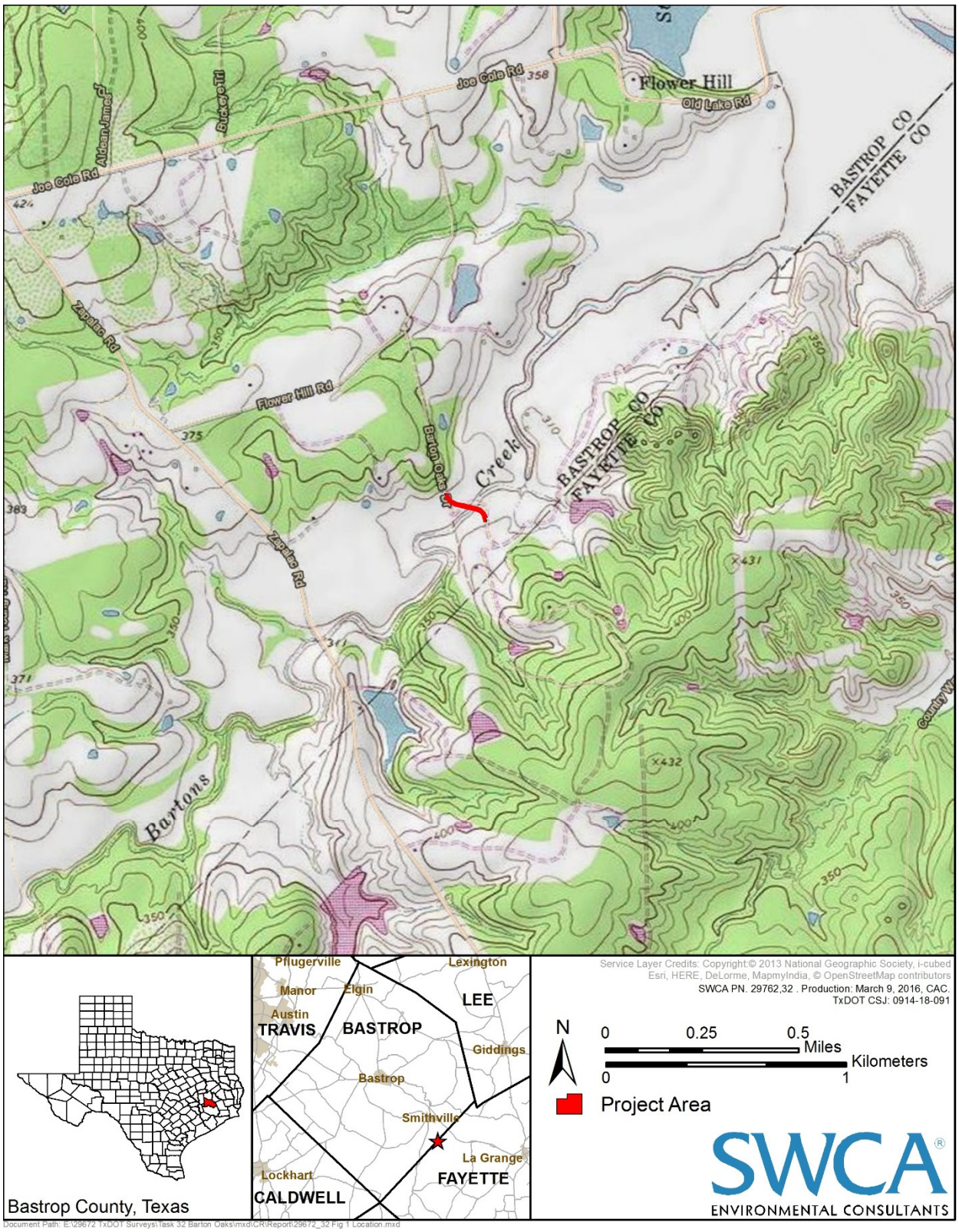

Figure 1. Project area location.

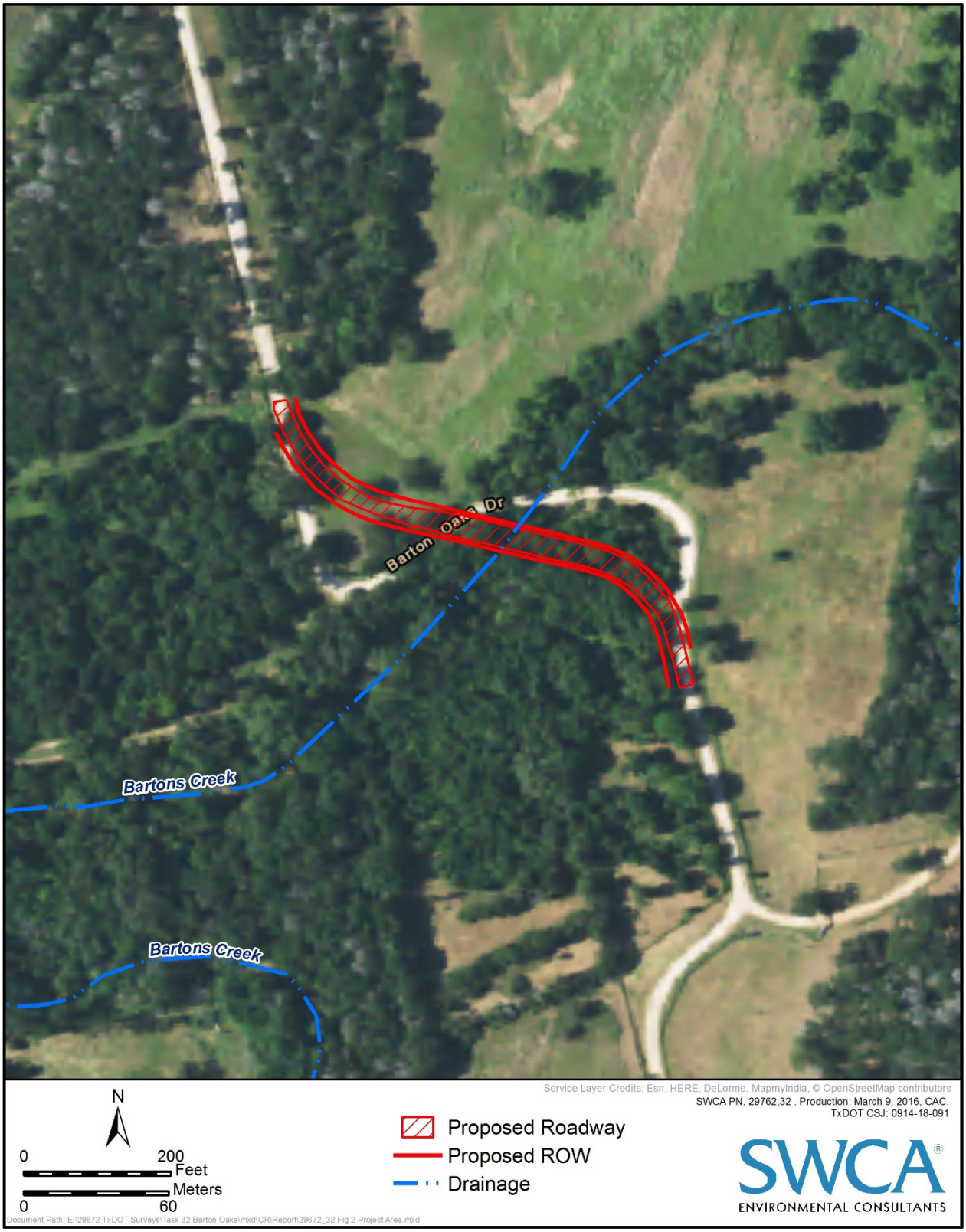

Figure 2. Project area.

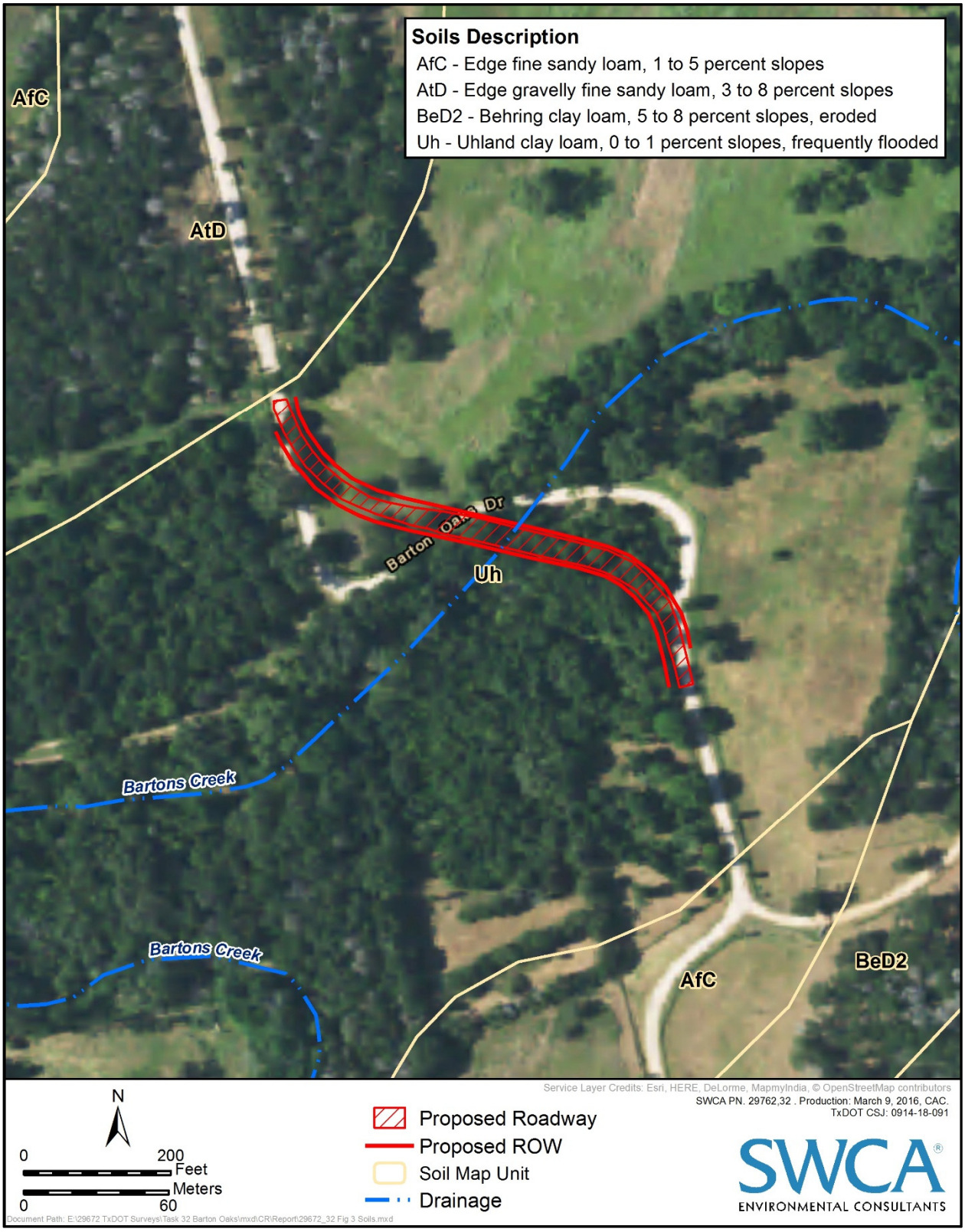

Figure 3. Project area soils.

Vegetation: The project area is surrounded by short to medium mixed grasses with sparse forbs and graminoids (i.e., weeds) and junipers (*Juniperus* spp.) in cultivated fields. The drainage and low-lying areas were populated by post oak (*Quercus stellata*), elm (*Ulmus* spp.), hackberry (*Celtis* spp.), eastern cottonwoods (*Populus deltoids*), and some bald cypress (*Taxodium distichum*). The project area consists of approximately 80 percent wooded floodplain and 20 percent cultivated field.

Estimated Ground Surface Visibility: 0 percent

Previous Investigations and Historic Map Review: The background literature review determined that the survey area has not been previously surveyed for cultural resources. No previously recorded sites are located within the APE. In addition, no previously recorded sites or surveys are within a 1-kilometer radius of the APE. The nearest recorded site, 41BP327, is located approximately 1.67 miles northeast of the APE on the northwest bank of Stagners Lake (Texas Archeological Sites Atlas [Atlas] 2016). However, no site form was available on the Atlas. A review of the Historic Overlay maps, ranging from 1964 to 1982, found no historic-age structures or features within the APE (Foster et al. 2006).

Comments on Project Setting: The project area spans Bartons Creek, a prominent drainage that empties into the Colorado River 4 miles to the east. Although no previously recorded sites are located within the APE, the deposits and setting along this waterway are favorable for containing buried cultural material; its terraces have been shown to contain very deep alluvium aggrading over a long period of time resulting in the potential for deeply buried deposits. Half of the APE is heavily modified by agricultural disturbances as well as existing road and bridge construction, minimizing the likelihood of intact surficial cultural deposits within the APE.

Survey Methods

Surveyors: Ken Lawrence and Mercedes Cody

Methodological Description: In accordance with the Work Authorization (WA), SWCA conducted reconnaissance-level inspection across the entire APE to determine locations where potential impacts to cultural resources would most likely occur. The WA specifies concentrating intensive pedestrian inspection, augmented by excavation of backhoe trenches (Table 1), on each side of the drainage crossing. All survey was located within the new TxDOT ROW.

Table 1. Subsurface Probes.

Method	Quantity in Existing ROW	Quantity in Proposed New ROW	Quantity in Temporary Easements	Total Number per Acre
Shovel Test Units	0	0	n/a	0
Auger Test Units	0	0	n/a	0
Mechanical Trenching	0	3	n/a	1.5

The SWCA archeologist determined trench placement at the project area crossing based on the level of disturbance, the location of any impacted areas such as previous construction, existing buried utility locations, access, and the preservation potential for archeological sites. Backhoe trenches (BHTs) at the crossings were excavated to a depth sufficient to determine the presence/absence of buried cultural materials and to allow the complete recording of all features and geomorphic information to depths of project impacts. Generally, trenches were 8 to 10 feet (2.5 to 2.8 meters [m]) deep, 13 to 16 feet (4 to 5 m) long, and 3 feet (1 m) wide. An experienced archeologist monitored all trenching while excavations were underway. Once the trench was excavated to 5 feet in depth, an SWCA archeologist scraped down a minimum of 6 feet (1.8 m) of one trench wall and examined the profiles for artifacts, features, or other cultural manifestations, and recorded stratigraphic descriptions for each trench (Table 2). Those trenches excavated below 5 feet (1.5 m) were not entered in accordance with Occupational Safety and Health Administration (OSHA) (29 Code of Federal Regulations [CFR] Part 1926) regulations. However, while outside of the trench, SWCA archeologists examined, screened, and thoroughly documented soils from the deeper deposits (grab samples).

SWCA performed all work in accordance with OSHA (29 CFR Part 1926) regulations. When necessary to assess the potential for buried deposits beyond 5 feet (1.5 m) below the surface, using the methods noted above, an archeologist screened a portion of soil from every third backhoe bucket through ¼-inch wire mesh to assess presence or absence of cultural materials and observed the profile from the surface. The entire process was thoroughly documented and photographed. Upon completion of excavation, all trenches were backfilled and returned as closely as possible to their original surface contours.

Table 2. Backhoe Trench Results.

Trench	Depth (cmbs)	Munsell	Soil Color	Soil Texture Description	Inclusions	Lower Boundary	Comments
1	0–11	10YR5/3	brown	sandy loam	20% roots and rootlets	gradual and smooth	Plow zone; no cultural material encountered.
	11–64	10YR5/3 to 10YR6/3	brown to pale brown	sandy loam	10% roots and rootlets	abrupt and smooth	No cultural material encountered.
	64–86	10YR4/2	dark grayish brown	sandy clay loam	5–10% roots and rootlets	clear and smooth	Buried soil; no cultural material encountered.
	86–107	10YR4/3	brown	sandy loam	10% roots	clear and smooth	No cultural material encountered.
	107–124	10YR3/2 to 10YR3/3	very dark grayish brown to dark brown	sandy clay loam	5–10% rootlets	clear and smooth	No cultural material encountered.
	124–180	10YR3/3 to 10YR4/3	dark brown to brown	sandy clay loam	5% rootlets		Slightly more clay content; no cultural material encountered.
	180–210	10YR4/1 to 10YR4/2	dark gray to dark grayish brown	sandy clay loam			Buried soil; no cultural material encountered; observed from above.
	210–271+	10YR5/3	brown	sandy clay loam		unobserved	No cultural material encountered; observed from above.
2	0–18	10YR5/3	brown	sandy loam	20% roots and rootlets	gradual and smooth	Root zone at 0–4 cmbs; no cultural material encountered.
	18–56	10YR4/4	dark yellowish brown	sand to sandy loam	10% roots and rootlets		High sand content; no cultural material encountered.
	56–76	10YR4/4 to 10YR5/4	dark yellowish brown to yellowish brown	sandy loam	5–10% roots and rootlets; 5–10% gleying mottles	abrupt and wavy	No cultural material encountered.
	76–81	10YR4/2	dark grayish brown	clay		abrupt and wavy	Firm clay lens; no cultural material encountered.
	81–88	10YR4/4 to 10YR5/4	dark yellowish brown to yellowish brown	sandy loam	5–10% roots and rootlets; 5–10% gleying mottles	abrupt and wavy	No cultural material encountered.
	88–94	10YR5/1 to 10YR5/2	gray to grayish brown	clay to clay loam	common redoximorphic mottles	abrupt and wavy	No cultural material encountered.
	94–252+	10YR3/1	very dark grayish brown	sandy loam	2% rootlets	unobserved	Slight clay content; no cultural material encountered.

Trench	Depth (cmbs)	Munsell	Soil Color	Soil Texture Description	Inclusions	Lower Boundary	Comments
3	0–29	10YR4/2	dark grayish brown	sandy loam	20% roots and rootlets; 2% insect burrows	abrupt and smooth to slightly irregular	Slight clay content; no cultural material encountered.
	29–67	10YR5/6	yellowish brown	sandy loam	10% roots and rootlets; 2% insect burrows	clear and smooth	Slight clay content; no cultural material encountered.
	67–109	10YR6/6	brownish yellow	sand to sandy loam	2–3% roots and rootlets; <1% insect burrows	abrupt and smooth	No cultural material encountered.
	109–254+	10YR3/1	very dark gray	clay loam		unobserved	Buried soil; slightly saturated; no cultural material encountered.

Other Methods: None

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

Comments on Methods: Intensive survey with subsurface investigations was limited to areas where the backhoe could access. On the western side of Bartons Creek two backhoe trenches were placed in the cultivated field. On the eastern side, one trench was placed along the tree line close to the drainage.

Survey Results

Project Area Description: The western bank of the proposed new ROW is a cultivated short-grass pasture with sparse juniper and post oaks. The area has surficial disturbances from land clearing and agriculture, with the existing road easement flanking the new ROW on the southern side. SWCA documented and photographed the new southwestern ROW and conducted two backhoe trenches (BHT01, BHT02) near the drainage (Figures 4 through 7).

The existing bridge is made of concrete and steel. The single-lane bridge is located approximately 20 to 100 feet north from the proposed bridge replacement. Bartons Creek drainage, at the bridge, contains little water and has a large amount of tree detritus from infrequent flood events (Figure 8). The sides of the drainage by the bridge show heavy erosion.

The eastern bank of the proposed new ROW is a semi-wooded drainage with a mix of post-oak, juniper, and medium grasses. The project area was not utilized as a cultivated field and was flanked to the north by the existing Barton Oaks Drive. There was little surficial indication of previous disturbance relating to the existing road or land-clearing activities. SWCA documented and photographed the new western ROW and conducted a backhoe trench (BHT03) as close to the drainage as access would allow (Figures 9 and 10). A total of three backhoe trenches were conducted within the project area (see Tables 1 and 2, Figure 11).

The trenches revealed sandy loam over sandy clay loam, clay, or clay loam. BHT 1, highest on the landform, contained a sandy loam plowzone over deep sandy clay loam to a depth of greater than 271 centimeters (cm) below surface, the maximum depth of the trench. The two trenches (BHTs 2 and 3) nearest Bartons Creek revealed approximately 1 m of sandy loam over dense, dark organic clays that are inferred to old wetland or backchannel deposits associated with a meandering creek. Several abruptly bounded strata indicate discrete changes in the depositional regime through time.

Archeological Materials Identified: No cultural materials were observed on the surface or within the backhoe trenches in the survey area.

APE Integrity: The new ROW is relatively intact. The western bank has been cleared and disturbed by agricultural use, while the eastern bank shows little signs of agricultural modification. Both areas have some disturbances relating to the construction and maintenance of the existing Barton Oak Drive easement, and the banks of Bartons Creek show areas of heavy erosion relating to infrequent flood events. Overall the 2-acre APE is heavily disturbed in the existing ROW but relatively undisturbed in new ROW and has the possibility to yield intact subsurface deposits. However, no cultural materials were identified.

Recommendations

Further Work: No further work is recommended within the proposed survey areas.

Justification: The surface and upper 30 cm (1.0 foot) of the survey areas within the existing ROW have been disturbed and significantly modified from vegetation clearing, road construction, and associated terrain modifications. The new ROW subsurface has also been significantly disturbed from vegetation clearing and impacts from neighboring construction. The buried Holocene soils throughout the survey areas contain the potential for buried intact cultural deposits. However, the depth of these buried soils (some over 5 feet below surface) is generally below the APE except where deeper impacts are expected for bridge supports. No cultural materials were identified. Therefore, no further investigations are recommended. The work was conducted in compliance with the Antiquities Code of Texas (ACT) and National Historic Preservation Act (NHPA), and the investigations exceeded the Council of Texas Archeologists and THC standards for projects of this size. As per the implementing regulations of the NHPA and the ACT, as found in 36 CFR 800 and 13 Texas Administrative Code 26, SWCA has made an effort to identify all cultural resources within the survey areas and recommends no further investigation prior to construction.

Figure 4. Backhoe trench BHT01 overview, facing east.

Figure 5. Backhoe trench BHT01 north profile wall, facing northeast.

Figure 6. Backhoe trench BHT02 overview, facing east.

Figure 7. Backhoe trench BHT02 north profile wall, facing northeast.

Figure 8. East bank of Bartons Creek drainage on south side of existing bridge, facing southeast.

Figure 9. Backhoe trench BHT03 overview, facing west.

Figure 10. Backhoe trench BHT03 north profile wall, facing north.

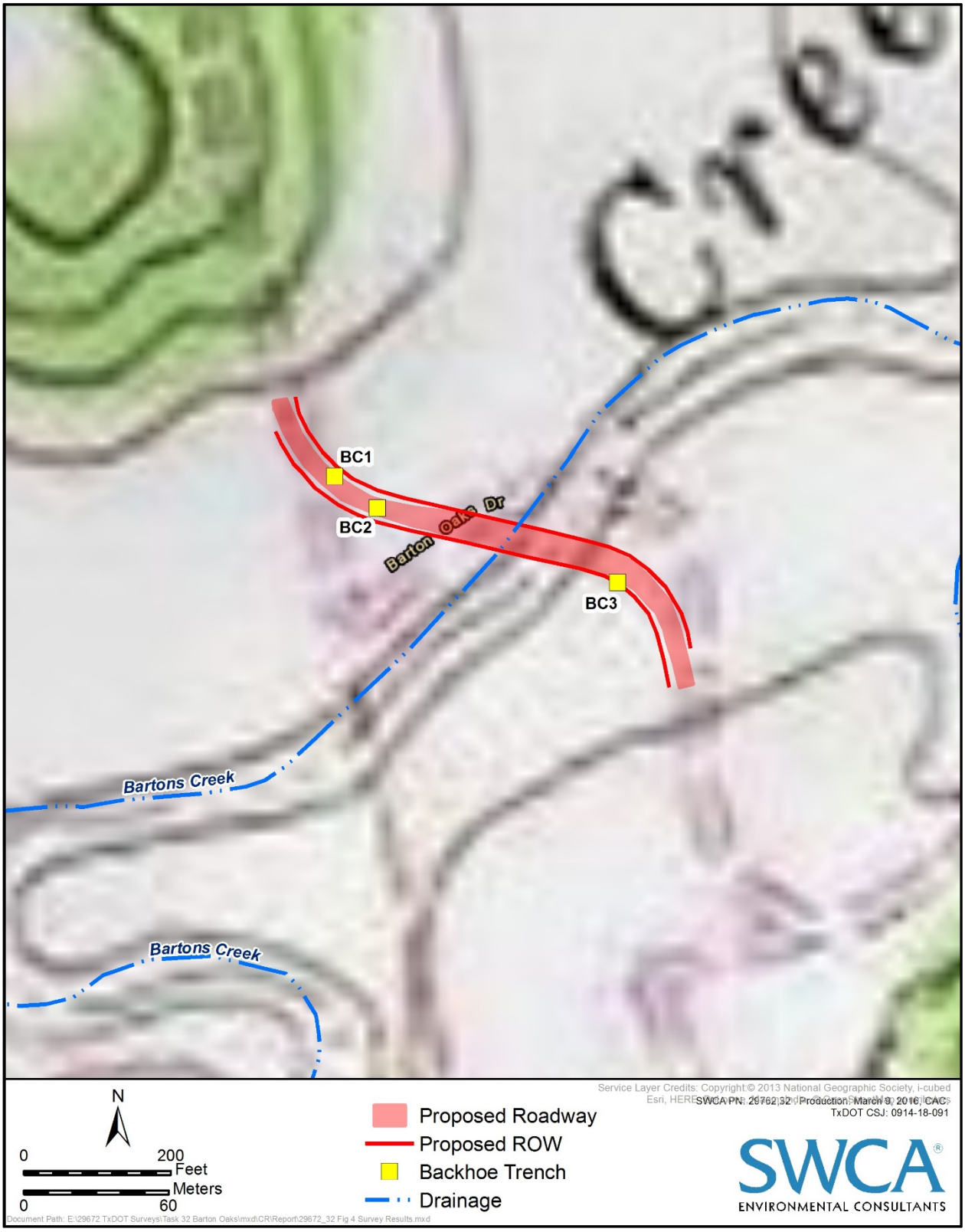

Figure 11. Survey Results.

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

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