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Intensive Archeological Survey of County Road 541 in Montague County, Texas

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Report for Archeological Survey

Intensive Archeological Survey of County Road 541 in Montague County, Texas

Wichita Falls District

Jon Budd, Principal Investigator

Texas Antiquities Permit No. 8226

CSJ: 0903-28-064

January 12, 2018

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 (TxDOT), SWCA Environmental Consultants (SWCA) conducted an intensive archeological survey on January 4, 2018, of 0.31 acre of existing right-of-way (ROW) along County Road (CR) 541 in Montague County, Texas. Because 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) and, therefore, 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). Jon Budd served as Principal Investigator under Texas Antiquities Code Permit No. 8226.

The total area of potential effects (APE) comprises the existing 50-foot-wide ROW at the Herring Branch of Big Sandy Creek crossing. The project extends from approximately 130 feet south of the center of the Herring Branch of Big Sandy Creek to 270 feet to the north. Based on the bridge design, the depth of impacts is estimated to be up to 30 feet for the bridge supports and up to 3 feet for the rest of the project.

Background research did not identify any recorded cultural resources surveys that cross the APE, nor any within a 0.6-mile (1-kilometer) radius. Additionally, no archeological sites, recorded landmarks, cemeteries, National Register of Historic Places districts or properties, or historical markers are within or adjacent to the project area. A historic map review of the area does not indicate any potential historic resources within or adjacent to the APE.

SWCA conducted field investigations in compliance with the Texas Historical Commission Archeological Survey Standards, and this document was produced consistent with the Council of Texas Archeologists guidelines for reporting. The field investigation of the proposed project APE consisted of an intensive pedestrian survey with limited shovel testing and backhoe trenching. Through testing, SWCA determined that the APE is heavily disturbed by existing roadway construction and utilities. SWCA has made a reasonable and good faith effort to locate and identify historic properties as per 36 CFR Part 800.4(b)(1), and cultural resources as per Subchapter A of Chapter 26 of the Texas Administrative Code, throughout the proposed project APE. The field investigation discovered no cultural resources; therefore, SWCA recommends that a finding of “no historic properties affected” be made for the current undertaking.

Project Identification

Date: January 12, 2018

Date(s) of Survey: January 4, 2018

Archeological Survey Type: Reconnaissance ☐ Intensive ☒

Report Version: Draft ☒ Final ☐

Jurisdiction: Federal ☒ State ☒

Texas Antiquities Permit Number: 8226

District: Wichita Falls

County or Counties: Montague

USGS Quadrangle(s): Selma (3397-233)

Highway: County Road (CR) 541

CSJ: 0903-28-064

Report Author(s): Christopher Shelton and Steve Carpenter

Principal Investigator: Jon Budd, Texas Department of Transportation (TxDOT)

Texas Historical Commission Approval

Signature Date

Project Description

Project Type: Bridge replacement

Total Project Impact Acreage: 0.31 acre

New Right of Way (ROW) Acreage: 0.0 acres

Easement Acreage: 0.0

Area of Pedestrian Survey: 0.31 acre

Project Description and Impacts: The proposed project is located along CR 541 southwest of Bowie in Montague County, Texas (Figure 1). The project would replace the existing bridge and approaches at the Herring Branch of Sandy Creek. The proposed bridge will be 50 feet long and 24 feet wide. All work will be limited to the existing ROW. No new ROW or easements would be required.

Area of Potential Effects (APE): The APE is defined as the existing 50-foot-wide CR 541 ROW beginning 130 feet south of the center of the Herring Branch of Big Sandy Creek to 270 feet north (Figure 2). According to the bridge design, the depth of impacts is estimated to be up to 30 feet for the bridge supports and up to 3 feet for the rest of the project. The APE consists of 0.31 acre.

Project Area Ownership: The existing ROW is owned and managed by TxDOT.

Project Setting

Topography: The linear APE runs roughly north to south across the floodplain of the Herring Branch of Sandy Creek and Lake Amon G. Carter. Elevation ranges from a maximum of 928 feet above mean sea level (amsl) near the northern terminus of the APE, to a low of 918 feet amsl in the center of Herring Branch.

Geology: According to the Geologic Atlas of Texas, Wichita Falls-Lawton sheet, the APE is underlain by Paleozoic-age Markley formation deposits and recent (Holocene) alluvium (Figure 3) (Barnes 1987). The alluvium deposits, from the Herring Branch and Lake Amon G. Carter floodplains, are underlain by the sandstone of the Markley formation, which has a thickness ranging between 320 and 600 feet (Barnes 1987).

Soils: According to the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey, the APE is located entirely within the Pulexas series (27) soil (Figure 4). The Pulexas series consists of a very deep, well-drained loamy alluvium, which is frequently flooded. The soils are found in nearly level floodplains with slopes ranging from 0 to 1 percent, and are described as a brown fine sandy loam overlying a brown to dark brown loam (NRCS 2018).

Land Use: The proposed APE is entirely within the existing CR 541 ROW. An overhead utility trends north to south on the west side of the APE.

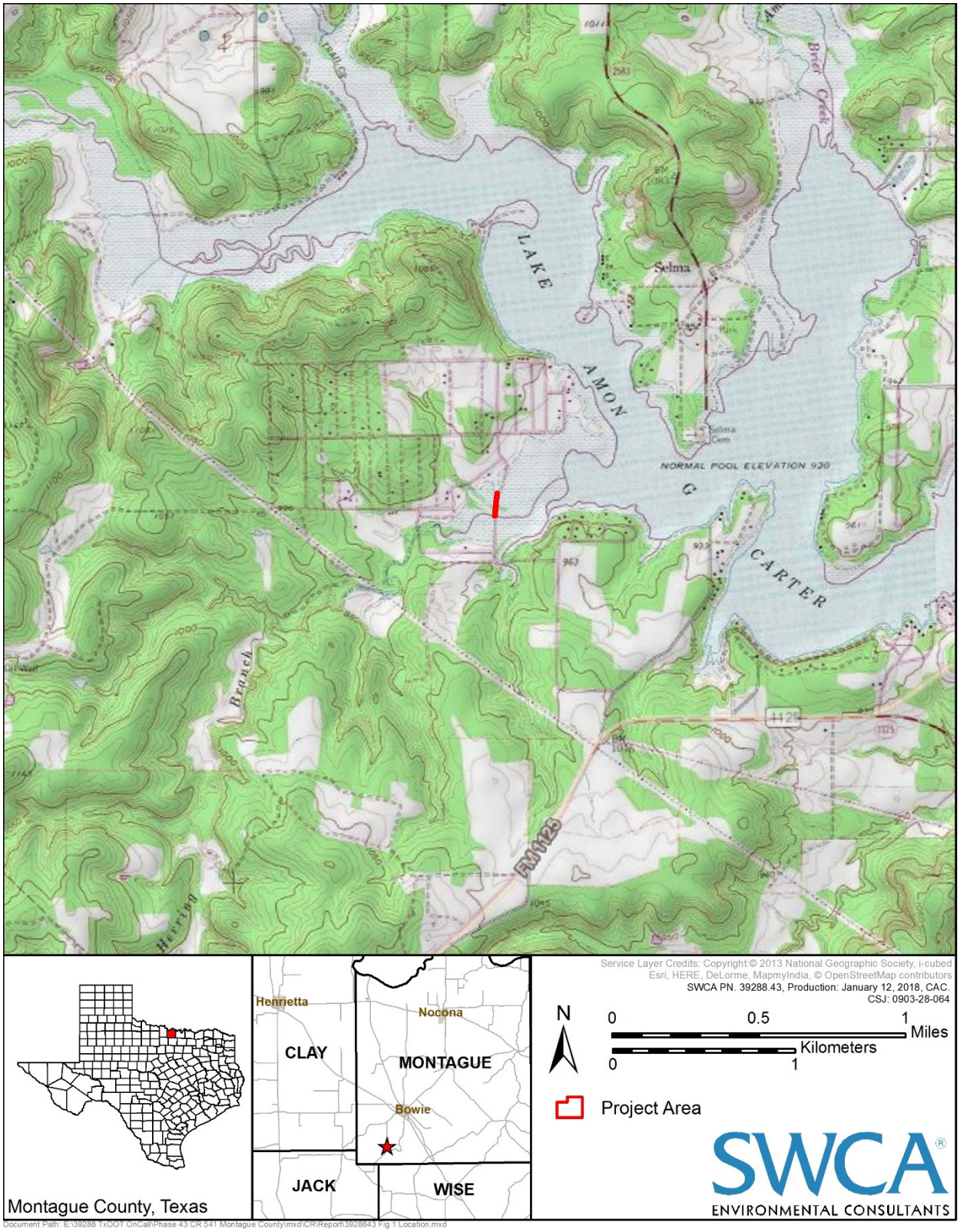

Figure 1. Project location map.

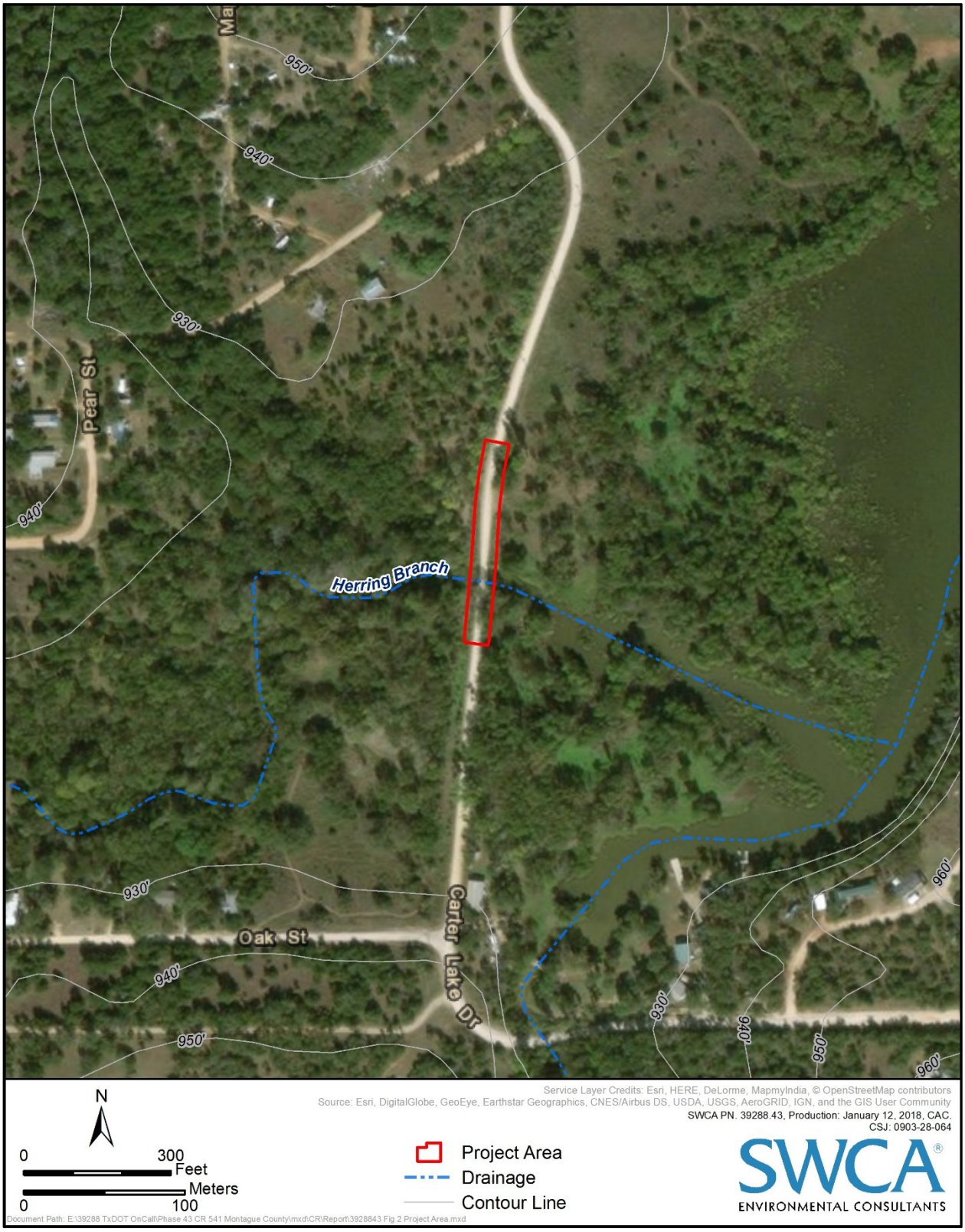

Figure 2. Project area.

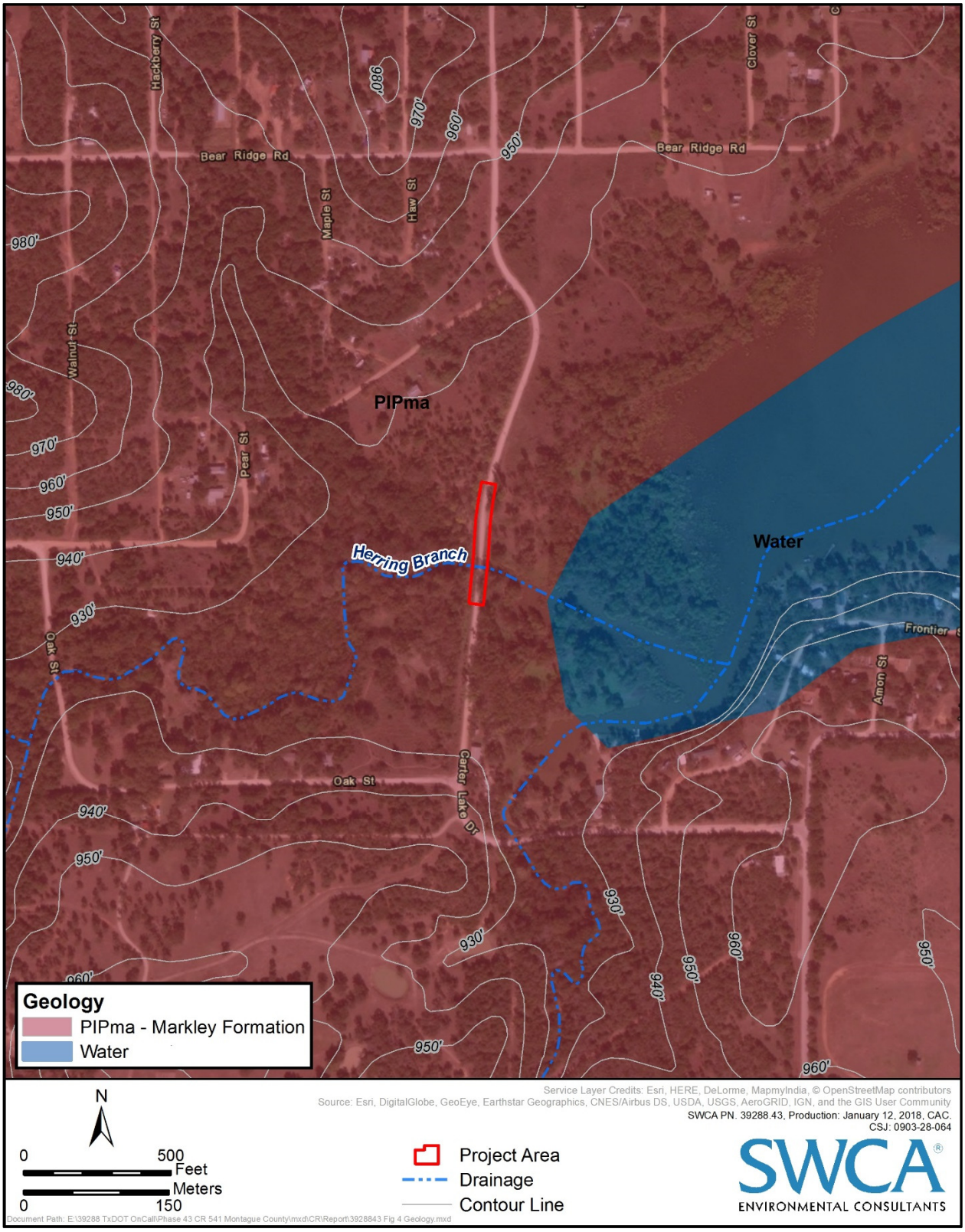

Figure 3. Project area geology.

Figure 4. Project area soils.

Vegetation: Vegetation within the APE consists of small patches of mixed grasses directly adjacent to the existing roadway, surrounded by riparian woodland and inundated floodplain (Figures 5 and 6).

Estimated Ground Surface Visibility: 0 to 20 percent, not including the existing roadway.

Previous Investigations and Known Archeological Sites: SWCA Environmental Consultants (SWCA) conducted a cultural resources background and historic map review of the project area in January 2018. To conduct the background review, an SWCA archeologist reviewed the Selma (3397-233) U.S. Geological Survey (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 (Atlas) (THC 2018a). Additionally, SWCA reviewed maps contained in the TxDOT Historic Overlay, a mapping/geographic information system (GIS) database with historic maps and resource information covering most portions of the state (Foster et al. 2006). SWCA also reviewed historical USGS topographic maps available on USGS TopoView (USGS 2018). These sources contain information on the nature and location of previously conducted cultural resources investigations, previously recorded prehistoric and/or historic archeological sites, National Register of Historic Places districts and properties, State Antiquities Landmarks, Official Texas Historical Markers, Registered Texas Historic Landmarks, and local neighborhood surveys in, or within 0.6 mile (1 kilometer [km]) of, the proposed project APE. The review did not identify any previously recorded cultural resources or previously conducted surveys within the APE. Additionally, no previously recorded cultural resources or previously conducted cultural surveys have been documented within 0.6 mile (1 km) of the proposed project APE (THC 2018a).

Comments on Project Setting: The APE within the existing ROW has been extensively modified by previous roadway and bridge construction, as well as the installation of overhead utilities.

Survey Methods

Surveyors: Dan Rodriguez and Robert Brush

Methodological Description: The field investigations complied with the THC Archeological Field Survey Standards (THC 2018b). The investigations entailed an intensive pedestrian survey of 0.31 acre, augmented with the excavation of a shovel test and a backhoe trench in locations that appeared most favorable to contain intact cultural resources (e.g., areas with less visible disturbance, fewer utilities, and/or not inundated). Survey efforts resulted in the excavation of one shovel test (ST) and one backhoe trench (BHT) (Table 1).

Figure 5. Overview of the APE from the northern terminus (bridge in background), facing south.

Figure 6. Overview of bridge and Herring Branch crossing showing inundated areas within APE, facing south.

Table 1. Excavations in Project APE

Method	Quantity in Existing ROW	Quantity in Proposed New ROW	Quantity in Temporary Easements	Total Number per Acre
Survey Shovel Test Units	1	N/A	N/A	>1
Auger Test Units	0	N/A	N/A	0
Mechanical Trenching	1	N/A	N/A	>1

SWCA archeologists excavated the ST in arbitrary 4-inch (10-centimeter [cm]) levels and sifted all materials through ¼-inch mesh. The ST measured 12 inches (30 cm) in diameter and was excavated to impenetrable layers. Archeologists recorded the ST on data forms, and included information on texture, consistency, color, and cultural materials collected. Soil colors were described as per Munsell soil color charts. Furthermore, archeologists photographed the single ST and recorded the ST location on a handheld Global Positioning System (GPS) device with sub-meter accuracy.

In addition to the ST, a BHT was placed within the existing ROW along CR 541 within the Herring Branch/Lake Amon G. Carter floodplain. Archeologists thoroughly documented and photographed the entire excavation process, and recorded the BHT location on a handheld GPS device with sub-meter accuracy. Upon completion of the individual trench, the BHT was backfilled, levelled, and returned as much as possible to its 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., 0–2 acres) requires a minimum of three STs for every acre, or one ST for the 0.31-acre APE (THC 2018b). The single ST was excavated in an area identified by the archeologist as having the highest potential for intact, buried deposits, and meets the THC survey standards.

THC archeological survey standards do not specify a density of BHTs per unit area (THC 2018b). Per TXDOT contractual requirements, a maximum of six BHTs were proposed to be placed within the project area; however, due to the disturbance caused by previous construction of the roadway, overhead utilities, and inundation within the narrow ROW, only one BHT could be excavated.

Survey Results

Project Area Description: The project area setting is entirely within the Herring Branch/Lake Amon G. Carter floodplain. The project area is undeveloped, except for the existing roadway/bridge and an overhead utility. Vegetation is composed of riparian woodlands. The APE is existing TxDOT ROW with no new easements or new ROW.

SWCA archeologists conducted an intensive pedestrian survey supplemented with the excavation of one ST and one BHT, which focused on accessible areas within the APE (Figure 7). The existing ROW has been heavily modified by the construction of CR 541 and associated bridge, as well as an overhead utility line. Additionally, the entirety of the APE is located within the Herring Branch/Lake Amon G. Carter floodplain; therefore, disturbance is quite substantial, due to the need for the road to be raised with fill within the existing ROW and the frequent flooding of the area. The cumulative impacts from the roadway, existing utilities, and fluvial action not only limited the archeological potential, but also where shovel testing and trenching could be conducted.

Backhoe Trenching

SWCA excavated a single BHT within the proposed project APE (Table 2). Due to inundation, road fill, overhead utilities, and the existing roadway within the narrow APE, only one BHT could be excavated. The trench was approximately 15 feet (4.6 meters [m]) in length, 4 feet (1.2 m) wide, and reached a depth of approximately 7.2 feet (2.2 m) (Figure 8). The first level of the BHT was heavily disturbed by road fill to a depth of 1.3 feet (40 cm) (Figure 9). Below the disturbance, the trench profile was composed of a brown (10YR 4/3) sandy clay loam overlying a strong brown clay loam (7.5YR 5/8). The trench began to fill with water at a depth of approximately 6.6 feet (200 cm). No evidence of cultural resources was observed within the trench.

Shovel Test Results

Surveyors excavated one ST (RB01) on the northern side of Herring Branch on the eastern side of the APE, in an area that did not exhibit obvious signs of disturbance on the ground surface (Table 3). The ST was negative for cultural materials and contained strong brown (7.5YR 5/8) sandy clay loam overlying a brown (7.5YR 4/4) clay loam. The ST was terminated at a depth of 2.6 feet (80 cm), due to the soil being too compact to be manually excavated.

Archeological Materials Identified: The pedestrian survey, along with the excavated ST and BHT, identified no cultural materials or features within the project APE. The documented cumulative impacts from modern development and natural fluvial action indicate a negligible potential for intact archeological resources to be present within the APE.

APE Integrity: The proposed APE exhibits prior disturbance from road construction and surface utilities, which has compromised the integrity of soil deposits and any cultural resources that might be present within them.

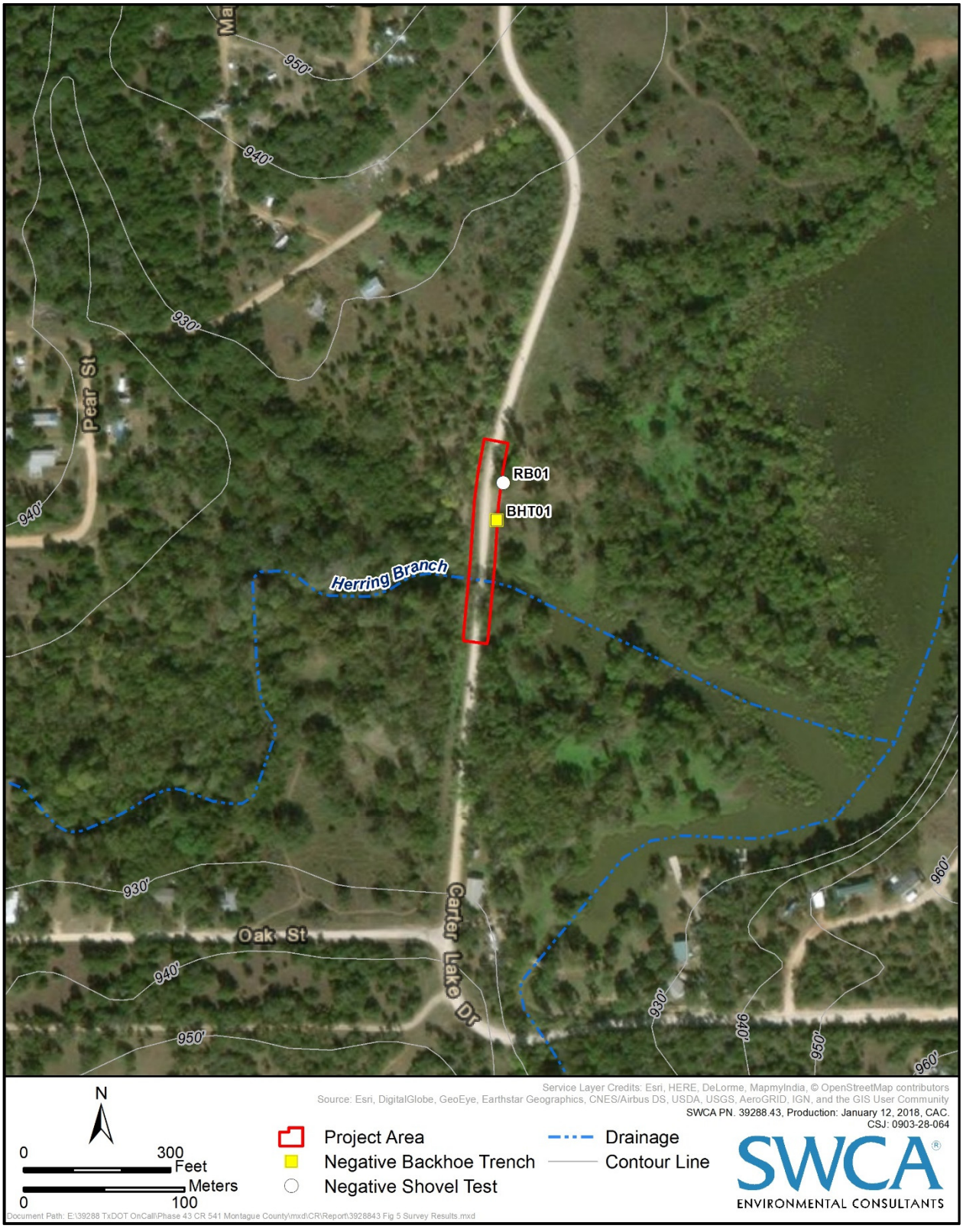

Figure 7. Survey results.

Table 2. BHT Results Table

Trench	Depth (cmbs)	Munsell	Soil Color	Soil Texture	Horizon Discussion	Lower Boundary	Comments
BHT01	0-40	10YR 5/4	Yellowish brown	Clay loam	Loose, subangular, medium size, and a moderate grade; roots (10%), rootlets (10%), Sandstone (5% tabular cobbles), Mottled with 10YR 7/4	Irregular and horizontal	Heavily disturbed with roadfill
	40-200	10YR 4/3	Brown	Silty clay loam	Loose to firm, subangular, fine size and weak grade; roots (1%)	Gradual	Observed from above after 140 cmbs
	200-220+	7.5YR 5/8	Strong brown	Sandy clay loam	Firm, sub-angular blocky, fine size, and weak grade; Mottled with 7.5YR 4/2	Unobserved	Water pooling at bottom of trench

Figure 8. Overview of the selected BHT area, facing south.

Figure 9. Profile of BHT01, facing east.

Table 3. ST Results Table

Shovel Test No.	Level	Depth (cmbs)	Munsell	Color	Texture	Comments
RB01	1	0-55	7.5YR 5/8	strong brown	Sandy Clay Loam	No cultural material encountered. Terminated at compact soil.
	2	55-80	7.5YR 4/4	brown	Clay Loam	

Recommendations

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

Justification: Investigators did not encounter any historic or prehistoric cultural materials during intensive investigations of the APE. The intensive pedestrian survey with the excavated ST and BHT exceeded the THC survey standards for a project of this size (0.31 acre). The BHT within the APE encountered soil disturbance to a depth of 1.3 feet (40 cm), and the water table at a depth of 6.6 feet (200 cm). Soil disturbances were likely caused by road and bridge construction, road fill, and overhead utilities. The extensive disturbances throughout the existing ROW, as well as the frequent fluvial action within the floodplain, has greatly decreased the potential for encountering intact cultural deposits. No further investigations are recommended to assess deep impacts from project construction within the 0.31 acre of existing ROW.

Investigations were conducted in compliance with the Antiquities Code of Texas and Section 106 of the National Historic Preservation Act. 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.

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

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