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Intensive Archeological Survey on Farm-toMarket 767 at Punta de Agua and Rita Blanca Creeks, Hartley County, Texas

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Report for Archeological Survey

Intensive Archeological Survey on Farm-to-Market 767 at Punta de Agua and Rita Blanca Creeks, Hartley County, Texas

Amarillo District

Jon Budd, Principal Investigator, Antiquities Permit No. 8090

CSJ: 1108-01-020
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 August 7, 2017, of 9.2 acres of existing right-of-way (ROW) along Farm-to-Market (FM) 767, west of Channing in Hartley 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). Jon Budd served as Principal Investigator under Texas Antiquities Code Permit No. 8090.

The project area is defined as the existing 150-foot-wide FM 767 ROW beginning 835 feet west of the Punta de Agua Creek waterline and extending 2,655 feet east. According to project design, the depth of impacts will be up to 50 feet below the current ground surface for the bridge supports and up to 10 feet for the remainder of the project. The APE is approximately 9.2 acres.

Background research identified one archeological site (41HT21) within 0.6 mile (1 kilometer [km]) of the proposed project APE. Site 41HT21 is located 0.37 mile (0.6 km) south of the proposed APE. One archeological survey is mapped within the APE, a 2011 fiber optic line survey that crosses the northern side of the roadway. No sites were recorded during the survey. No potentially historic structures, cemeteries, or historic markers are located within 0.6 mile (1 km) of the project area.

The existing ROW has been modified by the construction of FM 767, existing buried utilities, the current concrete span bridge, and disturbances from high-energy flooding of the Rita Blanca and Punta de Agua Creeks. Portions of the ROW consist of short grasses, but the APE is largely devoid of vegetation, affording abundant ground surface visibility. The field investigation consisted of a pedestrian survey of the entire APE and excavation of five backhoe trenches on terraces adjacent to the active floodplain. The trenches and pedestrian survey identified no cultural materials or features in the project APE. The pedestrian survey, however, identified one isolated find, a metal mixer or separator of undetermined age, although it does not appear historic. 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 that a finding of “no historic properties affected” be made for the current undertaking.

Project Identification

Date: August 31, 2017

Date(s) of Survey: August 7, 2017

Archeological Survey Type: Reconnaissance ☐ Intensive ☒

Report Version: Draft ☒ Final ☐

Jurisdiction: Federal ☒ State ☒

Texas Antiquities Permit Number: 8090

District: Amarillo

County or Counties: Hartley

USGS Quadrangle(s): Channing NW (3502-423)

Highway: Farm-to-Market (FM) 767

CSJ: 1108-01-020

Report Author(s): Steve Carpenter

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

Texas Historical Commission Approval

Signature Date

Project Description

Project Type: Roadway improvement, bridge replacement

Total Project Impact Acreage: 9.2 acres

New Right of Way (ROW) Acreage: 0.0 acres

Easement Acreage: 0 acres

Area of Pedestrian Survey: 9.2 acres

Project Description and Impacts: This undertaking would replace an existing load posted two-lane, 25.33-foot wide slab beam bridge built in 1950 with a proposed two lane, 925-foot long, 34-foot wide pre-stressed concrete beam bridge. The new bridge will be slightly realigned to the south with the centerline of the new bridge just south of the existing bridge's southern edge. The west bridge abutment will be moved approximately 60 feet to the west and the east bridge abutment will be moved approximately 300 feet to the west of the existing east abutment. This will require fill material to be placed from 5 to 9 feet deep for 250 feet to the east of the planned east bridge abutment to maintain the required roadway elevation approaching the east end of the bridge. The more southerly alignment of the new bridge will require the removal of a portion of a hill within the TxDOT ROW, east of the east end of the bridge. Twelve-foot wide haul roads will be constructed on both the north and south sides of the existing and planned new bridge to carry out construction and demolition work. These roads will be located within existing TxDOT ROW and their construction may require impacts greater than 2 feet in depth. These haul roads will cross both Punta de Agua Creek and Rita Blanca Creeks and will require appropriate temporary drainage structures to allow ephemeral flow through them. All planned work will be carried out within existing operational TxDOT ROW (Figure 1).

Area of Potential Effects (APE): The APE is defined as the existing 150-foot wide FM 767 ROW beginning 835 feet west of the Punta de Agua Creek waterline and extending 2,655 feet east (Figure 2). According to project design, the depth of impacts will be up to 50 below the current ground surface for the bridge supports and up to 10 feet for the remainder of the project. The APE consists of approximately 9.2 acres.

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

Project Setting

Topography: The linear APE runs roughly east-west across the floodplain of the Punta de Agua and Rita Blanca Creeks and onto overlooking terraces on both the eastern and western ends of the APE. Elevation ranges from a maximum of 1040 feet above mean sea level (amsl) at the eastern and western ends of the APE to a low of approximately 1030 feet amsl in the creek channels.

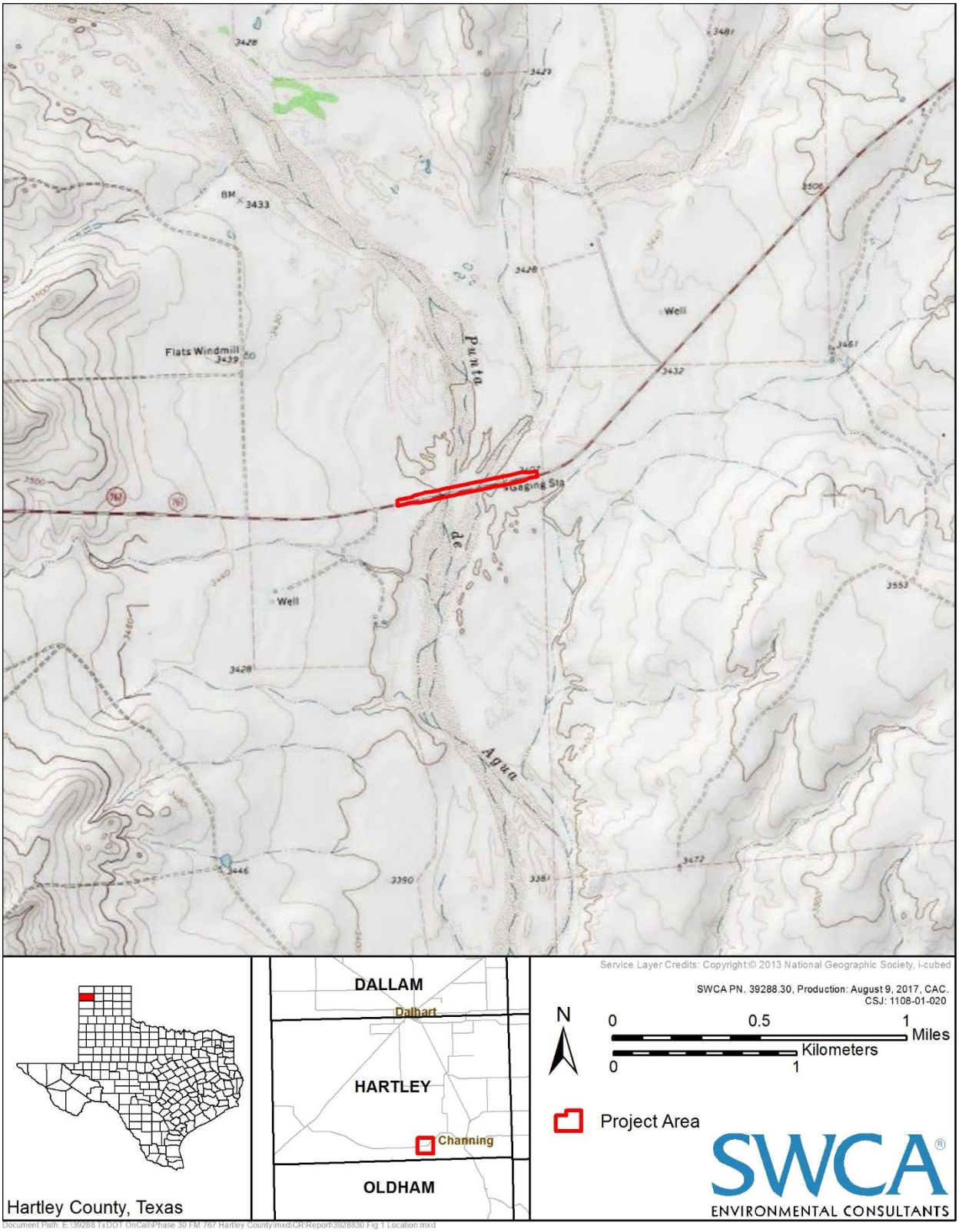

Figure 1. Project location map.

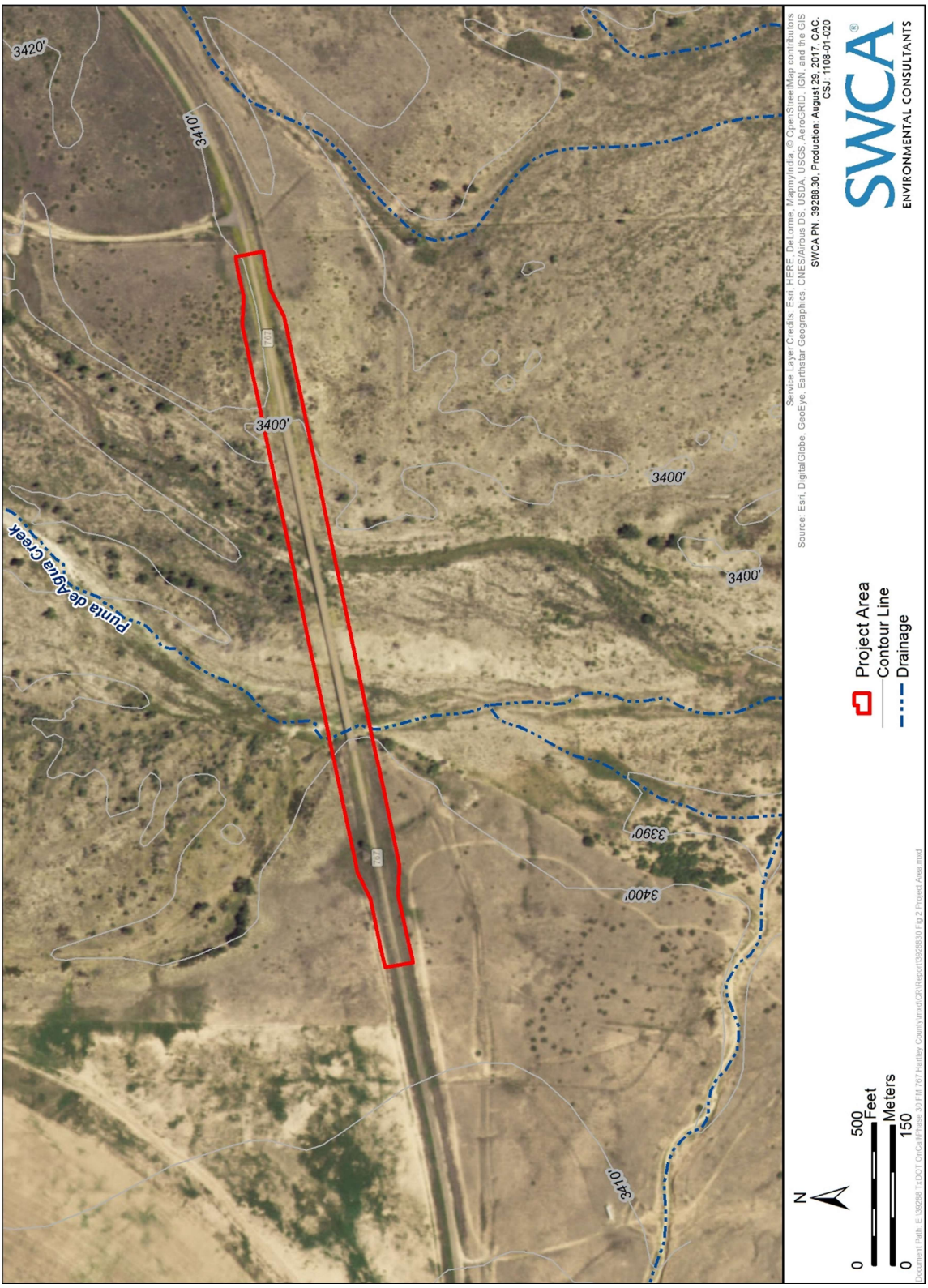

Figure 2. Project area.

Geology: According to the Geologic Atlas of Texas, the project area is composed of three formations, including Quaternary sands on the eastern site of the APE, the Pliocene Ogallala formation on the western side, and Quaternary alluvium in the active floodplain (Barnes 1984). Holocene-age alluvium and low terrace deposits along streams consisting of sand, silt, clay and gravel (Barnes 2016; U.S. Geological Survey [USGS] 2017). The Ogallala formation consists of sands, silts, clay, gravel, and caliche that compose much of the upland areas around the project. This formation typically has surficial or shallowly buried archeological potential. Quaternary sands are eolian dunes and dune ridges, typically modified by alluvial wash (Barnes 1984).

Soils: The U.S. Department of Agriculture – Natural Resources Conservation Service (NRCS) Web Soil Survey, indicates that the APE is mapped within the Likes, Lincoln, and Vingo-Dallam association soil series (Figure 3). The Lincoln series, covering approximately 59 percent of the APE, form in the floodplains of draws and consist of fine sandy alluvium that are "somewhat excessively drained" (NRCS 2017). Within the APE, these are reworked sediments in meandering creek channels. Likes loamy fine sands are found on the slopes of dunes and cover approximately 16 percent of the APE, limited exclusively to the eastern side of the APE in a deep road cut section. Covering 25 percent of the APE, the Vingo-Dallam association are well-drained soils that formed in Quaternary sandy eolian deposits. The typical profile of Vingo-Dallam soils is loamy fine sandy over fine sandy loam with a substrate of calcareous sandy clay loam beginning at approximately 1 m below ground surface. The basal clay loam substrate with up to 10 percent calcium carbonate is inferred to be pre-Holocene. Consequently, the Vingo-Dallam soils typically do not have a potential for deeply buried deposits.

Land Use: The existing FM 767 ROW contains roadway, ditches, and approaches; sand and gravel fill is also present where the bridge support structures are situated. Two utilities, including one fiber optic line, are located on the northern side of the roadway. Beyond the APE, land use patterns consist of open ranchland.

Vegetation: The existing APE consists of sparse short grasses with a few mesquite, oak, and juniper bordering the roadway (Figures 4 and 5).

Estimated Ground Surface Visibility: 70 to 90 percent, not including the existing roadway.

Previous Investigations and Known Archeological Sites: SWCA conducted a background cultural resources review of the project area in August 2017. An SWCA archeologist reviewed the Channing NW (3502-423) 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 2017). 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 (41HT21) are located within 0.6 mile (1 km) of the proposed project APE. Site 41HT21 is located 0.37 mile (0.60 km) southwest of the APE. According to the site form on the Texas Archeological Site Atlas (THC 2017a), the site was the location of an old homestead, built by the local informant Ben Trujillo's father who moved from New Mexico and settled the locale prior to 1876. The homestead once comprised two rock structures and stone corrals or pens, but these structures were destroyed by bulldozer work used to construct ranch buildings, corrals, and a stock tank. Ben Trujillo of Channing, Texas provided this information to A. J. Taylor, who recorded the site as part of the Pastore Project sponsored by the Texas Historical Foundation in 1984.

The project also falls within the historical borders of the XIT Ranch. In 1879, the Texas legislature set aside 3,000,000 acres of land as payment for a new state capitol – they stipulated this capitol must be more attractive and 1 foot taller than the U.S. Capitol (Metz 1994:407). A group of Chicago investors backed by British financiers took the offer in 1882. After completion of the capitol, in 1885 trail boss Ab Blocker of Fort Concho delivered the first 2,500 longhorns to the ranch. As local legend would have it, Blocker scratched the ranch's brand in the corral dust with his boot heel, "XIT" which stood for the Roman numeral ten followed by the letters IT for "In Texas" (Metz 1994:407). Ten in Texas represented the ten counties that contributed to the ranch. The famously large ranch required 6,000 miles of barbed wire to fence its boundaries and pastures (Metz 1994:408). The town of Channing, located 10 miles east of the project area, served as the ranch headquarters. Operating between 1885 and 1912, the investors gradually sold off the ranch, but its legacy is still celebrated in the area with an annual festival.

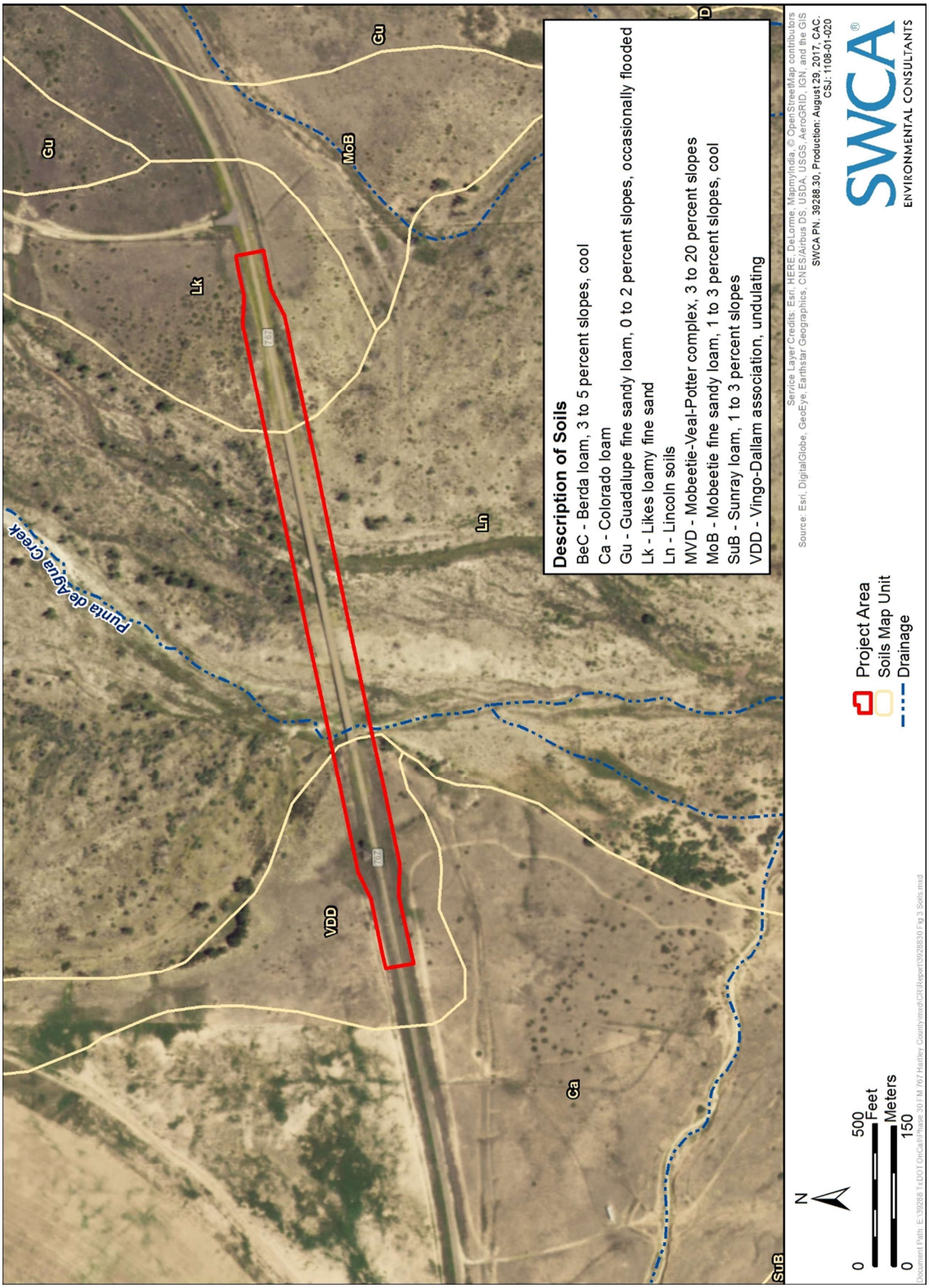

Figure 3. Mapped soils within the APE.

Figure 4. Overview of sparse grasses within the floodplain of the Rita Blanca and Punto de Agua Creeks, facing west.

Figure 5. Overview of vegetation along downcut dune in existing ROW within northeast quadrant, facing west.

Comments on Project Setting: The project area is located along the floodplain of a wide draw containing sand-choked braided channels that are likely reworked annually during high energy runoff. The area is heavily disturbed by the construction of the FM 767 bridge and at least two buried utilities on the northern side of the road. The eastern portion of the ROW is a deep cut section through a dunal ridge and has a slope of approximately 35 to 45 percent, and the portion of the ROW on the western side was predominantly fill, below grade ditches, and berms that were not suitable for trenching.

Survey Methods

Surveyors: Steve Carpenter

Methodological Description: The field investigations complied with the THC Archeological Field Survey Standards (THC 2017b). The investigations entailed an intensive pedestrian survey of 9.2 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 five 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	5	0	0	.55

The SWCA archeologist excavated five BHTs that were placed within the existing ROW along FM 767 within the landforms bordering the wide draw (Table 2). The archeologist thoroughly documented and photographed the entire excavation process. Additionally, the archeologist recorded BHT locations on a handheld GPS device. 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., 3–10 acres) require a minimum of two shovel tests per acre. Due to the existing roadway and heavy disturbance within the APE, five (5) 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: The project area includes three main landforms: 1) low uplands on the western end with a Pliocene Ogallala formation surface geology and shallow soils (circa 1 m deep); 2) the active floodplain of the Punta de Agua and Rita Blanca Creeks with reworked stream channel deposits; and 3) the high dunes on the eastern side that are truncated by a deep road cut. The western side contains a long fill section, elevating the roadway above the surrounding landscape (Figure 6). A long linear artificial berm runs along the southern margin of the APE and a drainage swale runs between the berm and fill section. The majority of the APE is covered with sparse short grasses and the area is disturbed by raised road beds and fill from bridge construction, modern trash dumps, and active erosion and deposition in the floodplain (Figure 7). 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.

Figure 6. Overview of BHT 5 showing setting on western side of APE with artificial berm along ROW margin (denoted by bi-pointed arrow), downcut drainage ditch that has likely removed much of the archeological potential, and fill section that raises existing roadway above surrounding landscape.

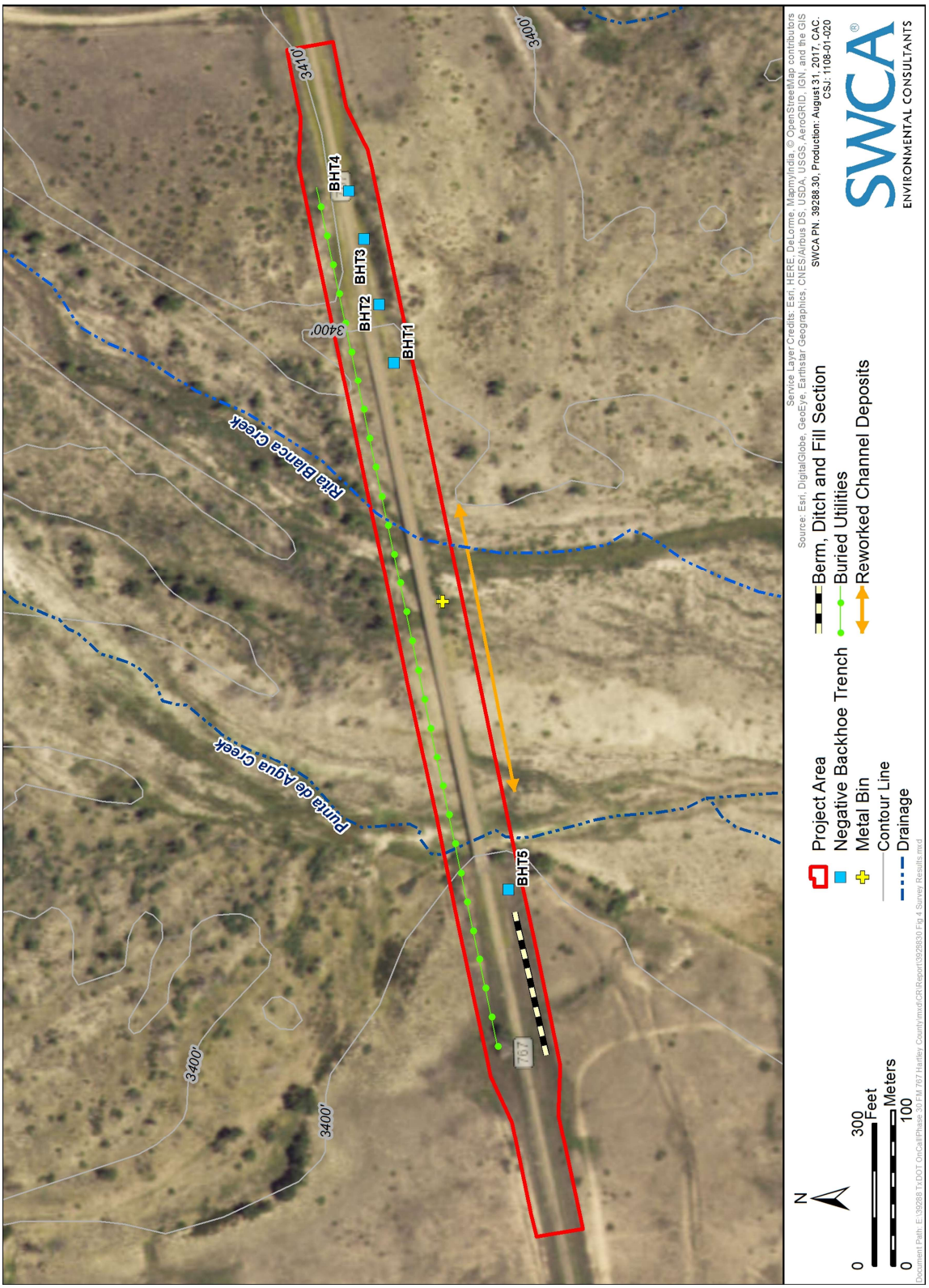

Figure 7. Survey results map.

Backhoe Trenching

The SWCA archeologist conducted backhoe trenching and pedestrian survey on the eastern and western sides of the APE on the landforms bordering the channel deposits. The presence of a fiber optic line and other reportedly unmarked utilities precluded trenching on the northern side; consequently, trenching was limited to the southern quadrants with a focus on the southeastern portion of the APE. Although the southeastern quadrant was deeply incised by a road cut section, the area still contained deep Holocene deposits. A total of 5 trenches were placed in the APE, including 4 in the southeastern quadrant and 1 trench in the southwestern quad.

Four trenches (BHTs 01 through 04) were excavated in the southeast quadrant of the APE (Figures 8 and 9). The BHTs were excavated to varying depths, ranging from a minimum of 204 cm (6.7 feet) to a maximum of 270 cm (8.9 feet). The trench dimensions were typically 0.9 m (2.95 feet) wide and 5 m (15 feet long). All four trenches encountered unconsolidated very pale brown (10YR 7/4) eolian sands, revealing deep deposits associated with a dunal ridge that was apparently active as recently as several years ago, but has now since stabilized (Figure 10). No pedogenic development was noted in the sandy deposits. Of the four trenches in the southeastern quadrant, BHT 03 was the only trench to encounter a substrate, a grayish brown (10YR 3/2) clay loam at 186 centimeters below surface (cmbs [6.1 feet]). There was some calcium carbonate development in the clay loam, but the age of the deep deposits (e.g., pre-Holocene?) is unclear. Other than modern glass and metal on the surface, no cultural materials were found in BHTs 01 through 04.

BHT 05 is in the southwestern quadrant and revealed shallow soils in a heavily disturbed ROW. Beneath a thin layer of road fill, the profile contained 4 strata, a very pale brown (10YR 7/4) loose sand to a depth of 45 cmbs (18 inches) over a brown (10YR 5/3) sandy loam extending to a depth of 60 cm (24 inches). Beneath these upper strata, two rubified (7.5YR 5/6 and 5/8) calcareous sandy clay loam to sandy clays with very firm blocky angular structure were represented.

The central portion of the APE is located on a T_0 terrace that is subject to frequent flooding and the reworking of channel deposits. These areas were covered with a pedestrian survey, but no subsurface investigations were conducted. The survey identified one isolated find, discussed in the following section.

Archeological Materials Identified: In addition to modern roadside debris including glass soda and beer bottles, and plastic fragments within the project area, SWCA encountered one isolated find, a metal mixer or separator.

The metal mixer/separator a made of thick-gauge (1/4-inch) tubular iron and measures approximately 36 inches in height and 16 inches in diameter (Figures 11 and 12). A 3-inch pipe or hose valve is located on the enclosed bottom. The top is

open with a three-spoked welded metal divider serving as an axle for a hand-cranked rod extending down into the interior of the device. The rod has welded horizontal metal slats that appear to function as mixing paddles when churned. Several links of chain are welded to the top. No manufacturer marks were identified, and it is plausible this is not a mass-produced item but rather locally produced by a welder for some specific purpose. The metal is rusted but not sufficiently rusted to indicate a historic age.

APE Integrity: The existing FM 767 APE exhibits extensive prior disturbance from road construction the installation of buried utilities thereby compromising the integrity of the survey area.

Figure 8. BHT 02 in southeastern quadrant showing 5 m deep cut section through dunal ridge, facing east.

Figure 9. BHT 3, looking west.

Figure 10. Overview of project area in 2013 aerial showing active dunes east and southeast of the APE.

Figure 11. Isolated find, a metal mixer or separator. Note trowel for scale, facing southwest.

Figure 12. Interior of metal mixer or separator.

Table 2. BHT excavations in Project APE.

Trench Number	Depth (cmbs)	Munsell Value		Soil Color	Soil Texture	Consistency	Structure	Grade	Inclusion Type	Lower Boundary	Comments
BHT01	0-270	10YR 7/4		Very Pale Brown	Sand	Loose	Granular	Weak	few rootlets	unknown	eolian dune deposits, no substrate identified
BHT02	0-250	10YR 7/4		Very Pale Brown	Sand	Loose	Granular	Weak	few rootlets	unknown	eolian dune deposits, no substrate identified
BHT03	0-186	10YR 7/4		Very Pale Brown	Sand	Loose	Granular	Weak	few rootlets	abrupt and irregular	eolian dune deposits, no substrate identified
	186-204	10YR 3/2		Grayish brown	Clay Loam	Firm	Blocky Angular to Blocky Subangular	Moderate, Strong	CaCO3 filaments	unknown	Buried A(?); no cultural materials
BHT04	0-247	10YR 7/4		Very Pale Brown	Sand	Loose	Granular	Weak	few rootlets	unknown	eolian dune deposits, no substrate identified
BHT05	0-10	Varied		Varied	Road fill	Loose	Granular	Weak	Rootlets	clear and irregular	Rock and pavement mixed with sediments
	10-45	10YR 7/3		Very Pale Brown	Sand	Loose	Granular	Moderate, Strong	Rootlets	clear and irregular	Buried A(?); no cultural materials
	45-60	10YR 5/3		Brown	Sandy Loam	Firm	Blocky Angular to Blocky Subangular	Strong	Rootlets, Roots	abrupt and irregular	No cultural materials
	60-160	7.5YR 5/6		Strong Brown	Sandy Clay Loam	Extra Firm	Blocky Subangular	Strong	Few gravels	clear and wavy	likely precultural layer
	160-195	7.5YR 5/8		Strong Brown	Sandy Clay	Extra Firm	Blocky Angular	Strong	CaCO3 filaments, nodules, mottled	unobserved	precultural layer

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. One isolated find, a metal mixer or separator is of unknown age, but does not appear historic in age based on weathering. Cultural materials (e.g., glass soda and beer bottles, metal fragments, and plastic fragments) were observed on the ground surface within the APE, but all were recent in age. The backhoe trenching across the project encountered shallow sediments and common disturbances in the western side of the APE and deep eolian sands in a deep cut section on the eastern side of the APE.

Additionally, since the APE consists of entirely existing ROW, the extensive roadway construction and disturbances throughout the existing ROW has greatly decreased the potential for encountering intact cultural deposits. No further investigations are recommended to assess deep impacts from project construction within the 9.2 acres of existing ROW.

Investigations were conducted in compliance with the ACT and Section 106 of the NHPA. 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.

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

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