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Cultural Resources Survey for the Buttercup Creek Natural Area

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CULTURAL RESOURCES SURVEY FOR THE BUTTERCUP CREEK NATURAL AREA

Williamson County, Texas

Final Report
January 2020

Texas Historical Commission
TAC Permit # 8646

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Submitted to:
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aci Project No.: 05-18-089

ABSTRACT

On November 20, 2018, **aci consulting** conducted a cultural resources survey for the Buttercup Creek Natural Area Project in Williamson County, Texas. The Area of Potential Effect (APE) for this project consists of the 12-acre (4.86-hectare) Buttercup Creek Natural Area. However, due to the high amount of surface and subsurface disturbance from displaced limestone boulders and cut slabs scattered throughout the project area, the cultural resources survey was restricted to approximately 5.5 acres (2.2 hectares). The adjusted survey began at the eastern corner, traveled along the southern boundary, and terminated in the southwestern corner of the original APE (Figures 1, 2, and 3).

This work was conducted in compliance with the Texas Administrative Code (13 TAC 26.20[2]) under Texas Antiquities Code permit number 8646, as well as Section 106 of the National Historic Preservation Act of 1966, as amended. The survey did not result in the location of any new archeological sites, historic structures, or additional historic properties. Based on these results, no further archeological work is recommended. Records from this investigation will be curated at the Texas Archeological Research Laboratory (TARL). Joey O'Keefe served as Principal Investigator.

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1.0 INTRODUCTION

On November 20, 2018, **aci consulting** conducted a cultural resources survey for the Buttercup Creek Natural Area Project in Williamson County, Texas. The Area of Potential Effect (APE) for this project consists of the 12-acre (4.86-hectare) Buttercup Creek Natural Area. However, due to the high amount of surface and subsurface disturbance from displaced limestone boulders and cut slabs scattered throughout the project area (See 5.1 *Site Reconnaissance*), the cultural resources survey was restricted to approximately 5.5 acres (2.2 hectares). The adjusted survey began at the eastern corner, traveled along the southern boundary, and terminated in the southwestern corner of the original APE (Figures 1, 2, and 3).

This work was conducted in compliance with the Texas Administrative Code (13 TAC 26.20[2]) under Texas Antiquities Code permit number 8646, as well as Section 106 of the National Historic Preservation Act of 1966, as amended. The investigation will consist of an intensive pedestrian survey, shovel testing, site recording, assessment of sites for listing on the National Register of Historic Places (NRHP) or for designation as a State Antiquities Landmark (SAL), data analysis, and reporting in accordance with the Texas Historical Commission (THC) and Council of Texas Archaeologists (CTA) standards.

Buttercup Creek Natural Area **aci Project No.: 05-18-089**

Figure 1: APE on *Leander* USGS 7.5-minute Topographic Quadrangle **January 2020**

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Figure 2: APE on Aerial Photograph Background **January 2020**

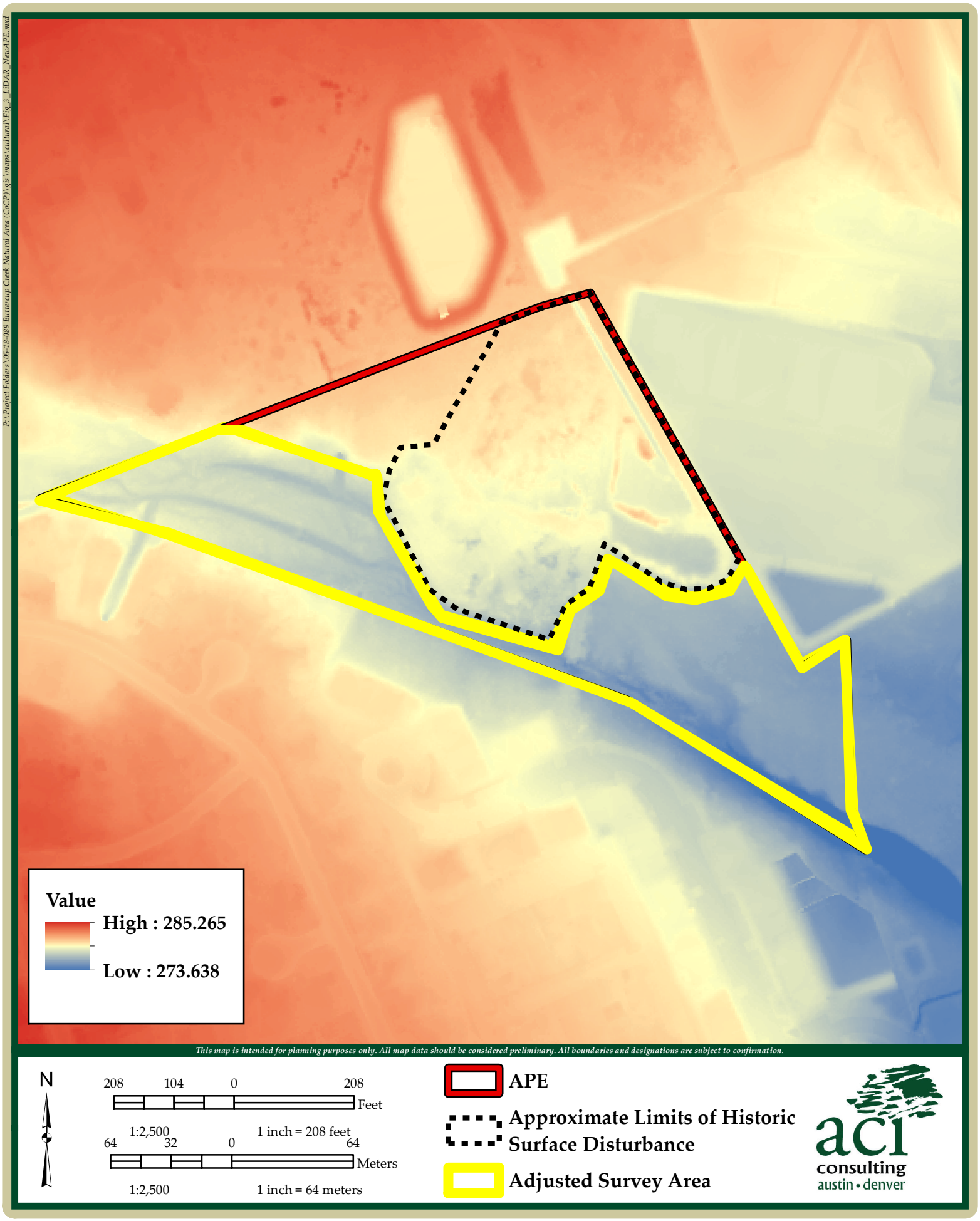

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Figure 3: APE Based on Ground Disturbance - 1m LiDAR 2017 **January 2020**

2.0 ENVIRONMENTAL SETTING

2.1 Physiography

The project is located in Williamson County in central Texas in the Edwards Plateau region. This region includes stream cut valleys deeply incised and characterized by springs, karstic sinks, caves, and rock shelters (Collins and Mear 1998). The Blackland Prairie lies to the east of the subject area on the eastern side of the Balcones Escarpment, a fault zone with hills to the west and north and low relief to the east and south. The Blackland Prairie supports prairie vegetation along with small woods often found along low-gradient streams. The elevation of the subject area is approximately from 902 - 922 feet above mean sea level (MSL).

2.2 Geology and Soils

According to the Geologic Map of the *Leander* Quadrangle (Collins 1998), the subject area intersects three geologic units and one normal fault (concealed and inferred) on the eastern extent of the subject area (Collins 1998):

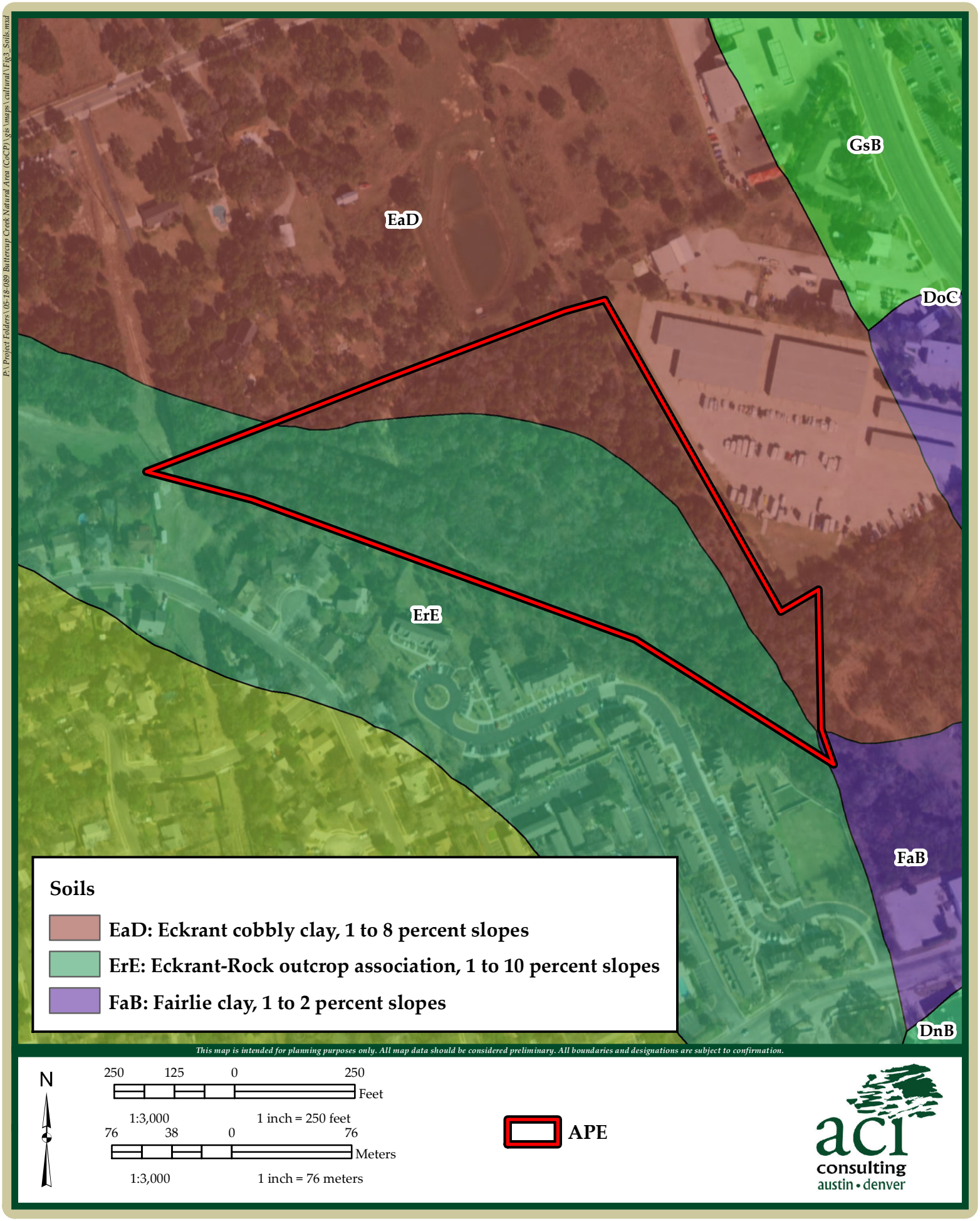
- **Terrace Deposits (Qt)** Gravel, sand, silt, and clay along streams and rivers. Mostly above flood level along entrenched streams and rivers. Larger deposits along the San Gabriel River, Berry Creek, and Brushy Creek are as thick as 36 feet locally may be thicker. Deposits of adjacent terraces at different elevations are mapped separately.
- **Keys Valley Member of the Walnut Formation (KwKv)** Marl, argillaceous limestone and some limestone. Thickness is as much as ~50ft. Walnut Formation consists of six members that include (from oldest to youngest): the Bull Creek, Bee Cave, Cedar Park, Whitestone, Keys Valley and the upper marl member (Moore, 1964). The upper marl member occurs north of southern Bell County and is not mapped in the subject area.
- **Keys Valley, Whitestone, Cedar Park, Bee Cave and Bull Creek Members, undivided, of the Walnut Formation and Edwards Formation, undivided (Kwkv+Kwwh+Kwcpbc+Ked)** Limestone, argillaceous limestone and marl. Area of Edwards interfingering with Walnut Members and Whitestone Member interfingering with Keys Valley Member.

Three soil series are mapped along the subject area (Figure 4). The soils are mapped as Eckrant-Rock outcrop association, 1 to 10 percent slopes; Eckrant

cobbly clay, 1 to 8 percent slopes; and Fairlie clay, 1 to 2 percent slopes (NRCS 2019). Eckrant and Fairlie soils have been previously determined to have a low probability to contain archeological sites according to the Potential Archeological Liability Maps (PALM) model created by Texas Department of Transportation Environmental Handbook (TxDOT ENV) for highway projects in the Austin District (Abbott 2013).

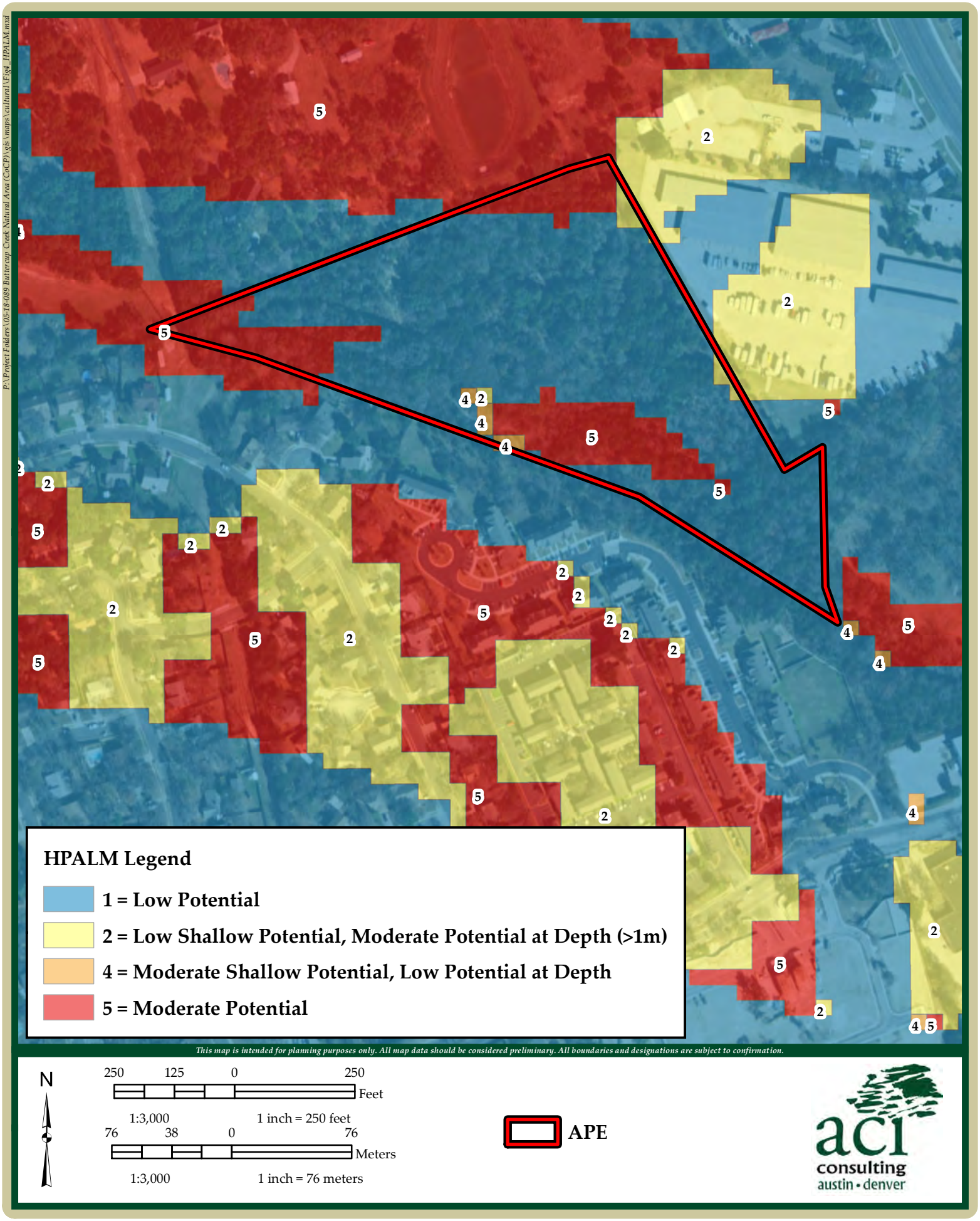
- *Eckrant-Rock outcrop association, 1 to 10 percent slopes (ErE);* and *Eckrant cobbly clay, 1 to 8 percent slopes (EaD)*: The Eckrant series consists of well drained, moderately slowly permeable soils that are very shallow to shallow over indurated limestone bedrock. These nearly level to very steep soils formed in residuum derived from limestone and occur on summits, shoulders, and backslopes of ridges on dissected plateaus. Slope ranges from 1 to 60 percent.
- *Fairlie clay, 1 to 2 percent slopes (FaB)*: The Fairlie series consists of deep, moderately well drained, very slowly permeable soils. These soils are on nearly level to gently sloping uplands. The slope is typically 1 to 3 percent but ranges from 0 to 5 percent.

According to the Austin Hybrid District Potential Archeological Liability Map (HPALM), the majority of the APE has a low potential for cultural resources (Figure 5) (Abbott and Pletka 2015).



Buttercup Creek Natural Area **aci Project No.: 05-18-089**

Figure 4: APE Soils **January 2020**



Buttercup Creek Natural Area **aci Project No.: 05-18-089**

Figure 5: Austin District Hybrid Potential Archeological Liability Map (HPALM) **January 2020**

3.0 PREVIOUS INVESTIGATIONS

A literature review of the THC Archeological Sites Database (Atlas) revealed that there are no previously recorded sites within the subject area, and two sites are within 1 kilometer of the subject area (Figure 6) (Table 1). No portion of the subject area has been previously surveyed. However, three surveys have been conducted within the 1-kilometer buffer. Also, one cemetery is within the 1-kilometer buffer of the subject area.

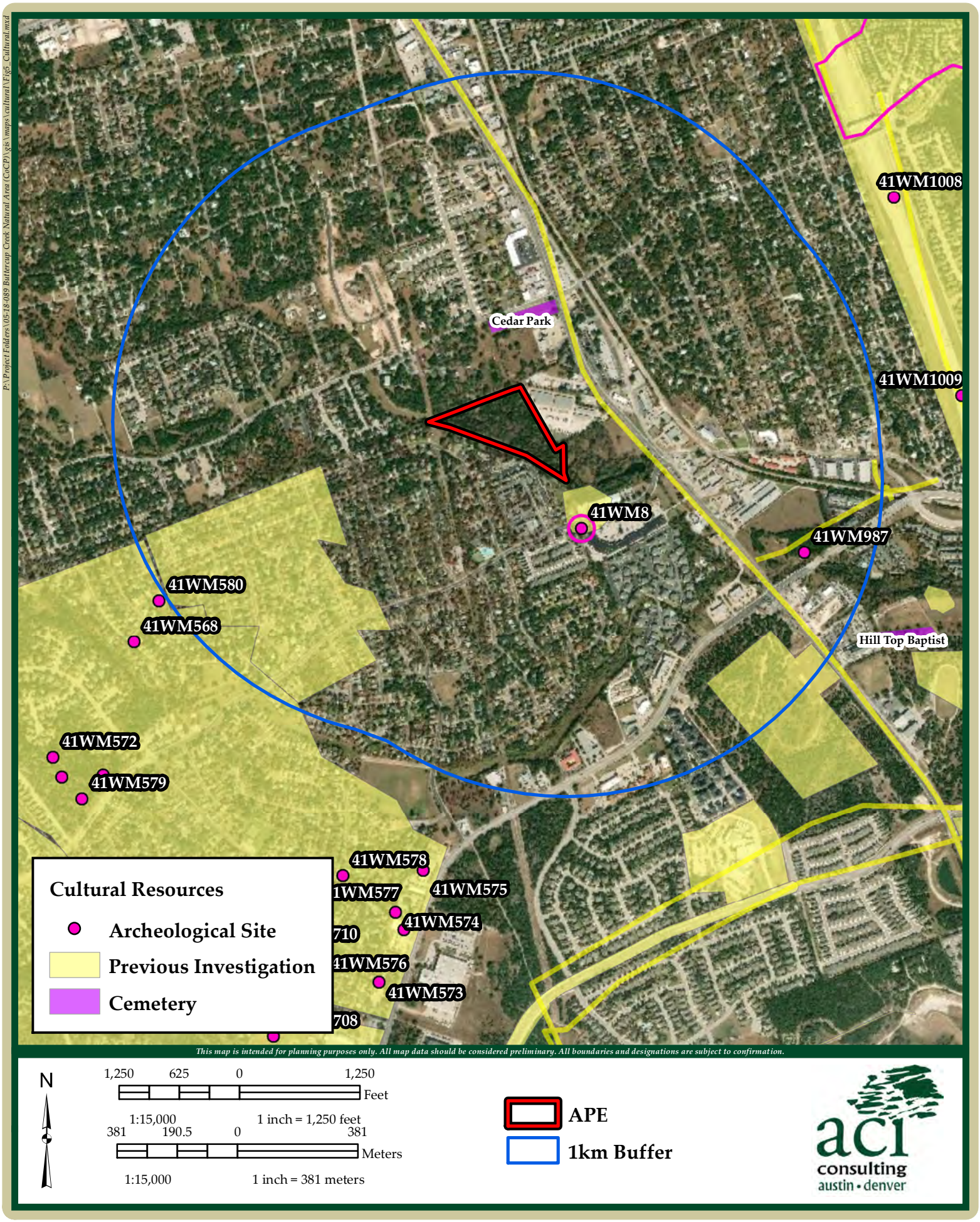
Table 1. Previously recorded sites within one kilometer of the APE

Site	Site Type	NRHP Eligibility	Distance from APE	Recommendations
41WM8, Cedar Park Mound	Prehistoric burned rock midden with burials	Undetermined	125 meters south	Mitigation
41WM987	Prehistoric lithic terrace site	Undetermined	775 meters north	none

Site 41WM8 is a prehistoric burned rock midden containing human burials that was originally recorded in 1927, and was revisited in the 1930s and 40s, and again in 1983 and 1984 for the development of the Buttercup Creek residential development. An official NRHP determination has not been established, but the site has undergone numerous excavations and the question remains as to how much of the site is intact.

41WM987 is a burned rock midden recorded during the Cypress Creek road extension in 2001. It is located on a bluff overlooking Cluck Creek. The site was determined ineligible by the THC in 2001.

The Cedar Park Cemetery is approximately 200 meters north of the APE and will not be impacted by the proposed project.



Buttercup Creek Natural Area **NOT FOR PUBLIC DISCLOSURE** **aci Project No.: 05-18-089**

Figure 6: Archeological Sites and Previous Investigations **January 2020**

4.0 METHODS

4.1 Survey Method

An intensive pedestrian survey of the adjusted subject area was conducted to locate any archeological sites or other historical properties that may be within the APE. The pedestrian survey was conducted along the non-disturbed 5.5-acre (2.2-hectare) adjusted subject area (see Figures 1, 2, and 3). The majority of the subject area lies within low probability areas.

Shovel tests were excavated in settings that had potential for buried cultural horizons and/or if the ground surface visibility is less than 30 percent. The tests were excavated at least 30 centimeters (cm) in diameter to the bottom of Holocene deposits, if possible. The shovel tests were dug in 10 cm levels, and the excavated sediments were screened through ¼-inch hardware cloth. Shovel tests were recorded on logs and the locations of the tests were recorded on a GIS unit. Other field forms include a daily journal, photograph log, and site forms.

5.0 RESULTS OF INVESTIGATION

5.1 Site Reconnaissance

The original APE was an approximately 12-acre triangle area on the east side of Bell Boulevard (see Figure 2). Prior to the archeological survey, on October 25, 2018, aci consulting personnel conducted site reconnaissance to assess the APE. During this reconnaissance, it was discovered that a large portion of the subject area, approximately 6.5 acres (2.6 hectares), had been heavily disturbed by displaced limestone boulders and piles of cut limestone slabs along the north side of Cluck Creek (Figures 7 and 8). The location and magnitude of surface disturbance is consistent with the historic aerial photograph review. On the Banks Environmental Data (BED) historic aerial photograph dated 1953 (Figure 9), evidence of earth disturbing activities consistent to those of quarrying limestone is first seen within the subject area and on the adjacent properties to the north and east. The land clearing activities appear to stop prior to the aerial photograph taken in 1973 (Figure 10). Furthermore, Light Detection and Ranging (LiDAR) was used to depict the areas of previous disturbance (see Figure 3). Based on the area of disturbance, the subject area was reduced to a 5.5-acre (2.2-hectare) area that followed the southern portion of the original subject area (see Figure 3).

Figure 7. Example of displaced limestone, facing south

Figure 8. Example of displaced limestone, facing southeast

Buttercup Creek Natural Area

Figure 9: BED Historic Aerial Photograph (1953)

aci Project No.: 05-18-089

January 2020

Date: 1953
Source: AMS

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA
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Buttercup Creek Natural Area

Figure 10: BED Historic Aerial Photograph (1973)

aci Project No.: 05-18-089

January 2020

Date: 1973
Source: ASCS

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

5.2 Cultural Resources Survey

On November 20, 2018, aci consulting conducted a cultural resources investigation of the adjusted survey area. The survey was conducted under pleasant cool conditions in the morning under a clear sky, with a slight breeze. The ground surface was still damp from the morning condensation. No issues arose during the survey of the adjusted subject area. Leaf fall, tree limbs, and branches were scattered throughout the subject area creating areas with less than 30% visibility (Figure 11).

Survey of the adjusted subject area began at the northeastern extent of the subject area and trended southeast. In total, 5 shovel tests (ST) were conducted within the adjusted subject area, all of which were negative. Due to visibility being less than 30%, ST 1 was placed approximately 16 feet (5 meters) north of a dry creek bed that runs parallel to the southern border of the APE (Figure 12). The ST terminated at 30 centimeters below the surface (cmbs) due to the presence of subsurface limestone, with soils described as Munsell 10 YR4/3 clay loam throughout the 30 cm.

ST 2 was placed approximately 50 meters east/southeast of ST#1 where surface visibility was less than 30% due to leaf litter, fallen limbs, sticks, and limestone fragments. ST#2 terminated at 40 cmbs due to subsurface limestone and roots from nearby trees. Soils for ST 2 were described as Munsell 10 YR4/3 clay loam throughout the 40 cm.

To determine the extent of the disturbance, ST 3 was placed near the center of the original subject area. ST 3 terminated at 10 cmbs due to dense concentrations of subsurface limestone. ST 3 confirmed the extent of ground disturbance noted during the previous survey. Soils were described as Munsell 10 YR4/3 clay loam.

ST 4 and ST 5 were conducted approximately 50 and 100 meters east/southeast from ST 3. Both STs were placed in areas with surface visibility that was less than 30%. ST 4 terminated at 30 cmbs due to limestone deposits, and ST 5 terminated at 20 cmbs due to dense rocks and roots from nearby vegetation. For both ST 4 and 5, soils were described as Munsell 10 YR4/3 clay loam.

Figure 11. Example of ground cover within adjusted subject area, facing east

Figure 12. Overview of dried creek bed within subject area, facing east

6.0 CONCLUSIONS AND RECOMMENDATIONS

On November 20, 2018, **aci consulting** conducted a cultural resources survey for the Buttercup Creek Natural Area Project in Williamson County, Texas. The APE for this project consists of the 12-acre (4.86-hectare) Buttercup Creek Natural Area. However, due to the high amount of surface and subsurface disturbance from displaced limestone boulders and cut slabs scattered throughout the subject area (see 5.1 *Site Reconnaissance*), the cultural resources survey was restricted to approximately 5.5 acres (2.2 hectares). The adjusted subject area began at the eastern corner, traveled along the southern boundary, and terminated in the southwestern corner of the original subject area (see Figures 1, 2, and 3).

The investigation consisted of a pedestrian survey augmented by shovel testing (n=5) and did not result in the location of new or previously recorded archeological sites, nor any other historic properties. Based on these results, no further archeological work is recommended. It must be noted that no level of survey intensity can be guaranteed to locate all cultural features within a project area. Therefore, should previously-unrecorded cultural resources, including human remains, be discovered during the course of construction for this project, Williamson County or the city of Cedar Park will contact a qualified professional archeologist to assess the findings.

7.0 REFERENCES CITED

Abbott, James T.

2013 Automated Archeological Integrity Modeling in Texas: A Pilot Study. Texas Department of Transportation, Environmental Affairs Division, Austin, Texas.

Abbott, James T. and Scott Pletka

2015 Data Release: The Austin District HPALM Model. Texas Department of Transportation, Environmental Affairs Division, Austin, Texas.

Atlas

2019 Texas Archeological Sites Atlas. Texas Historic Commission, Austin. Available Online at https://atlas.thc.state.tx.us/. Accessed 11/29/2019.

Collins, E.W.

1998 Geologic Map of the Leander Quadrangle, Texas. Bureau of Economic Geology. Austin, Texas.

Collins, Michael B. and C.E. Mear

1998 The Site and Its Setting. In Wilson-Leonard: An 11,000-Year Archeological Record of Hunter-Gatherers in Central Texas. Vol. 1. Studies in Archeology 31, Texas Archeological Research Laboratory, University of Texas at Austin and Archeology Studies Program, Report 10, Environmental Affairs Division, Texas Department of Transportation.

(NRCS)

2019 Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database for Williamson County, TX. Available online at http://soildatamart.nrcs.usda.gov. Accessed 11/29/2019.