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## Intensive Cultural Resources Survey For The Canyon West Water Supply Line, Travis And Burnet Counties, Texas

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## Intensive Cultural Resources Survey For The Canyon West Water Supply Line, Travis And Burnet Counties, Texas

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# INTENSIVE CULTURAL RESOURCES SURVEY FOR THE CANYON WEST WATER SUPPLY LINE, TRAVIS AND BURNET COUNTIES, TEXAS

February 2020

Final Report

Texas Historical Commission  
TAC Permit # 8514

**Prepared for:**

Hines Highway 71 Limited Partnership  
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aci Project No.: 35-16-126

## Abstract

On September 18 and 19, 2018, archeologists from aci consulting conducted an intensive pedestrian survey prior to construction of the Canyon West Water Supply Line in Travis and Burnet Counties, Texas. The project consists of the approximately 4.55-mile raw water transmission main from the existing South Central Water Company (SCWC) raw water storage tank located along Haynie Flat Road. The proposed alignment will be constructed within a 15-foot permanent easement and also utilize an additional 15-foot temporary construction easement during construction. Therefore, the APE of the proposed alignment is approximately 30 feet wide along the entire 4.55-mile length of the alignment for a total of approximately 16.6 acres (6.72 hectares).

The investigation was conducted in accordance with Council of Texas Archeologists (CTA) and Texas Historical Commission (THC) and in compliance with Texas Administrative Code (13 TAC 26) under Permit No. 8514. The project is also conducted in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, for any additional compliance for impacts to US Army Corps of Engineers (USACE) regulated waters.

Two sites, 41TV539 and 41TV2501, were previously recorded within the APE and were revisited during this investigation. The site are not recommended as eligible for listing on the National Register of Historic Properties (NRHP) or a State Antiquities Landmark (SAL), and the portions of the sites within the APE would not contribute to the sites' eligibility were they to later be determined eligible. The investigation 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. Julie Shipp served as Principal Investigator.

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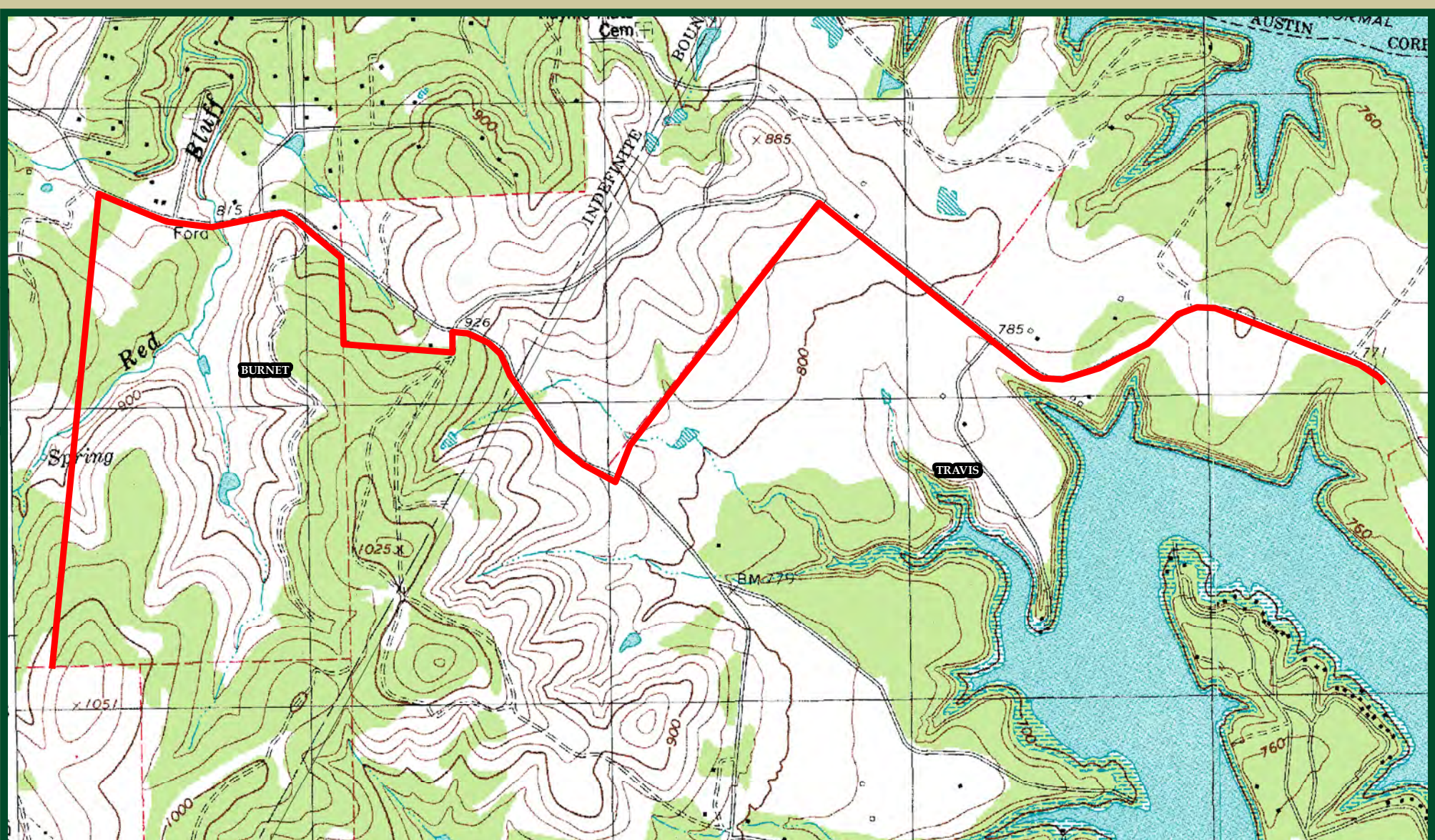
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## 1.0 INTRODUCTION

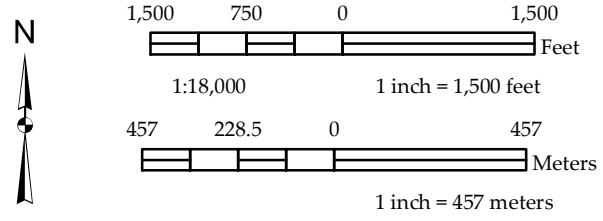
Archeologists from **aci consulting** conducted a pedestrian prior to construction of the Canyon West Water Supply Line in Travis and Burnet Counties, Texas. The project consists of the approximately 4.55-mile raw water transmission main from the existing South Central Water Company (SCWC) raw water storage tank located along Haynie Flat Road approximately 1.9 miles east of the intersection of North Paleface Ranch Road and Haynie Flat Road. The proposed alignment will be constructed within a 15-foot permanent easement and also utilize an additional 15-foot temporary construction easement during construction. Therefore, the APE of the proposed alignment is approximately 30 feet wide along the entire 4.55-mile length of the alignment for a total of approximately 16.6 acres (6.72 hectares) (Figures 1 and 2).

The investigation will be conducted in accordance with Council of Texas Archeologists (CTA) and Texas Historical Commission (THC) and in compliance with Texas Administrative Code (13 TAC 26) under Permit No. 8514. The project is also conducted in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, for any additional compliance for impacts to US Army Corps of Engineers (USACE) regulated waters.

The investigation consisted of a site revisit to 41TV539 and 41TV2501, 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 THC and Council of Texas Archaeologists (CTA) standards.



This map is intended for planning purposes only. All map data should be considered preliminary. All boundaries and designations are subject to confirmation.



**Proposed Alignment**

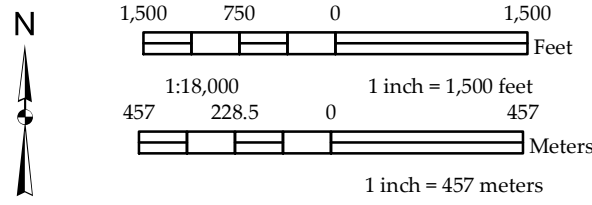


Canyon West Water Supply Line

Figure 1: USGS 7.5-minute Topographic Map: Pace Bend



This map is intended for planning purposes only. All map data should be considered preliminary. All boundaries and designations are subject to confirmation.



- Proposed Alignment
- Canyon West



### Canyon West Water Supply Line

### Figure 2: Proposed alignment on Aerial Photograph Background



## 2.0 BACKGROUND INFORMATION

### 2.1 Environmental Setting

The project is located between Lake Travis and the Pedernales River, also crossing Red Bluff Creek and smaller tributaries. The proposed alignment is located within the Pace Bend (1986) U.S. Geologic Survey (USGS) 7.5-minute topographic quadrangle (see Figure 1). The proposed alignment transects variable topography of hills and gently sloping areas that range in elevation from approximately 1,020 feet above mean sea level (MSL) to 780 feet above MSL. The western portion of the proposed alignment generally drains north to Lake Travis and the eastern portion of the proposed alignment generally drains west or south to Lake Travis. The area is in the Edwards Plateau ecoregion, specifically the savanna.

### 2.2 Soils

According to the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey (2018), 10 soil map units occur within the proposed alignment (Figure 3). The majority of the soils within the project area have been previously determined to have a low probability to contain archeological sites according to the Potential Archeological Liability Maps (PALM) model, including Bracket, Hensley, Altoga, Real, Purves, and Tarrant (Abbott 2013). Travis and Volente have a low to moderate probability to contain archeological sites. Krum has a moderate to high probability to contain archeological sites. According to the Hybrid Austin District PALM model, the majority of the alignment is mapped as low to negligible potential for cultural resources (Abbott and Pletka 2015) (Figure 4). However, there are small sections along the alignment that are mapped as high potential. These areas can be found near the Pedernales River and one pocket is located in the middle of the alignment in a flat forested area.

Descriptions of the soil map units are as follows:

- **Bracket-Real Association, 10 to 30 Percent Slopes (7)**

The Brackett component makes up 58 percent of the map unit. Slopes are 10 to 30 percent. This component is on stair stepped ridges on dissected

plateaus. The parent material consists of residuum weathered from limestone. Depth to a root restrictive layer, bedrock, paralithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria.

- **Hensley Association, Undulating (17)**

The Hensley component makes up 100 percent of the map unit. Slopes are 1 to 8 percent. This component is on undulating plains on dissected plateaus. The parent material consists of residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria.

- **Krum Clay, 3 to 5 Percent Slopes (25)**

The Krum component makes up 90 percent of the map unit. Slopes are 3 to 5 percent. This component is on stream terraces on dissected plateaus. The parent material consists of calcareous silty and clayey alluvium derived from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrinkswell potential is high. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria.

- **Altoga Silty Clay, 1 to 3 Percent Slopes (AgB)**

The Altoga component makes up 95 percent of the map unit. Slopes are 1 to 3 percent. This component is on stream terraces on dissected plains. The parent material consists of calcareous clayey alluvium derived from mudstone. Depth to a root restrictive layer is greater than 60 inches. The

natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria.

- **Altoga Silty Clay, 3 to 6 Percent Slopes, Moderately Eroded (AgC2)**  
The Altoga, eroded component makes up 95 percent of the map unit. Slopes are 3 to 6 percent. This component is on stream terraces on dissected plains. The parent material consists of clayey alluvium derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria.
- **Bracket-Rock Outcrop Complex, 1 to 12 Percent Slopes (BiD)**  
The Brackett component makes up 68 percent of the map unit. Slopes are 1 to 12 percent. This component is on ridges on dissected plateaus. The parent material consists of residuum weathered from limestone. Depth to a root restrictive layer, bedrock, paralithic, is 6 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria.
- **Purves Silty Clay, 1 to 5 percent slopes (PuC)**  
The Purves component makes up 95 percent of the map unit. Slopes are 1 to 5 percent. This component is on undulating plains on dissected plateaus. The parent material consists of residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 8 to 20 inches. The natural drainage class is well drained. Water movement in the

most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is high. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria.

- **Tarrant Soils, 5 to 8 Percent Slopes (TaD)**

The Tarrant, PE >44 component makes up 95 percent of the map unit. Slopes are 5 to 18 percent. This component is on undulating plains on dissected plateaus. The parent material consists of residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 6 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria.

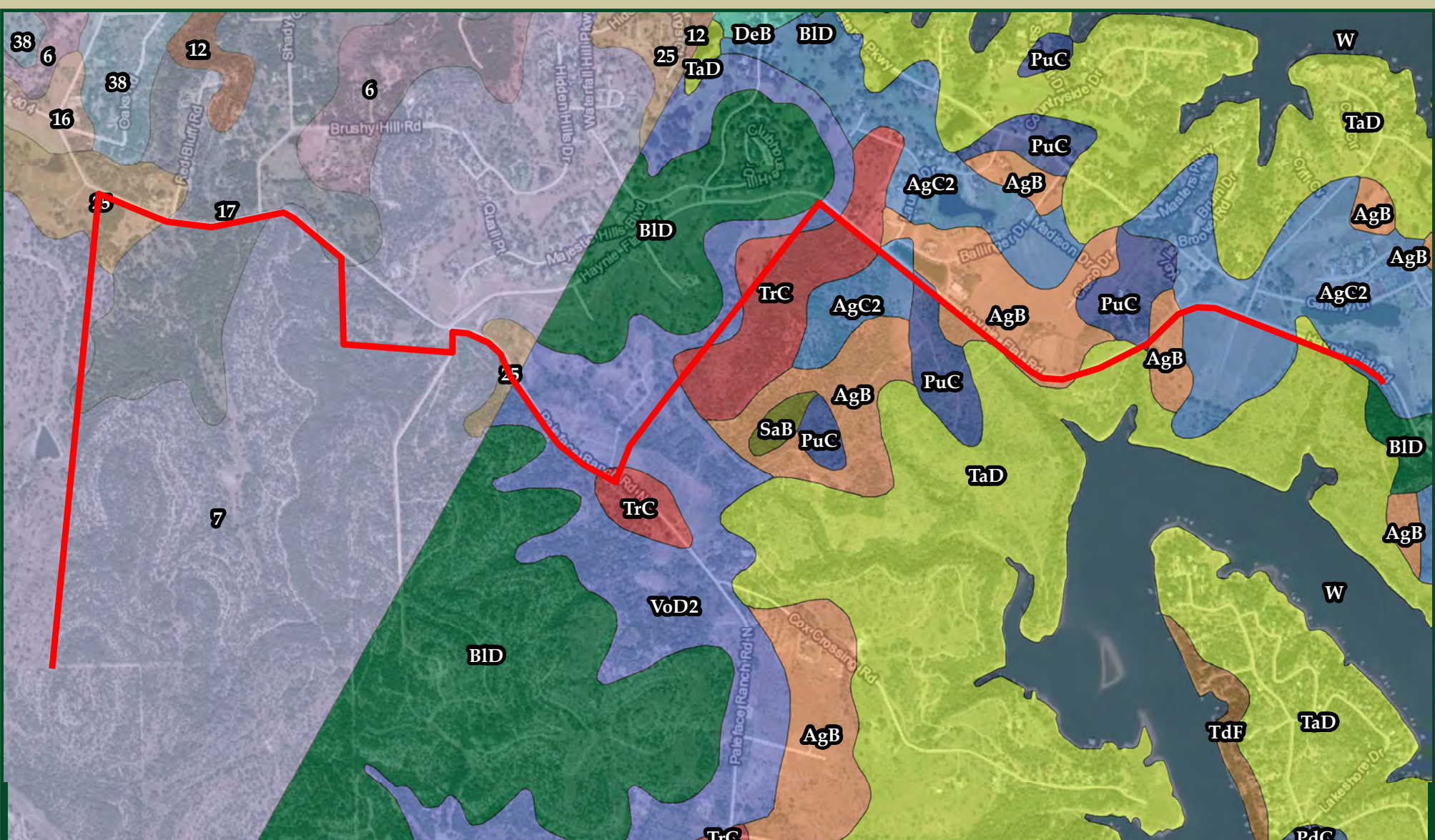
- **Travis Soils, 1 to 5 Percent Slopes (TrC)**

The Travis component makes up 95 percent of the map unit. Slopes are 1 to 5 percent. This component is on stream terraces on river valleys. The parent material consists of loamy alluvium of Pleistocene age derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria.

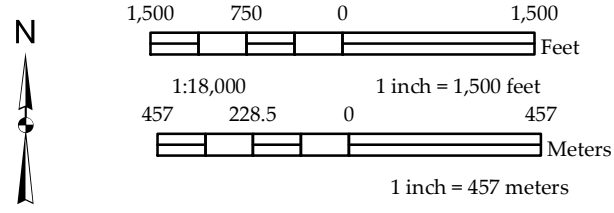
- **Volente Silty Clay Loam, 1 to 8 Percent Slopes, Moderately Eroded (VoD2)**

The Volente component makes up 75 percent of the map unit. Slopes are 1 to 8 percent. This component is on stream terraces on river valleys. The parent material consists of alluvium derived from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately

high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is high. This soil is not flooded. It is not ponded.



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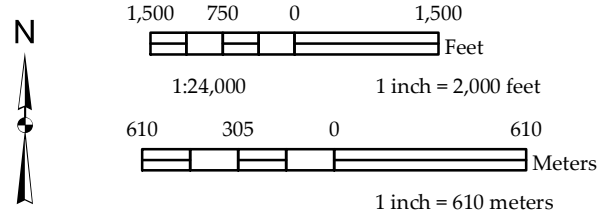
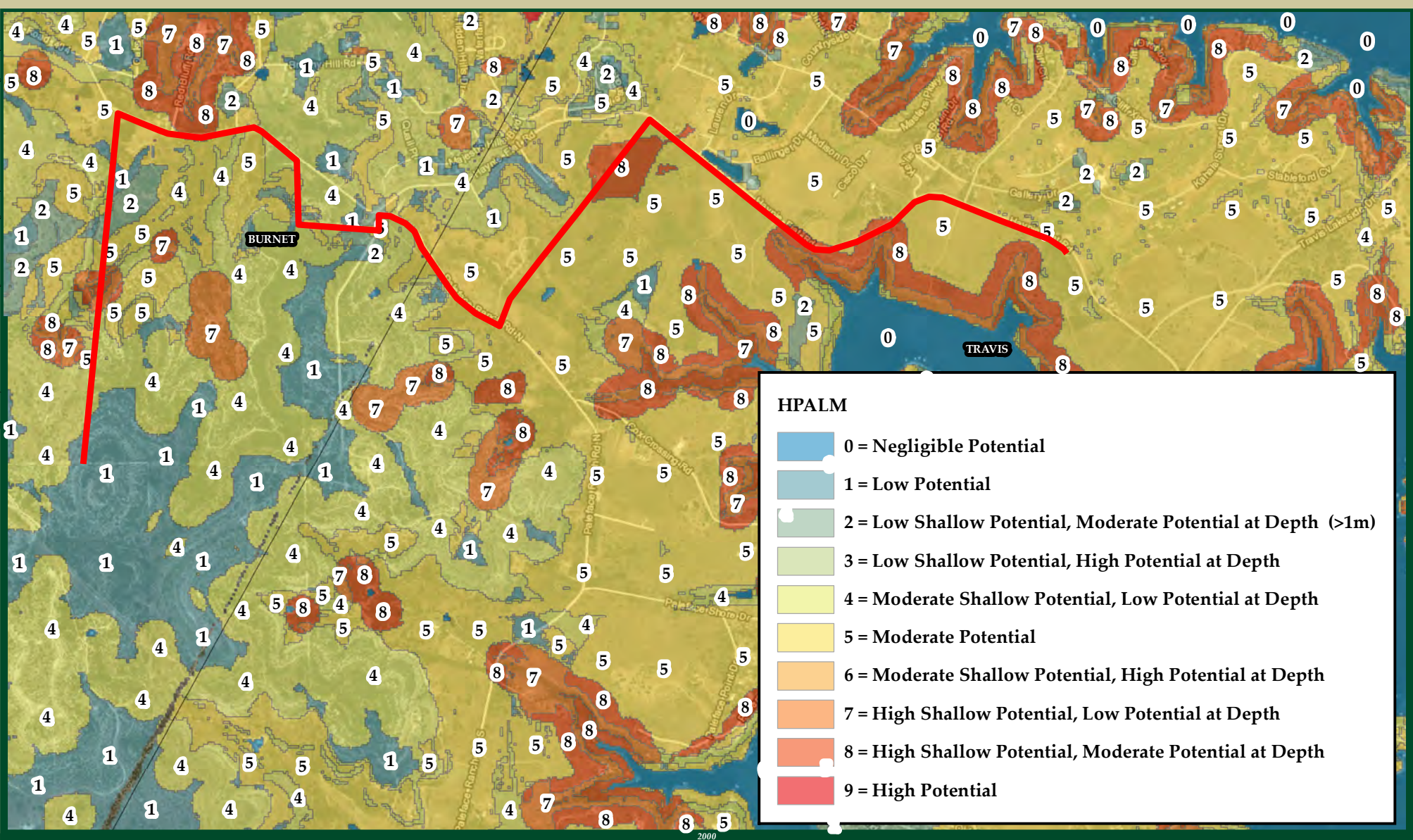
— Proposed Alignment



Canyon West Water Supply Line

Figure 3: Soils

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— Proposed Alignment



## 2.3 Geology

According to Barnes (1986), the proposed alignment is located within four geologic units:

- **Upper Glen Rose Limestone (Kgru)**  
Kgru is defined as “limestone, dolomite, and marl in alternating resistant and recessive beds forming stairstep topography; limestone, aphanitic to fine-grained; hard to soft and marly, light-gray to yellowish-gray; dolomite, fine-grained, porous, yellowish-brown; marine megafossils include molluscan steinkerns, rudistids, oysters, and echinoids; upper part relatively thinner bedded, more dolomitic and less fossiliferous than lower part, thickness about 220 feet.”
- **Lower Glen Rose Limestone (Kgrl);**  
Kgrl is defined as “limestone, dolomite, and marl in alternating resistant and recessive beds forming stairstep topography; limestone, aphanitic to fine-grained, hard to soft and marly, light-gray to yellowish-gray; dolomite, fine-grained, porous, yellowish-brown; marine megafossils include molluscan steinkerns, rudistids, oysters, and echinoids; lower part more massive and about 160 feet thick, includes at top Corbula Bed.”
- **Upper Glen Rose Limestone (Kgru)**  
Kgru is defined as “limestone, dolomite, and marl in alternating resistant and recessive beds forming stairstep topography; limestone, aphanitic to fine-grained; hard to soft and marly, light-gray to yellowish-gray; dolomite, fine-grained, porous, yellowish-brown; marine megafossils include molluscan steinkerns, rudistids, oysters, and echinoids; upper part relatively thinner bedded, more dolomitic and less fossiliferous than lower part, thickness about 220 feet.”
- **Lower Glen Rose Limestone (Kgrl);**  
Kgrl is defined as “limestone, dolomite, and marl in alternating resistant and recessive beds forming stairstep topography; limestone, aphanitic to fine-grained, hard to soft and marly, light-gray to yellowish-gray; dolomite, fine-grained, porous, yellowish-brown; marine megafossils



include molluscan steinkerns, rudistids, oysters, and echinoids; lower part more massive and about 160 feet thick, includes at top *Corbula* Bed.”

### 3.0 LITERATURE REVIEW

A literature review of the Texas Archeological Sites Atlas (Atlas) revealed that two previously recorded sites are within the APE but that no part of the APE been previously surveyed (Figure 5). Sixteen additional sites are located within 1 kilometer (0.62 mile) of the APE. Furthermore, one cemetery is also within 1 kilometer of the APE. No historical markers, National Register properties, or SALs were located within 1 kilometer of the APE.

Site 41TV539 encompasses the last approximately 140 meters of the eastern terminus. The centroid is mapped 60 meters (196.9 feet) to the south. The site was first recorded in 1981 and was revisited in 2015 by SWCA Environmental Consultants. 41TV539 is a large prehistoric campsite with a historic component. Secondary and tertiary flakes were recovered during the revisit along with historic refuse. No further work was recommended.

The mapped site boundary of 41TV2501 intersects the centerline of the project alignment near the eastern terminus. The site centroid is mapped 23 meters (75 feet) to the south. The site was recorded in 2015 by SWCA Environmental Consultants. Site 41TV 2501 is a small lithic scatter and no diagnostics were recovered. No further work was recommended.

Sites 41TV2489 to 41TV2504 were all recorded in 2015 by SWCA Environmental Consultants for a privately funded project. The surveyed area is not entered into the Atlas and thus unknown how much of the possible APE might have been included in that investigation. A summary of all sites can be found in Table 1. None of the sites are located within Burnet County.

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

<i>Site</i>	<i>Site Type</i>	<i>NRHP Eligibility</i>	<i>Recommendations</i>
41TV248	Prehistoric campsite	Unknown	None
41TV339	Prehistoric lithic scatter	Unknown	None
41TV539	Prehistoric campsite; Historic scatter	Unknown	None
41TV2489	Historic scatter, foundation	Unknown	Archival research
41TV2490	Prehistoric scatter	Unknown	None
41TV2491	Historic cabin	Unknown	Archival research
41TV2492	Historic structure	Unknown	Archival research
41TV2493	Prehistoric campsite	Unknown	None
41TV2494	Historic limestone wall	Unknown	Archival research
41TV2495	Prehistoric lithic scatter	Unknown	Further excavation
41TV2496	Historic structure	Unknown	Archival research
41TV2497	Historic stone wall	Unknown	Archival research
41TV2498	Historic homesite	Unknown	Preservation and archival research
41TV2499	Historic scatter	Unknown	None
41TV2500	Prehistoric lithic scatter	Unknown	None
41TV2501	Prehistoric lithic scatter	Unknown	None
41TV2503	Historic structure	Unknown	Archival research
41TV2504	Prehistoric lithic scatter	Unknown	None

In addition to the sites, one known cemetery is located within one kilometer of the alignment. Haynie Flat Cemetery (BT-C017) is located approximately 720 meters (0.45 mile) north of the APE in Burnet County. No other information on the cemetery was available from the Atlas.

## 4.0 FIELD METHOD

An intensive pedestrian survey was conducted along the entire 4.55-mile alignment with a 30-foot wide buffer for a total of an approximate 16.6-acre (6.72-hectare) APE. The survey also included shovel testing and photography. In total, 46 shovel tests were conducted, concentrated in site revisits and previously determined high probability areas (HPA) (Figure 6). The shovel tests were at least 30 centimeters (cm) in diameter, in 10 cm levels, and the soil was screened through ¼-inch (.63-centimeter) hardware cloth. Shovel tests were recorded on logs and the locations of the tests were recorded on a GPS unit. All shovel tests outside of the site revisits were negative.

Sites 41TV539 and 41TV2501 were revisited. The revisits consisted of a survey of the site, photography, and completion of a revisit site form submitted to TARL.

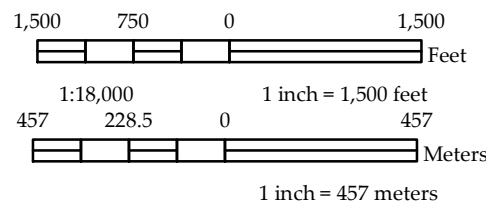
## 5.0 RESULTS OF INVESTIGATION

The survey and shovel testing were conducted under pleasant, warm conditions over two days, under a partially cloudy sky. An intensive survey was conducted within the entire 16.6-acre (6.72-hectare) APE of the project area.

The proposed alignment is located within agricultural-use land. The survey began at the east end of the alignment within previously recorded site 41TV539. Six shovel tests were conducted in 30m intervals within the known site boundary and pedestrian surveyed (Figure 7). Shovel tests were conducted to depths of 30 cm until clay and the bottom of Holocene deposits were reached. All shovel tests were negative. Two cores and two lithic flakes were recovered from the surface (Figure 8). A two-track road and a surface water line run through the site and further agricultural activities could account for the lack of recovered artifacts (Figure 9). Due to lack of diagnostics and poor contextual integrity, 41TV539 is not recommended for listing on the NRHP, and the portion of the site within the APE would not contribute to the site's eligibility were it to later be determined eligible.



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- Proposed Alignment
- Canyon West
- Shovel Test





**Figure 8. Recovered artifacts from surface of 41TV539**



**Figure 9. Overview of 41TV539, facing west**

Site 41TV2501 is located approximately 350 meters to the northwest of site 41TV539. Ten shovel tests were conducted within 30m intervals and the site was pedestrian surveyed (Figure 10). Shovel tests were conducted to depths of 20-30cm until clay or dense caliche was reached. Portions of the site included bedrock outcroppings and little soil as the site is located on a gentle slope exhibiting signs of much erosion (Figure 11). Four shovel tests were positive with lithic flakes and additional flakes were located on the surface along with a broken projectile point tip (Figure 12). The site consisted of mostly surficial scatter of lithics with a subsurface component to 15 cm below surface.



**Figure 11. 41TV2501 site overview towards rise, showing GSV, facing west**



**Figure 12. Recovered artifacts from surface of 41TV2501**

Observed material included chert flakes and utilized flakes. The site was shovel tested until double negatives were reached to the east and west. The positive shovel tests extended the known site boundary to the east and west by a total of 70m, for an approximate east-west width of 120m. Due to the constraints of the APE, it is unknown how far south the site may extend. Haynie Flat Road bounds the site to the north. Due to lack of diagnostics and high level of erosion, 41TV2501 is not recommended for listing on the NRHP, and the portion of the sites within the APE would not contribute to the site's eligibility were it to later be determined eligible.

Four previously determined HPAs intersect the alignment which were shovel tested in 30m intervals. A fifth HPA also intersects the alignment but lacked soils. Throughout the remainder of the alignment, ground surface visibility ranged from 30 to 90% and many areas included exposed limestone outcroppings (Figures 13-15). While chert material was located, no cultural materials were recovered outside of the two previously recorded sites.





**Figure 13. GSV along Paleface Ranch Road, facing southeast**



**Figure 14. GSV along Haynie Flat Road**



**Figure 15. GSV and overview of HPA along western portion of APE, facing north towards a spring**

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

On September 18 and 19, 2018, archeologists from **aci consulting** conducted a pedestrian survey prior to construction of the Canyon West Water Supply Line in Travis and Burnet Counties, Texas. The project consists of the approximately 4.55-mile raw water transmission main from the existing SCWC raw water storage tank located along Haynie Flat Road. The proposed alignment will be constructed within a 15-foot permanent easement and also utilize an additional 15-foot temporary construction easement during construction. Therefore, the APE of the proposed alignment is approximately 30 feet wide along the entire 4.55-mile length of the alignment for a total of approximately 16.6 acres (6.72 hectares).

The investigation consisted of a site revisit to 41TV539 and 41TV2501, an intensive pedestrian survey, shovel testing, site recording, assessment of sites for listing on the NRHP or for designation as a SAL. Neither site is recommended for listing on the NRHP or as a SAL, and the portions of the sites within the APE would not contribute to the sites' eligibility were they to later be determined eligible.

The investigation 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. It should 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, Hines Highway 71 Limited Partnership will contact the Texas Historical Commission or other professional archeologist of the inadvertent discoveries.

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