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## Short Report on the Intensive Archeological Survey of the City of Austin's Burleson Road Pressure Conversion Travis County, Texas

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## Short Report on the Intensive Archeological Survey of the City of Austin's Burluson Road Pressure Conversion Travis County, Texas

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**SHORT REPORT ON THE  
INTENSIVE ARCHEOLOGICAL SURVEY  
OF THE CITY OF AUSTIN'S  
BURLESON ROAD PRESSURE CONVERSION  
TRAVIS COUNTY, TEXAS**

Written by:  
Gregg Cestaro and Shannon Smith with a contribution by Keith Faz

Antiquities Permit #7177

Principal Investigator:  
Josh Haefner

Submitted to:  
K. Friese + Associates  
&  
The City of Austin

Hicks & Company  
Austin, Texas

Archeology Series No. 264

October 2015



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## MANAGEMENT SUMMARY

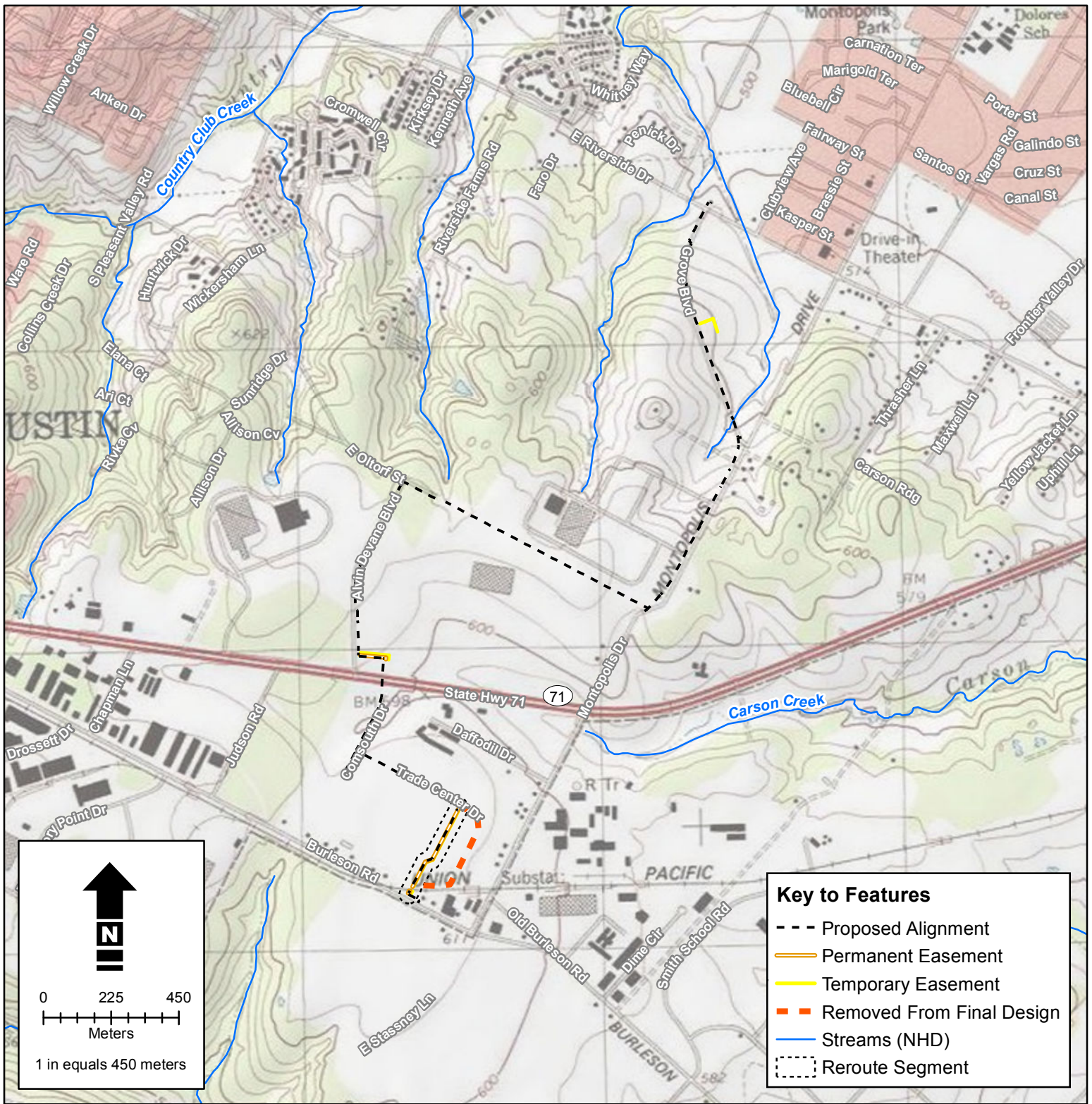
Hicks & Company archeologists, working on behalf of K. Friese + Associates and the City of Austin (COA), recently conducted an archeological survey supplemented with shovel testing in undisturbed locations for the COA's proposed Burleson Road Pressure Conversion project (**Figure 1**). According to current design plans, pipe will be installed through open-cut trenching with a northern terminus at East Riverside Drive and a southern terminus at Burleson Road within a 10 meter-wide construction corridor. From its northern terminus, the proposed alignment follows Grove Boulevard southward to Montopolis Drive, for an approximate distance of 1,355 meters. After which, the proposed alignment turns west, following the East Oltorf Street corridor, until turning south on Alvin Devane Boulevard, crossing under State Highway (SH) 71 via installation using a jack and bore methodology. Continuing on to Comsouth Drive, the alignment turns east to follow Trade Center Drive for an approximate distance of 655 meters before turning south/southwest for approximately 370 meters before terminating at Burleson Road. Currently, construction easements are planned at three locations: approximately 450 meters south of the intersection of East Riverside Drive and Grove Boulevard; just north of SH 71 near Alvin Devane Boulevard; and along the proposed alignment between Trade Center Drive and Burleson Road. The total acreage for this project is 10.62 acres.

The project is being funded by the COA and is therefore subject to the Antiquities Code of Texas (ACT). Investigations were conducted under Texas Antiquities Permit #7177 in accordance with the Texas Historical Commission (THC) and the Council of Texas Archeologists' (CTAs) guidelines for intensive archeological survey. During the investigations, 13 shovel tests were excavated, with all shovel tests negative for cultural materials. None of the shovel tests excavated during this survey were positive for cultural materials and no archeological sites, features, or artifacts were observed during the investigations. Based on the results of the current survey, it is recommended that no archeological historic properties (36 CFR 800.16(1)) or State Antiquities Landmarks (13 TAC 26.12) will be affected by this construction of the proposed alignment. No further cultural resource investigations are recommended for the proposed project.

Fieldwork for the initial archeological survey occurred on February 19, 2015, requiring ten labor hours to complete. Necessitated by a rerouting of the segment located between Trade Center Drive and Burleson Road, additional fieldwork was conducted on October 19, 2015, requiring six labor hours to complete. Josh Haefner served as Principal Investigator and Gregg Cestaro served as Project Archeologist. Gregg Cestaro, Shannon Smith, and Keith Faz authored the report and conducted the survey with Josh Haefner and Meghan Egan. This report includes an environmental background, a discussion of previous surveys and recorded sites, a description of field methodology, a discussion of the results of the field investigation, and a conclusion containing formal regulatory recommendations. Also included are appendices containing regulatory correspondence (**Appendix A**), and shovel test results and locations (**Appendix B**). Project-generated notes, forms, and photographs will be curated at the Texas Archeological Research Laboratory in Austin, Texas. This report is offered in partial fulfillment of Texas Antiquities Permit #7177.

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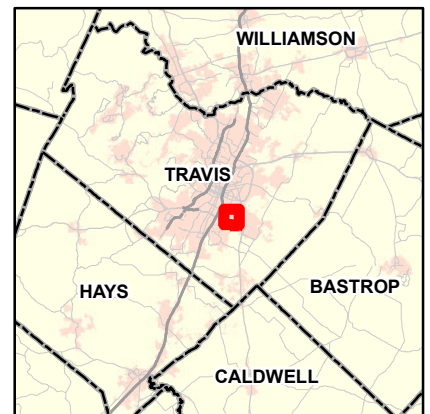




**Figure 1**  
**Project Location**

CITY OF AUSTIN BURLESON RD  
PRESSURE CONVERSION

USGS 7.5-minute Topographic Quadrangle:  
Montopolis (USGS# 30097-B6), Tx



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## ENVIRONMENTAL SETTING

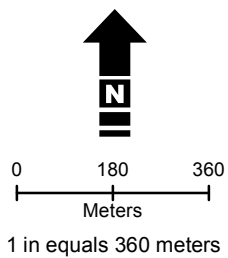
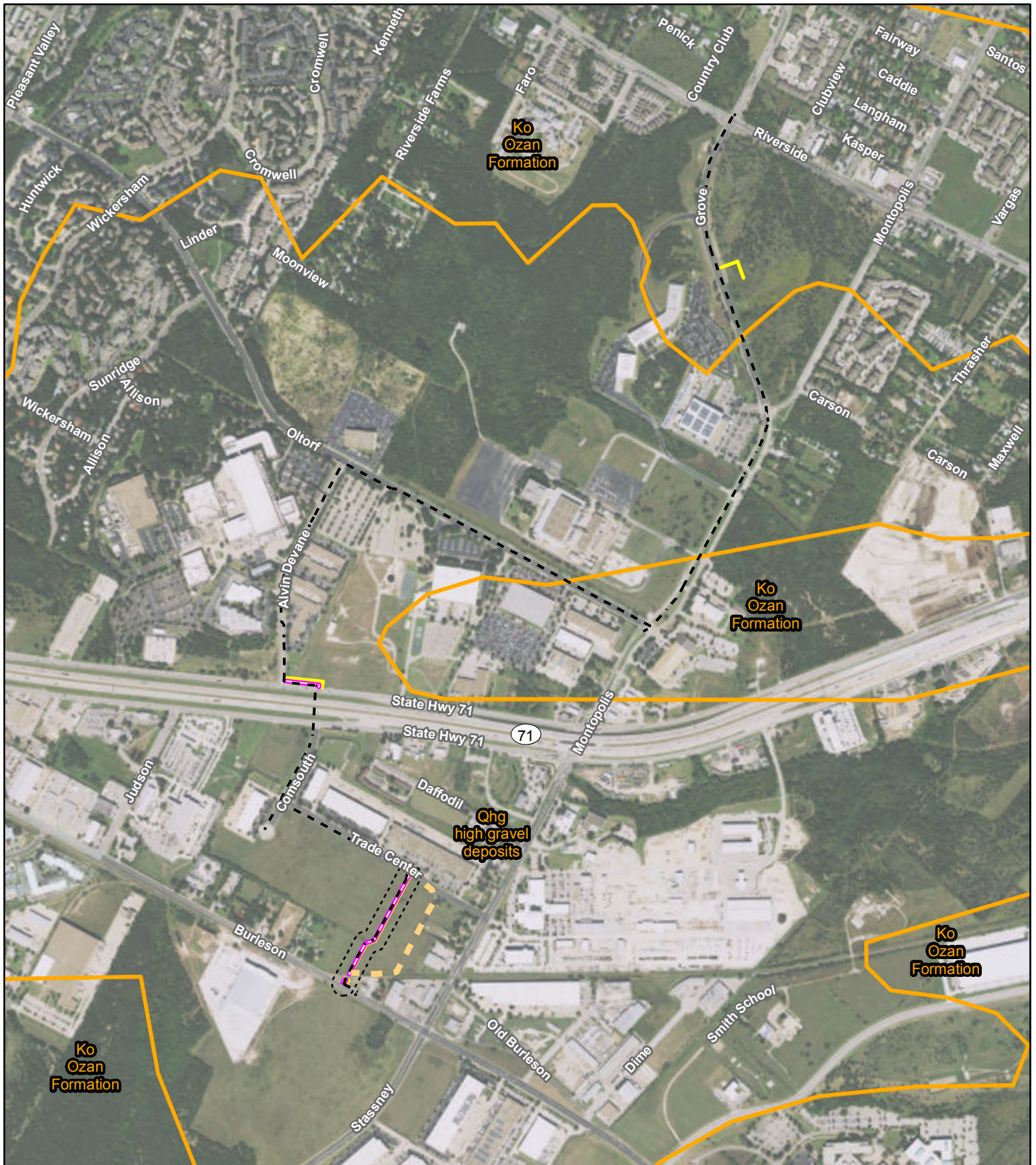
### GEOLOGY

Geologically, the proposed project area is situated above the Ozan Formation (Oz) dating to the Cretaceous and high gravel deposits (Qhg) dating to the beginning of the Early Pleistocene (**Figure 2**). The Ozan Formation is comprised of clay, marly, calcareous content that decreases upward. Characteristic nodules of hematite and pyrite and silt-size quartz and calcite fragments abound and become more abundant upward where shape is blocky and fractures conchoidal. This geologic formation predates the arrival of humans in the Americas; as such cultural deposits in these areas would likely be close to the surface in overlying sediment or on the surface itself. High gravel deposits in the Austin area are fluvial terrace formations representing former levels of the Colorado River and its tributaries. Commonly, the matrix can be composed of gravel, silts, sands, and clays. This geologic formation coincides with the arrival of humans in the Americas; as such, cultural deposits in these areas could be buried below the surface. However, artifacts located within the gravel beds of the high terrace deposits would not likely be *in situ*.

### PEDOLOGY

According to the United States Department of Agriculture – Natural Resource Conservation Services (USDA NRCS') Web Soil Survey for Travis County accessed on September 17, 2014, soil series mapped within the proposed project area consist of Altoga silty clay (AgC2), 3 to 6 percent slopes, moderately eroded; Burleson clay (BsB), 1 to 2 percent slopes; Heiden clay (HeD2), 5 to 8 percent slopes, moderately eroded; Houston Black clay (HnA), 0 to 1 percent slopes; Houston Black clay (HnB), 1 to 3 percent slopes; Houston Black clay (HnC2), 3 to 5 percent slopes, moderately eroded; Houston Black soils and Urban land (LcB), 0 to 8 percent slopes; Lewisville silty clay (LcB), 1 to 2 percent slopes; Patrick soils (PaC), 2 to 5 percent slopes (**Figure 3**). The Altoga series is derived from mudstone. Burleson clay forms from calcareous clayey alluvium of Pleistocene age derived from mixed sources. Heiden clay is derived from clayey residuum weathered from Eagleford shale or Taylor marl. Soils of the Houston Black series are derived from calcareous mudstone of Cretaceous Age. Both the Patrick and Lewisville series are parented from quaternary alluvium derived from mixed sources typically located on terrace landforms. Houston Black soils and urban land consist of 56 percent Houston Black clay, 30 percent Urban Land, and about 14 percent other soils including but not limited to Heiden and Burleson clay. The Lewisville and Patrick soils have good potential to contain deeply buried archeological deposits with integrity, while the Altoga and Burleson series have moderate potential, and the Houston Black and Heiden series have low potential.

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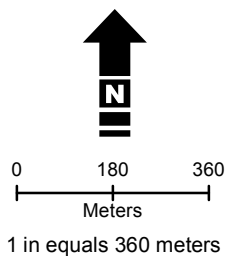
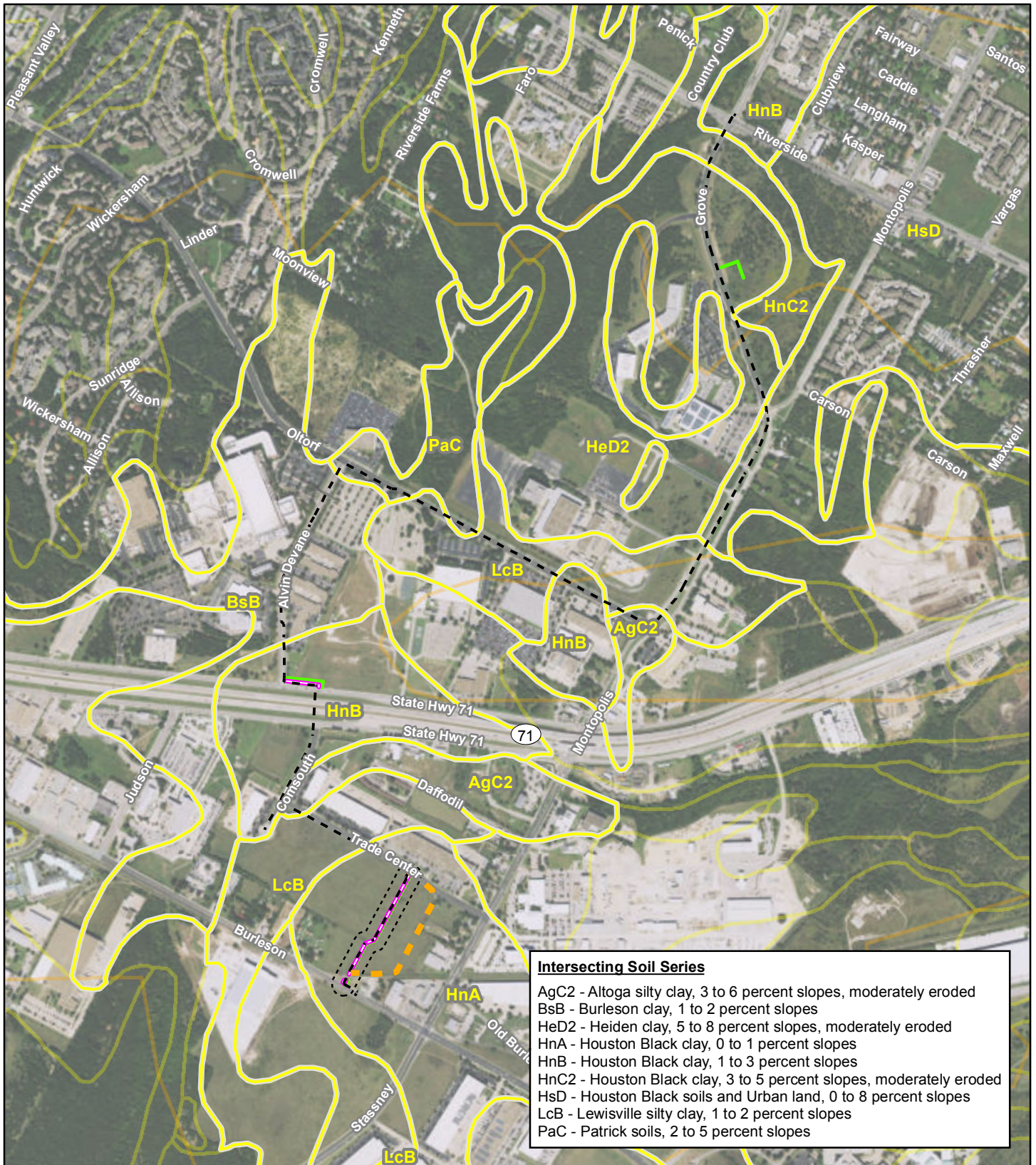


**Figure 2**  
**Project Area Geology**  
 CITY OF AUSTIN BURLESON RD  
 PRESSURE CONVERSION

**Key to Features**

- Proposed Alignment
- Permanent Easement
- Temporary Easement
- Removed From Final Design
- Geologic Formations
- - - Reroute Segment

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**Figure 3**  
**Project Area Soils**

CITY OF AUSTIN BURLESON RD  
PRESSURE CONVERSION

**Key to Features**

- - - Proposed Alignment
- Permanent Easement
- Temporary Easement
- Removed From Final Design
- Soil Series
- Reroute Segment

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## VEGETATION AND LAND USE

The proposed project is located along the southeastern extent of the Blackland Prairie. This rolling and dissected prairie is the southern expression of the true prairie that stretches from Canada to Texas (TAMU 2000). Much of the Blackland Prairie has been cultivated, with cotton, sorghum, corn and wheat production thriving during the second half of the nineteenth century. By the second half of the twentieth century, the estimated area utilized as cropland dropped from approximately 98 percent to 50 percent, with 25 percent now pasture and the bulk of the rest, rangeland. During past years as a tallgrass prairie, the Blackland Prairie was dominated by little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardi*), indiagrass (*Sorghastrum nutans*), tall dropseed (*Sporobolus compositus*) and silveus dropseed (*Sporobolus silveanus*). Where grazing pressure has continuously occurred, sideouts grama (*Bouteloua curtipendula*), hairy grama (*Bouteloua hirsute*), Mead's sedge (*Carex meadii*), Texas wintergrass (*Nassella leucotricha*), and buffalograss (*Bouteloua dactyloides*) may thrive. Mesquite (*Prosopis glandulosa*), huisache (*Acacia farnesian*), oak (*Quercus* sp.), and elm (*Ulmus* sp.) are common on derelict rangelands or unutilized croplands. Oak, elm, cottonwoods (*Populus deltoids*), and pecans (*Carya illinoensis*) frequently occur along drainages. Within the immediate vicinity of the proposed project area, vegetation is a mix of oaks, cedar, and short, often manicured, grasses within an urbanized part of the Austin City Limits. Invasive exotic brush species such as Chinaberry (*Melia azedarach*) and Wax-leaf ligustrum (*Ligustrum japonicum*) are also common in unmaintained areas of the proposed project.

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## PREVIOUSLY RECORDED SITES AND ARCHEOLOGICAL INVESTIGATIONS

According to the THC's Online Sites Atlas (the Atlas), accessed on September 17, 2014, eight archeological surveys and three archeological sites have been recorded within 750 meters of the proposed alignment (**Figure 4**). An areal survey was conducted approximately 400 meters northwest of the proposed alignment's northern terminus; however, according to the Atlas, no other information is available on this investigation. In 2013, AmaTerra conducted an areal survey for the COA that follows the proposed alignment from the intersection of Grove Boulevard and East Riverside Drive to approximately 365 meters northwest of the intersection of Grove Boulevard and Montopolis Drive. In 1977, the Texas Department of Highways and Public Transportation conducted a linear survey of the East Riverside Drive corridor. This survey intersects the northern terminus of the proposed alignment at Riverside Drive and Grove Boulevard. A linear survey was also conducted of the Montopolis Drive corridor, trending south from its intersection with East Riverside Drive. This survey intersects the proposed alignment on Montopolis Drive, approximately 675 meters south of the intersection of East Riverside Drive and Montopolis Drive.

In 2001, the Texas Department of Transportation conducted a linear survey approximately 250 meters west of the proposed southern terminus. This survey begins at the intersection of Montopolis Drive and Old Burlison Road and heads east, away from the proposed project area. In 1986, the State Department of Highways and Public Transportation conducted a linear survey of what is now SH 71. In 2013, Sphere 3 Environmental, on behalf of the Department of Housing and Urban Development, conducted an areal survey that is located approximately 400 meters east of the proposed alignment. In 2012, Hicks & Company, on behalf of the COA, conducted an areal survey approximately 150 meters northeast of the intersection of Montopolis Drive and SH 71. During this survey, Site 41TV2438, a small surficial lithic scatter, was recorded. The site is ineligible for listing on the National Register of Historic Places. In 2001, the Lower Colorado River Authority conducted an areal survey approximately 680 meters east-southeast of the intersection of Montopolis Drive and SH 71, approximately 180 meters south of the Carson Creek channel. Discovered during the survey, Site 41TV1951 is a multi-component site with both historic and prehistoric artifacts observed up to 60 centimeters below the surface. According to the Atlas, the eligibility status of Site 41TV1951 is currently undetermined. Located approximately 90 meters southeast of the intersection of Montopolis Drive and Burlison Boulevard, Site 41TV1696 was recorded in 1994 as a historic cemetery, wherein a grave marker of an infant was discovered. During recordation, Site 41TV1696 was recommended eligible for listing as a State Antiquities Landmark. In total, approximately 641 meters of the proposed 4005-meter project length has been previously surveyed.

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Figure 4 has been removed due to sensitive site data.

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## METHODOLOGY

The field methodology utilized in the course of the archeological survey was tailored to provide the broadest possible evaluation of cultural resources within the project area. Urban development, roadways, and other associated infrastructure have disturbed much of the area surveyed. However, the northern segment of the proposed alignment that follows the 910 meters of Grove Boulevard to its intersection with Montopolis Drive and the 370 meters of project length north of Burlison Road, occur within a previously unsurveyed area with limited evidence of recent disturbance. In consultation with the THC, it was determined that these areas warranted intensive archeological survey with the remaining project area requiring reconnaissance-level survey to document degree of disturbance (**Appendix A**). Intensively surveyed areas were supplemented with shovel testing in accordance with CTA guidelines at intervals of 100 meters (330 feet) or less within the project alignment. In addition, during survey it was determined that a single temporary easement area located at the southern end of Alvin Devane Boulevard, parallel with SH 71, warranted shovel testing to determine degree of subsurface disturbance. During the investigations, 16 shovel tests in total were excavated along the proposed alignment in locations that did not overlay current existing road, sidewalk or trail, an approximate total distance of 1300 meters (**Appendix B**). Due to the presence of extant concrete, stone, and numerous above-and-below-ground utilities, reconnaissance survey areas were traversed on foot with degree of disturbance documented in note and photographic form. All excavated sediment from shovel tests was screened through quarter-inch wire mesh or hand-sorted when clay texture prohibited screening. Investigators utilized handheld global positioning system (GPS) units and detailed maps to locate and record excavations. Each shovel test was recorded on standardized forms and their location plotted. Once data were recorded, all shovel tests were backfilled. Following survey, all GPS positions were downloaded and plotted on 7.5-minute U.S. Geological Survey topographic and aerial maps by Hicks & Company GIS personnel.

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## RESULTS OF FIELD INVESTIGATIONS

On February 19, and October 19, 2015, Hicks & Company archeologists performed archeological survey, supplemented by shovel testing, of the proposed project alignment. The proposed project's northern terminus is located at East Riverside Drive and Grove Boulevard. From here, the proposed alignment continues south following Montopolis Road, East Oltorf Street, Alvin Devane Boulevard, Comsouth Drive, and Trade Center Drive to terminate at Burleson Road for an approximate distance of 4005 meters. Working from the northern terminus of the project to its southern terminus, archeologists performed shovel testing in areas that were previously designated for intensive survey in consultation with the THC (**Appendix A**). Reconnaissance-level survey and photographic documentation was executed in urbanized, modified and disturbed settings along the alignment. Areas subjected to shovel testing include the northern segment of the project area that follows Grove Boulevard from East Riverside Drive to East Oltorf Drive and from Comsouth Drive to Burleson Road. In total, 16 shovel tests were excavated during the survey, none of which were positive for cultural materials.

### East Riverside Drive to East Oltorf Drive

The northernmost segment of the proposed alignment, located along Grove Boulevard from East Riverside Drive to East Oltorf Street, is located within an undeveloped lightly wooded area adjacent to a mixed-use industrial area (**Figure 5**). Eight negative shovel tests (STGC1-STGC4 and STSS1-STSS4) were performed in this segment, including two tests (STGC4 and STSS4) in a proposed temporary easement located adjacent to Grove Boulevard. These shovel tests noted sediment profiles consisting of three discernible layers. The first is a 10-30 centimeter (cm) thick horizon of a very dark grayish brown (10YR 3/2) silty clay with 10 percent rounded limestone pebbles and gravels. Below this top layer, is a 10-20 cm thick dark brown (10YR 3/3) silty clay with 20 percent calcium carbonate inclusions. A third layer, a 10+ cm lower horizon of a lighter yellow brown (10YR 5/4) clay with 5-20 percent calcium carbonate and pebble/gravel inclusions was also noted. Subsurface gravels increased in number as the landform rises southerly along Grove Boulevard from East Riverside Drive. Within the temporary easement, the landform sloped gently to the east (**Figure 6**). This area is an oak and cedar stand with visible iron-oxide tinted chert gravels on the surface and to depth. Excavated sediment on this rise was observed to be a dark grayish brown (10YR 3/2) silty clay with reddish mottling and 10 percent rounded limestone pebble and gravel inclusions above a brown clay (10YR 4/3) loam. None of the shovel tests conducted along this segment were positive for cultural materials and no such materials were noted on the surface. Continuing south along Montopolis Drive, the proposed alignment bisects the grassy median between north and southbound lanes in an area of industrial (**Figure 7**). This segment was surveyed on foot with levels of disturbance documented but was not shovel tested.



**Figure 5:** Overview facing north towards the project's northern terminus at the Intersection of East Riverside Dr. and Grove Blvd.



**Figure 6:** Overview of vegetation at the temporary easement along Grove Blvd.



**Figure 7:** Overview of Proposed alignment at Montopolis Drive facing south.

### **East Oltorf Drive to Comsouth Drive**

From the intersection of Montopolis Drive and East Oltorf Street, the proposed alignment travels 800 meters west to Alvin Devane Boulevard. This segment was observed to be a mixed-use industrial area and therefore was not shovel tested (**Figure 8**). From the intersection of East Oltorf Street and Alvin Devane Boulevard, the project alignment follows Alvin Devane Boulevard south for a distance of 700 meters to SH 71. This area was noted to be a dense mixed-use industrial setting of parking lots and various businesses with few undeveloped parcels (**Figure 9**). From Alvin Devane Boulevard and the SH 71 intersection, the proposed alignment travels east approximately 100 meters and realigns south to Comsouth Drive. This small segment is within a disturbed context of utilities, culverts, and artificially raised land along the highway (**Figure 10**). One negative shovel test (STSS5) was performed at this location and photos were taken highlighting the modified landscape. From this point, the proposed project alignment travels under SH 71 to align with the Comsouth Drive corridor.



**Figure 8:** Urban setting of proposed alignment along East Oltorf Street, facing west.



**Figure 9:** Overview of urban setting of proposed alignment along Alvin Devane Blvd., facing south towards SH 71.



**Figure 10:** Overview of disturbed and modified setting at the Alvin Devane Blvd. and SH71 intersection facing east.

### **Comsouth Drive to Burleson Road**

At Comsouth Drive, the proposed alignment runs 1500 meters to the south and splits into a small segment that terminates at a cul-du-sac, while a longer segment runs east along the Trade Center Drive corridor, then south to a terminus at Burleson Road (**Figures 11 and 12**). This particular area is a grassy field setting. Seven negative shovel tests (STKF1, STJH1-STJH5, and STME1) were excavated within this area. Sediment in this location is a dark brown (10YR 3/2 to 7.5 YR 2.5/2) silty clay loam with limited inclusions. Sediment was more compact and disturbed in this setting, characterized by a 30 cm thick upper level of a very dark grayish brown (10 YR 3/2) silty clay loam with rootlet inclusions. Beneath this layer, a lower level horizon of brown (7.5YR 4/2) clay follows with 20 percent limestone gravel inclusions and mottles of a grayish brown (10YR 3/2) or yellowish brown (10YR 5/6) clay. No culturally significant materials were observed on the surface or within shovel tests at this location.



**Figure 11:** Overview of the urban and field setting at Comsouth Drive facing east along Trade Center Drive.



**Figure 12:** Overview of southern terminus of proposed alignment at Trade Center Drive looking north.

## CONCLUSION AND RECOMMENDATIONS

On behalf of K. Friese + Associates and the COA, Hicks & Company archeologists completed an archeological survey of approximately 4000 meters (2.49 miles) for the proposed COA's Burleson Road Pressure Conversion project located in Travis County, Texas. The proposed project area is within an urban and industrial setting, through which the proposed alignment utilizes existing paved roads, sidewalks and undisturbed wooded areas. The survey consisted of pedestrian inspection supplemented by shovel testing ( $n = 16$ ) within the proposed footprint.

None of the shovel tests excavated during this survey were positive for cultural materials and no archeological sites, features, or artifacts were observed during the investigations. Based on the results of the current survey, it is recommended that no archeological historic properties (36 CFR 800.16(1)) or State Antiquities Landmarks (13 TAC 26.12) will be affected by the construction of the proposed alignment and no further cultural resource investigations are recommended for the proposed project prior to construction. In the unlikely event that cultural materials are found during construction, all work in the area is recommended to cease until the THC is contacted so that a professional archeologist can assess the finding and make recommendations for any future action that may be required. This report is offered in partial fulfillment of the requirement of Antiquities Permit #7177.

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## REFERENCES CITED

Texas Agricultural and Mechanical University (TAMU)

- 2000 Checklist of the Vascular Plants of Texas: Ecological Summary – Vegetation Area 4, Blackland Prairies. Online document, accessed at <http://www.csdl.tamu.edu/flora/tracy/taesreg4> on October 4, 2000.

Texas Historical Commission (THC)

- 2014 Texas Archeological Sites Atlas (the Atlas). Accessed at <http://nueces.thc.state.tx.us> on September 17, 2014.

United States Department of Agriculture, Natural Resources Conservation Service

- 2014 Web Soil Survey: Soil database for Travis County, Texas. Accessed at <http://websoilsurvey.nrcs.usda.gov/app/> on February 19, 2015.

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**APPENDIX A**  
**REGULATORY CORRESPONDENCE**



DEC - 1 2014



ENVIRONMENTAL  
ARCHEOLOGICAL  
AND PLANNING  
CONSULTANTS

October 30, 2014

Mark Wolfe  
State Historic Preservation Officer  
Attn: Mark Denton  
Texas Historical Commission  
P.O. Box 12276 – Capitol Station  
Austin, Texas 78711

RECEIVED

OCT 30 2014

**RE: The City of Austin Burleson Road Pressure Conversion, Travis County, Texas**

Dear Mr. Denton,

The City of Austin (COA) is currently proposing to construct a reclaimed water pipeline that will be approximately 4005 meters in length (**Figure 1**). The proposed alignment will be installed through open-cut trenching with a northern terminus at East Riverside Drive and a southern terminus at Burleson Road. From its northern terminus, the proposed alignment follows Grove Boulevard southward to Montopolis Drive, for an approximate distance of 1,355 meters. At Montopolis Drive, the proposed alignment turns west, following the Oltorf Street corridor, until turning south on Alvin Devane Road, crossing under State Highway (SH) 71 via jack and bore, for a total approximate distance of 1,585 meters. Continuing on to Comsouth Road, the alignment turns east to follow Trade Center Drive for an approximate distance of 695 meters before turning south/southwest for approximately 370 meters before terminating at Burleson Road. Currently, construction easements are planned at three locations: approximately 450 meters south of the intersection of East Riverside Drive and Grove Boulevard; just north of SH 71 near Alvin Devane Road; and along the proposed alignment between Trade Center Drive and Burleson Road.

According to the Texas Historical Commission's (THC's) Online Sites Atlas (the Atlas), accessed on September 17, 2014, eight archaeological surveys and three archaeological sites have been recorded within 750 meters of the proposed alignment (**Figure 2**). An areal survey was conducted approximately 400 meters northwest of the proposed alignment's northern terminus; however, according to the Atlas, no other information is available on this investigation. In 2013, AmaTerra conducted an areal survey for the COA that follows the proposed alignment from the intersection of Grove Boulevard and East Riverside Drive to approximately 365 meters northwest of the intersection of Grove Boulevard and Montopolis Drive. In 1977, the Texas Department of Highways and Public Transportation conducted a linear survey of the East Riverside Drive corridor. This survey intersects with the northern terminus of the proposed alignment at East Riverside Drive and Grove Boulevard. A linear survey was also conducted of the Montopolis Drive corridor, trending south from its intersection with East Riverside Drive. The proposed alignment turns and follows the Oltorf Street corridor west for approximately 500 meters, while also continuing south down Montopolis Drive. This survey intersects the proposed alignment on Montopolis

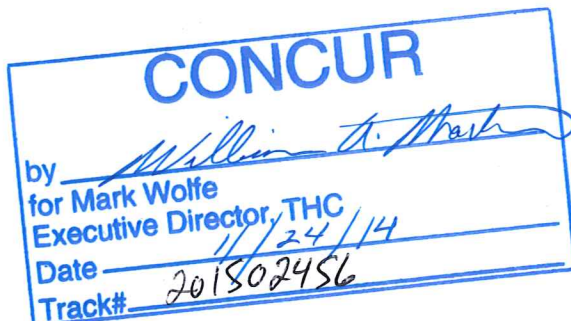
terrace formations representing former levels of the Colorado River and its tributaries. Commonly, the matrix can be composed of gravel, silts, sands, and clays. This geologic formation coincides with the arrival of humans in the Americas; as such, cultural deposits in these areas could be buried below the surface. However, artifacts located within the gravel beds of the high terrace deposits would not likely be *in situ*.

Noted disturbances within and adjacent to the proposed alignment include urban development, roadways, and other associated infrastructure. However, the northern segment of the proposed alignment that follows the southern portion of Grove Boulevard to its intersection with Montopolis Drive, and the 370-meter portion at the proposed southern terminus occur within a previously unsurveyed area with limited evidence of recent disturbance. Based on soil and geological data, these two areas are not conducive to deep archeological deposits; however, there is potential for intact shallowly buried or surficial archaeological deposits. Therefore, Hicks & Company recommends intensive archaeological survey, supplemented with shovel testing of these segments of the project area and a reconnaissance survey of the remaining segments to document degree of disturbance. On behalf of the COA, Hicks & Company presents this letter to the THC to inform your office of the proposed project and to request recommendations regarding the COA's responsibilities for regulatory compliance under the ACT.

Sincerely,



Josh Haefner  
Senior Archeologist



## ANTIQUITIES PERMIT APPLICATION FORM ARCHEOLOGY

### GENERAL INFORMATION

#### I. PROPERTY TYPE AND LOCATION

Project Name (and/or Site Trinomial) City of Austin's Bureson Road Pressure Conversion Project  
 County (ies) Travis County  
 USGS Quadrangle Name and Number Montopolis (3097-213)  
 UTM Coordinates Zone 14  
 Northern Terminus: E 6624331.02 N 3344641.03 Southern Terminus: E 623342.14 N 3342380.25  
 Location Southeast Austin  
 Federal Involvement Yes: \_\_\_\_\_ No XX  
 Name of Federal Agency \_\_\_\_\_  
 Agency Representative \_\_\_\_\_

#### II. OWNER (OR CONTROLLING AGENCY)

Owner CITY OF AUSTIN - AUSTIN WATER UTILITY  
 Representative SHWETHA PANDURANGI  
 Address 625 E. 10<sup>th</sup> STREET, SUITE 100  
 City/State/Zip AUSTIN / TX / 78701  
 Telephone (include area code) 512-974-3514 Email Address shwetha.pandurangi@  
austin.texas.gov

#### III. PROJECT SPONSOR (IF DIFFERENT FROM OWNER)

Sponsor SAME AS ABOVE  
 Representative \_\_\_\_\_  
 Address \_\_\_\_\_  
 City/State/Zip \_\_\_\_\_  
 Telephone (include area code) \_\_\_\_\_ Email Address \_\_\_\_\_

### PROJECT INFORMATION

#### I. PRINCIPAL INVESTIGATOR (ARCHEOLOGIST)

Name Josh Haefner  
 Affiliation Hicks & Company  
 Address 1504 W. 5<sup>th</sup> Street  
 City/State/Zip Austin, Tx. 78703  
 Telephone (include area code) 512-478-0858 Email Address jhaefner@hicksenv.com





(OVER)  
ANTIQUITIES PERMIT APPLICATION FORM (CONTINUED)

II. PROJECT DESCRIPTION

Proposed Starting Date of Fieldwork December 30, 2014  
Requested Permit Duration 3 Years                      Months (1 year minimum)  
Scope of Work (Provided an Outline of Proposed Work) Intensive Survey (see attached scope of work)

III. CURATION & REPORT

Temporary Curatorial or Laboratory Facility Hicks & Company  
Permanent Curatorial Facility Center for Archeological Studies (CAS) in San Marcos

IV. LAND OWNER'S CERTIFICATION

I, SHWETHA PANDURANGI, as legal representative of the Land Owner,  
AUSTIN WATER UTILITY, do certify that I have reviewed the plans and research design, and that no investigations  
will be performed prior to the issuance of a permit by the Texas Historical Commission. Furthermore, I understand that  
the Owner, Sponsor, and Principal Investigator are responsible for completing the terms of the permit.  
Signature [Signature] Date 2/5/15

V. SPONSOR'S CERTIFICATION

SEE IV.

I, \_\_\_\_\_, as legal representative of the Sponsor,  
\_\_\_\_\_, do certify that I have reviewed the plans and  
research design, and that no investigations will be performed prior to the issuance of a permit by the Texas Historical  
Commission. Furthermore, I understand that the Sponsor, Owner, and Principal Investigator are responsible for  
completing the terms of this permit.  
Signature \_\_\_\_\_ Date \_\_\_\_\_

VI. INVESTIGATOR'S CERTIFICATION

I, Josh Haefner, as Principal Investigator employed by Hicks & Company  
Hicks & Company (Investigative Firm), do certify that I will execute this project  
according to the submitted plans and research design, and will not conduct any work prior to the issuance of a permit by  
the Texas Historical Commission. Furthermore, I understand that the Principal Investigator (and the Investigative Firm),  
as well as the Owner and Sponsor, are responsible for completing the terms of this permit.

Signature [Signature] Date 12/8/2014

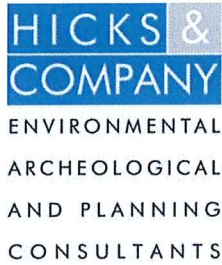
Principal Investigator must attach a research design, a copy of the USGS quadrangle showing project boundaries, and any  
additional pertinent information. Curriculum vita must be on file with the Division of Antiquities Protection.

FOR OFFICIAL USE ONLY

Reviewer \_\_\_\_\_ Date Permit Issues \_\_\_\_\_  
Permit Number \_\_\_\_\_ Permit Expiration Date \_\_\_\_\_  
Type of Permit \_\_\_\_\_ Date Received for Data Entry \_\_\_\_\_







**Hicks & Company's Scope of Work  
for the  
City of Austin's Burleson Pressure Conversion Project, Travis County, Texas  
December 8, 2014**

Pursuant to the Texas Historical Commission's (THC) concurrence with Hicks & Company's recommendations regarding the City of Austin's (COA's) compliance responsibilities (letter, Haefner to Wolfe, October 30, 2014), this scope of work describes an archeological survey for the **City of Austin's Burleson Pressure Conversion Project** in Travis County, Texas. The project involves the construction of a reclaimed water pipeline that will measure approximately 4,005 meters in length (**Figure 1**). The proposed alignment will be installed through open-cut trenching with a northern terminus at East Riverside Drive and a southern terminus at Burleson Road. From its northern terminus, the proposed alignment follows Grove Boulevard southward to Montopolis Drive, for an approximate distance of 1,355 meters. At Montopolis Drive, the proposed alignment turns west, following the Oltorf Street corridor, until turning south on Alvin Devane Road, crossing under State Highway (SH) 71 via jack and bore, for a total approximate distance of 1,585 meters. Continuing on to Comsouth Road, the alignment turns east to follow Trade Center Drive for an approximate distance of 695 meters before turning south/southwest for approximately 370 meters before terminating at Burleson Road. Currently, construction easements are planned at three locations: approximately 450 meters south of the intersection of East Riverside Drive and Grove Boulevard; just north of SH 71 near Alvin Devane Road; and along the proposed alignment between Trade Center Drive and Burleson Road. The project is being funded by the COA and, as such, is subject to the Antiquities Code of Texas (ACT).

According to the United States Department of Agriculture – Natural Resource Conservation Services (NRCS') Web Soil Survey for Travis County accessed on September 17, 2014, soil series mapped within the proposed project area consist of Altoga silty clay (AgC2), 3 to 6 percent slopes, moderately eroded; Burleson clay (BsB), 1 to 2 percent slopes; Heiden clay (HeD2), 5 to 8 percent slopes, moderately eroded; Houston Black clay (HnA), 0 to 1 percent slopes; Houston Black clay (HnB), 1 to 3 percent slopes; Houston Black clay (HnC2), 3 to 5 percent slopes, moderately eroded; Houston Black soils and Urban land (LcB), 0 to 8 percent slopes; Lewisville silty clay (LcB), 1 to 2 percent slopes; Patrick soils (PaC), 2 to 5 percent slopes (**Figure 2**). The Altoga series is derived from mudstone. Burleson clay forms from calcareous clayey alluvium of Pleistocene age derived from mixed sources. Heiden clay is derived from clayey residuum weathered from Eagleford shale or Taylor marl. Soils of the Houston Black series are derived from calcareous mudstone of Cretaceous Age. Both the Patrick and Lewisville series are parented from quaternary alluvium derived from mixed sources typically located on terrace landforms. Houston Black soils and urban land consist of 56 percent Houston Black clay, 30 percent Urban Land, and about 14 percent other soils including but not limited to Heiden and Burleson clay. The Lewisville and Patrick soils have good potential to contain deeply buried archeological deposits with integrity, while the Altoga and Burleson series have moderate potential, and the Houston Black and Heiden series have low potential.

Geologically, the proposed project area is situated above the Ozan Formation (Oz) dating to the Cretaceous, and high gravel deposits (Qhg) dating to the beginning of the Early Pleistocene (**Figure 3**). The Ozan Formation is comprised of clay, marly, calcareous content that decreases upward. Characteristic nodules of hematite, pyrite, silt-size quartz, and calcite fragments abound and become more abundant upward where shape is blocky and fractures conchoidal. This geologic formation predates the arrival of humans in the Americas; as such, cultural deposits in these areas would likely be close to the surface in overlying sediment or on the surface itself. High gravel deposits in the Austin area are fluvial terrace formations representing former levels of the Colorado River and its tributaries. Commonly, the matrix can be composed of gravel, silts, sands, and clays. This geologic formation coincides with the arrival of humans in the Americas; as such, cultural deposits in these areas could be buried below the surface.

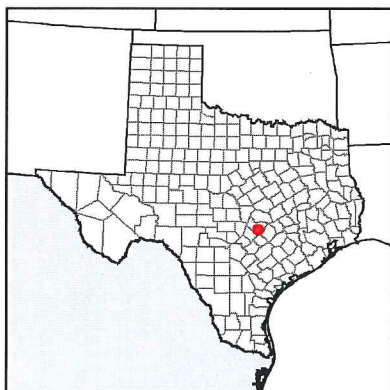
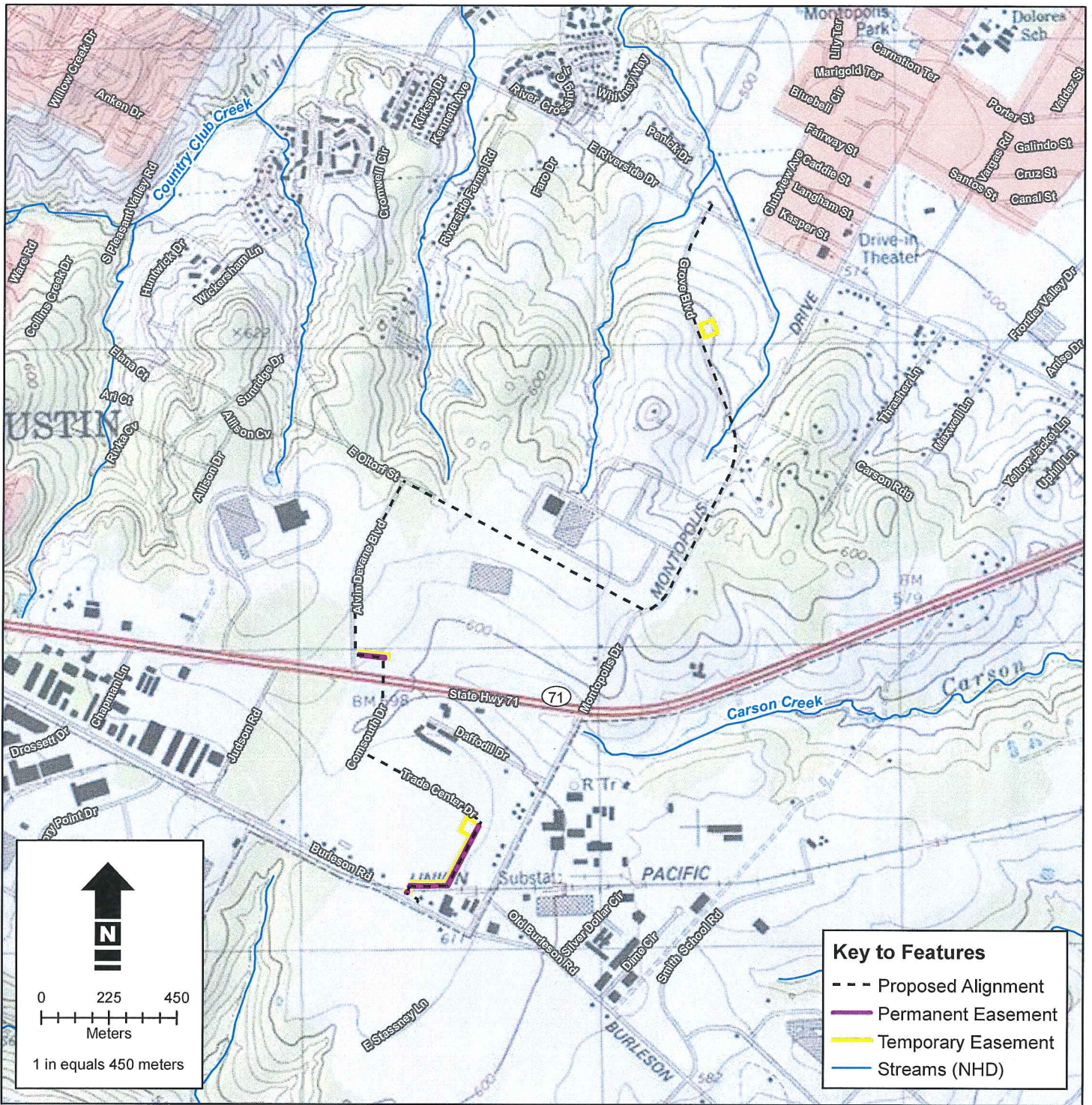
However, artifacts located within the gravel beds of the high terrace deposits would not likely be *in situ*.

Noted disturbances within and adjacent to the proposed alignment include urban development, roadways, and other associated infrastructure. However, the northern segment of the proposed alignment that follows the southern portion of Grove Boulevard to its intersection with Montopolis Drive, and the 370- meters of pipe length beginning at the southern terminus occur within a previously unsurveyed area with limited evidence of recent disturbance. Based on soil and geological data, these two areas are not conducive to deep archeological deposits; however, there is potential for intact shallowly buried or surficial archeological deposits. Therefore, Hicks & Company previously recommended an intensive archeological survey, supplemented with shovel testing of these segments of the project area and a reconnaissance survey of the remaining segments to document degree of disturbance. To complete the archeological survey, Hicks & Company will utilize the minimum standards for archeological survey as referenced in 13 TAC 26.20 and outlined in the THC/Council of Texas Archeologists' (CTA's) guidelines. Shovel testing will be conducted at a rate of 16 tests per linear mile per 100 feet (30 meters) of proposed corridor width along 30-meter-interval survey transects. Survey methods may vary from this standard in areas clearly lacking the possibility for archeological historic properties (i.e., disturbed contexts, areas of exposed bedrock) and/or in areas with excellent surface visibility (>30% surface visibility). Investigators will record their observations and the results of shovel tests through notes, standardized shovel test forms, and photographs. Site definitions will comply with THC/CTA survey standards and policy including additional requirements for assessing historical sites and cemeteries (see below). All archeological sites identified within the proposed corridor width during the survey will be investigated by means of no fewer than six shovel tests in order to define site boundaries relative to the project corridor. Specific site information will be recorded on standardized forms and eventually presented to the Texas Archeological Research Laboratory (TARL) for inclusion in their archives and, if necessary, production of new site trinomials. Shovel tests will be excavated to a depth of one meter, to bedrock, or to culturally sterile soils, whichever is encountered first. Sediment from all shovel tests will be screened through ¼-inch mesh hardware cloth.

The survey investigations will follow a no-collection strategy. All materials identified in these areas, either on the surface or in subsurface tests, will be briefly documented (field notes, drawings, photographs, etc.) and returned to the find location. If archeological sites are recorded, all documents, photographs, and field notes generated from the field survey will be permanently curated at the Center for Archeological Studies (CAS) in San Marcos, Texas. If no sites are encountered, such documents will be permanently housed at Hicks & Company's office in Austin, Texas.

Historical archeological sites will be documented not only through field efforts but also through survey level-archival research. This research will include an attempt to determine history of ownership and land use for each site through oral interviews or deed research, along with map research when possible. The names of individuals associated with the site will be checked in the New Handbook of Texas History and in census records. Should research reveal that historical archeological sites might be associated with significant persons; the investigators will make recommendations for further archival or archeological work to determine National Register of Historic Places (NRHP) / State Antiquities Landmark (SAL) eligibility. In the event a historic cemetery is identified during field visits, additional archival research will be conducted and the findings will be coordinated with the THC. In the unlikely event a prehistoric or historic cemetery is encountered in the proposed project area, all work will immediately cease in the area pending coordination with the THC

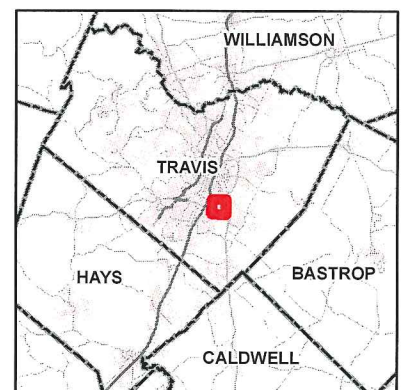
## Figures



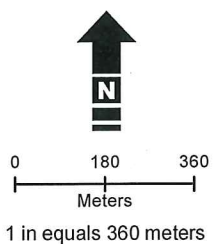
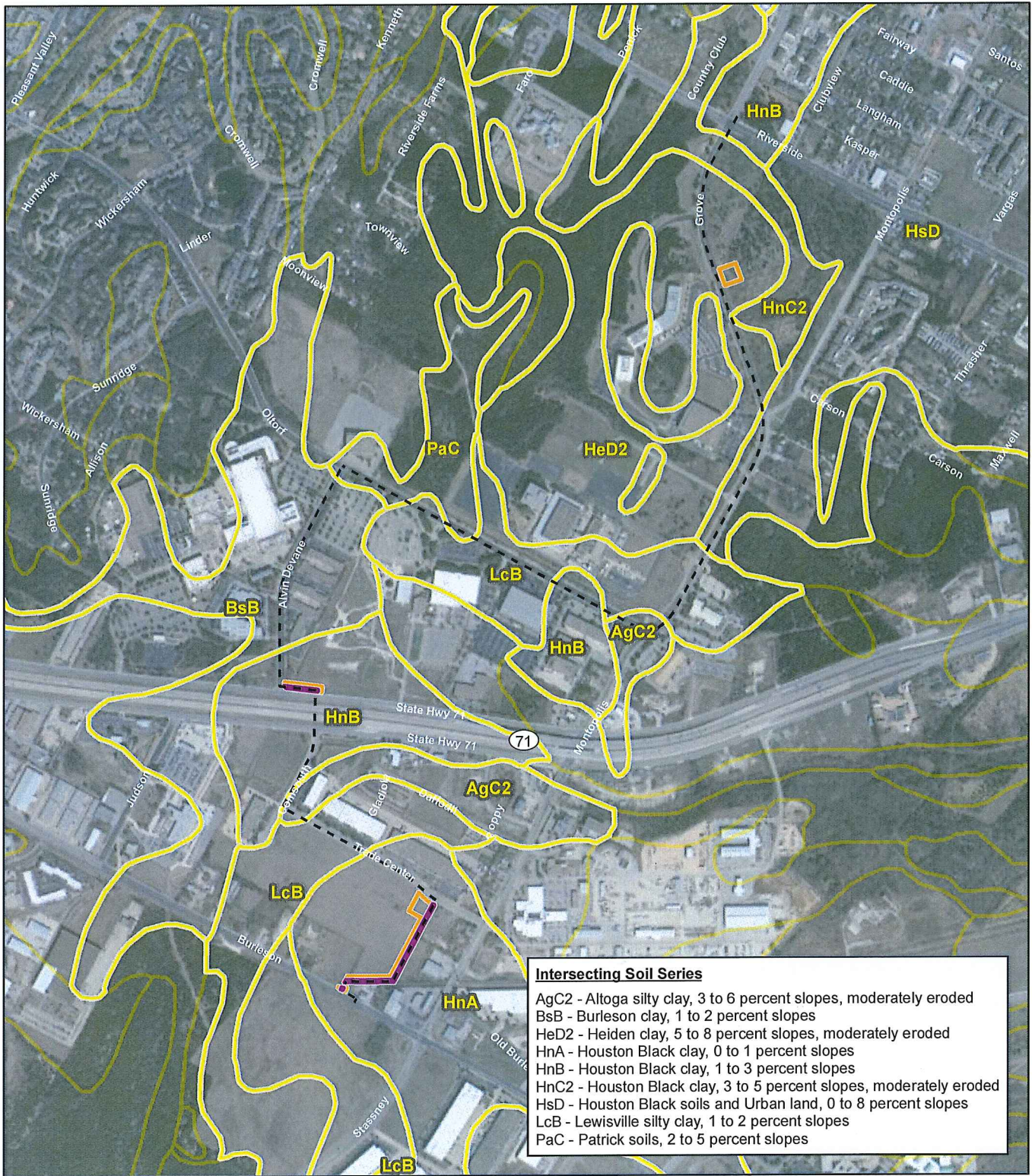
**Figure 1**  
**Project Location**

CITY OF AUSTIN BURLESON RD  
PRESSURE CONVERSION

USGS 7.5-minute Topographic Quadrangle:  
Montopolis, Tx



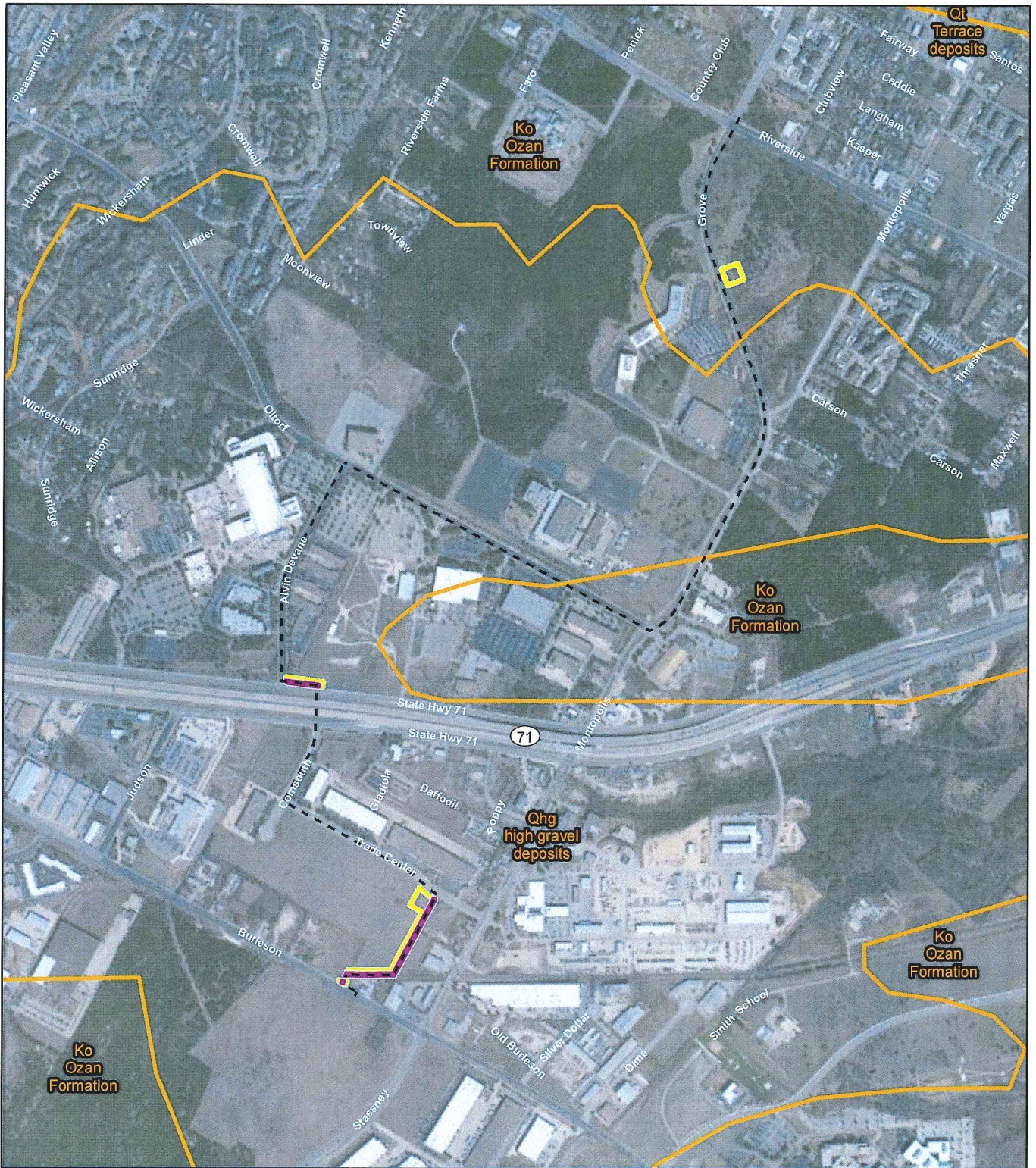




**Figure 2**  
**Project Area Soil Series**  
 CITY OF AUSTIN BURLESON RD  
 PRESSURE CONVERSION

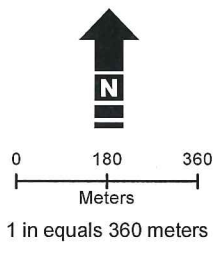
**Key to Features**

- Proposed Alignment
- Permanent Easement
- Temporary Easement
- Soil Series



**Figure 3**  
**Project Area Geologic Formations**  
 CITY OF AUSTIN BURLESON RD  
 PRESSURE CONVERSION

- Key to Features**
- - - Proposed Alignment
  - Permanent Easement
  - Temporary Easement
  - Geologic Formations



TEXAS HISTORICAL COMMISSION  
*real places telling real stories*

FEB 17 2015

February 13, 2015

Josh Haefner  
Hicks & Company  
1504 West 5<sup>th</sup> Street  
Austin, TX 78703

Re: Project review under the Antiquities Code of Texas  
City of Austin's Bureson Road Pressure Conversion, Travis County, Texas  
Texas Antiquities Permit Application #7177

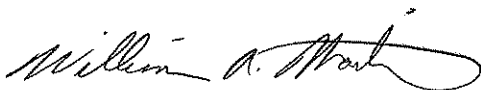
Dear Colleague:

Thank you for your Antiquities Permit Application for the above referenced project. This letter presents the final copy of the permit application from the Executive Director of the Texas Historical Commission (THC), the state agency responsible for administering the Antiquities Code of Texas.

Please keep this copy for your records. The Antiquities Permit investigations requires the production and submittal of one printed copy of the final report, a completed abstract form submitted via our online system, two copies of the final report on a tagged PDF CD (one with site location information & one without), and verification that any artifacts recovered and records produced during the investigations are curated at the repository listed in the permit. The abstract form maybe submitted via the THC website ([www.thc.state.tx.us](http://www.thc.state.tx.us)) or use url: <https://106.thc.state.tx.us:4444/Abstract/Secure/index.aspx>. Additionally, you must send the THC shapefiles showing the boundaries of the project area *and* the areas actually surveyed via email to [archeological\\_projects@thc.state.tx.us](mailto:archeological_projects@thc.state.tx.us).

If you have any questions concerning this permit or if we can be of further assistance, please contact Lillie Thompson at 512/463-1858. The reviewer for this project is Tiffany Osburn, 512/463-6096.

Sincerely,



for  
Mark Wolfe  
Executive Director

MW/lft

Enclosures

Cc: Shwetha Pandurangi, City of Austin Water Utility



*State of Texas*  
**TEXAS ANTIQUITIES COMMITTEE**

ARCHEOLOGY PERMIT # 7177

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*This permit is issued by the Texas Historical Commission, hereafter referred to as the Commission, represented herein by and through its duly authorized and empowered representatives. The Commission, under authority of the Texas Natural Resources Code, Title 9, Chapter 191, and subject to the conditions hereinafter set forth, grants this permit for:*

---

**Intensive Survey**

---

*To be performed on a potential or designated landmark or other public land known as:*

---

**Title: City of Austin's Bureson Road Pressure Conversion**

**County: Travis**

**Location: Southeast Austin**

---

*Owned or Controlled by: (hereafter known as the Permittee):*

---

**City of Austin - Austin Water Utility**

**625 East 10th Street, Suite 100**

**Austin, TX 78701**

---

*Sponsored by (hereafter known as the Sponsor)*

---

**City of Austin - Austin Water Utility**

**625 East 10th Street, Suite 100**

**Austin, TX 78701**

---

*The Principal Investigator/Investigation Firm representing the Owner or Sponsor is:*

---

**Josh Haefner**

**Hicks and Company**

**1504 West 5th Street**

**Austin, TX 78703**

---

*This permit is to be in effect for a period of:*

---

**3 Years and 0 Months**

---

*and Will Expire on:*

---

**02/10/2018**

---

*During the preservation, analysis, and preparation of a final report or until further notice by the Commission, artifacts, field notes, and other data gathered during the investigation will be kept temporarily at:*

---

**Hicks & Company**

---

*Upon completion of the final permit report, the same artifacts, field notes, and other data will be placed in a permanent curatorial repository at:*

---

**Texas State Univ.-CAS**

---

*Scope of Work under this permit shall consist of:*

---

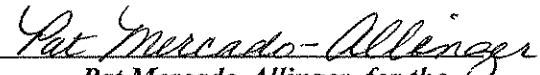
**An intensive pedestrian archaeological survey with shovel testing of high probability areas that meets or exceeds the State Archeological Survey Standards for Texas. This includes, subsurface shovel testing of pedestrian survey transects and mechanical testing in appropriate alluvial areas. For details, see scope of work submitted with permit application.**

ARCHEOLOGY PERMIT # 7177

**This permit is granted on the following terms and conditions:**

- 1) This project must be carried out in such a manner that the maximum amount of historic, scientific, archeological, and educational information will be recovered and preserved and must include the scientific, techniques for recovery, recording, preservation and analysis commonly used in archeological investigations. All survey level investigations must follow the state survey standards and the THC survey requirements established with the projects sponsor(s).
- 2) The Principal Investigator/Investigation Firm, serving for the Owner/Permittee and/or the Project Sponsor, is responsible for insuring that specimens, samples, artifacts, materials and records that are collected as a result of this permit are appropriately cleaned, and cataloged for curation. These tasks will be accomplished at no charge to the Commission, and all specimens, artifacts, materials, samples, and original field notes, maps, drawings, and photographs resulting from the investigations remain the property of the State of Texas, or its political subdivision, and must be curated at a certified repository. Verification of curation by the repository is also required, and duplicate copies of any requested records shall be furnished to the Commission before any permit will be considered complete.
- 3) The Principal Investigator/Investigation Firm serving for the Owner/Permittee, and/or the Project Sponsor is responsible for the publication of results of the investigations in a thorough technical report containing relevant descriptions, maps, documents, drawings, and photographs. A draft copy of the report must be submitted to the Commission for review and approval. Any changes to the draft report requested by the Commission must be made or addressed in the report, or under separate written response to the Commission. Once a draft has been approved by the Commission, one (1) printed, unbound copy of the final report containing at least one map with the plotted location of any and all sites recorded and two copies of the report in tagged PDF format on an archival quality CD or DVD shall be furnished to the commission. One copy must include the plotted location of any and all sites recorded and the other should not include the site location data. A paper copy and an electronic copy of the completed Abstracts in Texas Contract Archeology Summary Form must also be submitted with the final report to the Commission. (Printed copies of forms are available from the Commission or also online at [www.thc.state.tx.us](http://www.thc.state.tx.us).)
- 4) If the Owner/Permittee, Project Sponsor or Principal Investigator/Investigation Firm fails to comply with any of the Commission's Rules of Practice and Procedure or with any of the specific terms of this permit, or fails to properly conduct or complete this project within the allotted time, the permit will fall into default status. A notification of Default status shall be sent to the Principal Investigator/Investigation Firm, and the Principal Investigator will not be eligible to be issued any new permits until such time that the conditions of this permit are complete or, if applicable, extended.
- 5) The Owner/Permittee, Project Sponsor, and Principal Investigator/Investigation Firm, in the conduct of the activities hereby authorizes, must comply with all laws, ordinances and regulations of the State of Texas and of its political subdivisions including, but not limited to, the Antiquities Code of Texas; they must conduct the investigation in such a manner as to afford protection to the rights of any and all lessees or easement holders or other persons having an interest in the property and they must return the property to its original condition insofar as possible, to leave it in a state which will not create hazard to life nor contribute to the deterioration of the site or adjacent lands by natural forces.
- 6) Any duly authorized and empowered representative of the Commission may, at any time, visit the site to inspect the fieldwork as well as the field records, materials, and specimens being recovered.
- 7) For reasons of site security associated with historical resources, the Project Sponsor (if not the Owner/Permittee), Principal Investigator, Owner, and Investigation Firm shall not issue any press releases, or divulge to the news media, either directly or indirectly, information regarding the specific location of, or other information that might endanger those resources, or their associated artifacts without first consulting with the Commission, and the State agency or political subdivision of the State that owns or controls the land where the resource has been discovered.
- 8) This permit may not be assigned by the Principal Investigator/Investigation Firm, Owner/Permittee, or Project Sponsor in whole, or in part to any other individual, organization, or corporation not specifically mentioned in this permit without the written consent of the Commission.
- 9) Hold Harmless: The Owner/Permittee hereby expressly releases the State and agrees that Owner/Permittee will hold harmless, indemnify, and defend (including reasonable attorney's fees and cost of litigation) the State, its officers, agents, and employees in their official and/or individual capacities from every liability, loss, or claim for damages to persons or property, direct or indirect of whatsoever nature arising out of, or in any way connected with, any of the activities covered under this permit. The provisions of this paragraph are solely for the benefit of the State and the Texas Historical Commission and are not intended to create or grant any rights, contractual or otherwise, to any other person or entity.
- 10) Addendum: The Owner/Permittee, Project Sponsor and Principal Investigator/Investigation Firm must abide by any addenda hereto attached.

Upon a finding that it is in the best interest of the State, this permit is issued on 02/10/2015.

  
Pat Mercado-Allinger, for the  
Texas Historical Commission

## **APPENDIX B**

### **SHOVEL TEST LOCATIONS and DATA**

**Table B-1 Shovel Test Results**

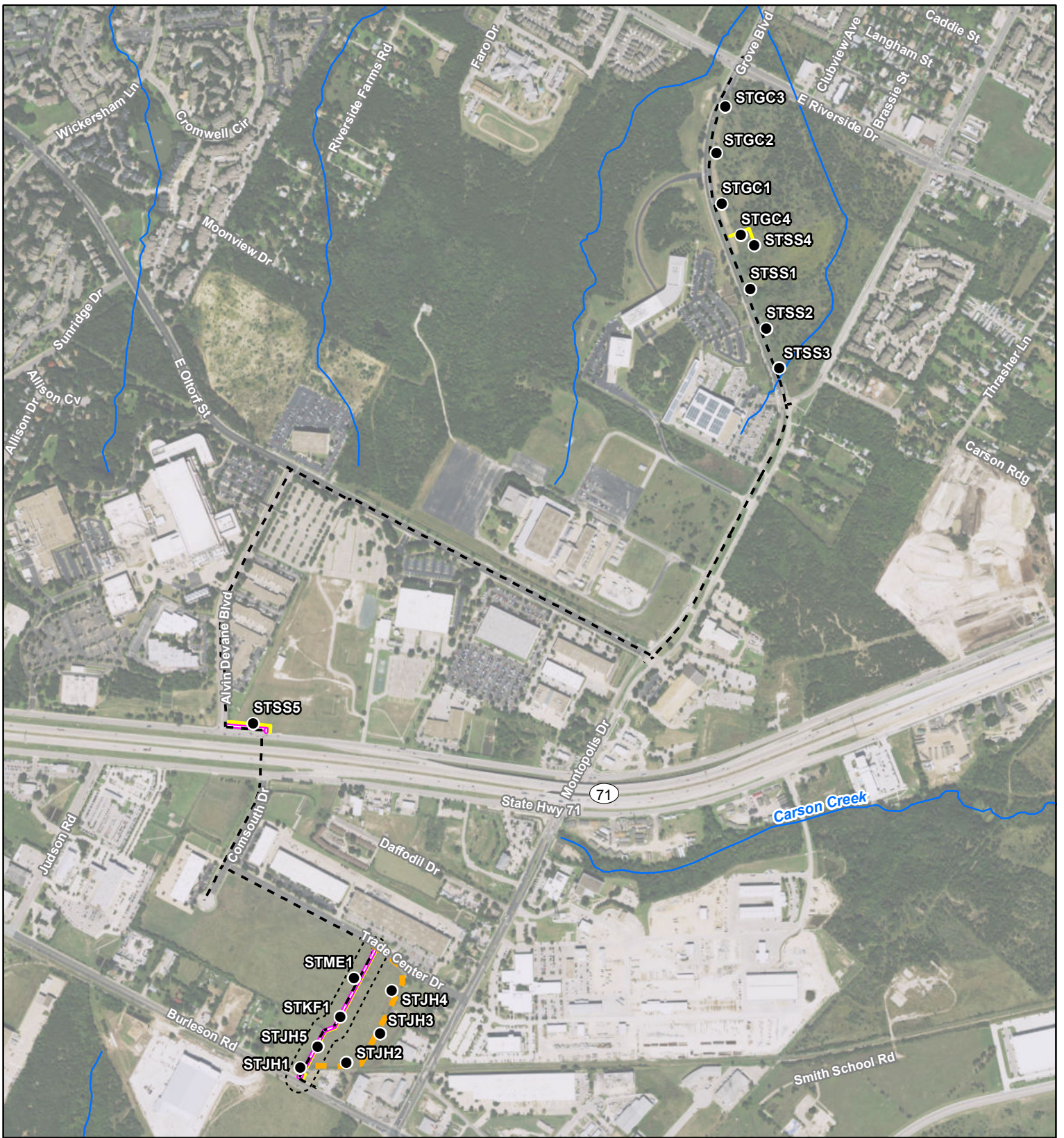
<b>Shovel Test</b>	<b>+/-</b>	<b>Location</b>	<b>Description</b>	<b>Comments/ Cultural Materials</b>
GC1	-	Directly across from the entrance to the Tokyo Electron building, in a grassy area east of Grove Blvd.	0-15 cmbs: Very dark grayish brown (10YR 3/2) silty clay loam with 10% limestone gravel inclusions. 15-40 cmbs: Dark brown (10YR 3/3) clay silt with 20% calcium carbonate inclusions. 40-52 cmbs: Brown (10YR4/3) clay silt with 20% calcium carbonate inclusions.	None.
GC2	-	Just north of the northernmost drainage, east of Grove Blvd.	0-12 cmbs: Very dark grayish brown (10YR 3/2) silty clay with 10% limestone gravel inclusions. 12-47 cmbs: Dark brown (10YR 3/3) silty clay with 10% calcium carbonate inclusions.	None
GC3	-	Just south of the intersection of E. Riverside Dr. and Grove Blvd, east of Grove Blvd.	0-10 cmbs: Very dark grayish brown (10YR 3/2) firm silty clay with 10% gravel inclusions. 10-37 cmbs: Dark brown (10YR 3/3) clay silt.	None
GC4	-	Near the northeast corner of the temporary easement area.	0-33 cmbs: Very dark grayish brown (10YR 3/2) with 10% river worn limestone gravel inclusions.	None
JH1	-	Near the southern terminus of the trail, parallel to Burleson Road.	0-30 cmbs: Very dark grayish brown clay loam with parking lot gravel inclusions.	None
JH2	-	At the southern terminus of an overgrown field.	0-35 cmbs: Very dark grayish brown clay loam with rootlet inclusions. 35-65 cmbs: Brown (7.5YR 4/2) clay with increasing compaction in sediment.	None
JH3	-	In the overgrown field near the central portion of the temporary easement area.	0-35 cmbs: Very dark grayish brown clay loam with rootlet inclusions. 35-65 cmbs: Brown (7.5YR 4/2) clay with increasing compaction in sediment.	None
JH4	-	At the northern terminus of the temporary easement area, just south of Trade Center Drive.	0-50 cmbs: Dark yellowish brown (10YR 4/4), Brown (7.5YR 4/2), very dark grayish brown (10YR 3/2) mottled clay.	None
JH5	-	North of Burleson Road .	0-50 cmbs: Very dark grayish brown (10YR 3/2) mottled clay. Terminated at broken up bedrock.	None

**Table B-1 Shovel Test Results**

<b>Shovel Test</b>	<b>+/-</b>	<b>Location</b>	<b>Description</b>	<b>Comments/ Cultural Materials</b>
SS1	-	East of Grove Blvd, 100 meters south of temporary easement area.	0-10 cmbs: Dark grayish brown (10YR 3/2) clay loam with 10% limestone gravel inclusions. 10-15 cmbs: Yellowish brown clay loam with 25% gravel inclusions.	None
SS2	-	East of Grove Blvd, approximately 8 meters south of southern construction driveway.	0-30 cmbs: Dark grayish brown (10YR 3/2) clay loam with 5% limestone gravel inclusions. 30-35 cmbs: Dark grayish brown (10YR 4/2) and yellowish brown (10YR 5/4) clay loam mottles with 5% limestone gravel inclusions.	None
SS3	-	Approximately 55 meters south of the intersection of Montopolis and Grove Blvd.	0-40 cmbs: Dark grayish brown (10YR 4/2) and yellowish brown (10YR 5/4) clay loam mottles with 5% limestone gravel inclusions. 40-45 cmbs: Dark grayish brown (10YR 4/2), yellowish brown (10YR 5/4), and yellowish red (5YR 5/8) clay loam mottles with less than 1% limestone gravel inclusions.	None
SS4	-	Located in the southeast corner of the temporary easement.	0-40 cmbs: Dark grayish brown (10YR 3/2) clay loam with 5% rootlet inclusions. 40-45 cmbs: Brown (10YR 4/3) clay loam.	None
SS5	-	Located on an artificial landscape on the north side of Ben White Blvd.	0-10 cmbs: Strong brown (7.5YR 5/6) sandy gravel loam. Very little soil present 90% gravel inclusion.	None
ME1	-	70 meters south of Trade Center Drive.	0-15 cmbs: Disturbed clay loam, very dark brown (7.5YR 2.5/2) with root inclusions. 15-45: Dense clay loam, very dark brown with < 1% pebbles and quartzite inclusions.	None
KF1	-	75 meters south of STME1	0-30 cmbs: Mottled clay loam, very dark brown (7.5YR 2.5/2) with root inclusions. 30-65: Dense brown (7.5YR 4/2) clay loam, very dark brown with < 1% pebbles inclusions.	None





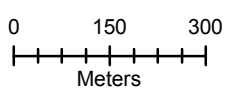


**Key to Features**

- Shovel Test Locations
- - - Proposed Alignment
- █ Permanent Easement
- █ Temporary Easement
- █ Removed From Final Design
- █ Streams (NHD)
- █ Reroute Segment

**Appendix B  
Shovel Test Locations**

CITY OF AUSTIN BURLESON RD  
PRESSURE CONVERSION



1 inch equals 300  
meters

