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Systematic Intensive Pedestrian Survey Of The Helotes Hike-Bike Trail Helotes, Bexar County, Texas

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Archaeological Resources Survey

SYSTEMATIC INTENSIVE PEDESTRIAN SURVEY OF HELOTES HIKE-BIKE TRAIL HELOTES, BEXAR COUNTY, TEXAS

March 9, 2016

Terracon Project No. 90157499
CSJ 0915-12-537
Antiquities Permit No. 7512

David M. Yelacic, RPA, Principal Investigator

Prepared for:
Texas Department of Transportation
Austin, Texas

Prepared by:
Terracon Consultants, Inc.
San Antonio, Texas

March 9, 2016

Terracon

Dr. Scott Pletka
Archeological Studies Branch Supervisor
Texas Department of Transportation
125 E 11th Street
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Telephone: 512-416-2631
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RE: **Cultural Resource Survey**
Helotes Hike-Bike Trail
Helotes, Bexar County, Texas
CSJ 0915-12-537
Terracon Project Number 90157499

Dear Dr. Pletka:

Terracon is pleased to submit this report of findings from systematic intensive pedestrian survey of an approximately 0.75-mile linear hike-bike trail, as well as an approximately 4.7-acre polygonal park space, pedestrian bridge, bench/trashcan improvements, and pedestrian intersection crossing in central Helotes, Bexar County, Texas. Work was carried out in coordination with your office and the Texas Historical Commission under Antiquities Permit Number 7512.

Given overall negative findings, it is Terracon's opinion that the proposed project be permitted to proceed as planned without further consideration of archaeological resources at this time. If cultural materials are identified during the course of construction, however, then work should cease immediately and Terracon archaeologists and the proper authorities (i.e., THC and TxDOT) should be contacted. Please contact David Yelacic (david.yelacic@terracon.com) or Jeremy Hanzlik (jeremy.hanzlik@terracon.com) at the number below if you should have any questions, comments, or concerns.

Sincerely,
Terracon Consultants, Inc.

David Yelacic, M.S.
Principal Investigator Archaeologist

Jeremy Hanzlik, P.E.
Natural/Cultural Resources Manager

Attachments

ABSTRACT

As a result of a City of Helotes undertaking funded by TxDOT, an intensive pedestrian survey was carried across approximately seven total acres of trail and park space, as well as a pedestrian bridge, improvements to the parking and sidewalk space (i.e., benches and trashcans) along Riggs Road, and pedestrian crossing at Scenic Loop Road and Highway 16. Work was carried out in coordination with TxDOT and the THC under Antiquities Permit Number 7512, issued to David Yelacic, RPA, and fieldwork was conducted in late December 2015 by Yelacic with assistance from Tanner Jason, field scientist. Overall, systematic pedestrian survey and 10 total shovel test excavations failed to encounter any historic or prehistoric cultural materials and revealed that much of the APE was previously impacted by land use and considerable flooding in the recent past.

Given our negative findings, it is Terracon's opinion that no archaeological resources would be effected by the proposed undertaking. We therefore recommend that the project be permitted to proceed as planned without further considerations of archaeological resources. If archaeological resources are encountered during the course of construction, however, then work should cease immediately and Terracon archaeologists and proper authorities (i.e., THC and TxDOT) should be contacted as quickly as reasonably possible.

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1.0 INTRODUCTION

This report presents the results of an intensive pedestrian survey performed in advance of developing a suite of improvements to the pedestrian environment in the vicinity of downtown Helotes, Texas. Such a survey was commissioned to identify, evaluate, and consider archaeological resources within the area of potential effect (APE), and also to help navigate the project through the initial stages of cultural resource management and compliance. This archaeological survey and report stand separate from a forthcoming survey and review of historic standing structures. Because of funding from the Texas Department of Transportation (TxDOT) and City of Helotes landowners (City), this project is ultimately under purview of the Antiquities Code of Texas (Texas Natural Resource Code, Title 9, Chapter 191) with oversight by the Texas Historical Commission (THC) in accordance with Texas Administrative Code (TAC) Title 13, Part 2, Chapter 26. However, compliance with state legislation for the current project is delegated to TxDOT under a Memorandum of Understanding. Due to parameters of the project, the United States Army Corps of Engineers also has jurisdiction and regulatory obligations to Section 106 of the National Historic Preservation Act, as amended, under Code of Federal Regulations (CFR) Chapter 36, Part 800 and 33 CFR 325, Appendix C.

Fieldwork was carried out in December of 2015 under the auspices of Antiquities Permit Number 7512, issued to David Yelacic, Principal Investigator. Systematic pedestrian survey and a total of 10 shovel test excavations explored the APE for unrecorded archaeological resources in compliance with Minimum Survey Standards set forth by the THC. Following reporting guidelines set forth by the Council for Texas Archeologists and adopted by the THC, this report describes the project and natural and cultural contexts. Sections presenting methodology will be followed by results, conclusions, and recommendations. Appendices containing maps, photographs, and shovel test results are included at the end of the document.

2.0 AREA OF POTENTIAL EFFECT

The area of potential effect (APE) for direct impacts includes seven parts: 1) approximately 0.25 miles of a 50-foot-wide easement that would be developed into proposed hike and bike trail; 2) an approximately 4.7-acre polygon comprised of extant park space (Helotes Creek Linear Park); 3) an approximately 0.4-acre parcel of previously disturbed vacant property that would be

developed for parking at the southern extent of the trail; 4) an approximately 0.3-acre polygon and 0.075-mile alignment that would be used for access and staging during construction; 5) a pedestrian bridge across Helotes Creek adjacent to the Old Bandera Road crossing of the creek; 6) benches and trashcans along Riggs Road between Old Bandera Road and the southern terminus of the proposed trail; and 7) improvements to pedestrian crossing infrastructure at the intersection of Scenic Loop Road and State Highway 16 (Map 1 and Map 2). Improvements to the pedestrian crossing would include the installation of ramps, extension of sidewalks, and new sidewalks in proximity to the intersection. Total acreage of the park and trail areas is approximately 7 acres, and the pedestrian crossing improvements would impact 0.06 acres.

Per design, vertical impacts along the 10-foot wide concrete trail would vary between approximately one foot and six feet. Two stream crossings along the trail system are designed as low water crossings that would generally follow that natural contour of the landscape; each crossing would consist of concrete sections supported above the bedrock channel by concrete supports. Stream banks in proximity to the low water crossings would be graded up to approximately 2.5 feet to smooth the contour of the trail. Impacts resulting from improvements to the pedestrian crossing at the intersection of Scenic Loop Road and Highway 16 are estimated to be one to two feet. Impacts to Helotes Creek banks at the pedestrian crossing along Old Bandera Road would be limited to abutments and four anchoring piers, the depth/volumetric impacts of which are unclear.

3.0 ENVIRONMENTAL SETTING

Environments are composed of such interconnected elements as underlying bedrock geology, soil, biology (i.e., plants and animals), and climate. Environmental conditions are also connected to the initial patterning and subsequent preservation of materials left behind by humans, the culmination of which is referred to as site formation processes. Understanding site formation processes aids in assessing the presence and preservation of archaeological resources. It is therefore important to consider environmental conditions of the past and present when assessing archaeological resources.

In general terms, the project site is located at the transition between two large-scale biotic provinces or biomes, the Edwards Plateau and the Blackland Prairie/Gulf Coastal Plains (Griffith et al. 2004). Each of these biomes is characterized by a distinct set of physical and biological properties, and the transitional zone is known to have endemic plant and animal communities as well (Blair 1950). These transitional zones are known as ecotones, and they typically support a tremendous amount of biological richness and diversity (Crumley 1994).

The United States Geological Survey (USGS) Helotes Quadrangle shows that the hike and bike trail portion of the project area is situated along Helotes Creek among topography formed by moving water. Elevation ranges from approximately 1000 to 1030 feet above sea level, and just

beyond the park boundary and trail alignment, dramatic cliffs climb an additional 40 feet to approximately 1070 feet above sea level. The construction access road and staging area traverses additional uplands to an elevation of 1050 feet above sea level, which is approximately the same elevation as the intersection of Scenic Loop Road and Highway 16, where improvements to pedestrian crossing are planned. Under current conditions, Helotes Creek is an intermittent/ephemeral stream that flows from the Kremkau Divide to Culebra Creek. Alluvial settings have erosional and depositional components, depending upon specific location. Archaeological resources located in depositional settings typically have the greatest capacity for preservation, whereas erosion inherently adversely affect cultural deposits. Aside from water, cherty inclusions and gravels are another attractive resource for such stone tool-making human inhabitants as those who lived in central Texas.

3.1 Geology

A factor that greatly contributes to the site setting is its location within the Balcones Fault Zone, which is a southwest to northeast aligned group of normal faults situated at the contact between the Edwards Plateau and the Gulf Coastal Plains. The fault system was most active during the Miocene as the Gulf subsided and pulled the Gulf Coastal Plain from the adjacent Edwards Plateau, and the normal fault created a physiographic feature known as the Balcones Escarpment (Spearing 1991; Swanson 1995). In this area, the Balcones Escarpment marks the boundary between the adjacent biomes, it affects weather patterns on either side, and its local relief creates ecological refuges for flora and fauna.

Mapped by the Bureau of Economic Geology (Barnes 1974), bedrock geology of the project site includes Glen Rose Limestone (Kgr) and Leona Formation (Qle) separated by an east-west aligned normal fault located near the middle of the linear parkland. Glen Rose Limestone is alternately bedded resistant limestone and soft marl, and Leona Formation materials are remnants of ancestral streams.

3.2 Soils

Soil formation is a function of local climate, biology, parent material, topography, and time, and so it is clearly tied to environment as defined above. Accordingly, soil can serve as a proxy for environmental conditions of the present and past. Defining soils as they are relevant to investigations of archaeological resources, however, is useful because of how they are characterized and mapped by the Natural Resources Conservation Service, formerly Soil Conservation Service. Though agricultural in nature, county soil surveys provide a description of soil characteristics, including depth, color, inclusions, etc., which can be used to elucidate site formation processes.

Soils of the APE are mapped as Lewisville silty clay (LvB), Eckrant cobbly clay (TaB), and Patrick soils (PaB) (Taylor et al. 1991). Lewisville clay is comparatively deep (i.e., A horizons sitting atop calcic subsoils at approximately 40 cm below surface) next to Eckrant and Patrick soils, which thinly veil bedrock or chalky parent materials.

The bedrock-lined channel of Helotes Creek would not be conducive to preserving archaeological materials if ever they were deposited within this portion of the APE. Considering the remaining shallow soils throughout the APE, archaeological resources present would likely be in surface and near-surface environments, depending upon land use history. Preservation of archaeological deposits diminish as they are exposed through time, and we would therefore expect archaeological sites encountered in the current APE to have relatively diminished integrity.

3.3 Vegetation and Wildlife

Flora and fauna of the ecotone include species that are representative of both the Edwards Plateau and the South Texas Plains as well as endemic species (Blair 1950). Major game species of the region include whitetail deer, javelina, and several species of bird, and pronghorn and bison were periodically present further back in history. The region's natural vegetation is typically a grassland-woodland-forest mosaic (Ellis et al. 1995).

The natural vegetation of the region was dominated by tallgrass prairie on uplands. Deciduous bottomland woodland and forest were common along rivers and creeks (Diamond and Smeins 1985). The Blackland Prairie is characterized by a high degree of plant community diversity. This diversity, which is in part represented by four major prairie community types, is attributable to the ecoregion's variety of soil orders and their variation in texture and soil pH.

The Blackland Prairie was a disturbance-maintained system. Prior to European settlement (pre-1825 for the southern and pre-1845 for the northern half) important natural landscape-scale disturbances included fire and periodic grazing by large herbivores, primarily bison and to a lesser extent pronghorn. Fire and infrequent but intense, short-duration grazing suppressed woody vegetation and invigorated herbaceous prairie species. Bison herds, though reported for the Blackland Prairie, were far smaller than those found further west in the mixed and shortgrass prairies (Strickland and Fox 1993). Their impact was probably local with long intervals between grazing episodes. Bison were probably extirpated in the region by the 1850s. The Fayette Prairie consists of oak lands and savannas and runs from just south of the Red River on the Texas-Oklahoma border through the Dallas–Fort Worth metropolitan area and into southwestern Texas (Ricketts et al. 1999).

3.4 Current and Past Climates

The project site in south central Texas has a climate classified as Humid subtropical (Cfa) and is found near the current transition from Subtropical Subhumid to Subtropical Steppe, with diminishing precipitation from east to west. The location typically has long hot summers and mild winters, and precipitation is bimodal with peaks in the late spring and early fall.

Because most archaeological resources originate in the period of time between the Last Glacial Maximum and the colonization of the western hemisphere by emigrants of the European continent, it is necessary to consider past climates, too. Since past climatic conditions cannot be

observed (i.e., measurements did not begin in this region until the late 19th century), we rely on proxy data to reconstruct past conditions. Proxy data do not directly reflect past environments, but they can be used to infer conditions under which they form (Ellis et al. 1995).

Based on fossil pollens (Bousman 1998), phytoliths (Joines 2005), microfaunal remains (Toomey 1993), soil chemistry (Nordt et al. 2002), and speleothems (Musgrove et al. 2001), it is pretty clear that climatic conditions of the past approximately 20,000 years have steadily become warmer and increasingly arid with several punctuated episodes. Transition from the Pleistocene to the Holocene at approximately 11,700 years ago was a marked increase in warmth and aridity. In addition to increased warmth and aridity, the Holocene is characterized by increasing seasonal variation of temperatures and precipitation. Peak warmth and aridity occurred during the mid- to late-Holocene Altithermal. Following the Altithermal, conditions similar to the early-Holocene returned, but warmth and aridity increase to the present.

4.0 CULTURAL HISTORY

Generally, the cultural chronology of Central Texas can be divided into two periods, Prehistoric and Historic. The boundary between the two periods is marked by the introduction of Europeans into the Western Hemisphere. The following description of Central Texas' cultural history is a gross compilation of a vast suite of data and interpretations (cf. Collins 1995, 2004).

The Prehistoric people of Central Texas were primarily hunter-gatherers. Through the last 75-plus years of archaeological research in the region, identifiable and repeated patterns in artifact assemblages have indicated major shifts in subsistence strategies and technology through time. As a result, the Prehistoric period now has three subdivisions: Paleoindian, Archaic, and Late Prehistoric.

The Paleoindian period (ca. 12,500-8800 years ago) includes the earliest human occupation of North America, which extends back into the late Pleistocene. During this period of time, people hunted large game, but they generally had a broad diet and consumed much of what they could. This included small game and aquatic creatures all the way up to mega fauna that went extinct with the close of the Pleistocene (i.e., mammoth, mastodon, bison, horse, camel, etc.). Technological traditions further subdivide the Paleoindian period into Early and Late.

The Archaic period (ca. 8800-1250 years ago) of Central Texas was the longest period in prehistory, and it is generally marked by the introduction of hot rock cooking in addition to the proliferation of a wide variety of diagnostic projectile points. Cooking with fire-heated rocks developed with increased reliance on plant foods, which may have been a response to diminishing game resources and ultimately climatic change/variation. This is not to say that human agency, and ultimately culture, did not play an important role in the shift of economic and subsistence strategies. The Archaic period is subdivided into Early-, Middle-, and Late-Archaic periods, each with a slight variation in response to cultural shifts and ambient conditions.

The Late Prehistoric (ca. 1250-250 years ago) was a relatively brief period, but it was marked by a shift in weapon technology: the introduction of the bow-and-arrow. Like the Archaic, the Late Prehistoric people utilized hot rock cooking to process plants to edible forms. There also appeared to be increasing contact among groups, which resulted in increased trade of materials and evident competition over resources.

Sometimes referred to as Protohistoric, Spanish Entradas, or expeditions, mark the onset of western influence in the New World. These explorations effectively scouted the new land and resulted in the settlement and establishment of missions spread throughout what has become northern Mexico and Texas. Through the Historic period, European populations and influence steadily increased as native populations steadily diminished.

San Antonio's history is rich and includes significant contributions from indigenous native people, European colonists, and immigrants from other regions of North America (Fehrenbach 2010). Spanish missions were the first European settlements in the area, and they provided infrastructure for the growing city throughout the eighteenth and into the nineteenth centuries. The city's population grew rapidly through the nineteenth century as Mexicans, Germans, and American colonists were drawn to the location and as an age of industry and modernization was ushered by railroads. Helotes was settled in the mid-nineteenth century by Scottish, German, and Mexican immigrants (Massey 2010). Helotes was a farming community and remained largely rural until the latter half of the twentieth century.

5.0 PREVIOUS INVESTIGATIONS

A review of the Texas Archeological Sites Atlas database indicates that no previously known sites are located within the APE (Map 3). The Atlas also indicates that the northern portion of the intersection of Scenic Loop Road and State Highway 16 was previously surveyed with negative findings (Nichols and Luzmoor 2015). No other portion of the current APE has previously been surveyed. Within a kilometer radius of the proposed APE, there are four recorded archaeological sites, 41BX70, 41BX678, 41BX902, and 41BX1742, and the northern terminus of the proposed trail is situated approximately opposite the intersection of Old Bandera Road and Floore Drive from Floor Country Store, a property included on the National Register of Historic Places (NRHP).

Each of the nearby recorded archaeological sites is prehistoric in nature and composed of stone materials. Site 41BX70 is described as a [destroyed] upland lithic scatter, whereas the remaining three sites contain debris from hot rock cooking exposed by road construction. Sites 41BX768 and 41BX902 are burned rock middens, and 41BX1742 was described as a basin-shaped hearth. These three sites are situated along Helotes Creek and Los Reyes Creek, the confluence of which is located in the northern extent of the Helotes Creek Linear Park.

6.0 METHODS

Methods described below were employed to identify and characterize archaeological resources present within the APE to the extent practicable.

6.1 Intensive Pedestrian Survey

To explore the APE for previously unknown archaeological resources, a systematic and intensive pedestrian survey was carried out across the approximately seven-acre trail APE according to Minimum Survey Standards set forth by the THC. Standards for such a project area dictate a minimum of two shovel test for every acre pending surface visibility, slope, and clear disturbances. Given that much of the linear trail alignment and park space traversed Helotes Creek channel and near channel environments, a total of 10 shovel tests were excavated to varying depths that targeted Holocene-aged soils, and the surface was systematically inspected along transects spaced approximately 10 meters apart (Map 4). Sediment was excavated in arbitrary 20 cm levels to depth, and excavated sediment was passed through ¼-inch hardware mesh. Characteristics and contents of shovel tests were recorded by photographs, forms/notes, and hand-held global positioning system (GPS), and the excavated pits were backfilled upon completion.

6.2 Evaluation Criteria

Once identified in the field, cultural resources are evaluated for their importance or significance under federal and state law. For a cultural resource to be deemed eligible for inclusion in the NRHP, the resource must be at least 50 years old and must possess significance and integrity. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location design, setting, materials, workmanship, feeling, and association and:

a. That are associated with the events that have made a significant contribution to the broad patterns of our history; or
b. That are associated with the lives of persons significant in our past; or
c. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
d. That have yielded, or may likely to yield, information important in our prehistory or history (36 CFR 60.4).

Additionally, the State of Texas affords important cultural resources a level of protection beyond that of NRHP status if the resource meets the criteria for listing as a State Antiquities Landmark (SAL). SAL criteria are divided into four categories based on the type of resource: archaeological site (13 TAC 26.10), shipwreck (13 TAC 26.11), cache and collection (13 TAC 26.12), and historic structure (13 TAC 26.19). Under each category is a short list of eligibility

requirements that mirror NRHP criteria with a few notable inclusions; the concept of integrity is explicitly built into the criteria for archaeological sites and historic-age structures, potential looting and vandalism is considered for archaeological sites, and historic-age structures must already be listed on the NRHP.

7.0 RESULTS

Overall, systematic and intensive pedestrian survey failed to identify new archaeological resources in the APE. Much of the APE has been previously disturbed by natural and anthropogenic activity. Results of the survey will be presented in four parts, the first of which will aggregate the portions of the aforementioned seven-part APE associated with the trail, and Appendices B and C contain photographs and transcripts of shovel test forms/notes, respectively.

7.1 Hike and Bike Trail and Linear Park

The trail alignment and linear park were the focus of archaeological survey and were perceived to have the greatest potential of having adverse effects on previously unknown archaeological resources. The narrow, linear portions of both the trail alignment and park space were traversed by at least four transects spaced at least five meters apart, and broader portions of the park were explored with additional transects.

Proposed additional parking, as well as the southern 0.25-mile easement, are situated in clearly disturbed environments. In aerial imagery spanning the last twenty years, the proposed 0.4-acre parking area at the south end of the overall project area was cleared and wooded and cleared again. Visual inspection of the area elucidated clear modification of the lot through landscaping (i.e., clusters of decorative plants and landscaping debris/materials). The 0.25-mile easement north of the parking area was also clearly disturbed: the area, within the small Helotes Creek channel, is flattened and maintained as extra parking and informal open space for Our Lady of Guadalupe Church. A brief conversation onsite with the groundskeeper of the church revealed that he was responsible for clearing, flattening, and maintaining that portion of property. Previous disturbance and substantial surface visibility did not call for shovel testing in this southern-most portion of the trail alignment. North of the church, however, where the easement meets the linear park, shovel tests probed the low floodplains of Helotes Creek for buried archaeological deposits.

A total of nine shovel tests were excavated within the park area (Map 4). These shovel tests were devoid of cultural materials and yielded relatively shallow soils, which corroborated soil survey information. Shovel tests were primarily excavated into soils of the floodway, and the shovel test profiles were typically very dark brown loams over gravels and bedrock. Much of the park space is confined to the channel and modern floodway, where narrow terraces exist between outcropped bedrock. Evidence of feral hogs (i.e. rooting and excrement), as well as vestiges of October flooding (i.e., woody and plastic debris), were abundant.

The construction access road and staging area were the only portions of the hike and bike trail and linear park that really emerged from Helotes Creek topography. The approximately 0.3-acre staging area is situated on the terrace above the channel and is confined to the northwest by a boulder/bedrock riser. Above this transition, the access road traverses rolling upland terrain with a soil/sediment veneer. Provided adequate surface visibility along much of the staging area and access road, one shovel test was excavated to probe for buried archaeological resources, and the results were identical to those nine excavations elsewhere within the trail and park APE.

7.2 Pedestrian Bridge

The proposed location of the pedestrian bridge was visually inspected by two survey transects, which revealed a number of (marked) existing buried utility lines and other disturbances associated with the modern vehicle bridge. A fiber-optic cable, gas line, and sewer line are all buried beneath the modern channel of Helotes Creek within the footprint of the proposed pedestrian bridge. These lines were apparently trenched into place, as opposed to horizontally bored, which is apparent by ribbons of concrete marking each line. On either side of Helotes Creek, the proposed bridge would tie into existing sidewalks.

7.3 Riggs Road Benches and Trashcans

A suite of benches and trashcans are proposed for the length of Riggs Road between the parking area at the southern end of the overall project area north to the roundabout intersection with Old Bandera Road. These benches and trashcans would be anchored into place along a stretch of the west side of the road that has previously been improved for parking and pedestrian access to Old Town Helotes. Benches and trashcans would be placed on landscaped *islands* between groups of parking spaces.

7.4 Pedestrian Crossing at Scenic Loop Road and Highway 16

A previous survey conducted along Highway 16 (Nichols and Luzmoor 2015) did not identify archaeological resources on the east side of the intersection at Scenic Loop Road. Visual inspection of the intersection revealed that the local landscape was previously disturbed for drainage and utilities in association with development and improvement of the roadways. Though this area was visually inspected, intensive pedestrian survey of the location was not deemed necessary due to confirmed previous impacts.

8.0 CONCLUSIONS AND RECOMMENDATIONS

As a result of the City of Helotes undertaking funded by TxDOT, an intensive pedestrian survey was carried across approximately seven total acres of trail and park space, as well as a pedestrian bridge and improvements to the parking and sidewalk space (i.e., benches and trashcans) along Riggs Road. Work was carried out in coordination with TxDOT and the THC under Antiquities Permit Number 7512, issued to David Yelacic, RPA. Overall, systematic

pedestrian survey and 10 total shovel test excavations failed to encounter historic or prehistoric cultural materials and revealed that much of the APE was previously impacted by land use and considerable flooding in the recent past.

Given our negative findings, it is Terracon's opinion that no archaeological resources would be affected by the proposed undertaking. We therefore recommend that the project be permitted to proceed as planned without further considerations of archaeological resources. If archaeological resources are encountered during the course of construction, however, then work should cease immediately and Terracon archaeologists and proper authorities (i.e., THC and TxDOT) should be contacted as quickly as reasonably possible.

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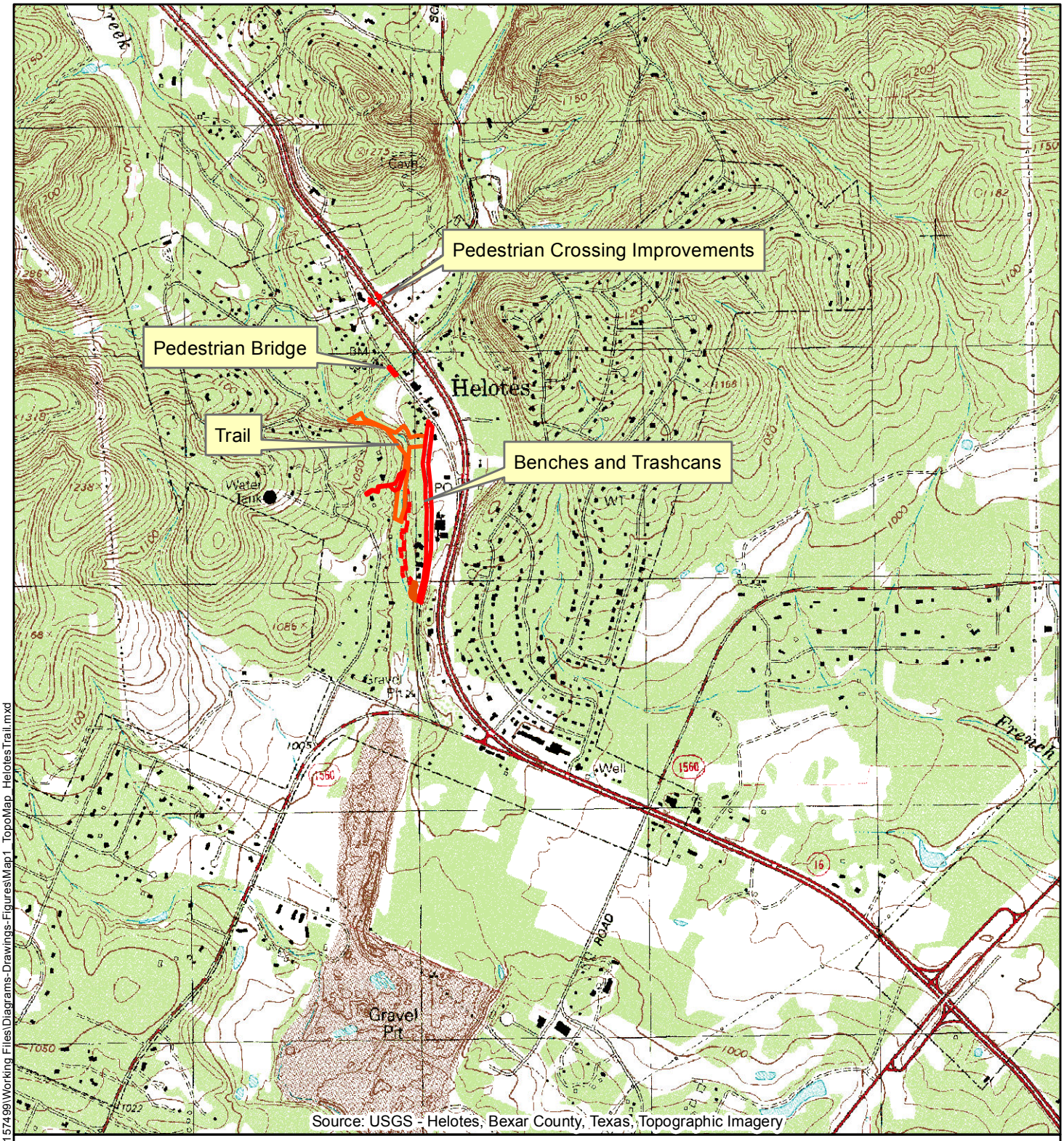
Appendix A. Maps



Path: N:\Projects\2015\90157499\Working Files\Diagrams-Figures\Map1_TopoMap_HelotesTrail.mxd

Legend

APE

2,000 1,000 0 2,000 Feet

N

Project Mngr:	DY
Drawn By:	TMJ
Checked By:	DY
Approved By:	DY

Project No.	90157499
Scale:	1 in = 2,000 ft
TBPE Firm No.	F-3272
Date:	December 2015

Terracon
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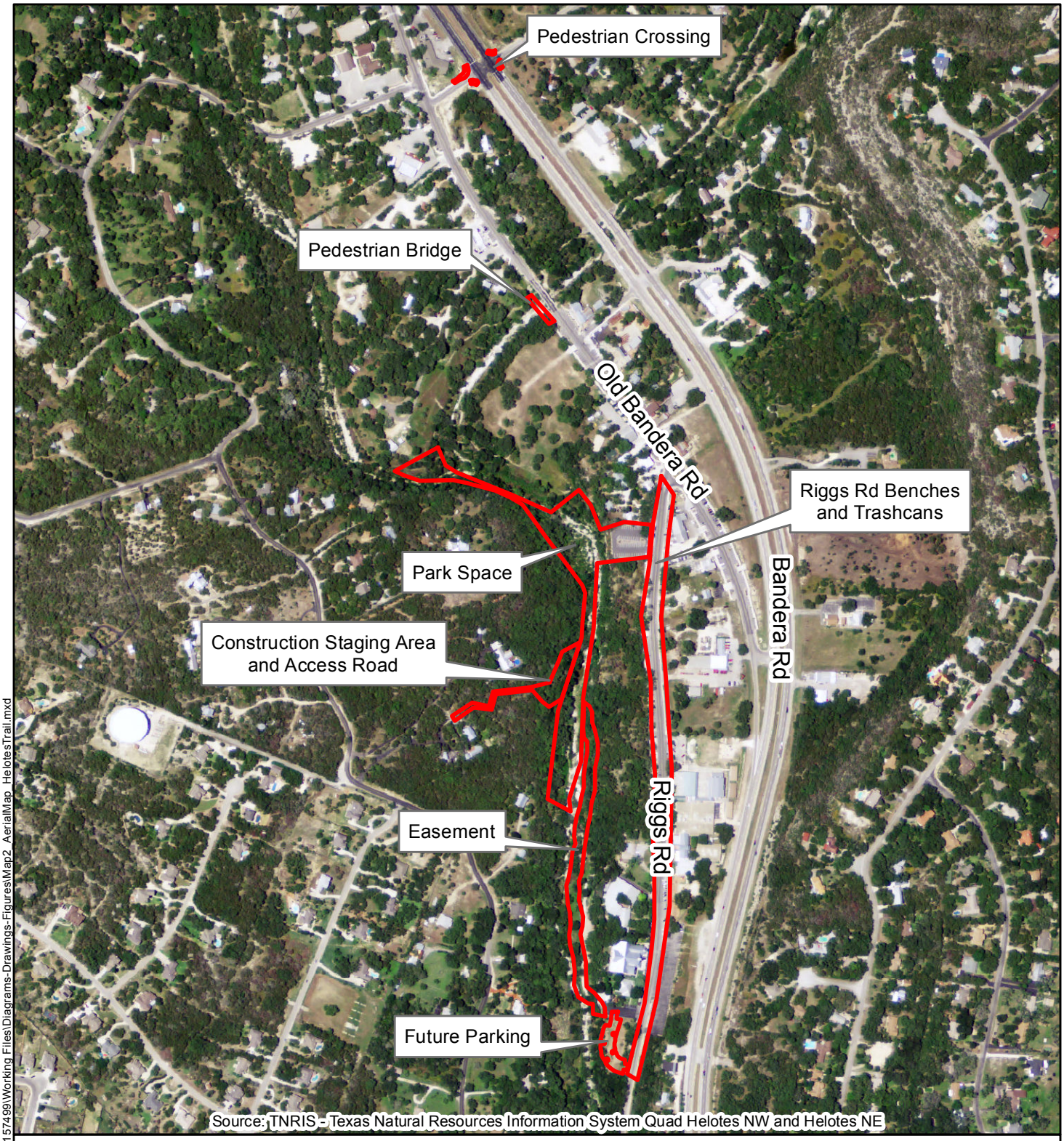
APE on Helotes Quadrangle

Helotes Hike-Bike Trail
Riggs Road and Old Bandera Road
Helotes, Bexar County, Texas

Map

1



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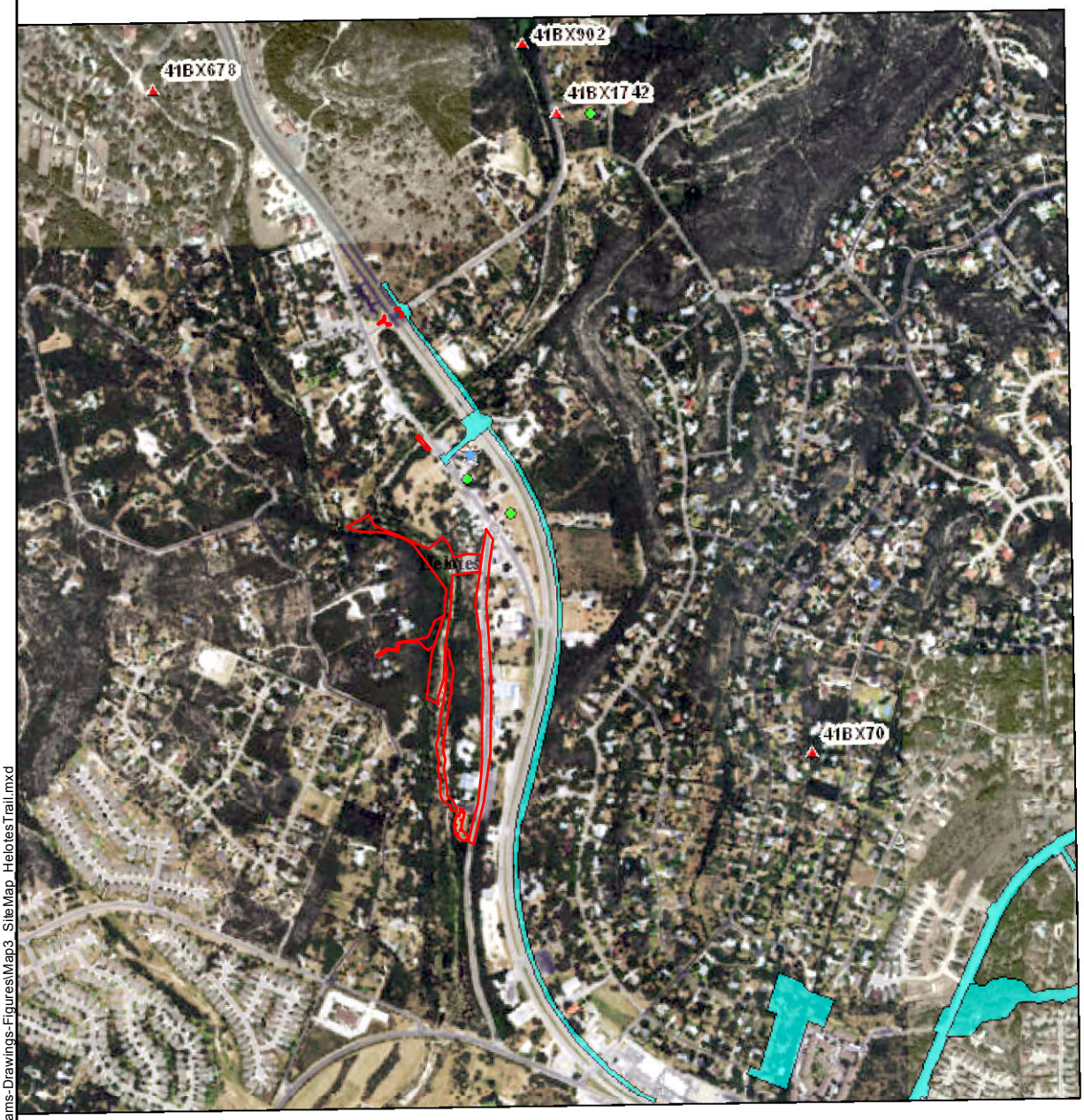
Project Mngr: DY	Project No. 90157499	Terracon Consulting Engineers & Scientists 6911 Blanco Road San Antonio, TX 78216 PH (210) 641-2112 Fax (210) 641-2124	APE on Aerial Imagery	Map
Drawn By: TMJ	Scale: 1 in = 600 ft		**Helotes Hike-Bike Trail** **Riggs Road and Old Bandera Road** **Helotes, Bexar County, Texas**	2
Checked By: DY	TBPE Firm No. F-3272			
Approved By: DY	Date: December 2015			

Texas Archeological Sites Atlas



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Legend

APE

N

1,400 700 0 1,400 Feet

Project Mngr:	DY
Drawn By:	TMJ
Checked By:	DY
Approved By:	DY
Project No.	90157499
Scale:	1 in = 1,400 ft
TBPE Firm No.	F-3272
Date:	December 2015

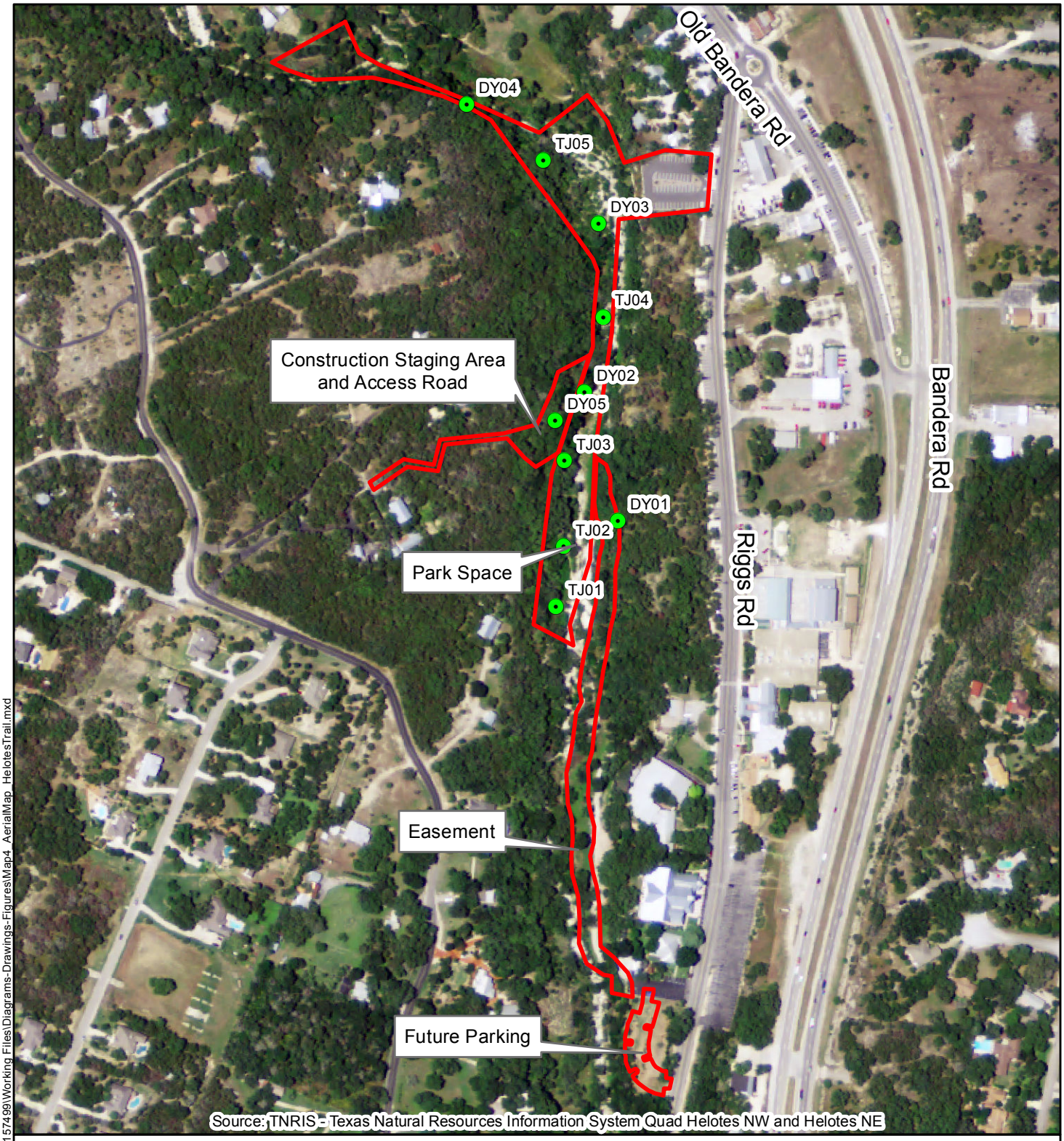
Terracon
Consulting Engineers & Scientists
6911 Blanco Road San Antonio, TX 78216
PH (210) 641-2112 Fax (210) 641-2124

Texas Archeological Site Atlas

Helotes Hike-Bike Trail
Riggs Road and Old Bandera Road
Helotes, Bexar County, Texas

Map

3



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Legend

- Shovel_Tests
- APE

350 175 0 350 Feet

N

Project Mngr:	DY
Drawn By:	DY
Checked By:	DY
Approved By:	DY
Project No.	90157499
Scale:	1 in = 350 ft
TBPE Firm No.	F-3272
Date:	December 2015

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Survey of Trail and Park Space

Helotes Hike-Bike Trail
Riggs Road and Old Bandera Road
Helotes, Bexar County, Texas

Map

4

Appendix B. Photographs

Photo #1: View south across southern-most portion of trail easement in proximity of landscaped channel at Our Lady of Guadalupe Church.

Photo #2: View north across landscaped portion of Helotes Creek channel in proximity to Our Lady of Guadalupe Church.

Photo #3: Shovel test TJ01 in the southwestern corner of park space. The modern cinderblock and stone outbuilding is approximately 20 feet beyond the project boundary.

Photo #4: View south across shovel test DY01 where the trail easement meets the park space. Note the woody debris deposited by recent flooding in the background.

Photo #5: Boulder garden, bedrock cliff, and possible sinkhole in background past shovel test DY02 location.

Photo #6: Woody debris likely deposited along tall bedrock cut bank in right bend of Helotes Creek by October flooding.

Photo #7: View north across shovel test DY04, showing small channel at left and rock escarpment at right.

Photo #8: View across channel in the northern-most portion of the park space and trail area.

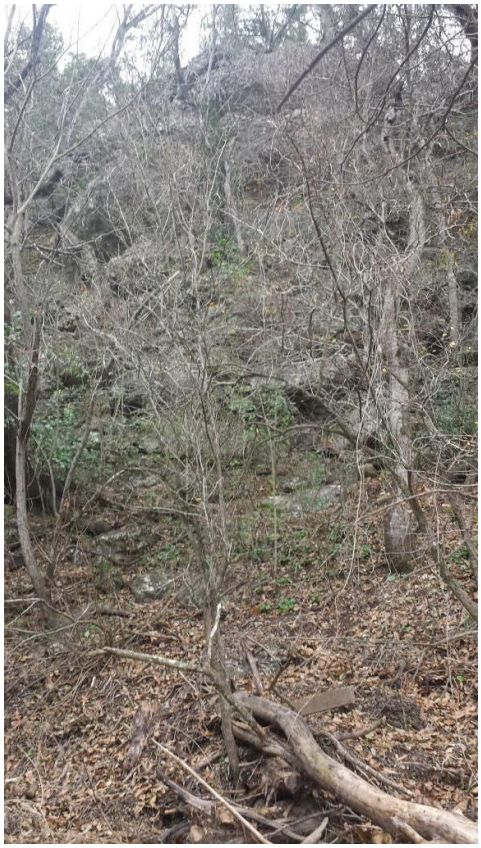

Photo #9: View west up escarpment in the northern-most portion of the parkspace and trail area.

Photo #10: Ground surface in the vicinity of DY03; typical view of ground surface in near-channel environments along this portion of Helotes Creek.

Photo #11: View north across shovel test DY05 in the vicinity of the construction staging area.

Photo #12: View south across Helotes Creek at the location of the proposed pedestrian bridge. Note the linear concrete features marking buried utility lines.

Photo #13: View north across Helotes Creek at point of proposed pedestrian bridge. Note the orange (center) and green (right) spray paint in the foreground marking buried fiber-optic and sewer lines, respectively.

Photo #14: View south along Riggs Road featuring alternating parking spaces and landscaped areas where benches and trashcans would be placed.

Photo #15: View north along Riggs Road showing landscaped areas where benches and trashcans would be inserted among parking spaces (left/west side of road).

Photo #16: View east across intersection of Scenic Loop Road and Highway 16 from west side.

Appendix C. Shovel Test Log

Table 1. Shovel test excavation transcripts.

Shovel Test	Depth (cmbs)	Munsell	Soil Texture	Comments
DY01	0-37	10YR 2/2	Loamy	Approximately 5 m east of channel on low terrace at base of outcrop near large flood debris deposit; 40-50% surface visibility, grasses, reeds, scattered oaks; terminated at bedrock
DY02	0-25, 25-55	10YR 2/1, 10YR 2/2	Loamy, loamy	Terrace above large pool and collapsed cliff/shelter; <25% surface visibility, grass and common elder, live oak, chinaberry, etc.; terminated at gravel
DY03	0-7, 7-22	10YR 2/2, 10YR 5/6	Loam, gravelly sand	In thick brush at point bar with boulders/bedrock exposed at surface; approximately 10 m west of bedrock channel; terminated at sterile parent material
DY04	0-27, 27-47	10YR 2/1, 10YR 2/2	Loam, clayey loam	Narrow terrace between channel and cliff near north end of park space and trail alignment; large cottonwood; 30% surface visibility, grass; terminated at large root and gravel
DY05	0-30, 30-75	10YR 2/1, 10YR 2/2	Loamy, loamy	Approximately 15 meters west of channel across fence at staging area for construction; 30-50% surface visibility, grasses, reeds, small oaks and other trees; near base of boulder outcrop that quckly slopes up to upland setting; terminated at gravel
TJ01	0-52, 52-60	10YR 2/2, 10YR 5/6	Sandy loam, sand	20 feet east of 10x10' stone and block building just outside the southwest corner of the park area; approximately 2 feet above channel and 4 feet above thalweg; point/sand bar with grass and reeds, 25% surface visibility; terminated at channel gravels
TJ02	0-55	10YR 3/2	Sandy loam	Across stream from DY01 and located above and west of creek bed by approximately 10 m; small grove of oak trees just up the creek bank; 80% surface visibility; terminated at gravels
TJ03	0-57	10YR 3/2	Sandy loam	Upbank from Helotes Creek approximately 15 m on the west side from large rock wall; hog rooting nearby; cedar elm and oak grove; 80% surface visibility; terminated at bedrock
TJ04	0-22, 22-52	10YR 3/2, 10YR 5/6	Sandy loam, sand	Approximately 50 meters from bend in creek; west side bank within trail alignment; approximately 10 m west of creek bank in an opening of waxleaf, elm, oak, and juniper trees; 80% surface visibility; terminated at bedrock
TJ05	0-35	10YR 3/2	Sandy loam	On an open bank west side of creek bed just as it starts to turn; approximately 20 m west of creek; waxleaf, mountain laurel, elm, and oak opening; 90% surface visibility; terminated at bedrock