



Archeological Background Study for Loop 336 in Conroe, Montgomery County, Texas

CSJ: 0338-11-056

Prepared by: AmaTerra Environmental, Inc.

Date: August 2016

Introduction

The Texas Department of Transportation (TxDOT) proposes to improve approximately 2.5 miles of Loop 336 South from Interstate Highway (IH) 45 to Farm-to-Market (FM) 1314 in Conroe, Montgomery County, Texas (**Figure 1**). The proposed project would create a divided 4-lane highway by constructing a 2 lane roadway to the south of the existing roadway. The new lanes would serve as the east bound lanes with the existing lanes being converted to serve west bound traffic. The existing Loop 336 (from East of Cypress Lane Boulevard to West of FM 1314) consists of one 13.5-foot lane (west bound lane) and one 12 foot lane (east bound lane) with an 8-foot outside shoulder, within a 300-foot right-of-way (ROW). The proposed Loop 336 westbound lanes would consist of one 13.5-foot lane and one 12 foot lane with an 8-foot outside shoulder. The proposed eastbound lanes would consist of two 12-foot lanes, a 15-foot outside shoulder, and a 10-foot hike and bike trail. The hike and bike trail would be off-set from the shoulder by 10-foot. An approximate 192-foot grassy median would be located between the eastbound and westbound lanes.

Similarly, the existing Loop 336 at FM 1314 consists of one 13.5-foot lane and one 12-foot-lane (westbound lanes), a center left turn lane, two 12-foot lanes (eastbound lanes) and an 8-foot outside shoulder. The proposed Loop 336 at FM 1314 westbound lanes would consists of one 13.5-foot lane, two 12-foot lanes, one 12-foot left turn lane, and a 20-foot inside shoulder. The eastbound lanes would consist of one 12-foot left turn lane, two 12-lanes, a 15-foot outside shoulder, and a 10-foot hike and bike trail. The hike and bike trail would be off-set from the shoulder by 10-foot. An approximate 142-foot grassy median would be located between the eastbound and westbound lanes (see **Attached Project Schematics**).

The proposed project is being funded by the TxDOT using federal funds. Since the project is being built with federal transportation money on land owned or controlled by the State of Texas, it is considered an undertaking subject to the provisions outlined under Section 106 of the National Historic Preservation Act (Section 106) and the Antiquities Code of Texas (ACT).

The Area of Potential Effects (APE) for archeological resources for this undertaking is defined as the footprint of the proposed project to the maximum depth of impact, including all easements, and project specific locations. Therefore, the APE for archeological resources will cover a total distance of approximately 6.4 miles and encompass an area of approximately 105 acres, all of which will take place entirely within existing ROW (**Figure 2**). The vertical APE (depth of impacts) is estimated to extend no more than three to five feet into the subsurface. Project schematics provided by the Houston District are attached.

Physical Setting

The APE is located within the Southern Tertiary Uplands, a sub region of the South Central Plains ecoregion (Griffith et al. 2007). This ecoregion, which is locally known as the “piney woods”, is characterized by irregular plains and “represents the western edge of the southern coniferous forest belt” (Griffith et al. 2007:87). The Southern Tertiary Uplands encompasses approximately 7667 square miles and consists of “dissected irregular plains with some low, rolling hills; low to moderate gradient streams with sandy and silty substrates” (Griffith et al. 2007:91). Historically, natural vegetation consisted of upland longleaf pine-bluestem (*Pinus palustris-Schizachyrium* spp. and *Andropogon* spp.) woodlands, shortleaf pine-hardwood forests (*Pinus echinata-Quercus* spp.), mixed hardwood-loblolly pine (*Pinus taeda*) forests, American beech (*Fagus grandifolia*) or magnolia-beech-forests, bogs, and sandstone glades. Bog plant species include southern sweetbay (*Magnolia virginiana*), hollies or gallberry (*Ilex* spp.), wax-myrtles (*Morella* spp.), insectivorous plants, orchids, and wild azalea (*Rhododendron* spp.). Today, pine forest is the dominant vegetation type with National Forest land making up large parts of this region (Griffith et al. 2007).

The APE is underlain by the Tertiary-age Willis Formation (Pow), which is composed mostly of clay, silt, sand, and siliceous granule to pebble gravel (BEG 1992). According to the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS 2016) Web Soil Survey (2016), soils within the APE consist of eight soil groups (**Table 1**). Soils are characterized by loam to very fine sandy loam with restrictive features, such as clay, encountered as shallow as 36 centimetres below the ground surface.

Table 1. Soil Groups Found within the Project Area (USDA-NRCS 2016; Abbott 2001).

Soil	Slope	Landform/Topographic Position	Parent Material	Solum Thickness	Geoarch. Potential
Atasco fine sandy loam	2 to 5	Terraces/Upland	Loamy alluvium derived from igneous, metamorphic and sedimentary rock	>60	Low
Conroe gravelly loamy fine sand	0 to 5	Interfluves/Upland	Sandy and gravelly fluviomarine deposits over clayey fluviomarine deposits	60-100+	Low
Conroe loamy fine sand	0 to 5	Interfluves/Upland	Clayey marine deposits	60-100+	Low
Hatliff-Pluck-Kian complex	0 to 1	Flood Plains/Forested Floodplain	Loam alluvium of Holocene-age	10	High
			Loamy alluvium	-	-
			Loamy alluvium	-	-
Landman fine sand	0 to 3	Stream Terraces/-	Loamy alluvium and/or sandy alluvium	-	-
Lilbert loamy	-	Interfluves	Loamy marine deposits	-	-

Soil	Slope	Landform/Topographic Position	Parent Material	Solum Thickness	Geoarch. Potential
fine sand					
Sorter-Tarkington complex	0 to 1	Flats/Upland	Loamy fluviomarine deposits derived from igneous, metamorphic and sedimentary rock	60-100+	Low
Splendora fine sandy loam	0 to 2	Flatwoods/Upland	Loamy fluviomarine deposits of Early Pleistocene-age	60-100+	Low

Current Setting

Located in southeast Conroe, Texas, the APE is within and surrounded by undeveloped woodland. The existing two-lane undivided FM 336 roadway parallels an approximately 100-foot wide cleared area (**Figure 3**) for much of its length. Topographically, the APE is hilly with elevations ranging from 141 to 184 feet above mean sea level. The APE crosses Stewarts Creek and abuts Little Caney Creek at its easternmost terminus. Both creeks empty into the West Fork of the San Jacinto River located roughly 3.5 kilometers to the south and southwest of the APE. Disturbances within the APE are minimal and include land clearing activities and those associated with the construction of roads, such as artificially levelled and paved surfaces (**Figure 4**).

Archeological Background and Previous Archeological Studies

Background research for this project consisted of an online records search through the Texas Historical Commission’s Archeological Sites Atlas (Atlas; 2016) and a review of historical maps and aerial photographs. Research focused on the identification of archeological sites, sites listed as State Antiquities Landmarks (SALs), Recorded Texas Historic Landmarks (RTHLs), sites listed on the National Register of Historic Places (NRHP), cemeteries, and previously conducted archeological surveys within one kilometer (0.62 mile) of the APE (**Figure 5**). The search revealed that no previously recorded archeological sites, SALs, RTHLs, or sites listed on the NRHP fall within one kilometer (0.62 mile) of the APE. However, one cemetery and 12 previously conducted archeological surveys (**Table 2**) are near or transect the APE.

The Conroe Memorial Park Cemetery (Cemetery ID Number: MQ-Co11) is situated approximately 825 meters to the north of the APE. The cemetery opened in 1944 and reportedly contains over three thousand internments. It is still active. The proposed undertaking will not have any foreseen effects on the cemetery.

A total of 12 previously conducted archeological surveys fall within one kilometer (0.62 mile; **Table 2**). Of these, only three intersect with the project area and none of the archeological surveys resulted in the recording of new archeological sites within or near the APE.

Table 2. Archeological Surveys that intersect the APE.

Fieldwork Year	Contractor	Sponsor or Agency	TAC Permit	Type (Linear or Area)/Size	Newly Recorded Sites
1980	Unknown	EPA	Unknown	Linear/Unknown	None
1983	Unknown	EPA – TWDB	Unknown	Linear/Unknown	None
2007	Blanton & Associates, Inc.	FHWA/TxDOT	4314	Area/5,280 Feet	None

Historic Land Use

Conroe, the county seat of Montgomery County, was established when Houston lumberman Isaac Conroe moved his sawmill from Stewarts Creek to the International-Great Northern Railroad's (I-GN) Houston-Crockett line. Conroe's sawmill became a station along the I & GN Railroad and by 1884. Around this time, the Gulf, Colorado and Santa Fe Railway's Navasota-Montgomery spur was built through Conroe forming the only major junction of rail lines in Montgomery County. Settlers moved to the region with the prospect of profiting from the region's lumber boom. As a result, in 1889, the population had reached 300 residents. Situated along a major rail line junction, By 1892, Conroe also supported five steam-powered saw and planing mills, several brickyards, a cotton gin, a gristmill, several hotels and general stores, and supported a population of 500 residents. Conroe became an important shipping point for lumber, cotton, livestock, tobacco, and bricks (Jackson 2016). Both the agricultural and timber industries continued to thrive through the early twentieth century, but was curtailed with the dwindling supply of local timber and the Great Depression. In 1931, George W. Strake discovered oil seven miles to the southeast of Conroe, which temporarily stimulated the local economy. A revival of the lumber industry, the construction of Interstate Highway 45, and the impounding of the West Fork of the San Jacinto River forming Lake Conroe all helped to promote growth within the community. Today, the City of Conroe supports 63,322 residents (Jackson 2016).

According to a 1901 General Land Office Map of Montgomery County, Texas, the APE crosses land originally patented by Hansom House and A. M. Folks (**Figure 6**). A 1938 USDA Map of the Sam Houston National Forest depicts the APE as devoid of development with the exception of a pipeline owned by the Prairie Pipe Line Company, which intersects FM 336 near its current intersection with Stewarts Forest Drive (**Figure 7**). By 1953, two additional pipelines are visible transecting the APE and FM 1314 is present at the project area's easternmost end. However, the rest of the project area remained forested and relatively free of development at this time (**Figure 8**). Urban development began to encroach upon the project area by the late 1970s (**Figure 9**) with Loop 336 constructed prior to 1989. The actual APE and its immediate surrounding, however, remain forested.

Archeological Site Potential

Historic aerial photographs and maps depict no residential or commercial development within the APE at any time during the nineteenth to mid-twentieth century. Therefore, based on the information provided above, there is low potential for historic-period archeological materials to be present within

the APE. However, the potential for prehistoric archeological sites is considered to be high. The Potential Archeological Liability Mapping of the Houston District (PALM; Abbott 2001), classifies the project area as Map Units 1, 2, and 4 (**Figure 10**). While no survey is recommended for those areas located within Map Unit 4, survey is recommended for areas classified as Map Units 1 and 2. In addition, the presence of sandy terraces overlooking natural waterways increases the potential for intact prehistoric sites within the project area. Finally, the landscape has remained relatively unchanged and lacks any major disturbances. Therefore, a survey for archeological sites is recommended within the APE.

Summary and Recommendations

To summarize, historical maps and aerial photographs indicate that the potential for historic-period archeological sites within the APE is low. On the other hand, topographic and soils maps, the presence of natural waterways, a lack of disturbances, and the Houston PALM all suggest that there is a good potential for intact prehistoric archeological remains to be present within the APE. This background study recommends that an archeological survey is warranted for the APE. The survey should include shovel testing and backhoe trenching at Stewarts Creek, where there is potential for deeply buried archeological materials.

References Cited

Abbott, J. T.

2001 Framework for Archeological Investigation, Interpretation, and Cultural Resource Management in the Houston Highway District. Archeological Studies Program Report 27. Texas Department of Transportation, Environmental Affairs Division.

Bureau of Economic Geology (BEG)

1992 Geologic Map of Texas. The University of Texas, Austin.

Jackson, Charles Christopher

2016 Conroe, Texas – The Handbook of Texas. Electronic document, <https://tshaonline.org/handbook/online/articles/HECo3>, accessed July 2016.

Omernik, Glenn, James Griffith, Anne Rogers

2007 *Ecoregions of Texas (EPA)*. Project report submitted to the Texas Commission on Environmental Quality.

Texas Historical Commission

2016 Texas Historic Sites Atlas. Electronic document, <http://nueces.thc.state.tx.us/>, accessed on July 2016.

United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS)

2016 Montgomery County, Texas – Web Soil Survey. Electronic document, <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.asp>, accessed on May 2016.

University of Missouri Extension

2016 Ag Site Assessment Tool. Electronic document, <http://www.communitycommons.org/groups/agsite/>, accessed July 2016.

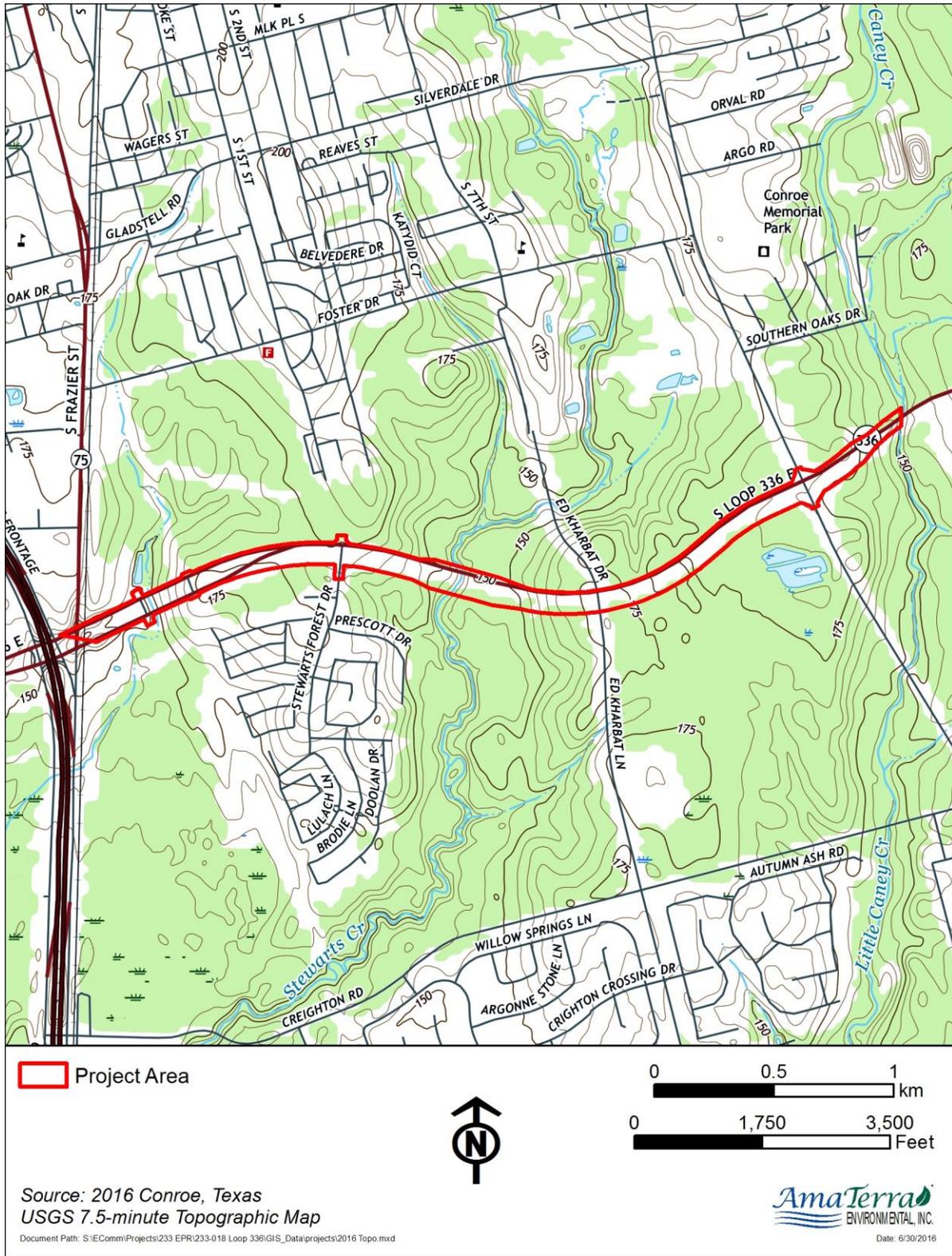
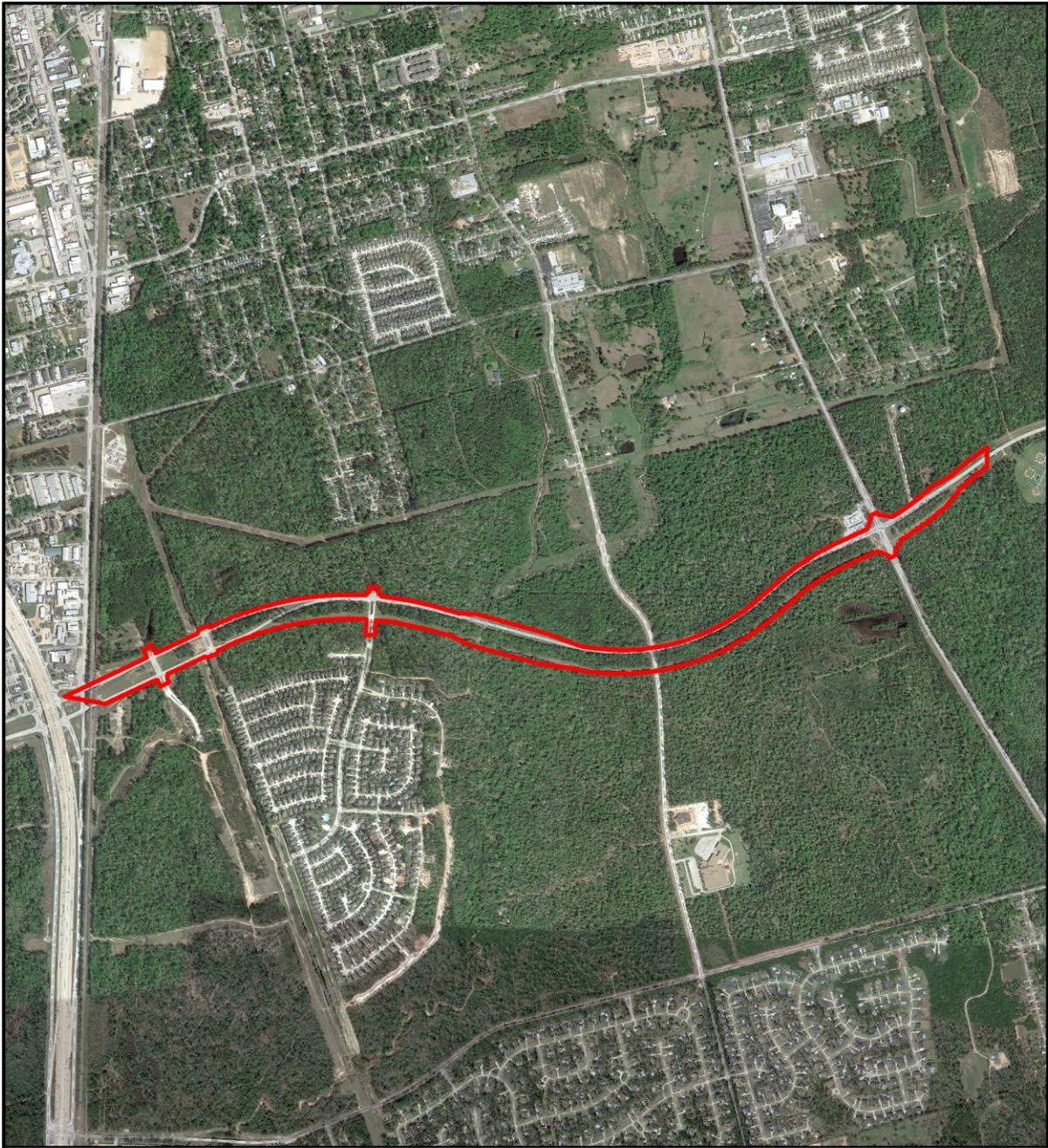


Figure 1. The project location in southeast Conroe, Montgomery County, Texas.



 Project Area



0 0.5 1 km
0 1,750 3,500 Feet

Source: 2015 Aerial Photograph
Google Imagery
Document Path: S:\EComm\Projects\233 EPR\233-018 Loop 336\GIS_Data\projects\2015 Aerial.mxd


Date: 6/30/2016

Figure 2. The APE depicted on 2016 aerial imagery.



Figure 3. The approximately 30-meter wide cleared area that parallels Loop 336, photographed facing west (Source: Google Earth).



Figure 4. Typical disturbances observed within the APE, photographed facing east (Source: Google Earth).

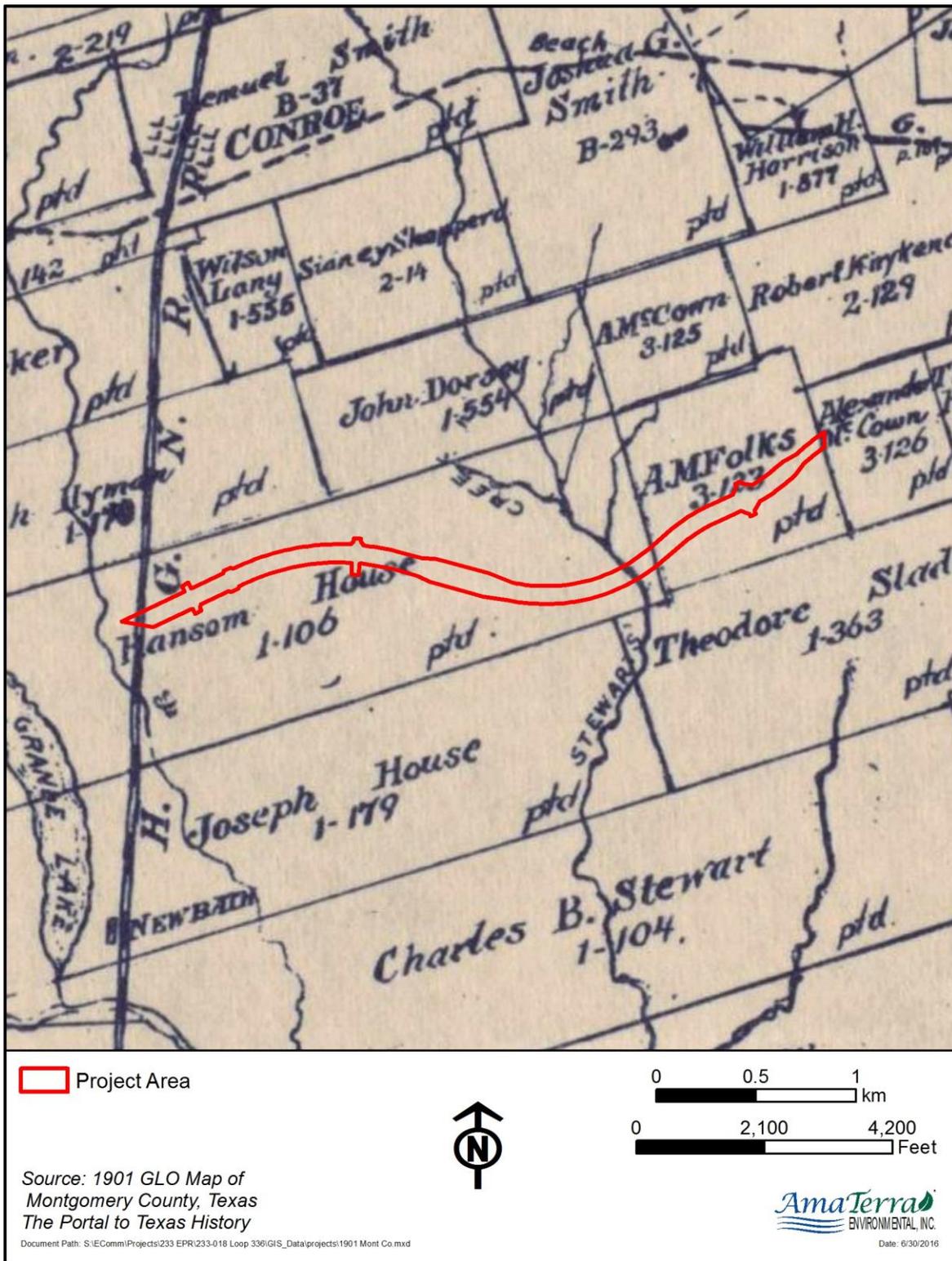


Figure 6. Detail from a 1901 General Land Office Map of Montgomery County, Texas depicting the approximate location of the APE.

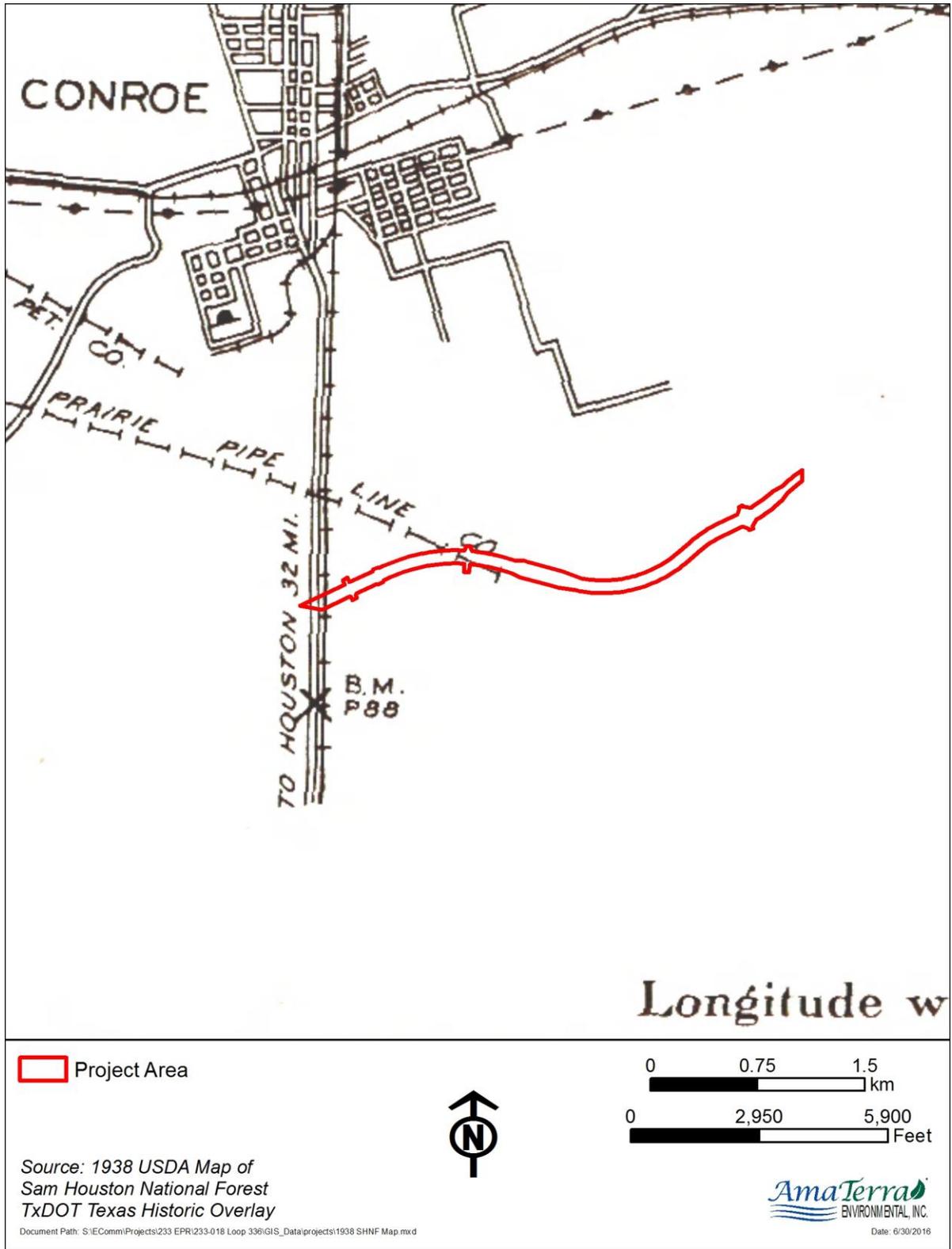


Figure 7. The project area overlain onto a 1938 USDA Map of Sam Houston National Forest.

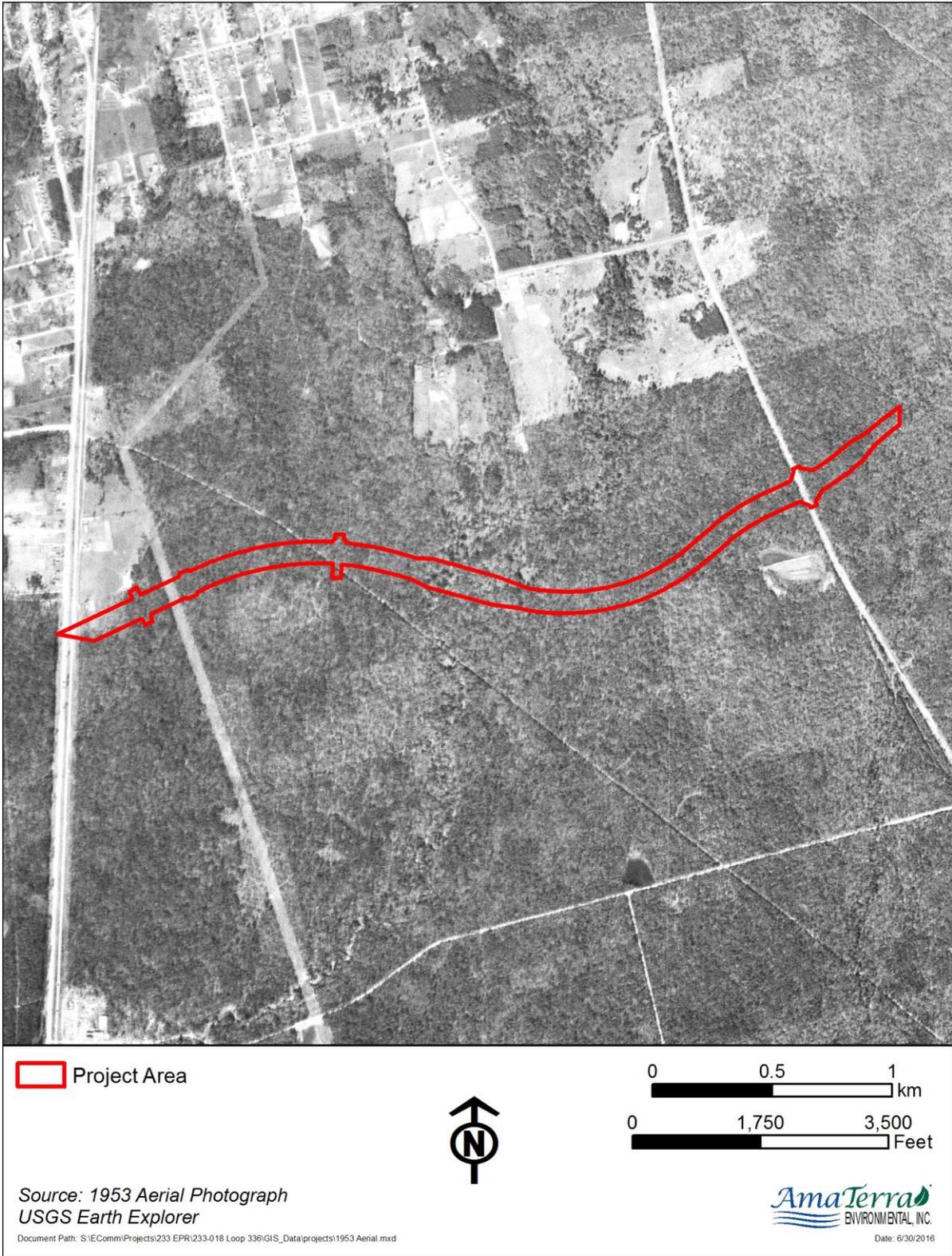


Figure 8. A 1953 aerial photograph depicting the location of the APE.

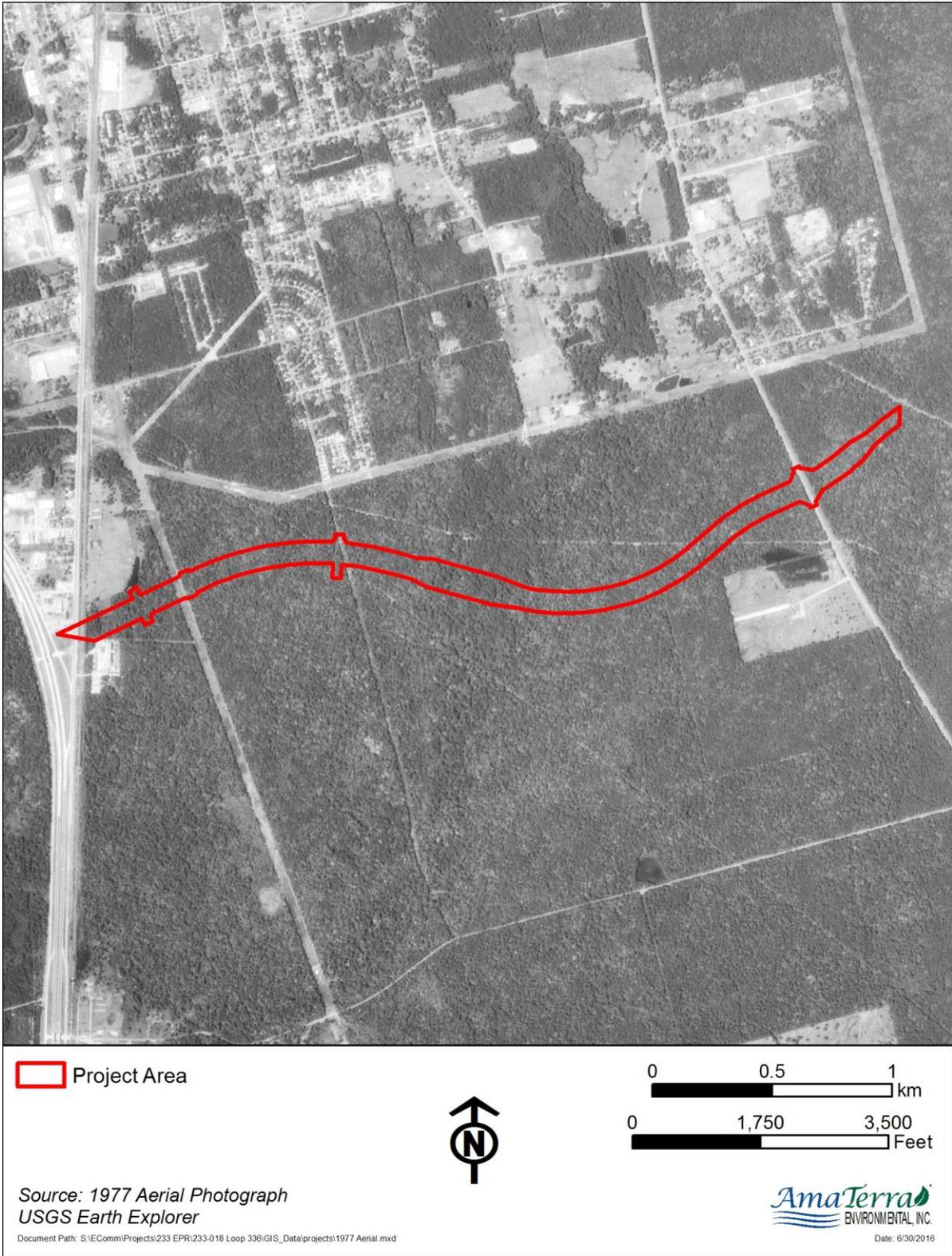


Figure 9. The APE depicted on a 1977 aerial photograph.

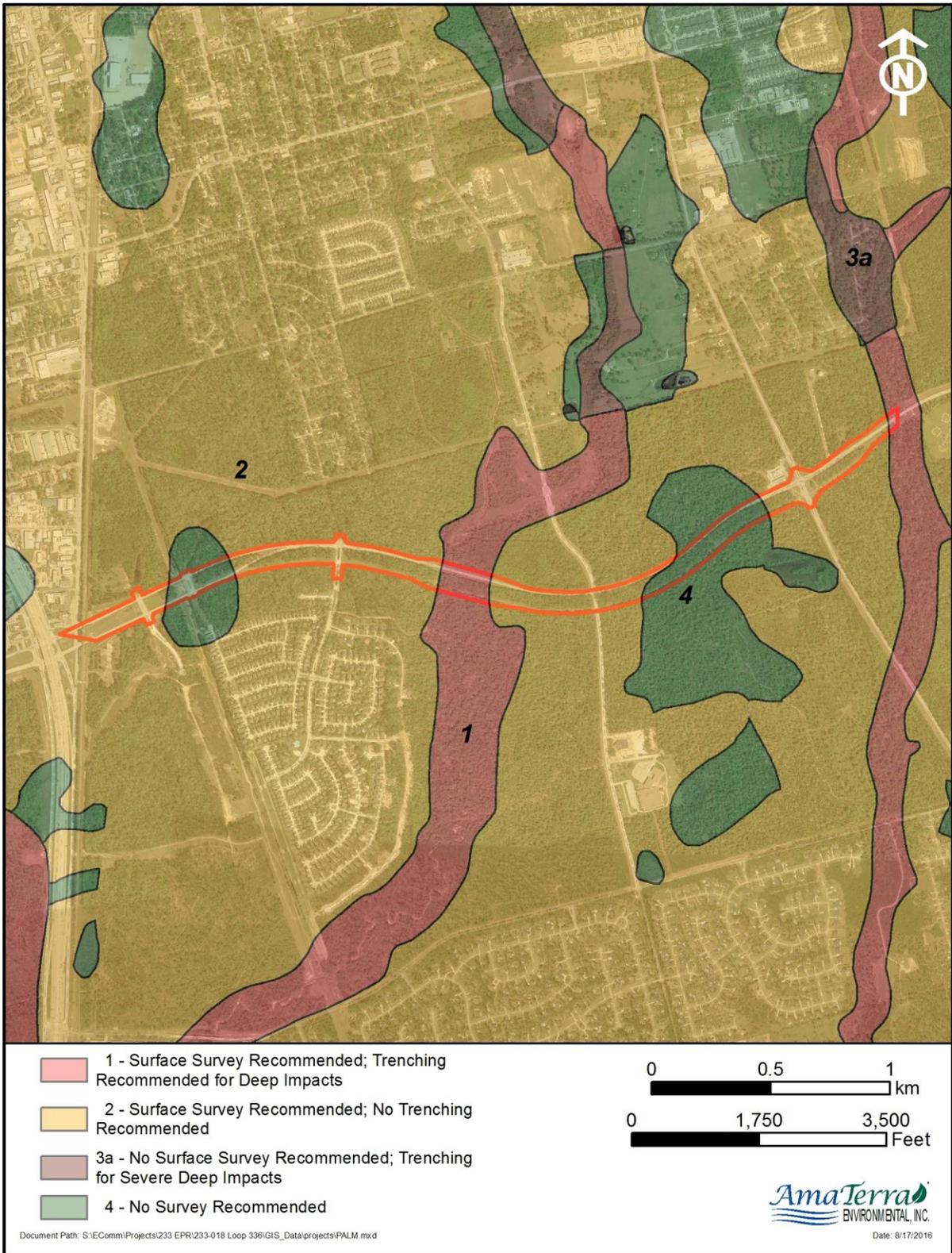


Figure 10. Map Units within the APE as defined by the Houston PALM.

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



4009 Banister Ln., Austin
TX, 78704
www.amaterra.com

SCHEMATIC LAYOUT
LP 336

COUNTY: HARRIS COUNTY CD: 1338-1400
 DATE: 03/12/2016
 DATE: 03/12/2016
 DATE: 03/12/2016

DATE: 03/12/2016
 DATE: 03/12/2016

DATE: 03/12/2016
 DATE: 03/12/2016

LEGEND

PROPOSED MAIN LANE	1	BLACK
PROPOSED FRONTAGE ROAD	2	BLACK
PROPOSED FRONTAGE ROAD	3	BLACK
PROPOSED FRONTAGE ROAD	4	BLACK
PROPOSED FRONTAGE ROAD	5	BLACK
PROPOSED FRONTAGE ROAD	6	BLACK
PROPOSED FRONTAGE ROAD	7	BLACK
PROPOSED FRONTAGE ROAD	8	BLACK
PROPOSED FRONTAGE ROAD	9	BLACK
PROPOSED FRONTAGE ROAD	10	BLACK
PROPOSED FRONTAGE ROAD	11	BLACK
PROPOSED FRONTAGE ROAD	12	BLACK
PROPOSED FRONTAGE ROAD	13	BLACK
PROPOSED FRONTAGE ROAD	14	BLACK
PROPOSED FRONTAGE ROAD	15	BLACK
PROPOSED FRONTAGE ROAD	16	BLACK
PROPOSED FRONTAGE ROAD	17	BLACK
PROPOSED FRONTAGE ROAD	18	BLACK
PROPOSED FRONTAGE ROAD	19	BLACK
PROPOSED FRONTAGE ROAD	20	BLACK
PROPOSED FRONTAGE ROAD	21	BLACK
PROPOSED FRONTAGE ROAD	22	BLACK
PROPOSED FRONTAGE ROAD	23	BLACK
PROPOSED FRONTAGE ROAD	24	BLACK
PROPOSED FRONTAGE ROAD	25	BLACK
PROPOSED FRONTAGE ROAD	26	BLACK
PROPOSED FRONTAGE ROAD	27	BLACK
PROPOSED FRONTAGE ROAD	28	BLACK
PROPOSED FRONTAGE ROAD	29	BLACK
PROPOSED FRONTAGE ROAD	30	BLACK
PROPOSED FRONTAGE ROAD	31	BLACK
PROPOSED FRONTAGE ROAD	32	BLACK
PROPOSED FRONTAGE ROAD	33	BLACK
PROPOSED FRONTAGE ROAD	34	BLACK
PROPOSED FRONTAGE ROAD	35	BLACK
PROPOSED FRONTAGE ROAD	36	BLACK
PROPOSED FRONTAGE ROAD	37	BLACK
PROPOSED FRONTAGE ROAD	38	BLACK
PROPOSED FRONTAGE ROAD	39	BLACK
PROPOSED FRONTAGE ROAD	40	BLACK
PROPOSED FRONTAGE ROAD	41	BLACK
PROPOSED FRONTAGE ROAD	42	BLACK
PROPOSED FRONTAGE ROAD	43	BLACK
PROPOSED FRONTAGE ROAD	44	BLACK
PROPOSED FRONTAGE ROAD	45	BLACK
PROPOSED FRONTAGE ROAD	46	BLACK
PROPOSED FRONTAGE ROAD	47	BLACK
PROPOSED FRONTAGE ROAD	48	BLACK
PROPOSED FRONTAGE ROAD	49	BLACK
PROPOSED FRONTAGE ROAD	50	BLACK
PROPOSED FRONTAGE ROAD	51	BLACK
PROPOSED FRONTAGE ROAD	52	BLACK
PROPOSED FRONTAGE ROAD	53	BLACK
PROPOSED FRONTAGE ROAD	54	BLACK
PROPOSED FRONTAGE ROAD	55	BLACK
PROPOSED FRONTAGE ROAD	56	BLACK
PROPOSED FRONTAGE ROAD	57	BLACK
PROPOSED FRONTAGE ROAD	58	BLACK
PROPOSED FRONTAGE ROAD	59	BLACK
PROPOSED FRONTAGE ROAD	60	BLACK
PROPOSED FRONTAGE ROAD	61	BLACK
PROPOSED FRONTAGE ROAD	62	BLACK
PROPOSED FRONTAGE ROAD	63	BLACK
PROPOSED FRONTAGE ROAD	64	BLACK
PROPOSED FRONTAGE ROAD	65	BLACK
PROPOSED FRONTAGE ROAD	66	BLACK
PROPOSED FRONTAGE ROAD	67	BLACK
PROPOSED FRONTAGE ROAD	68	BLACK
PROPOSED FRONTAGE ROAD	69	BLACK
PROPOSED FRONTAGE ROAD	70	BLACK
PROPOSED FRONTAGE ROAD	71	BLACK
PROPOSED FRONTAGE ROAD	72	BLACK
PROPOSED FRONTAGE ROAD	73	BLACK
PROPOSED FRONTAGE ROAD	74	BLACK
PROPOSED FRONTAGE ROAD	75	BLACK
PROPOSED FRONTAGE ROAD	76	BLACK
PROPOSED FRONTAGE ROAD	77	BLACK
PROPOSED FRONTAGE ROAD	78	BLACK
PROPOSED FRONTAGE ROAD	79	BLACK
PROPOSED FRONTAGE ROAD	80	BLACK
PROPOSED FRONTAGE ROAD	81	BLACK
PROPOSED FRONTAGE ROAD	82	BLACK
PROPOSED FRONTAGE ROAD	83	BLACK
PROPOSED FRONTAGE ROAD	84	BLACK
PROPOSED FRONTAGE ROAD	85	BLACK
PROPOSED FRONTAGE ROAD	86	BLACK
PROPOSED FRONTAGE ROAD	87	BLACK
PROPOSED FRONTAGE ROAD	88	BLACK
PROPOSED FRONTAGE ROAD	89	BLACK
PROPOSED FRONTAGE ROAD	90	BLACK
PROPOSED FRONTAGE ROAD	91	BLACK
PROPOSED FRONTAGE ROAD	92	BLACK
PROPOSED FRONTAGE ROAD	93	BLACK
PROPOSED FRONTAGE ROAD	94	BLACK
PROPOSED FRONTAGE ROAD	95	BLACK
PROPOSED FRONTAGE ROAD	96	BLACK
PROPOSED FRONTAGE ROAD	97	BLACK
PROPOSED FRONTAGE ROAD	98	BLACK
PROPOSED FRONTAGE ROAD	99	BLACK
PROPOSED FRONTAGE ROAD	100	BLACK

COLORFILL LEGEND

FRONTAGE ROAD RAMP

BRIDGE

SCALE

0 100 200 300 400

DESIGN CRITERIA

FUNCTIONAL CLASSIFICATION: URBAN PRINCIPAL ARTERIAL
 FRONTAGE ROAD DESIGN CRITERIA: RURAL COLLECTOR
 FRONTAGE ROAD DESIGN SPEED: 40 MPH

