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Archeological Survey For The Proposed Extension Of State Highway 249 In Montgomery And Grimes Counties, Texas, CSJ 0720-02-072 and CSJ 0720-02-073

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**Archeological Survey For The Proposed Extension Of State Highway 249 In
Montgomery And Grimes Counties, Texas, CSJ 0720-02-072 and CSJ
0720-02-073**

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**ARCHEOLOGICAL SURVEY FOR THE PROPOSED EXTENSION OF
STATE HIGHWAY 249 IN MONTGOMERY AND GRIMES COUNTIES,
TEXAS, CSJ 0720-02-072 AND CSJ 0720-02-073**

by

Ross C. Fields

and

Damon Burden

Principal Investigator: Ross C. Fields

LETTER REPORT NO. 891

submitted to

Jacobs Engineering Group, Inc.
Houston, Texas

and

Texas Department of Transportation
Houston District

by

Prewitt and Associates, Inc.
Cultural Resources Services
Austin, Texas

PAI No. 213010

May 2015

TEXAS ANTIQUITIES PERMIT NO. 6798

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ABSTRACT AND MANAGEMENT SUMMARY

In May 2014, personnel with Prewitt and Associates, Inc., conducted an intensive pedestrian archeological survey along portions of the proposed route of the extension of State Highway (SH) 249 in Montgomery (CSJ 0720-02-073) and Grimes (CSJ 0720-02-072) counties under Texas Antiquities Permit No. 6798 for Jacobs Engineering Group, Inc., and the Texas Department of Transportation, Houston District. The project area extends 14.9 miles northwest from existing SH 249 just southeast of Pinehurst in Montgomery County to Farm to Market Road (FM) 1774 about 1.8 miles north of Todd Mission in Grimes County. The project will consist of construction of a four-lane, controlled-access toll road with auxiliary lanes on mostly new location, typically within a 400-foot-wide right of way. The horizontal Area of Potential Effects for the road route is approximately 720 acres, of which 676 acres will be new right of way. The project also may require up to 98 acres for as many as four runoff detention ponds. Thus, the Area of Potential Effects for the entire project could encompass up to approximately 818 acres.

Project personnel consisted of Ross C. Fields (principal investigator), Aaron R. Norment (project archeologist), and Rob Thrift and Jennifer Anderson (archeological technicians). Fieldwork was conducted on May 5–9 and 19–23, 2014, and entailed approximately 24 person-days of effort. The pedestrian survey with shovel testing succeeded in covering 2.8 miles (127 acres) of the 14.9-mile route. Lack of right of entry prevented coverage of 4.3 miles and a 31-acre potential detention pond. Very dense vegetation and debris from the 2011 Magnolia wildfire prevented pedestrian coverage of the remaining 7.8 miles of the road route and three potential detention pond sites totaling 67 acres. Four archeological sites were recorded in the segments surveyed. Three sites (41GM464, 41MQ319, and 41MQ320) are low-density scatters of Native American lithic artifacts; the fourth site (41GM465) is a historic house site probably dating to the mid twentieth century. Artifacts recovered from them and records of the project will be curated at the Texas Archeological Research Laboratory, The University of Texas at Austin. The eligibility of these four sites for inclusion in the National Register of Historic Places and designation as State Antiquities Landmarks is considered undetermined, pending completion of the survey and inventory of sites that potentially will be affected by the project.

The results of the survey done to date, observations made of areas that could not be surveyed, and results of the background research indicate that the original plan for fieldwork in the remaining unsurveyed areas should be modified. Based on the low likelihood of either Native American or historic sites, it is recommended that survey is not warranted along about 4.7 miles of the road route and on 20 acres in one potential detention pond. Of the remaining unsurveyed lands, about 7.2 miles of the road route and 78 acres in four potential detention ponds should be surveyed with shovel testing, and 0.2 miles of the road route should be surveyed with backhoe trenching. This additional survey should be done after sufficient clearing of vegetation and wildfire debris has been done to enable systematic and safe pedestrian coverage.

INTRODUCTION

This report presents the results of intensive archeological survey conducted along the proposed route of the extension of State Highway (SH) 249 in Montgomery (CSJ 0720-02-073) and Grimes (CSJ 0720-02-072) counties in the Texas Department of Transportation's (TxDOT) Houston District (Figure 1). Prewitt and Associates, Inc., performed this work for Jacobs Engineering Group, Inc., and the TxDOT Houston District under Texas Antiquities Permit No. 6798. The project area extends 14.9 miles northwest from existing SH 249 just southeast of Pinehurst in Montgomery County to Farm to Market Road (FM) 1774 about 1.8 miles north of Todd Mission in Grimes County. The alignment will overlap about 0.9 miles of the existing SH 249 corridor and continue northwestward past the SH 249/FM 1774 intersection and the adjacent Missouri Pacific Railroad right of way. From there, the alignment trends north of a similarly aligned segment of FM 1774, skirting residential areas in the towns of Pinehurst and Magnolia before terminating at a north-south segment of FM 1774 south of Plantersville. The proposed alignment will cross, from east to west, FM 149, FM 1488, and FM 1486. Aside from the above-noted highways and railway, development along the alignment includes many improved and unimproved roadways, the Pinehurst Gas and Oil Field, some sand and gravel operations, and municipal and residential development in and on the edges of Pinehurst and Magnolia. Between FM 1486 and FM 1774, the alignment traverses a large area that was affected by the September 2011 Magnolia wildfire.

The proposed project will consist of construction of a four-lane, controlled-access toll road with auxiliary lanes on mostly new location. The horizontal Area of Potential Effects (APE) for this part of the project is 14.9 miles long, has a typical right of way width of 400 feet, and encompasses approximately 720 acres, of which approximately 44 acres are existing highway and railroad rights of way; hence, about 676 acres of the project area will be new right of way. Overpasses ranging from approximately 350 to 1,750 feet in length will carry the new SH 249 main lanes over FM 1774, the Missouri Pacific Railroad right of way, Circle Lane Drive, FM 149, FM 1488, and FM 1486. Ramps and service roads will connect SH 249 with FM 149, FM 1488, FM 1486, and FM 1774. Bridges will be constructed to carry the main lanes over Mill and Clear Creeks and four Mill Creek tributaries. Service road bridges will be constructed in advance of the FM 1774 intersection at a second Mill Creek crossing. Culverts will be installed on at least three other tributary crossings. The project also may require up to 98 acres for as many as four runoff detention ponds that may be as deep as 30 feet. Thus, the horizontal APE for the entire project could encompass up to approximately 818 acres. The vertical APE may vary from a minimum depth of 3–5 feet for general roadway improvements and highway construction (with deeper impacts along new highway cut sections) to an approximate maximum depth of 100 feet where shafts will be drilled for bridge supports.

Project personnel consisted of Ross C. Fields (principal investigator), Aaron R. Norment (project archeologist), and Rob Thrift and Jennifer Anderson (archeological technicians). Fieldwork was conducted on May 5–9 and 19–23, 2014, and entailed approximately 24 person-days of effort. The pedestrian survey with shovel testing succeeded in covering only 2.8 miles of the 14.9-mile route. Lack of right of entry prevented coverage of 4.3 miles and a 31-acre potential detention pond. Very dense vegetation and debris from the Magnolia

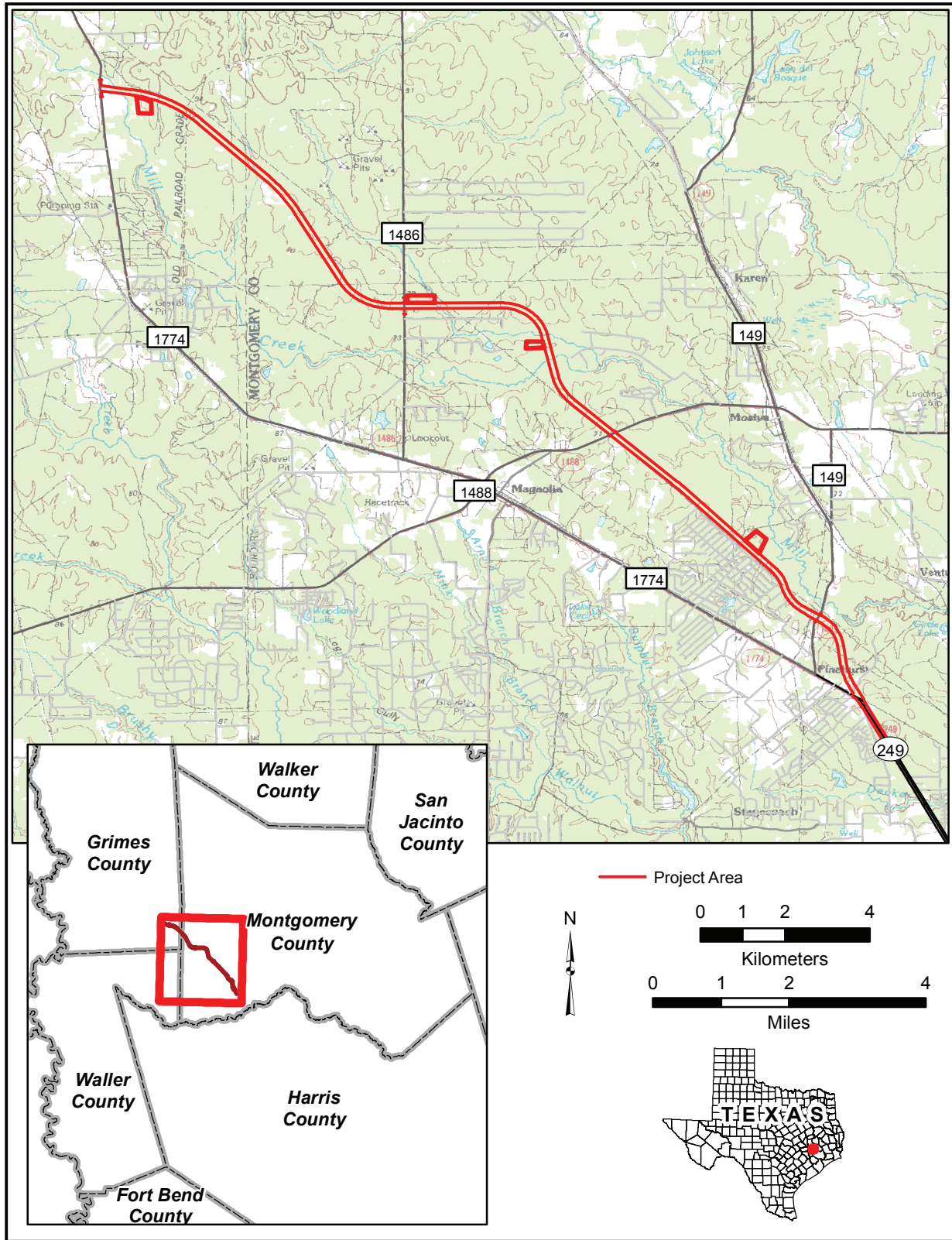


Figure 1. Project location map (base map data from United States Geological Survey [USGS] maps sheets and hypsography and Texas Natural Resources Information System [TNRIS] transportation layers).

wildfire prevented pedestrian coverage of the remaining 7.8 miles of the road route and three potential detention pond sites totaling 67 acres. Four archeological sites were recorded in the segments surveyed; artifacts recovered from the sites and records of the project will be curated at the Texas Archeological Research Laboratory, The University of Texas at Austin.

The remainder of this report consists of sections presenting information on the environmental setting, previous archeological investigations nearby, methods used and work accomplished, and results of the survey.

ENVIRONMENTAL SETTING

The project area is along the transition between the Austroriparian and Texan biotic provinces and along a boundary between the Pineywoods and Post Oak Savannah ecological regions of the state (Blair 1950; McMahan et al. 1984:Figure 1). The southernmost 1.6 miles of the alignment traverses the ridge between the Mill Creek and Decker Branch watersheds. The next 5.7 miles cross numerous intertributary ridges, interfluves, and sections of south valley wall before reaching Mill Creek within a narrow, poorly developed floodplain. After crossing the creek, the route extends 0.4 miles across a ridge between Mill and Clear Creeks. North of Clear Creek, the route runs north and then west for 2.6 miles across a series of interfluves drained by intermittent tributaries of Mill and Clear Creeks. Beyond that, it turns northwest and traverses uplands for 4.2 miles before crossing the narrow (0.2 miles) floodplain of the upper reach of Mill Creek. The northwesternmost segment of the route occupies the valley wall west of Mill Creek.

The short segment on the Mill Creek floodplain near the northwest end of the route, just east of FM 1774, crosses land mapped as undifferentiated Holocene alluvium. Lower Pleistocene-age Willis Formation deposits are mapped along the remainder of the proposed alignment (Bureau of Economic Geology 1992). Mapped soil associations include Conroe in Montgomery County (McClintock et al. 1972) and Depcor-Fetzer-Huntsburg and Conroe-Depcor in Grimes County (Greenwade 1996). Conroe association soils are deep, somewhat poorly to somewhat excessively well-drained soils characterized by mantles of sand, loamy sand, and sandy loam 60–80+ centimeters (cm) thick over sandy clay loam and clay containing indurated ironstone concretions and plinthite. Blanton series soils in this association can have fine sands that extend to more than 230 cm in depth. Soils in the Grimes County segment of the alignment are very deep and somewhat poorly to moderately well drained. Representative profiles consist of 25–70-cm-thick loamy sand underlain by clay loam, sandy clay loam, sandy clay, and clay with occasional plinthite nodules.

About 85 percent of the alignment is in Montgomery County, which is included in the Houston District Potential Archeological Liability Map (PALM) model coverage developed by Abbott (2001). Almost three-quarters of the Montgomery County segment (and approximately 44 acres in three potential detention ponds) is in areas identified as Map Unit 2, for which surface survey typically is recommended (Figures 2–4). Twenty-one percent

of the Montgomery County segment (and approximately 14 acres in one potential detention pond) is in areas designated as Map Unit 4, where survey usually is not recommended. Areas mapped as the latter include upland landforms on both sides of Mill Creek and developed areas around the existing FM 1774-SH 249 intersection. Three percent of the Montgomery County segment (and approximately 15.4 acres in one potential detention pond) is in areas of Map Unit 1, where surface survey and deep reconnaissance usually are recommended. These include the Mill Creek crossing northeast of Magnolia and a tributary crossing south of the creek between FM 149 and FM 1488. Three percent of the Montgomery County segment crosses the floodplain of a perennial tributary (Clear Creek) north of Mill Creek, which is designated as Map Unit 3. Typically, no surface survey is recommended in Map Unit 3 areas, but deep reconnaissance is needed in anticipation of deep impacts.

Most of the 2.2-mile-long segment of the alignment in Grimes County crosses upland terrain east and west of Mill Creek. Based on PALM map unit designations on similar landforms in Montgomery County, most of the Grimes County segment (and 25.2 acres in one potential detention pond) probably can be classed as Map Unit 2 with scattered areas identifiable as Map Unit 4 (including the FM 1774 highway corridor). Low-lying terrain at the upper Mill Creek crossing (about 0.2 miles) would be included in Map Unit 1.

Most of the project area is wooded with pines and hardwoods and is used for timber production, accounting for 56 percent of the road route and 74 percent of the potential detention pond areas; the vegetation in most of these areas is very dense, and ground surface visibility is nonexistent. Most of the remainder of the area, 32 percent of the road route and 26 percent of the detention pond areas, was timber land before it was devastated by the September 2011 Magnolia wildfire. This area, extending from FM 1486 westward almost all the way to FM 1774, is covered with debris from the fire and dense recent vegetation, along with isolated stands of trees that escaped the fire. Surface visibility in parts of this upland area is excellent because the fire, probably firefighting equipment traffic, and subsequent sand and gravel mining have denuded the ground, but fire debris hinders accessing much of the area. Land uses for the remainder of the project area are as follows, with all having ground surface visibility of less than 10 percent: (1) existing road (mainly SH 249) and railroad rights of way (7 percent of the road route), where disturbance is abundant; (2) improved pasture (2 percent of the road route); (3) residential lots (2 percent of the road route), which vary from open grassy areas to dense woods; and (4) a single church lot (1 percent of the road route), which is extensively disturbed.

PREVIOUS INVESTIGATIONS

Review of the Texas Historical Commission's Archeological Sites Atlas prior to fieldwork revealed no recorded archeological sites and three previous archeological investigations within 1.0 kilometer (km) of the alignment. The closest recorded sites are 41MQ214 and 41MQ219, which are 1.8 to 1.9 km southwest.

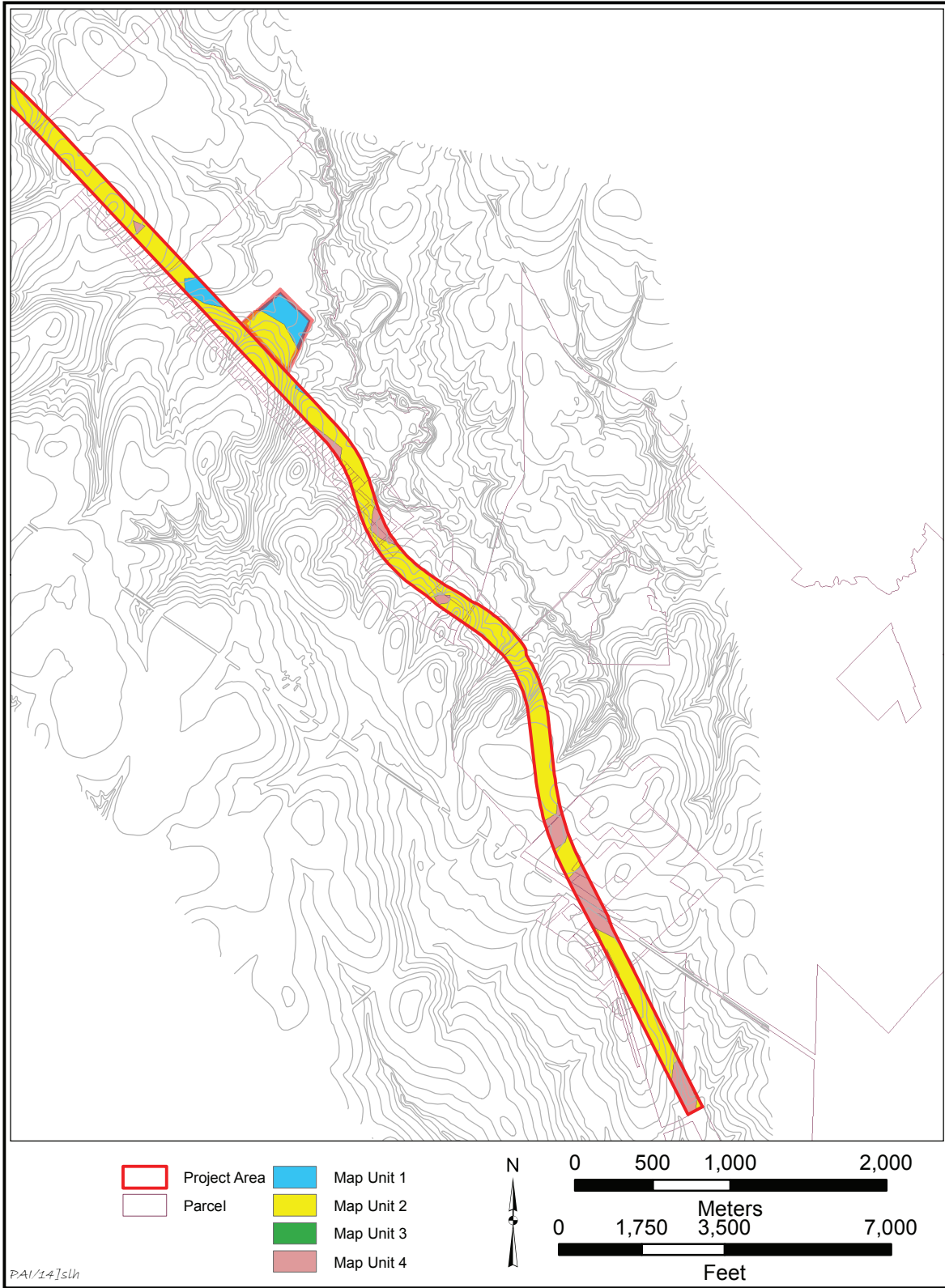


Figure 2. PALM model for the southeast third of the project area (base map data from USGS maps sheets and hypsography and Houston PALM).

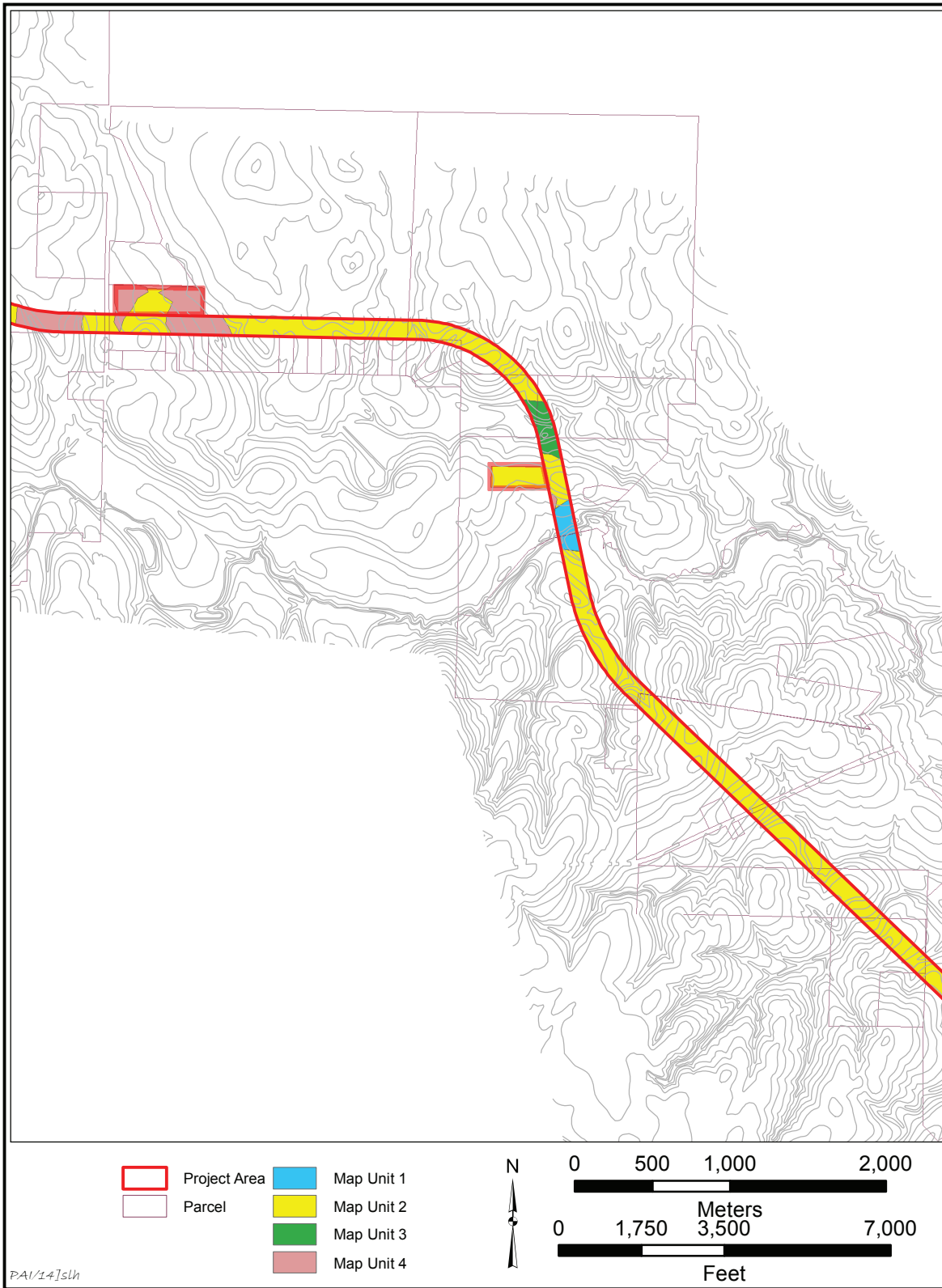


Figure 3. PALM model for the central third of the project area (base map data from USGS maps sheets and hypsography and Houston PALM).

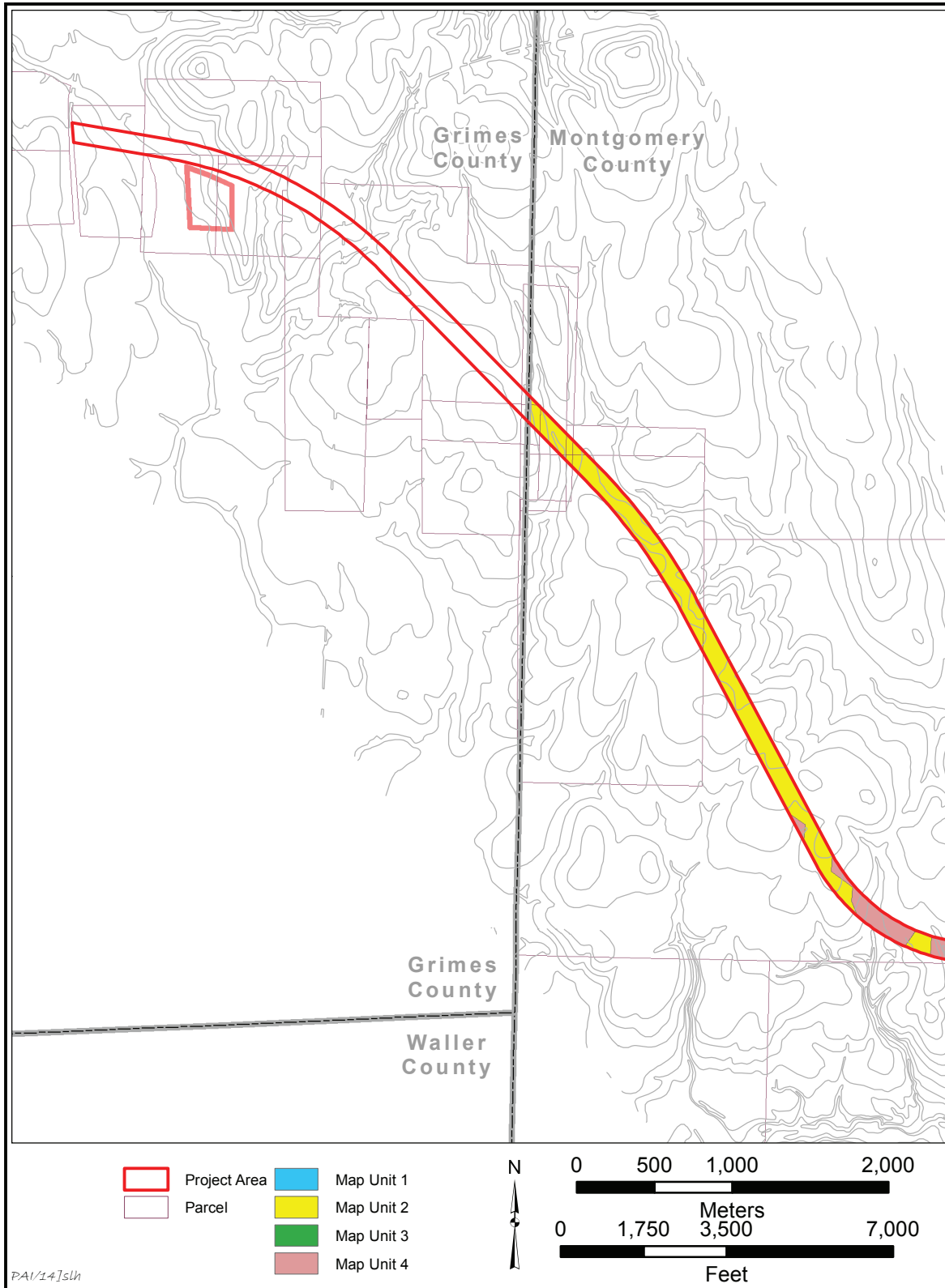


Figure 4. PALM model for the northwest third of the project area (Montgomery County portion only; base map data from USGS maps sheets and hypsography and Houston PALM).

Prehistoric sites 41MQ214 and 41MQ219 were recorded in 2006 and 2007 during surveys by Moore Archeological Consulting, Inc., on two five-acre tracts on the south side of Mill Creek (Driver 2010:18). These investigations were conducted in anticipation of permit application submission to the U.S. Corps of Engineers, Galveston District, for construction of a proposed wastewater treatment plant. Site 41MQ214 is at the end of a low ridge forming a sharp bend in Mill Creek, and 41MQ219 is upslope on the same landform. Shovel testing recovered lithic debitage at 20–60 cm below the ground surface at 41MQ214 and one sandy paste prehistoric ceramic sherd and lithic debitage at 0–110 cm below the surface at 41MQ219. Driver (2010:18–19) recommended further archeological investigations at both sites to assess their National Register of Historic Places and State Antiquities Landmark eligibility prior to any future construction impacts. Gulf Coast Archaeology Group, LLP, conducted test excavations at 41MQ214 in 2008. This effort involved the excavation of three 1x1-meter (m) units to depths of 70–90 cm below the surface, which yielded the distal tip of a projectile point, 3 microblades, 115 flakes, a scraper, a hammerstone, and a piece of red ochre. No diagnostic artifacts were recovered, and no cultural features were identified. The authors surmised that 41MQ214 is a Middle Archaic campsite and recommended that the site is not eligible for National Register listing or State Antiquities Landmark designation (Garcia-Herreros and Enderli 2008:31–32).

Three archeological surveys overlap parts of the project area. A 1992 survey along the existing SH 249 alignment, south of its intersection with FM 1774 in Pinehurst, overlaps the south end of the alignment. In 2005, Moore Archeological Consulting, Inc., conducted two archeological surveys for TxDOT along FM 1774 between the community of Todd Mission and FM 149 in Pinehurst. The southeast ends of these survey areas are within 1 km of the alignment. These three surveys identified no new archeological sites.

PROJECT DESIGN, METHODS, AND WORK ACCOMPLISHED

Survey Plan

Based on the results of the prefield background research, most of the project area was considered to have a moderate to high potential for Native American archeological sites, with only about one-fifth of it being in settings where the Houston PALM typically does not call for archeological survey (i.e., Map Unit 4). Areas considered most likely to contain Native American sites included the floodplains of Mill and Clear Creeks and especially interfluves close to these creeks; floodplains were likely to contain deeply buried sites, while shallowly buried sites were more likely on interfluves. Areas where the SH 249 route crosses unnamed small tributaries of Mill Creek also were considered to have some potential for sites, but less so than areas proximate to the larger water courses. Because less attention had been given to modeling historic archeological site locations for the region, it was hard to identify areas where historic sites were most likely. However, research suggested that the project area never was densely settled historically, with maps and aerial photographs indicating widely scattered improvements and occasional concentrations of buildings in Magnolia, Pinehurst, and other communities along area highways (Texas State Highway Department 1939, 1940, 1961a, 1961b; U.S. Department of Agriculture, Agricultural Stabilization and

Conservation Service 1952a, 1952b, 1958, 1967, 1968; U.S. Geological Survey 1962a, 1962b, 1962c, 1962d, 1964, 1967, 1979). The areas judged to have the highest potential for historic archeological sites were along the existing FM 1774/SH 249 intersection in Pinehurst, along FM 149 between Pinehurst and Mill Creek, and along FM 1488 in the vicinity of the extant Missionary Church and cemetery.

These expectations led to development of a survey plan that called for pedestrian survey of 100 percent of the project area, including the potential detention pond areas as well as the 400-foot-wide road route. Because about 93 percent of the road route was in settings where any archeological sites present would be shallowly buried (Houston PALM Map Units 2 and 4; see Figures 2–4), survey with shovel testing was considered to be the appropriate methodology for most of the project area, and the original scope of work estimated that 600–700 shovel tests would be required to provide effective coverage of these areas. It was determined that trenching to look for deeply buried sites would be the appropriate survey strategy in the remainder of the road route, since they were in Map Units 1 and 3, and perhaps in the potential detention pond areas as well. It was estimated that 20–25 trenches would be needed to cover the road route and another 20–25 would be required for the detention ponds.

Survey Methods and Work Accomplished

Archeological survey was done by crews of two or three archeologists on May 5–9 and 19–23, 2014. The initial task entailed identifying parcels where right of entry had not been obtained and thus where survey could not be done (amounting to about 4.3 miles of the road route and a 31-acre potential detention pond; Figures 5–7) and determining how to access those parcels for which right of entry had been obtained. Dense vegetation and debris from the 2011 Magnolia wildfire hindered fieldwork, so much so that many areas (about 7.8 miles of the road route and three potential detention ponds totaling 67 acres) could not be covered using pedestrian transects. After consultation with Jacobs Engineering Group personnel, it was determined that survey of these areas would have to be delayed until they had been cleared of vegetation and fire debris sufficiently to permit effective and safe field survey.

The pedestrian survey with shovel testing succeeded in covering only 2.8 miles of the 14.9-mile road route and none of the four detention pond areas. About 0.9 miles of the surveyed route is on public land (existing SH 249 right of way), and 1.9 miles is on private land. The eight areas covered were surveyed using pedestrian transects spaced no more than 30 m apart. The ground surface and existing exposures were examined for evidence of archeological remains, but ground surface visibility typically was very poor. One hundred seven shovel tests measuring approximately 30 cm in diameter were excavated to look for shallowly buried archeological remains. Fifteen tests were on public land within existing SH 249 right of way at the southeast end of the project area; the other 92 tests were on privately owned lands. The intensity of testing (1 test per 1.2 acres) exceeds that required by the Texas Historical Commission's Archeological Survey Standards for Texas for areas

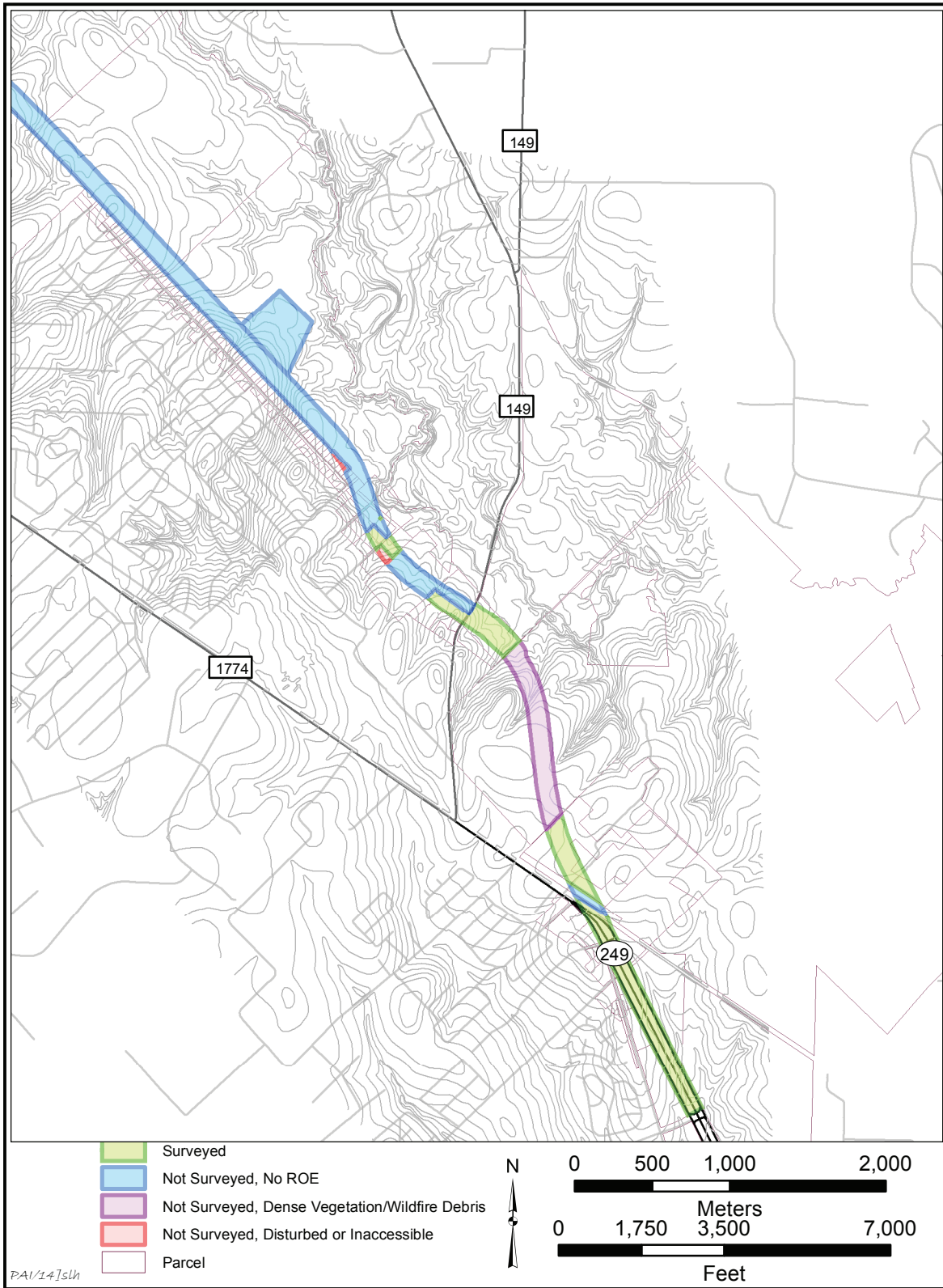


Figure 5. Map of the southeast third of the project area showing areas surveyed and areas that could not be surveyed (base map data from USGS maps sheets and hypsography and TNRIS transportation layers).

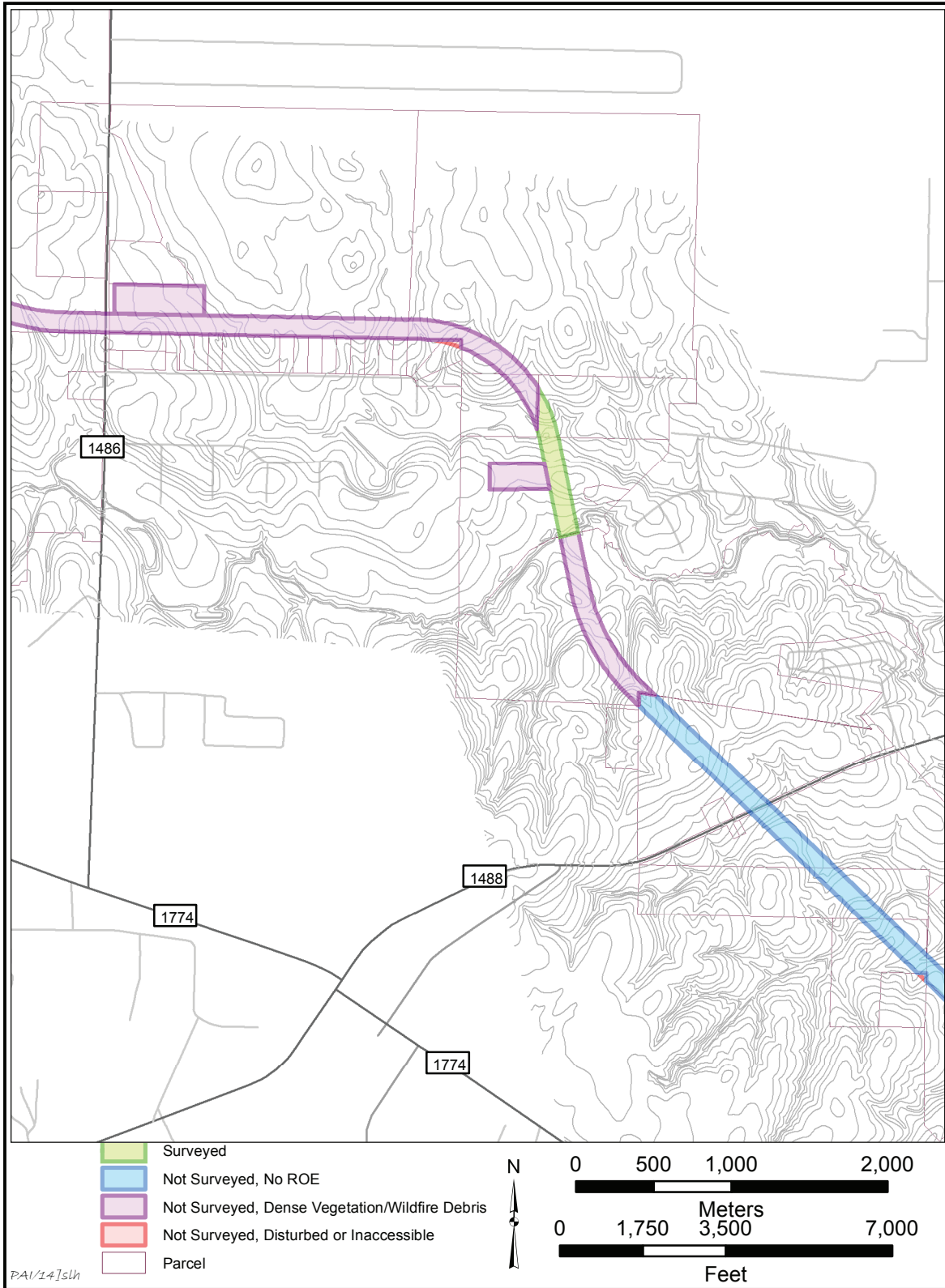


Figure 6. Map of the central third of the project area showing areas surveyed and areas that could not be surveyed (base map data from USGS maps sheets and hypsography and TNRIS transportation layers).

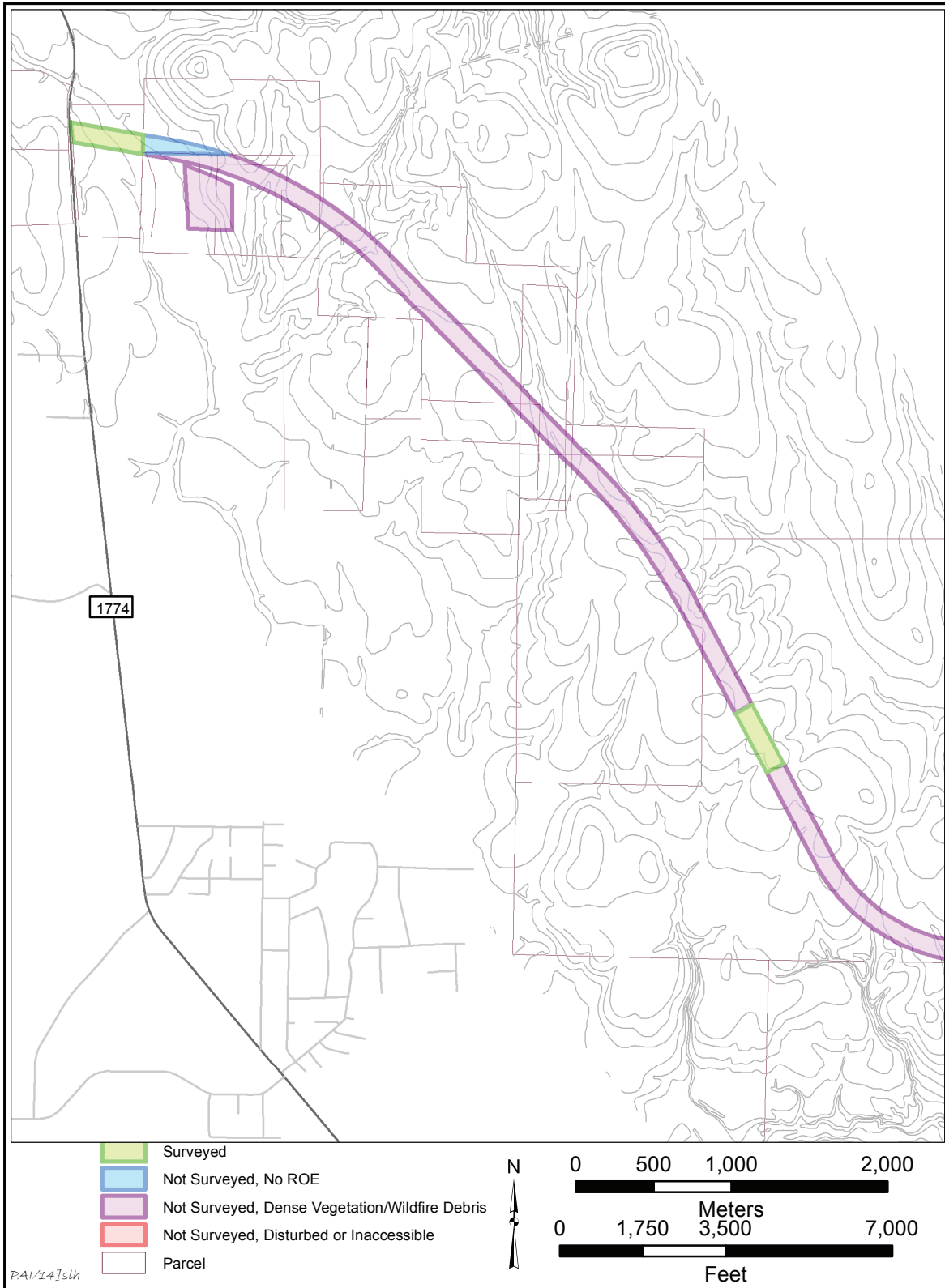


Figure 7. Map of the northwest third of the project area showing areas surveyed and areas that could not be surveyed (base map data from USGS maps sheets and hypsography and TNRIS transportation layers).

of this size (1 test per 3 acres). The tests were dug in 20-cm levels to depths ranging from 2 to 110 cm (average = 59 cm), and the sediments removed were screened through 1/4-inch-mesh hardware cloth. Sixty-four tests reached sandy clay bedrock at an average depth of 48 cm. Twenty-four tests did not reach bedrock because they were in areas with thick sands (80–110+ cm). The other 19 tests were stopped at depths of 60 cm or less for a variety of reasons, including obstruction by roots, concrete chunks, and a plastic pipe.

Table 1 summarizes the work accomplished, starting at the southeast end of the project area and moving northwest. In addition to containing parcel numbers and ownership information, it indicates where right of entry had been obtained, the condition of the land, where survey was completed and not completed, and sites recorded. The southeasternmost 0.9 miles of the road route is mostly existing SH 249 right of way, with occasional narrow slivers of new right of way on adjoining private lands (see Figure 5). The northwest end of this segment is where SH 249 transitions to FM 1774, south of the Missouri Pacific Railroad tracks. SH 249 is a divided four-lane highway with a wide, mostly wooded median bordered on both sides by storm drains. Between highway and railroad construction, placement of buried utilities, and development on adjacent private lands, most of this segment is so disturbed that it has no potential for archeological sites with good integrity. All of this segment was surveyed, and 15 shovel tests were excavated in less-disturbed portions of the median and along the west edge of the existing right of way; no archeological sites were found.

After crossing the Missouri Pacific Railroad tracks just north of FM 1774, the road route extends 1.3 miles across privately owned land to FM 149 (see Figure 5). All of this segment is wooded or has been recently logged. Two areas were surveyed, accounting for 40 percent by length and 42 percent of the acreage. Thirteen shovel tests were excavated on three adjoining parcels near the south end, and 9 shovel tests were on a parcel at the north end; no archeological remains were found in either area. The surveyed areas exhibit some surface modification from recent and past logging but do not show evidence of extensive disturbance that would have compromised the integrity of archeological sites. Two parcels at the south end were not surveyed because of a lack of right of entry, and the much larger central portion was not surveyed because of very dense vegetation.

After crossing FM 149, the road route extends 3.7 miles across privately owned land to FM 1488 (see Figures 5 and 6). The vast majority of this distance is wooded and undeveloped, although the southern end crosses a lot containing a church, and the southern portion traverses a residential neighborhood; in most of this neighborhood, the proposed right of way will clip the back parts of the lots. Just four parcels in this segment were surveyed, accounting for 9 percent by length and 5 percent by area. The Believers Fellowship Baptist Church parcel on the west side of FM 149 was surveyed and found to be extensively disturbed by building and parking lot construction and land leveling, and thus no shovel tests were dug. The other three surveyed parcels are in the residential neighborhood; four shovel tests were dug. No archeological remains were found in these tests or on the surface. The residential lots exhibit some surface modification from residential use but do not show evidence of extensive disturbance that would have compromised the integrity of archeological sites. Most of the land that was not surveyed (including a potential detention pond) is on large wooded tracts or small residential lots where right of entry had not been obtained.

Table 1. Summary of land parcels in the project area and survey coverage

County	Property ID	Owner	Right of Entry?	Condition	Road Center Line Length (ft.)	Road Route Acres	Detention Pond Acres	Surveyed?
Southeast End of Project Area to Missouri Pacific Railroad Tracks:								
Montgomery	various	various	various	mostly existing SH 249 ROW	4,943	40.6		yes; no archeological sites
Missouri Pacific Railroad Tracks to FM 149:								
Montgomery	R245799, R245800	RAC Materials, Inc.	no	wooded	262	2.7		no
Montgomery	R39281	CCB Land Partners, LLC	yes	wooded	305	2.6		yes; no archeological sites
Montgomery	R39280	Wiseman Development I, LLC	yes	clearcut	0	1.3		yes; no archeological sites
Montgomery	R39267	Hughes, Mary M. B.	yes	wooded	1,286	10.2		yes; no archeological sites
Montgomery	R43394	Primewood Investments, LP	yes	wooded	3,756	34.8		no (vegetation too dense)
Montgomery	R43425	Carswell Family Trust	yes	wooded	1,128	12.8		yes; no archeological sites
FM 149 to FM 1488:								
Montgomery	R43414	Believers Fellowship Baptist Church	yes	open	984	5.1		yes; disturbed; no archeological sites
Montgomery	R43405, R43409	Cobalt 201 Ltd.	no	wooded	1,122	13.8		no
Montgomery	R123220	Murrell, Clifford Eugene	yes	residential, very disturbed	0	1.1		no (disturbed)
Montgomery	R123221	Holland, Diana M.	yes	residential	344	1.4		yes; no archeological sites
Montgomery	R123222	Johnson, Jimmy Wayne	yes	residential	0	0.5		yes; no archeological sites
Montgomery	R123209, R123211	Moore, Michael P. and Julie A.	yes	residential	371	2.1		yes; no archeological sites
Montgomery	R123213	Bowling, Tonya Leo c/o Keystone	no	residential	0	1.2		no
Montgomery	R123212, R123210	Lloyd, Michael and Betty	no	residential	351	3.1		no
Montgomery	R123194	Dever, Eddie L.	no	residential	0	0.1		no (very small)
Montgomery	R123195	Parker, Talmon T.	no	residential	148	1.3		no

Table 1, continued

County	Property ID	Owner	Right of Entry?	Condition	Road Center Line Length (ft)	Road Route Acres	Detention Pond Acres	Surveyed?
Montgomery	R96844	Johnson, Malcom J.	no	residential	0	0.1		no (very small)
Montgomery	99999-2	?	no	residential	0	0.1		no (very small)
Montgomery	R123234	Young, Brian M. and Rachel B.	no	residential	115	1.7		no
Montgomery	99999-1	?	no	residential	194	1.0		no
Montgomery	R96929	Tucker, Mary Pauline	no	residential	0	0.3		no (very small)
Montgomery	R96930	Gonzales, Hugo	no	residential	0	0.4		no (very small)
Montgomery	R96931	Mentz, Randy Glen	yes	residential	0	0.2		no (very small)
Montgomery	R96932	Graham, Steven Tracy and Shawn	no	residential	0	0.2		no (very small)
Montgomery	R96933	Graham, Lola P.	yes	residential	0	0.1		no (very small)
Montgomery	R96934	?	yes	residential	0	0.1		no (very small)
Montgomery	R96935	Scott, Leo G.	yes	residential	0	0.1		no (very small)
Montgomery	R41698, R50855	Devon Energy Production Company	no	dense woods?	9,919	89.1	30.7	no
Montgomery	R41701	Magnolia 1138 Ltd.	no	dense woods?	1,230	11.1		no
Montgomery	R54407	Axe Em Investments, LP	yes	dense woods?	0	0.3		no (very small)
Montgomery	R54406	Schoessow, Carl	no	dense woods?	1,489	13.4		no
Montgomery	R40343, R52765	Magnolia 1138 Ltd.	no	dense woods?	3,201	29.7		no
FM 1488 to FM 1486:								
Montgomery	R52765	Magnolia 1138 Ltd.	no	dense woods	3,369	30.5		no
Montgomery	-	Mill Ridge, Inc.	yes	dense woods	3,782	35.0		no (vegetation too dense)
Montgomery	R36403	Rhodes, Christopher D.	yes	wooded	2,080	19.2	15.1	surveyed road route but not potential detention pond; recorded 41MQ320
Montgomery	R36400	Rickett, Ricky and Alta	yes	mostly wooded	699	6.2		yes; recorded 41MQ319
Montgomery	R122310	Hutton, Kenneth Allen	no	wooded	0	0.9		no (very small)
Montgomery	R122308	Barker, Susan F.	yes	open	0	0.1		no (very small)

Table 1, continued

County	Property ID	Owner	Right of Entry?	Condition	Road Center Line Length (ft)	Road Route Acres	Detention Pond Acres	Surveyed?
Montgomery	R52521, R36402	5732 Woodward Partners Ltd.	yes	dense woods	9,643	87.6	26.5	no (vegetation too dense)
FM 1486 to FM 1774:								
Montgomery	R51307, R41589, R45681	5732 Woodward Partners Ltd.	yes	burned	14,763	136.3		surveyed 1215-ft-long segment; no archeological sites; remainder has dense wildfire debris
Grimes and Montgomery	R37331, R18231, R18232, R18888, R62387	Crown Ranch Development Ltd.	yes	burned	10,243	94.4	25.2	no (dense wildfire debris)
Grimes	R18228	Connors, James and Joyce	no	dense woods	1,050	8.4		no
Grimes	R19976	Kubiak, Gary and Rhonda	yes	mostly pasture	1,515	14.3		yes; recorded 41GM464 and 41GM465

Four areas with right of entry were not surveyed because they are inaccessible back edges of residential lots; each encompasses only 0.1–0.3 acres.

From FM 1488, the road route extends northwest, north, and then west 3.7 miles across privately owned land to FM 1486, crossing Mill and Clear Creeks in the central north-south section (see Figure 6). Virtually all of this segment is wooded and undeveloped. Two adjacent parcels between Mill and Clear Creeks and north of Clear Creek were surveyed, accounting for 14 percent of this segment of the road route by both length and area. Thirty shovel tests were excavated, and two sites were found (41MQ319 and 41MQ320). The tests were on the ridge between the creeks and on both sides of Clear Creek; the floodplain of Mill Creek held standing water and was too wet for shovel testing. Parts of the northern surveyed tract have been disturbed extensively by gravel and sand quarrying, but most of the surveyed area does not show evidence of extensive disturbance that would have compromised the integrity of archeological sites. Most of the areas that were not surveyed have right of entry, but dense vegetation prevented pedestrian coverage (2.5 miles of road route and 42 acres in two potential detention ponds). One large tract containing 0.6 miles of the road route lacks right of entry and also was not surveyed.

From FM 1486, the road route extends west and then northwest 5.2 miles across privately owned land to FM 1774, crossing the upper reach of Mill Creek just east of the northwest end (see Figures 6 and 7). All but the northwesternmost 0.5 miles of this segment is undeveloped land that was affected to varying degrees by the 2011 Magnolia wildfire. Wildfire debris is extensive, and some areas exhibit abundant surface disturbance from earthmoving and erosion. Right of entry had been obtained for all of these burned-over areas, but most of it, including a 25.2-acre potential detention pond, could not be surveyed safely because of the wildfire debris. The single area that could be surveyed is a 0.2-mile-long segment of the road route in the southeast part that is accessible because multiple two-track roads cross it; 12 shovel tests were excavated here, exposing generally thin gravelly sediments and no archeological remains. This surveyed section has been substantially disturbed by vehicle traffic, wildfire-related surface modification, and erosion, such that it has a very low potential for archeological sites with good integrity. Of the two parcels at the northwest end that were not burned over, one is mostly in pasture, and the other is wooded. The pasture parcel, accounting for 0.3 miles of the route, was surveyed; 24 shovel tests were excavated, and two sites were found (41GM464 and 41GM465). This surveyed section shows no evidence of extensive disturbance that would have compromised the integrity of archeological sites. The 0.2-mile-long wooded parcel just to the east was not surveyed because of lack of right of entry.

SITE DESCRIPTIONS

Site 41GM464

Site 41GM464 is a scatter of Native American artifacts situated at an elevation of 275 feet above mean sea level at the base of the upland slope just west of Mill Creek near the northwest end of the proposed road route (Figure 8). The land currently is used as a

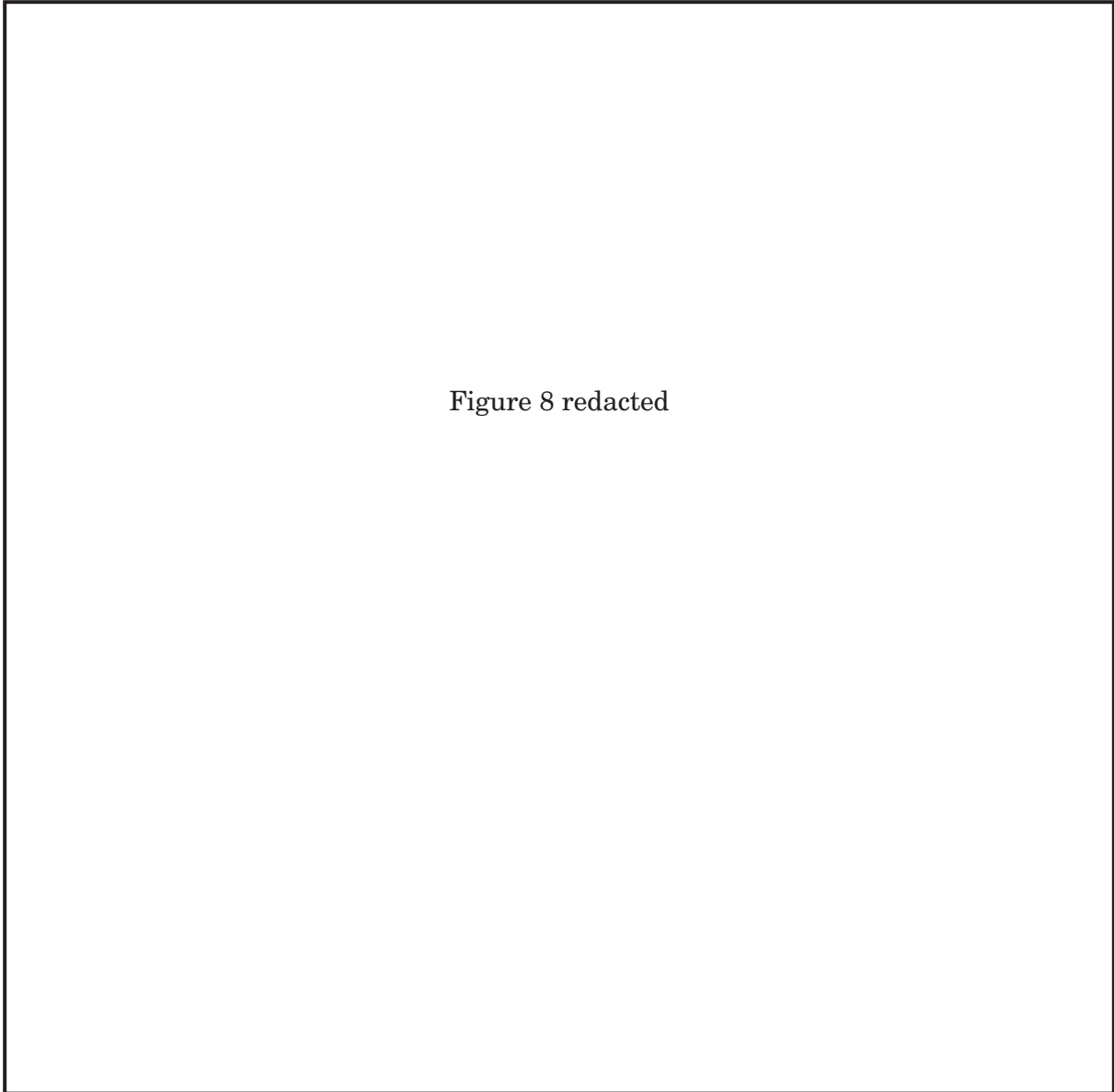


Figure 8 redacted

Figure 8. Aerial photograph showing 41GM464 and 41GM465 (base map data and aerial imagery from USGS maps sheets and hypsography and National Agricultural Imagery Program [NAIP] 2012).

cattle pasture and supports thick Bermudagrass. The site is along the pasture's eastern fence line, and a dense stand of pines, mixed hardwoods, and thorny brush grows along the stream channel to the east. No artifacts were observed on the ground surface, but artifacts were found in and collected from 3 of the 12 shovel tests excavated on the lower slope. The materials recovered consist of five lithic flakes, one possible burned rock, and three bone fragments. The latter came from a depth of 0–20 cm and could be of recent origin. The other artifacts came from depths of 0–80 cm, with single items from 0–20 and 60–80 cm and two items each from 20–40 and 40–60 cm. The 12 tests reached depths of 25–110 cm, averaging 84 cm. Three tests reached clay subsoil at 25–54 cm, but the other 9 tests extended to

90–110 cm without encountering subsoil. Sediments consisted of grayish brown loam in the upper 10 cm underlain by pale yellowish brown sandy loam. The three positive tests suggest that the site measures approximately 60x40 m.

Site 41GM465

Situated at an elevation of 280–295 feet above mean sea level in an upland setting within a cattle pasture along FM 1774 at the northwest end of the project area, 41GM465 is a historic house location evidenced by a concrete building foundation measuring approximately 54 feet east-west by 44 feet north-south surrounded by trees that likely mark the yard area (see Figure 8). Currently, a single cattle feeder and hay ring occupy the old home site, and the ground surface is blanketed by Bermudagrass. The site measures approximately 200 m east-west by 50 m north-south, with the house foundation at the western end and a barbecue pit at the eastern end. The barbecue pit is made of standard 16x8x8-inch concrete blocks and measures 64 inches long by 48 inches wide and 32 inches tall. Much of the pit has fallen apart. No historic artifacts were noted on the surface, but four artifacts were found in and collected from 3 of the 12 shovel tests excavated on and around the site: an unmarked whiteware fragment at 0–20 cm, a piece of clear glass and single wire nail at 20–40 cm, and a piece of clear glass at 40–60 cm. These artifacts are not very diagnostic temporally, although the wire nail certainly postdates approximately 1890 (Wells 1998:87). Also encountered in 2 shovel tests were a concrete block and a section of plastic pipe, both of which are consistent with occupation in the mid twentieth century or later. The 12 tests reached depths of 20–80 cm, averaging 61 cm. Nine tests reached clay subsoil at 50–80 cm, while the other 3 tests were stopped above the subsoil at 20–45 cm. Sediments encountered consisted of grayish brown loam in the upper 10 cm underlain by yellowish brown sandy loam. The remains observed suggest that this is a house site dating to the mid twentieth century, and the 1962 U.S. Geological Survey map and county highway maps dating to 1940 and 1961 show buildings at this location. Archival research to identify who lived here and a more precise date of the occupation will be done once fieldwork for the full project area is complete.

Site 41MQ319

Site 41MQ319 is a scatter of Native American artifacts occupying the sloping upland margin at an elevation of 220 feet above mean sea level on the north side of Clear Creek in the central part of the project area (Figure 9). Clear Creek flows west to east approximately 125 m south of the site at an elevation between 205 and 210 feet, and the intervening area consists of marshy floodplain and a culturally sterile floodplain rise. The site environs is dominated by pine and mixed hardwood forest containing gravel and sand quarry pits, which may have disturbed the original site area. The site is within a local Old West–themed shooting range, and erection of structures for the range also may have disturbed the site. No artifacts were observed on the ground surface, but artifacts were found in and collected from two of the seven shovel tests excavated on the landform. The materials recovered

consist of two small lithic flakes from 40–60 cm and a single flake from 80–100 cm. All but one of the tests reached a depth of 100 cm without encountering clay subsoil; the seventh test was stopped above subsoil at 55 cm. Sediments consisted of grayish brown loam in the upper 20 cm underlain by pale yellowish brown sandy loam. The two positive tests suggest that the site is small, measuring less than 30 m across.

Site 41MQ320

Site 41MQ320 is a scatter of Native American artifacts at an elevation of 215–220 feet above mean sea level on the upland slope south of Clear Creek in the central part of the project area (see Figure 9). Clear Creek flows west to east approximately 105 m north of the site at an elevation between 205 and 210 feet; the intervening area consists of a culturally sterile upland slope. The landform rises to the top of the ridge between Clear and Mill Creeks at an elevation of 230 feet approximately 125 m south of the site. The area is heavily wooded with dense pine trees and mixed hardwoods and supports a variety of underbrush filling in the open spaces at ground level. No artifacts were observed on the ground surface, but artifacts were found in and collected from two of the seven shovel tests excavated in the immediate area. The materials recovered consist of a small lithic flake from 0–20 cm and a battered chert pebble from 40–60 cm. Five of the seven tests encountered clay subsoil at 50–90 cm; the other two tests stopped at 100 cm without reaching subsoil. Sediments consisted of grayish brown sandy loam in the upper 5 cm underlain by brown sandy loam with numerous gravel inclusions throughout. The two positive tests suggest that the site is small, measuring less than 25 m across.

SITE ASSESSMENTS AND RECOMMENDATIONS

Given that much of the SH 249 project area remains to be surveyed archeologically, it is considered prudent to delay assessment of the four sites recorded in terms of their eligibility for inclusion in the National Register of Historic Places under Criterion D (36 CFR 60.4; 36 CFR 800.4, 5) and designation as State Antiquities Landmarks (13 TAC 26.2, 8) until a complete inventory of sites that will be affected by the project is made. This will ensure that all site assessments are consistent and supported by the sum of the evidence.

Based on the results of survey done to date, observations made of areas that could not be surveyed, and results of the background research, recommendations are offered here for completing the survey of the proposed road route and potential detention ponds. These recommendations are presented from southeast to northwest (Table 2; Figures 10–12). Between the Missouri Pacific Railroad tracks and FM 149, it appears that only the north half (1,900 feet) of the road route on Tract R43394 warrants survey with shovel testing (no trenching should be needed; see Figure 10). The other half of this tract and all of the smaller two to the south (totaling 2,100 feet of road route) are in upland settings where Native American sites are unlikely and where historical research yielded no indications of historic sites.

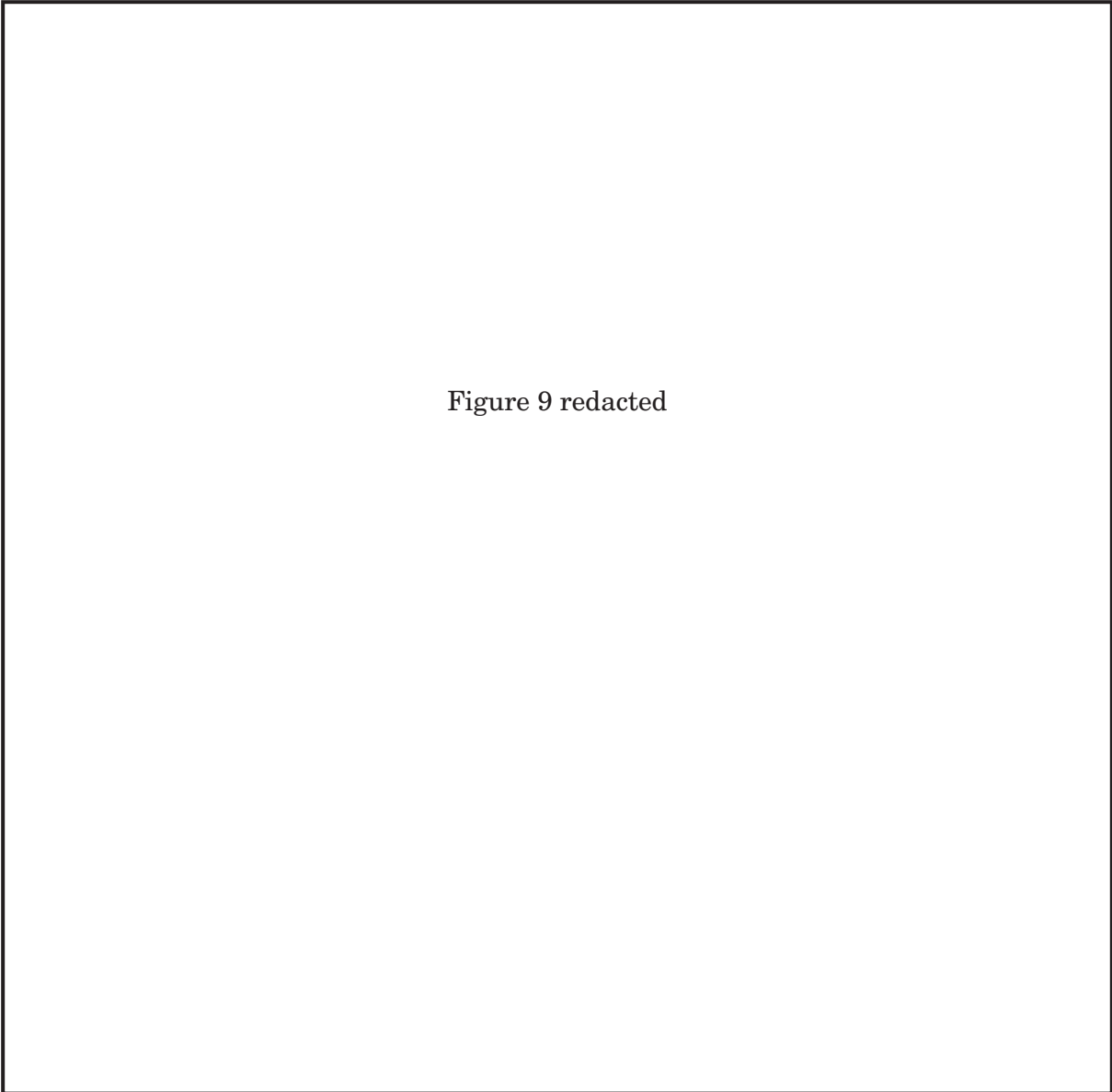


Figure 9 redacted

Figure 9. Aerial photograph showing 41MQ319 and 41MQ320 (base map data and aerial imagery from USGS maps sheets and hypsography and NAIP 2012).

Between FM 149 and FM 1488, survey is warranted along most of the road route (15,200 feet) and in the 31-acre potential detention based on proximity to Mill Creek or its tributaries; it appears that survey here can be accomplished with shovel testing with no need for trenching. Survey is unnecessary on about 2,600 feet of Tract R41698 because of its upland setting. Survey also is unnecessary on 10 small residential tracts (totaling 1.7 acres), as survey of 4 other larger tracts (totaling 7.1 acres) interspersed among them (and survey already completed of 3 lots totaling 4.0 acres with negative results) should be adequate for determining whether there are any sites in this area.

Table 2. Summary of recommendations for completing the archeological survey

	Property ID	Owner	Road Center Line Length (ft)	Road Route Acres	Detention Pond Acres	Survey Recommendations
Missouri Pacific Railroad Tracks to FM 149:						
Montgomery	R245799, R245800	RAC Materials, Inc.	262	2.7		no survey
Montgomery	R43394	Primewood Investments, LP	3,756	34.8		shovel testing of north half
FM 149 to FM 1488:						
Montgomery	R43405, R43409	Cobalt 201 Ltd.	1,122	13.8		shovel testing
Montgomery	R123213	Bowling, Tonya Leo c/o Keystone	0	1.2		shovel testing
Montgomery	R123212, R123210	Lloyd, Michael and Betty	351	3.1		shovel testing
Montgomery	R123194	Dever, Eddie L.	0	0.1		no survey
Montgomery	R123195	Parker, Talmon T.	148	1.3		shovel testing
Montgomery	R96844	Johnson, Malcom J.	0	0.1		no survey
Montgomery	99999-2	?	0	0.1		no survey
Montgomery	R123234	Young, Brian M. and Rachel B.	115	1.7		shovel testing
Montgomery	99999-1	?	194	1.0		shovel testing
Montgomery	R96929	Tucker, Mary Pauline	0	0.3		no survey
Montgomery	R96930	Gonzales, Hugo	0	0.4		no survey
Montgomery	R96931	Mentz, Randy Glen	0	0.2		no survey
Montgomery	R96932	Graham, Steven Tracy and Shawn	0	0.2		no survey
Montgomery	R96933	Graham, Lola P.	0	0.1		no survey
Montgomery	R96934	?	0	0.1		no survey
Montgomery	R96935	Scott, Leo G.	0	0.1		no survey
Montgomery	R41698, R50855	Devon Energy Production Company	9,919	89.1	30.7	shovel testing on all but the southeastern 2,600 ft of road route on R41698
Montgomery	R41701	Magnolia 1138 Ltd.	1,230	11.1		shovel testing
Montgomery	R54407	Axe Em Investments, LP	0	0.3		shovel testing
Montgomery	R54406	Schoessow, Carl	1,489	13.4		shovel testing

Table 2, continued

	Property ID	Owner	Road Center Line Length (ft)	Road Route Acres	Detention Pond Acres	Survey Recommendations
Montgomery	R40343, R52765	Magnolia 1138 Ltd.	3,201	29.7		shovel testing
FM 1488 to FM 1486:						
Montgomery	R52765	Magnolia 1138 Ltd.	3,369	30.5		no survey
Montgomery	-	Mill Ridge, Inc.	3,782	35.0		shovel testing
Montgomery	R36403	Rhodes, Christopher D.	2,080	19.2	15.1	shovel testing or trenching of southern 400 ft of road route (Mill Creek floodplain); shovel testing of detention pond
Montgomery	R122310	Hutton, Kenneth Allen	0	0.9		no survey
Montgomery	R122308	Barker, Susan F.	0	0.1		no survey
Montgomery	R52521, R36402	5732 Woodard Partners Ltd.	9,643	87.6	26.5	shovel testing of eastern 4,600 ft of road route and 1,300 ft of road route flanking tributary east of FM 1486; shovel testing of eastern one-quarter of detention pond
FM 1486 to FM 1774:						
Montgomery	R51307, R41589, R45681	5732 Woodard Partners Ltd.	14,763	136.3		shovel testing of eastern 3,800 ft and northwestern 650 ft
Grimes and Montgomery	R37331, R18231, R18232, R18888, R62387	Crown Ranch Development Ltd.	10,243	94.4	25.2	shovel testing of southeastern 1,200 ft and western 4,600 ft; shovel testing of detention pond
Grimes	R18228	Connors, James and Joyce	1,050	8.4		shovel testing; trenching of west half
Grimes	R19976	Kubiak, Gary and Rhonda	1,515	14.3		trenching west of Mill Creek near 41GM464

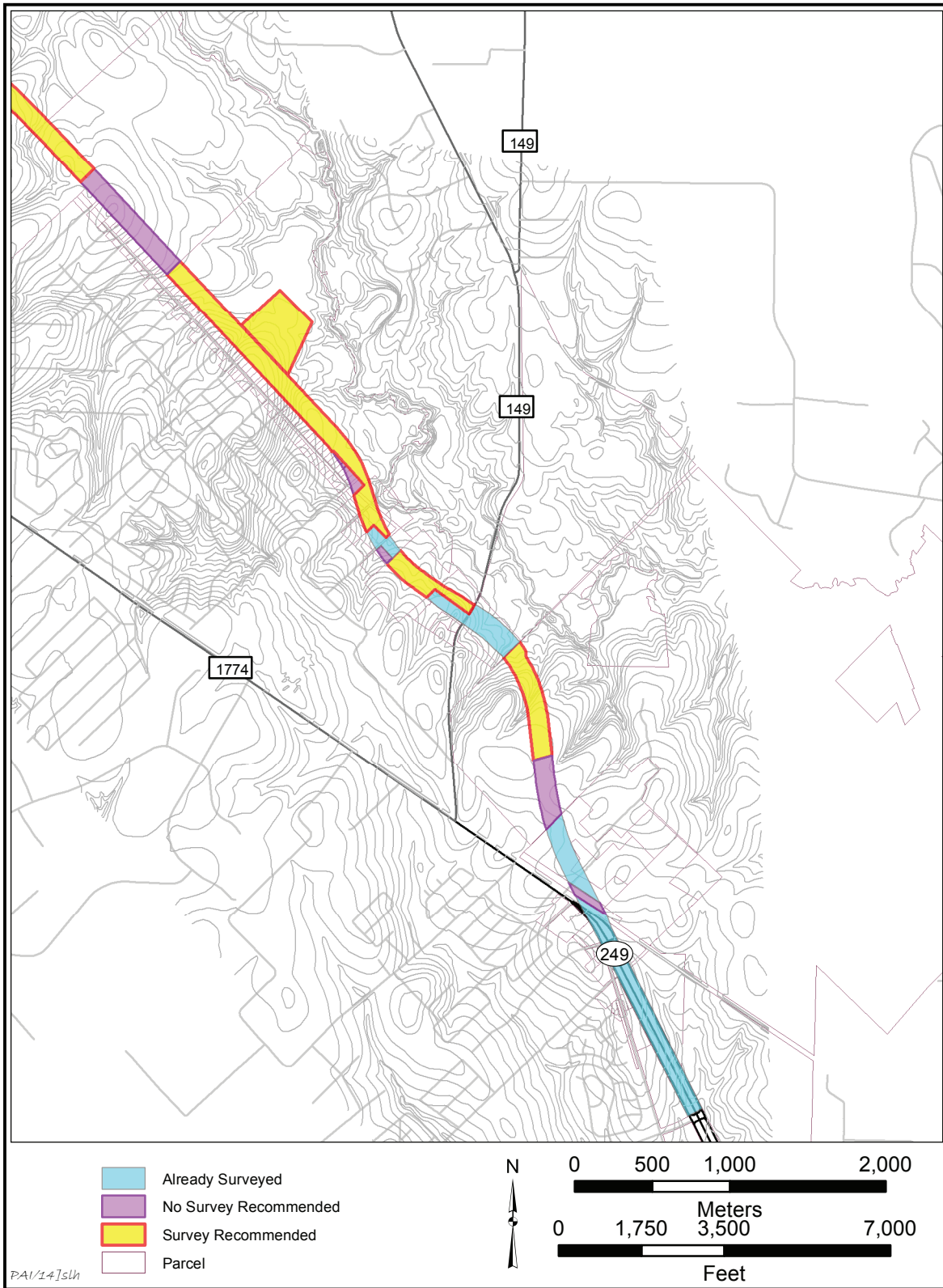


Figure 10. Map of the southeast third of the project area showing areas recommended for further survey (base map data from USGS maps sheets and hypsography and TNRIS transportation layers).

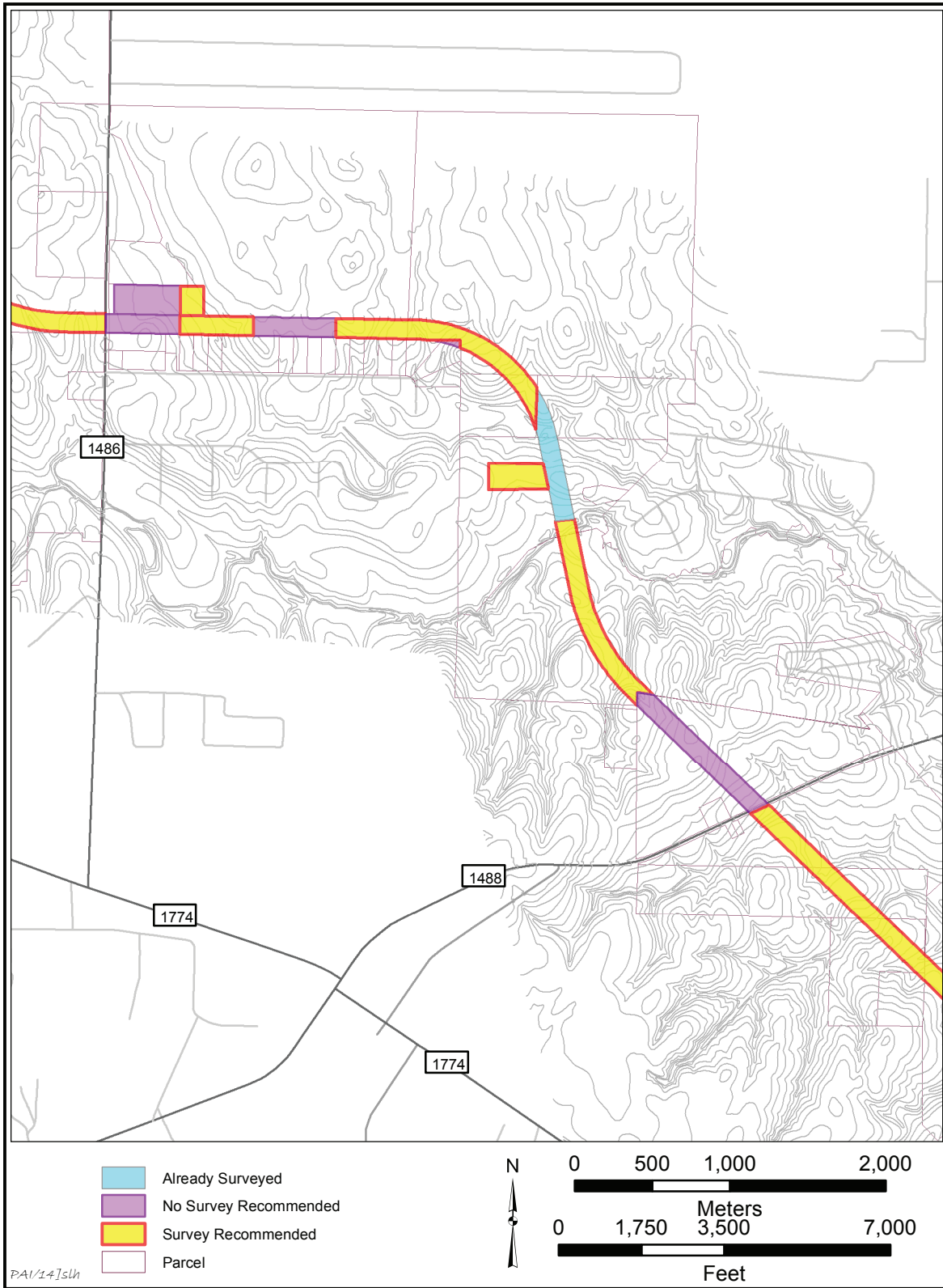


Figure 11. Map of the central third of the project area showing areas recommended for further survey (base map data from USGS maps sheets and hypsography and TNRIS transportation layers).

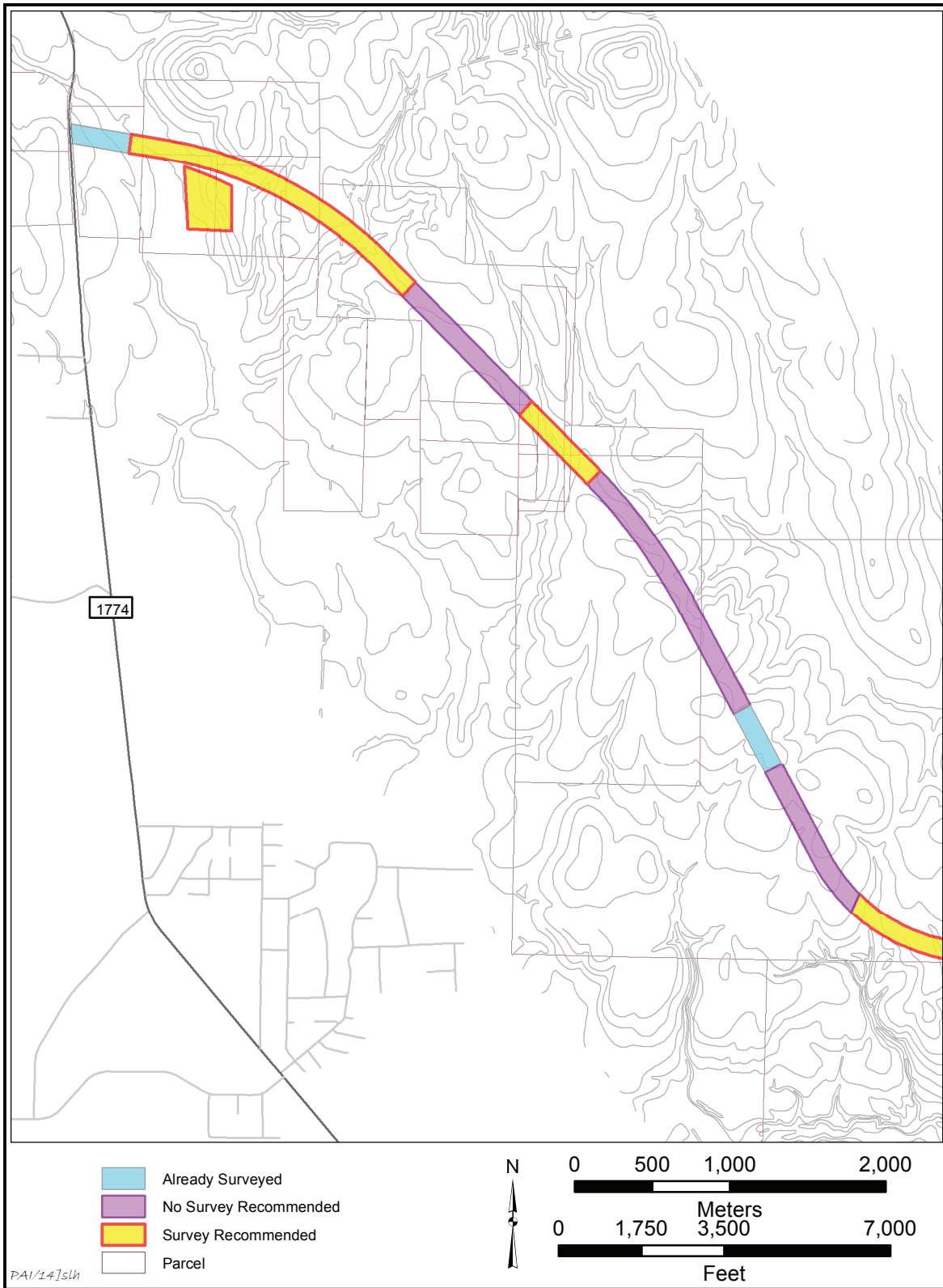


Figure 12. Map of the northwest third of the project area showing areas recommended for further survey (base map data from USGS maps sheets and hypsography and TNRIS transportation layers).

Between FM 1488 and FM 1486, survey is warranted along much of the road route (10,100 feet), in all of the 15-acre southeastern detention pond, and in the eastern quarter of the 26-acre northwestern detention pond based on proximity to Mill and Clear Creeks or their tributaries; survey over most of this area can be accomplished with shovel testing, but trenching may be needed on the narrow Mill Creek floodplain (approximately 400 feet). Survey is unnecessary on about 3,400 feet of the southeast end of the road route, 3,700 feet of the western part of the road route, and the western three-quarters of the northwestern detention pond because they are in upland settings removed from creeks and tributaries. Survey also should be unnecessary on two small residential tracts (totaling 1.0 acre), since the adjacent segment of the road route will be surveyed.

Between FM 1486 and FM 1774, survey is warranted along about half of the road route (11,500 feet) and in all of the 25-acre potential detention pond based on proximity to Mill Creek or its tributaries or suspected historic sites; survey over most of this area can be accomplished with shovel tests, but trenching may be needed for approximately 725 feet where the road route crosses Mill Creek. Survey is unnecessary on about 14,800 feet of the road route because they are in upland settings where Native American sites are unlikely and where historical research yielded no indications of historic sites.

CONCLUSIONS

In May 2014, personnel with Prewitt and Associates, Inc., conducted intensive pedestrian archeological survey along portions of the proposed route of the extension of SH 249 in Montgomery (CSJ 0720-02-073) and Grimes (CSJ 0720-02-072) Counties under Texas Antiquities Permit No. 6798. The project area extends 14.9 miles northwest from existing SH 249 just southeast of Pinehurst in Montgomery County to FM 1774 about 1.8 miles north of Todd Mission in Grimes County. The project will consist of construction of a four-lane, controlled-access toll road with auxiliary lanes on mostly new location within a typically 400-foot-wide right of way. The horizontal APE for the road route is approximately 720 acres, of which 676 acres will be new right of way. The project also may require up to 98 acres for as many as four runoff detention ponds. Thus, the horizontal APE for the entire project could encompass up to approximately 818 acres.

The pedestrian survey with shovel testing succeeded in covering 2.8 miles of the 14.9-mile route. Lack of right of entry prevented coverage of 4.3 miles and a 31-acre potential detention pond. Very dense vegetation and debris from the 2011 Magnolia wildfire prevented pedestrian coverage of the remaining 7.8 miles of the road route and three potential detention pond sites totaling 67 acres. Four archeological sites were recorded in the segments surveyed. Three sites (41GM464, 41MQ319, and 41MQ320) are low-density scatters of Native American lithic artifacts; the fourth site (41GM465) is a historic house site probably dating to the mid twentieth century. Artifacts recovered from them and records of the project will be curated at the Texas Archeological Research Laboratory, The University of Texas at Austin. The eligibility of these four sites for inclusion in the National Register of Historic Places and designation as State Antiquities Landmarks is

considered undetermined, pending completion of the survey and inventory of sites that will be affected by the project.

The results of survey done to date, observations made of areas that could not be surveyed, and results of the background research indicate that the original plan for fieldwork in the remaining unsurveyed areas should be modified. Based on the low likelihood of either Native American or historic sites, it is recommended that survey is not warranted along about 4.7 miles of the road route and on 20 acres in one potential detention pond (see Figures 10–12). Of the remaining unsurveyed lands, about 7.2 miles of the road route and 78 acres in four potential detention ponds should be surveyed with shovel testing, and 0.2 miles of the road route should be surveyed with backhoe trenching (see Figures 10–12). This additional survey should be done after sufficient clearing of vegetation and wildfire debris has been done to enable systematic and safe pedestrian coverage.

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