



Archeological Resources Background Study

State Highway 46

from Bulverde Road to Farm-to-Market Road 3159

CSJs: 0215-007-027 and 0215-01-044

May 2016

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

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



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ARCHEOLOGICAL INFORMATION FOR TxDOT-ENV COORDINATION:
SH 46 FROM BULVERDE ROAD TO FM 3159
COMAL COUNTY, TEXAS
(CSJs: 0215-07-027 and 0215-01-044)

Project Description

The Texas Department of Transportation (TxDOT) proposes to widen State Highway (SH) 46 in Comal County, Texas, from two to six lanes with a raised median, beginning at Bulverde Road and continuing east to Farm-to-Market Road (FM) 3159, a distance of approximately seven miles. SH 46 is classified as an urban/suburban arterial.

The existing SH 46 facility within the project limits is a two-lane, undivided roadway. Lane widths are approximately 12 feet with shoulders of varying widths. Existing right-of-way is approximately 100 feet. The posted speed limit varies from 45 miles per hour (mph) to 55 mph.

The proposed SH 46 project would widen the roadway from its existing two-lane highway to two different configurations. The curb and gutter configuration, constructed in the more developed areas, would consist of six 11-foot travel lanes with a 16-foot raised median. The roadway would have five-foot bike lanes and six-foot sidewalks to accommodate cyclists and pedestrians. Drainage would be via underground storm sewer. Typical right-of-way width of the curb and gutter configuration would be 130 ft. The other configuration, a grass-lined open-ditch configuration, would be constructed in less developed areas and would consist of six 11-foot travel lanes with a 16-foot raised median. The roadway would have five-foot bike lanes and six-foot sidewalks to accommodate cyclists and pedestrians. Drainage would be via grass-lined open ditches. Typical right-of-way width for the grass-lined open-ditch section would be 170 feet. Additional right-of-way would be required for both roadway configurations. A grade-separated intersection would be constructed at SH 46 and FM 3159. The project would transition back to the existing two-lane configuration east of FM 3159.

The proposed SH 46 project would extend between logical termini at Bulverde Road on the western end and FM 3159 on the eastern end. Consequently, no improvements are required beyond the project limits, the project having independent utility. The proposed project speed limit would be posted at 45 mph.

The archeological area of potential effects (APE) is currently defined as the largest footprint to encompass all possible alternatives.

Figures 1 shows the project location within Comal County and the location of Comal County in relation to the rest of the State of Texas. **Figures 2a-2d** show the APE. **Appendix A** shows project area photographs and a constraints map is included in **Appendix B** as design documents including typical sections are not available at this time.

Highway/County/District

SH 46/Comal/San Antonio

CSJs

0215-07-027 and 0215-01-044

Environmental Ready-to-Let (RTL) Date

September 2018

Letter of Authority (LOA) Date

To be determined

Funding

Federal and State

Consulting Parties

Texas Department of Transportation (TxDOT), Texas Historical Commission (THC), Comal County Historical Commission

Project Length

Approximately 8.6 miles

Project Width

Typically 200 feet

Project Acreage

Approximately 241.9 acres; this includes the footprints for all possible alternatives

Maximum Depth of Impacts

To be determined; around 2 feet for typical roadway construction. Impact associated with bridge supports for overpass at FM 3159 will be up to 40 feet.

Existing ROW

Approximately 135.6 acres

New ROW

Approximately 106.3

Existing Easements

None known

New Temporary or Permanent Easements

None known

Project-Specific Locations

None known

Background Information

The 241.9-acre archeological area of potential effects (APE) is located at approximate elevations ranging from 1170 to 1330 feet above mean sea level in west-central Comal County, Texas (**Figure 1**). The APE traverses primarily rural hill country with scattered suburban development, including commercial centers and residential subdivisions. No named waterways are present within the APE. The APE typically drains to the south, crossing 12 unnamed tributaries of Indian, Lewis, and Dripping Springs Creeks, from west to east (**Figures 2a-d**). The APE is underlain entirely by Cretaceous-age Glen Rose Limestone (USGS 2016). This formation is characteristically comprised of thinly bedded clay and claystone that have eroded into stair-stepping hills with common marine megafossils.

In general, soils mapped within the APE range from deep clay loam at stream crossings to very shallow soil or exposed bedrock across ridges and slopes (NRCS 2016). The Brackett-Rock outcrop-Comfort complex with 1-8 percent slopes is predominant within the project area, occupying nearly half of the 241.9-acre project area (NRCS 2016). This soil is comprised of well-drained, grayish brown to gray or yellow clay loam with limestone inclusions and common calcium carbonate nodules (NRCS 2016). Additional soils, in order of greatest to least amount, encountered within the APE include Brackett-Rock outcrop-Real complex with 8 to 30 percent slopes, Denton silty clay with 1 to 3 percent slopes, Bolar clay loam with 1 to 3 percent slopes, Sunev clay loam with 1 to 3 percent slopes, Purves clay with 1 to 5 percent slopes, Comfort-Rock outcrop complex with 1 to 8 percent slopes, and Lewisville silty clay with 1 to 3 percent slopes, (NRCS 2016).

A search of the *Texas Archeological Sites Atlas* (Atlas) maintained by the THC and the Texas Archeological Research Laboratory (TARL) was conducted in order to identify archeological sites, historical markers (Recorded Texas Historic Landmarks or RTHLs), properties or districts listed on the National Register of Historic Places (NRHP), State Antiquities Landmarks (SALs), cemeteries, or other cultural resources that may have been previously recorded in or near the APE, as well as previous surveys undertaken in the area. A standard 1-kilometer (km) study area around the APE was also examined.

According to the Atlas, four archeological surveys, three archeological sites (41CM292, 41CM299, and 41CM306), one historical marker, and three cemeteries are located within 1-km of the APE (**Figures 2a-2d**). In 2007, Hicks and Company (Hicks) conducted a linear survey of 21.5 miles of proposed SH 46 widening, from 200 feet east of Loop 337 to west of Anhalt (Miller et al. 2007), which includes the majority of the current project area. Two of the above mentioned sites (41CM299 and 41CM306) were documented as a result of this survey. Investigations conducted on behalf of a GBRA pipeline by SWCA also overlap the project area from FM 3159 to approximately one mile east of US 281 (THC 2016). After turning south and west, the survey again intersects the southern edge of the 1-km study area, west of Bulverde road. Another linear survey conducted on behalf of the Texas Department of Highways and Public Transportation (TDHPT, now TxDOT) in 1975 intersects the project area along US 281 (THC 2106). The final previous survey identified within one kilometer of the APE is an aerial survey conducted by GTI Environmental in 2012 on behalf of the Environmental Protection Agency. This survey

is located to the north of the project APE, immediately west of US 281. No archaeological sites were documented within the study area as a result of the final three surveys.

As previously mentioned, two of the three sites located within one km of the APE were recorded as a result of Hicks investigations for SH 46 widening (Atlas 2016). Site 41CM299 is a historic site, located approximately 150 meters (m) east of the intersection of FM 3159 and SH 46. The site consists of a spring-fed stock tank and associated elements and was determined to be ineligible for NRHP or SAL listing in 2006 (Miller et al. 2007; THC 2016). Site 41CM306 is a historic home and associated outbuildings, set back approximately 30 m (90 feet) north of the SH 46 ROW east of Lewis Creek (see **Figure 2a**). No recommendations were made regarding the site's NRHP or SAL eligibility due to survey limitations; however, the site would not be impacted by the proposed project. Site 41CM292 is a prehistoric hearth and two chert flakes that were identified on a hilltop overlooking the intersection of SH 46 and US 281. The site was documented by Abasolo Archaeological Consultants prior to construction of a public library and has since been destroyed. The site was determined to be ineligible for NRHP or SAL inclusion (THC 2016).

The Scheel, Letsch, and Moegelin cemeteries are all located within one kilometer of the APE (see **Figures 2a** and **2b**). The Scheel cemetery is located on private land approximately 0.25 mile north of SH 46 and west of Spring Branch Road, near the western project terminus. The number and age of interments in this cemetery are unknown. The Letsch cemetery is located immediately south of SH 46, approximately 1.75 miles west of US 281. According to the *Find a Grave* website, there are only two interments; Catherine Bauer Letsch (death date 1923) and Gottlieb Letsch (death date 1921; Tipton 2010). The cemetery was noted to be in poor condition with interments dating from 1890-1923 by Hicks investigators (Miller et al. 2007). Shovel testing within the right-of-way adjacent to the cemetery revealed gravelly and disturbed soil. Hicks staff concluded the likelihood of encountering unmarked burials within the right-of-way was minimal and recommended no further investigation (Miller et al. 2007). The Moegelin cemetery is located on private property, roughly 0.5 miles north of the SH 46 right-of-way and west of US 281. No information regarding the interments was available on the Atlas (2016). No impacts are proposed to any of the cemeteries discussed.

A 1936 Federal Highway Aid marker is located along SH 46 just east of US 281 interchange. No marker text was available on the Atlas (2016), though it was observed during a visit to the area while recording environmental constraints. The marker is a limestone block that has a small, metal shield-shaped label near the top (see **Photo 9** below).

This portion of Central Texas is generally considered to have a high probability for prehistoric archeological sites and materials, due in large part to the relative abundance of and ease of procuring high quality chert nodules for tool making. As evidenced by the previously documented resources in the immediate vicinity, there is an equally high probability for encountering historic cultural material, generally from the mid-19th century through the early 20th century. However, there is little potential for any archeological deposits at sites in the APE to have buried or intact archeological materials based upon the age of geological formations in the shallow, gravelly soils documented through previous investigations along SH 46 (Miller et al. 2007).

Recommendation

Prior to construction of the proposed project, an archeological survey augmented with the excavation of shovel tests is recommended, particularly for those areas that were inaccessible during the 2007 Hicks investigation. First, the potential for archeology is high in the APE; second, due to limited right-of-entry during the Hicks survey, the entire project area was not surveyed; and third, there are known cultural resources in and immediately adjacent to the APE. A pedestrian survey is also recommended for the proposed right-of-way areas. Further, although there are only two known burials listed in the Letsch Cemetery, mechanical scraping may be necessary if landowners and/or descendants are unable to confirm a low potential for additional burials and construction impacts are planned adjacent to the cemetery.

References

Miller, Mason, John Campbell, and Rachel Feit

- 2007 *Intensive Archeological Survey of the Proposed Expansion of State Highway 46 from East of Loop 337 in New Braunfels to Bulverde Road in Anhalt, Comal County, Texas*. Hicks and Company, Austin.

Natural Resources Conservation Service (NRCS)

- 2016 NRCS SSURGO and STATSGO soil data viewed through SoilWeb KMZ interface for Google Earth, available at <http://casoilresource.lawr.ucdavis.edu/soilweb/>. U.S. Department of Agriculture and California Soil Resource Laboratory, University of California, Davis. Accessed March 11, 2016.

Texas Historical Commission (THC)

- 2016 *Texas Archeological Sites Atlas*. Texas Archeological Research Laboratory and the Texas Historical Commission. Available at <http://nueces.thc.state.tx.us>. Accessed March 11, 2016.

Tipton, Jim

- 2013 *Find a Grave Cemetery Database – Comal County, Texas*. Available at <http://findagrave.com>. Accessed April 8, 2016.

U.S. Geological Survey (USGS)

- 2016 Texas Geology Map Viewer. Available at <http://txpub.usgs.gov/dss/texasgeology/>. Accessed March 11, 2016.

Attachments

Figure 1. Project Location

Figures 2a-2d. Archeological APE

Appendix A. Project Area Photographs

Appendix B. Constraints Map

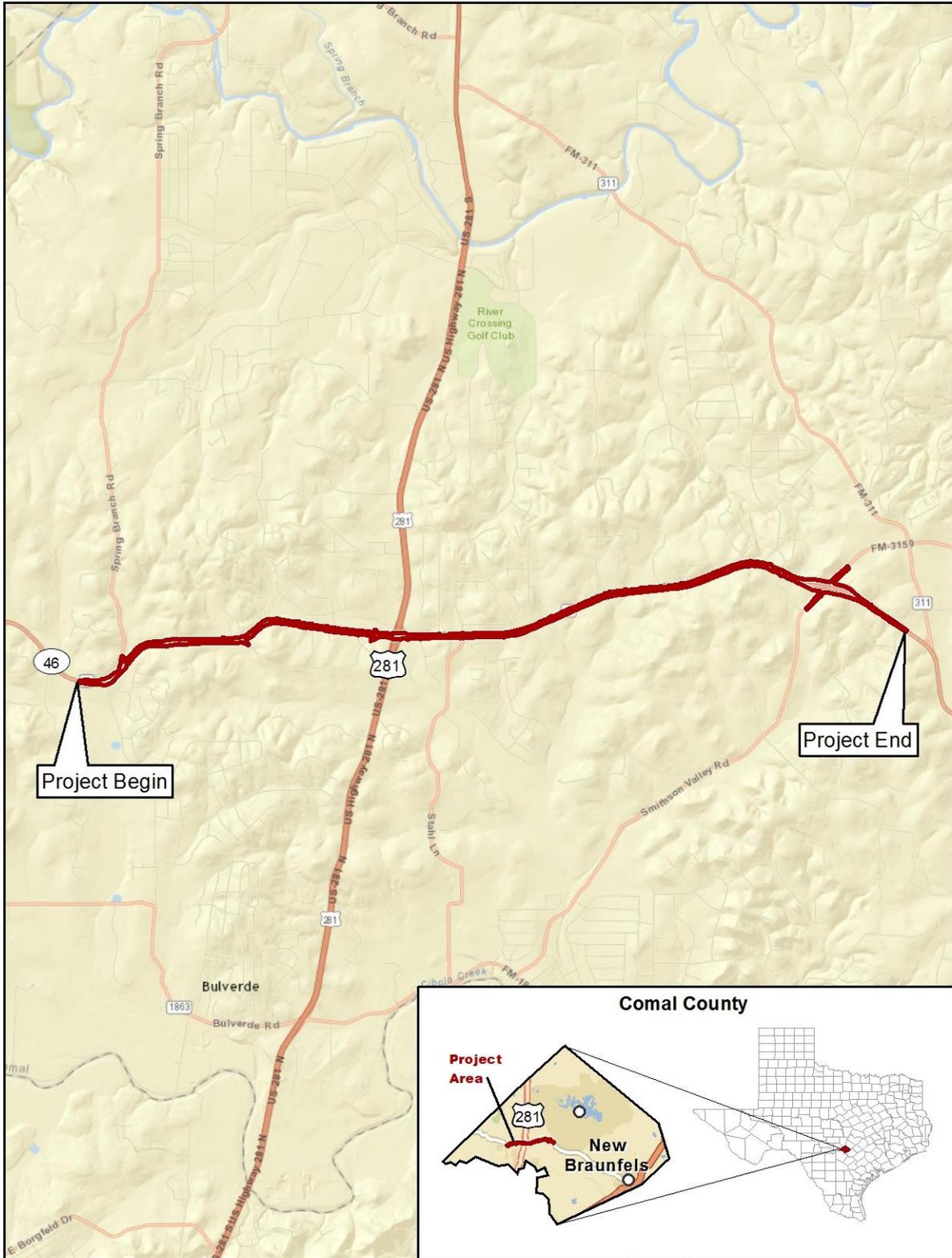


Figure 1
Project Location (Road Base)

SH 46 from Bulverde Rd to FM 3159

Project Location



0 1.5 Miles
 0 2 Kilometers

Prepared for: TxDOT 1 in = 1.5 miles

Scale: 1:95,040

CSJ: 0215-01-044, 0215-07-027 Date: 4/8/2016

Basemap Source: ESRI (2015)

G:\Projects\TXDOT\SH46\Arch Figure 1 Project Location Road 20160309.mxd

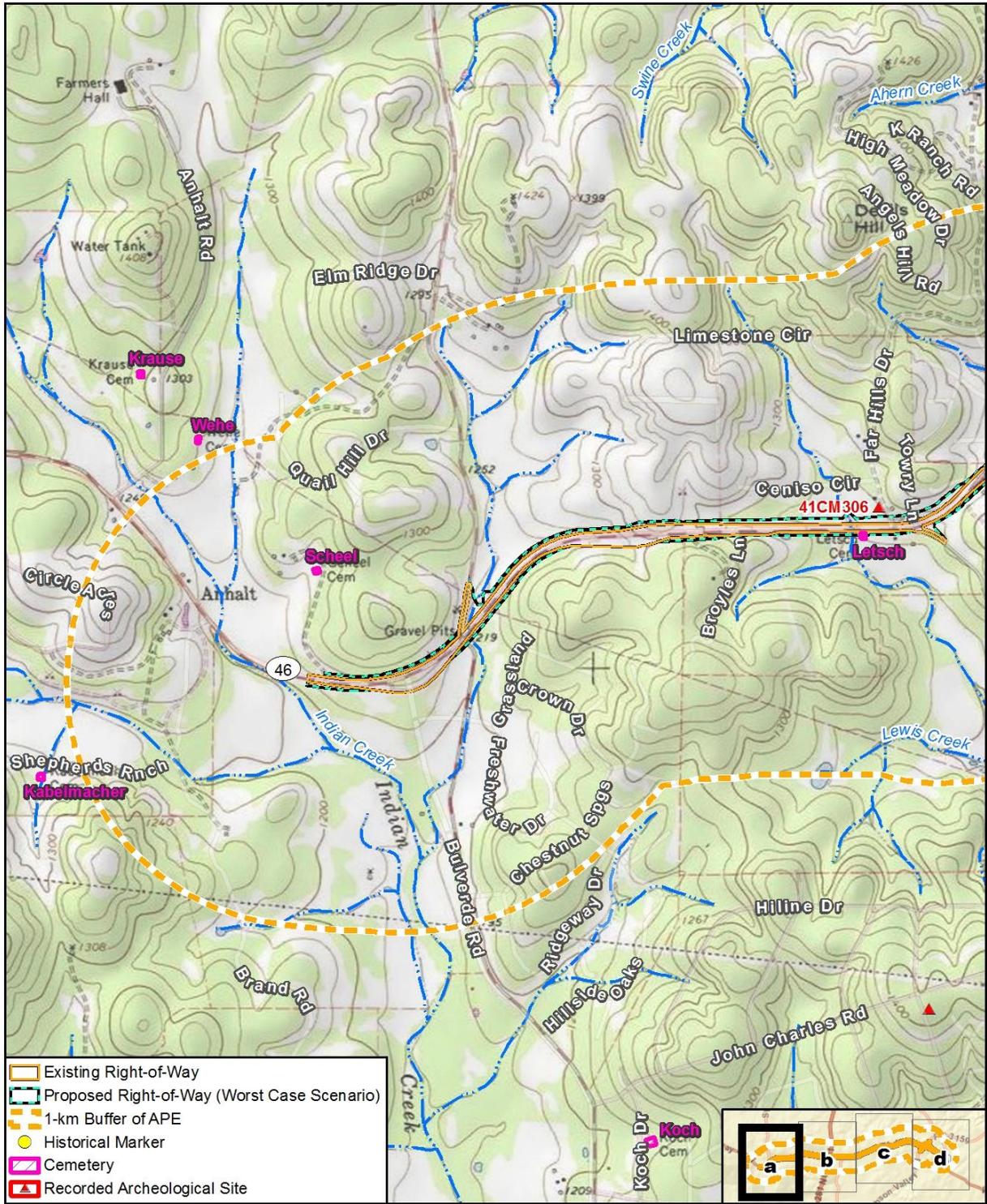


Figure 2a
Location of Archeological APE
 SH 46 from Bulverde Rd to FM 3159

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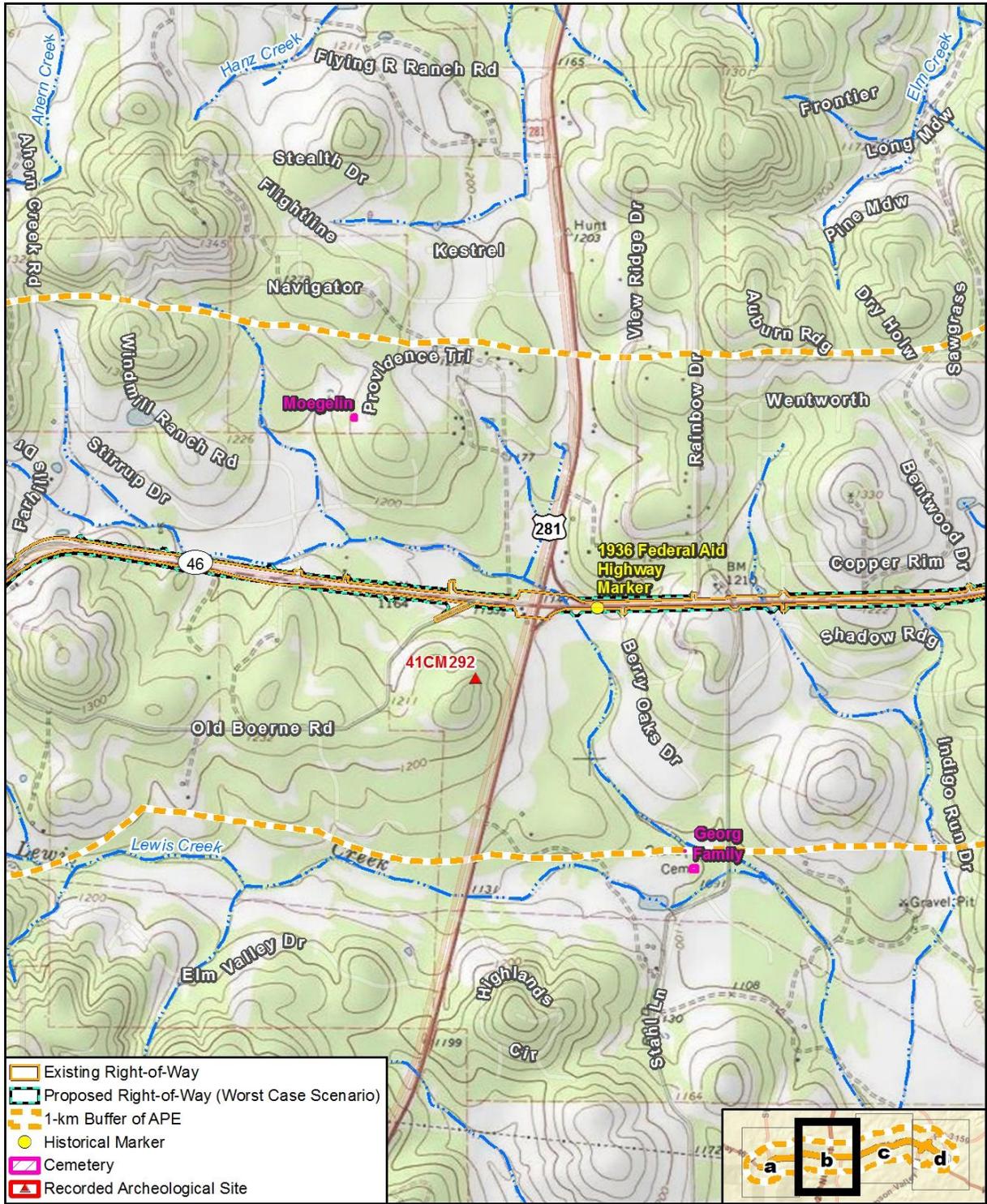


Figure 2b
Location of Archeological APE
 SH 46 from Bulverde Rd to FM 3159

Data Sources: THC (2015), TARL (2016), NHD (2014)
 Basemap Source: USGS Anhalt 7.5' Quadrangle (1973)

	0	500 Meters	2,000 Feet
	0	1 in = 2,000 feet	
Prepared for: TxDOT	Scale: 1:24,000		
CSJ: 0215-01-044, 0215-07-027	Date: 4/8/2016		

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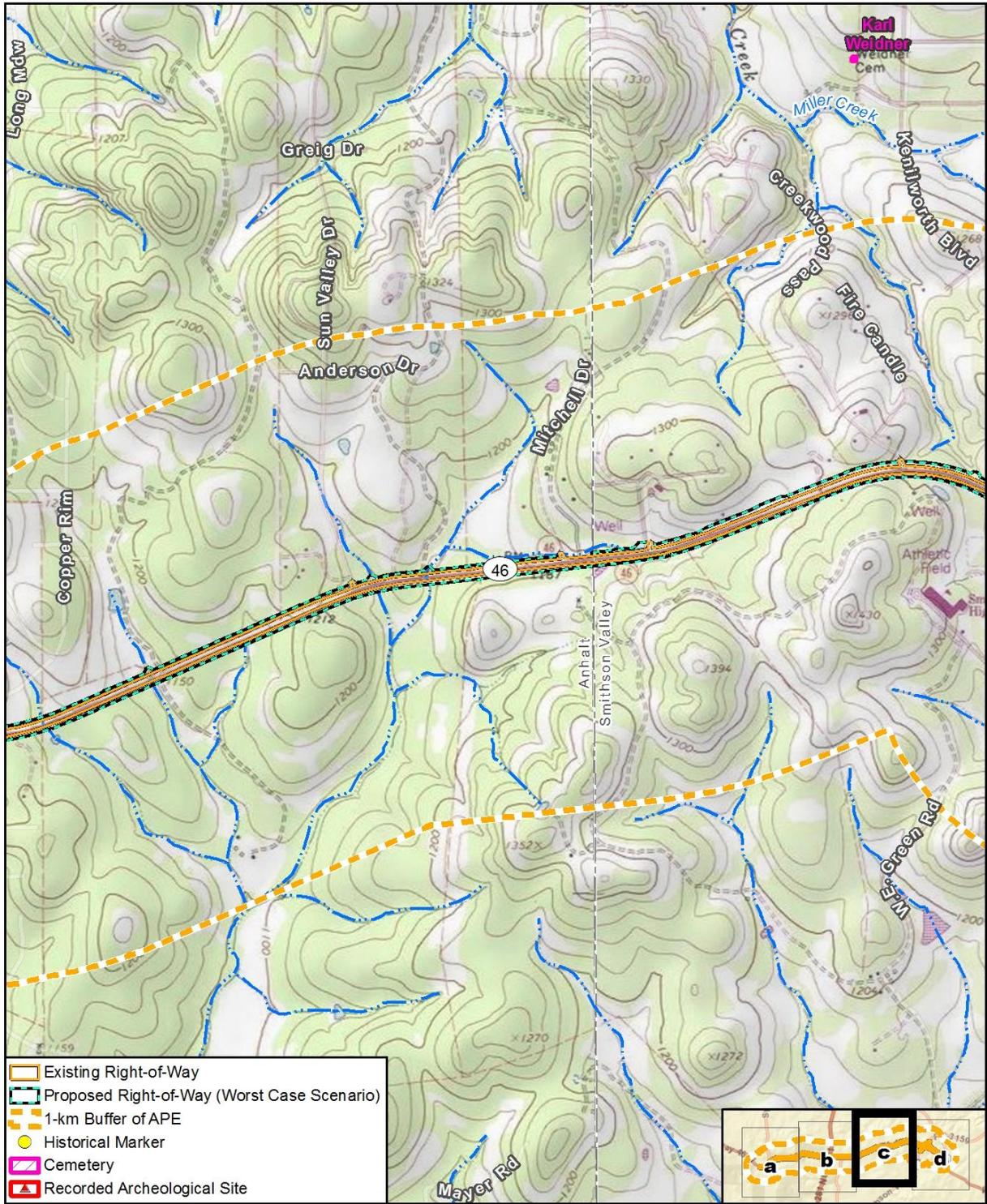


Figure 2c
Location of Archeological APE

SH 46 from Bulverde Rd to FM 3159

Data Sources: THC (2015), TARL (2016), NHD (2014)
 Basemap Source: USGS Anhalt 7.5' Quadrangle (1973)

	0	500 Meters	2,000 Feet
	0	500 Meters	2,000 Feet
Prepared for: TxDOT	Scale: 1:24,000		1 in = 2,000 feet
CSJ: 0215-01-044, 0215-07-027	Date: 4/8/2016		

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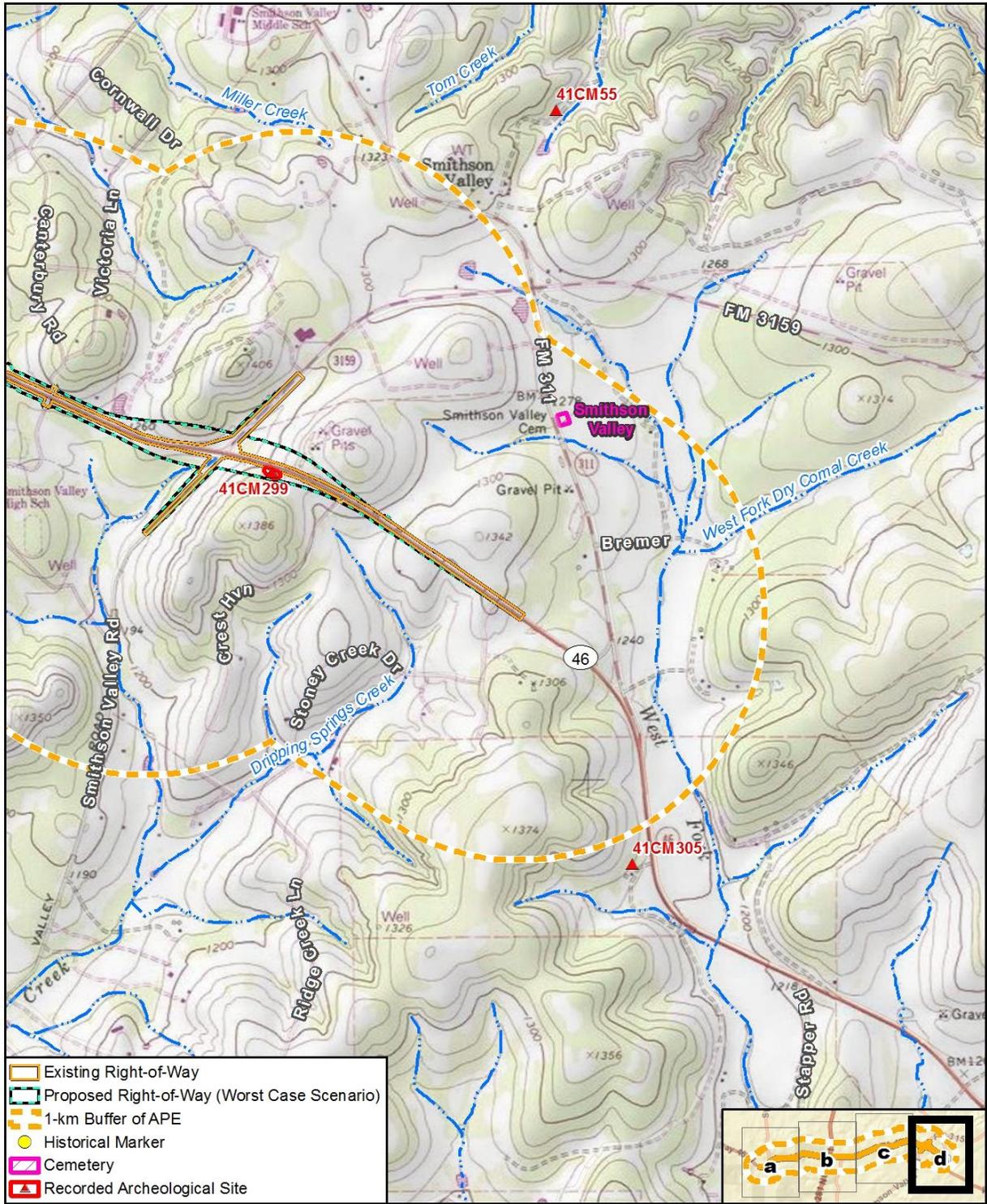


Figure 2d
Location of Archeological APE
 SH 46 from Bulverde Rd to FM 3159

Data Sources: THC (2015), TARL (2016), NHD (2014)
 Basemap Source: USGS Anhalt 7.5' Quadrangle (1973)

	0	500 Meters	2,000 Feet
	0	500 Meters	2,000 Feet
Prepared for: TxDOT	Scale: 1:24,000		1 in = 2,000 feet
CSJ: 0215-01-044, 0215-07-027	Date: 4/8/2016		

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Appendix A – Project Area Photographs



Photo 1: Eastern terminus; facing west.



Photo 2. Along right-of-way; facing west



Photo 3. Drainage in bedrock outcrop along right-of-way; facing northwest



Photo 4. Live oak in right-of-way near Mitchell Road; facing east



Photo 5. Commercial development near Mitchell Road; facing west



Photo 6. Small drainage in right-of-way; facing west



Photo 7. Along right-of-way near FM 3159; facing west



Photo 8. Historic marker in relation to right-of-way; facing west



Photo 9. Close-up of historic marker; facing south



Photo 10. SH 46/US 281 intersection; facing west



Photo 11. Location of archeological site 41CM306; facing north



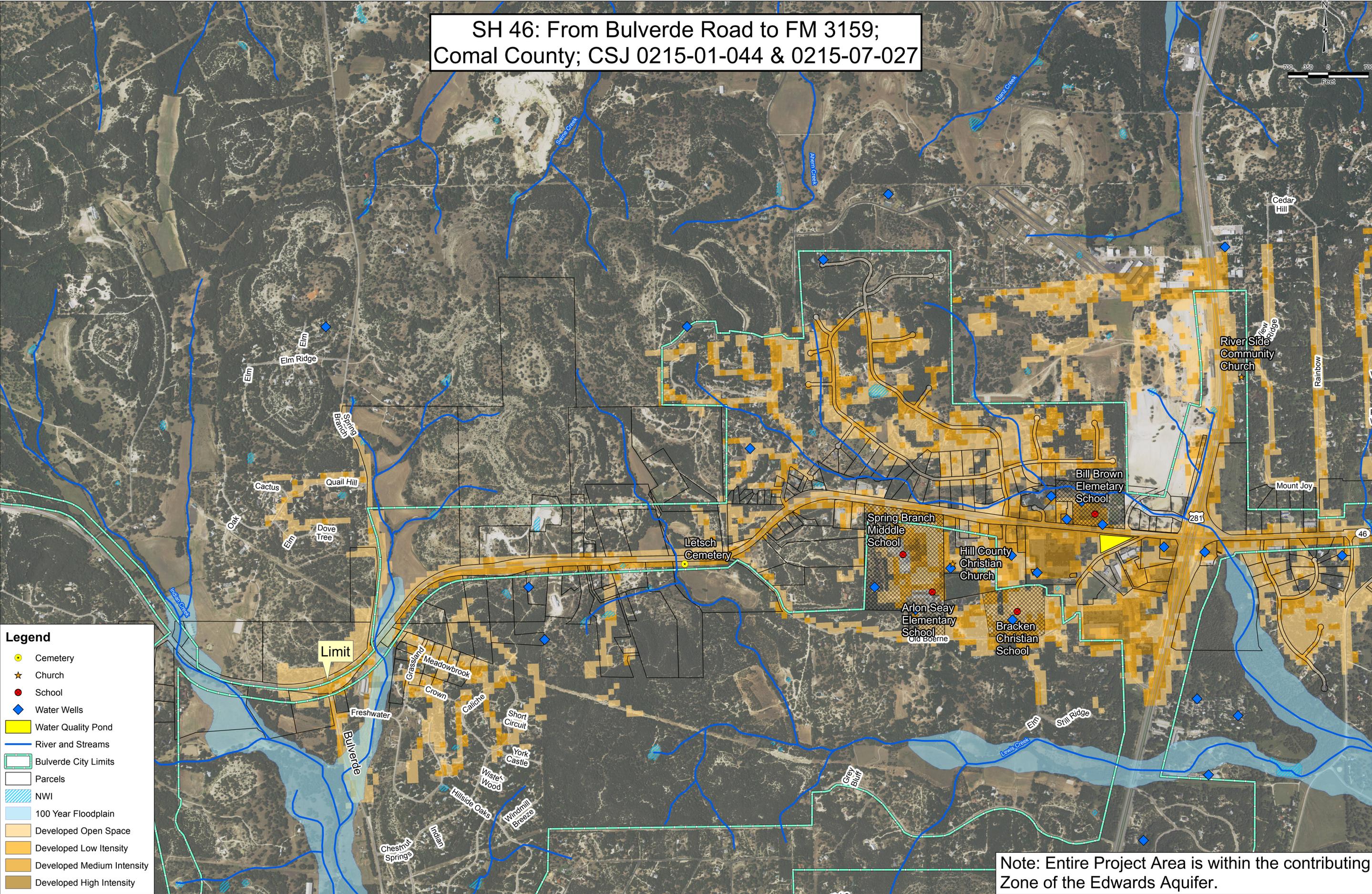
Photo 12. Letsch Cemetery; facing southeast



Photo 13. Western terminus; facing east.

Appendix B – Constraints Map

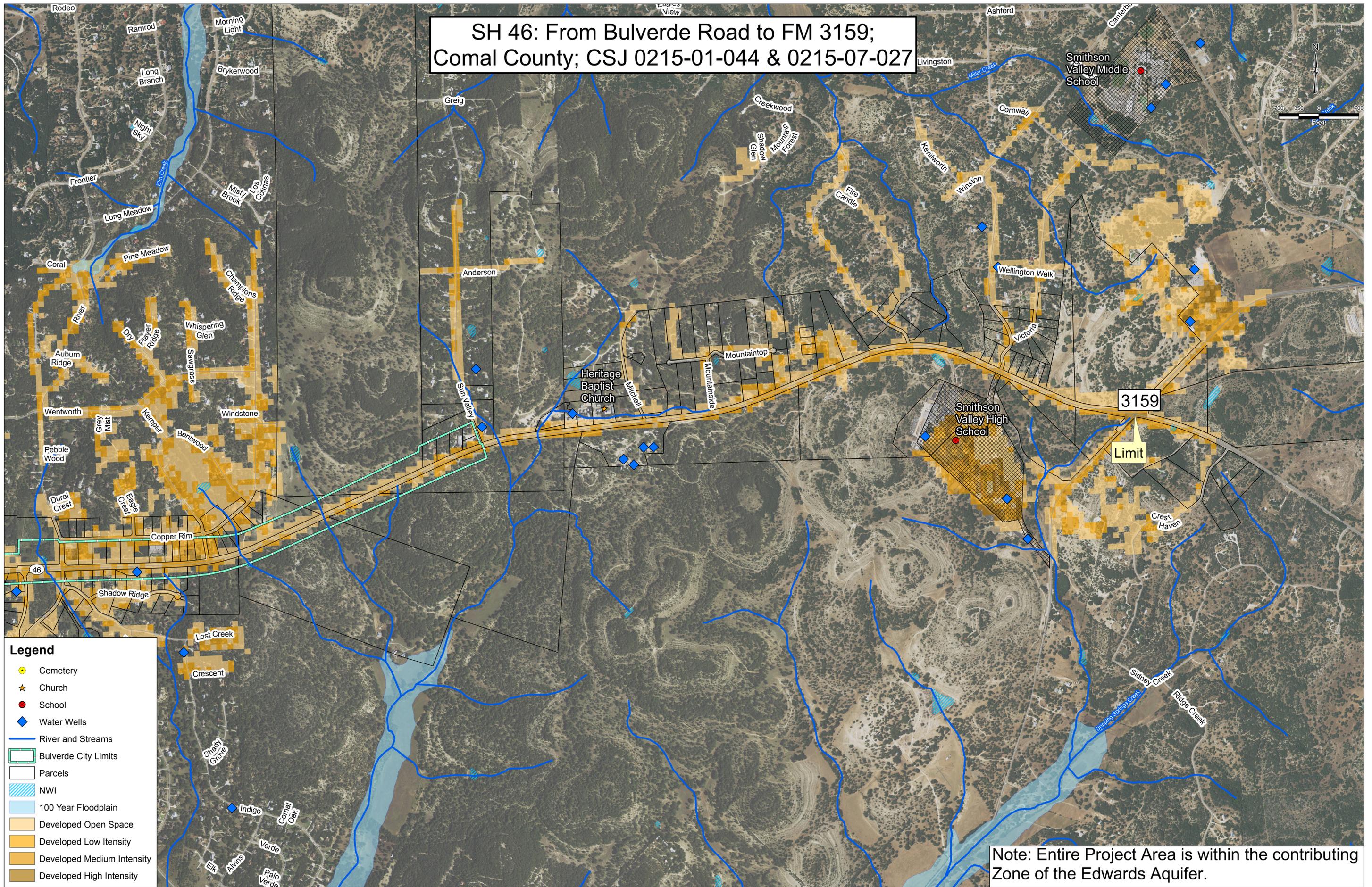
SH 46: From Bulverde Road to FM 3159;
Comal County; CSJ 0215-01-044 & 0215-07-027



- Legend**
- Cemetery
 - ★ Church
 - School
 - ◆ Water Wells
 - Water Quality Pond
 - River and Streams
 - ▭ Bulverde City Limits
 - ▭ Parcels
 - ▨ NWI
 - ▭ 100 Year Floodplain
 - ▭ Developed Open Space
 - ▭ Developed Low Intensity
 - ▭ Developed Medium Intensity
 - ▭ Developed High Intensity

Note: Entire Project Area is within the contributing Zone of the Edwards Aquifer.

SH 46: From Bulverde Road to FM 3159;
Comal County; CSJ 0215-01-044 & 0215-07-027



- Legend**
- Cemetery
 - ★ Church
 - School
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