Archeological Background Study

Project Name: SH 36 from I-69/US 59 to FM 2218

Highway: SH 36

District(s): Houston

County(s): Fort Bend

CSJ Number(s): 0188-01-016

Author and Affiliation: Andrew Milam; AmaTerra Environmental, Inc.

Report Completion Date: 3/24/2023

Table of Contents

Introduction

This project may require compliance both with Section 106 of the National Historic Preservation Act and with the Texas Antiquities Code. The purpose of this document is to identify risks for archeological historic properties within the project's area of potential effects (APE). The document also considers whether any cemeteries may extend into the APE, requiring compliance with the state Health and Safety Code.

The following sections list the results of review of readily-available information for the APE's setting and adjacent areas. The report also evaluates adjacent areas (a buffer zone; see Recommendations Section for definition of the buffer zone). The buffer zone is evaluated in case a subsequent design change expands the APE. This report concludes with separate recommendations regarding project effects and the need for additional work within shallow deposits less than three feet in depth and within Holocene-age deposits of three feet or greater depth, if such deep deposits are present.

This background study is (check one):

☒ the initial study for this project

☐ a continuation of previous investigations due to design changes or other reasons

Identify previous investigation(s):

If this box is checked, then answer the questions below only for the area that is affected by the design change.

Area of Potential Effects

The APE is defined to encompass the limits of the existing right of way; proposed, new project right of way; permanent and temporary easements; and any project-specific locations and utility relocations designated by TxDOT. Note: the APE encompasses the entirety of the project area, regardless of the extent of prior archeological investigations, the particular locations subject to proposed field investigations, or the portion of a project added through a design change. If impacts are not known, worst-case impacts are assumed in defining the APE.

See Attachment 1a-1b for a map of the APE, which is based on the project information attached as Attachment 2.

Information Source Checklist

(check each source of information that was consulted by the professional archeologist in preparing this background study—the number and type of sources are at the professional archeologist's discretion)

☒ Labelled USGS 7.5' topographic quadrangle project location map (or equivalent if a 7.5' quadrangle is unavailable) is attached and includes an inset map that depicts the county within Texas where the project occurs.

☒ Predictive Archeological Liability Map (PALM) is attached if available *(consult TxDOT's Environmental Compliance Toolkit).*

☒ Geologic Atlas of Texas map is attached *(PALM may be substituted for the GAT map, if it's available).*

☒ Soils map is attached *(PALM may be substituted for the soils map, if it's available)*.

☐ FEMA flood hazard map is attached.

☐ National Wetlands Inventory map is attached

☒ Texas Archeological Sites Atlas map is attached, depicting any sites within one kilometer of the APE or additional APE.

☒ Historic topographic map is attached.

☐ Historic soils map is attached.

☐ Historic road map is attached.

☐ As-built plans for roadway are attached.

☐ Other map of historic information is attached.

Specify Map:

☒ Aerial images are attached.

☐ Project area photographs are attached.

Analysis of Project Setting

- **Previously-Identified Archeological Sites**

☒ No archeological sites have been identified within the APE or within 150 feet of the APE

☐ Archeological sites have been identified within the APE or within 150 feet of the APE

Site 41FB363 was recorded approximately 965 meters east of the APE, see **Attachment 3**.

- **Previously–Identified Cemeteries**

☐ No known cemetery sites occur within the APE or within 150 feet of the APE.

☒ Cemeteries occur within the APE or within 150 feet of the APE.

Two cemeteries are present within a kilometer of the APE, see **Attachment 3**. West Gethsemane Cemetery is located approximately 540 meters (0.33 miles) north of the APE. Greater Power Baptist Church Cemetery is located approximately 35 meters (115 feet) southeast of the APE across an existing roadway from the project area. The Atlas cemetery record notes two graves from 2014 in an area between two trees (Atlas 2023). Neither cemetery will be impacted by the proposed improvements.

- **Holocene-Age Deposits**

☐ No Holocene-age deposits occur within or adjacent to the APE.

☒ Holocene-age deposits occur within or adjacent to the APE.

The project area is underlain by the Beaumont Formation (Qb and Qb-stippled). The Beaumont Formation is a Holocene and Pleistocene age deposit of mostly clay, silt and sand with concretion of calcium carbonate, iron oxide, and iron-manganese oxides in zones of weathering. In **Attachment 4** the stippled area includes soils that are dominantly clay and mud of low permeability, the non-stippled areas are dominantly clayey sand and silt of moderate permeability (USGS 2022). Soil series within the project area include Bacliff clay (0-1% slopes), Bernard clay loam (0-1% slopes), Bernard-Edna complex (0-1% slopes), Edna loam (0-1% slopes), and Lake Charles clay (0-1% slopes) (USDA_NCSS 2022) (**Attachment 5**).

- **Historically-Reliable Water Sources**

☐ No historically-reliable water sources occur within 500 feet of the APE.

☒ Historically-reliable water sources occur within 500 feet of the APE, or this question can't be answered confidently.

The APE crosses Seabourne Creek in two separate locations.

- **Wetlands and Frequently-Flooded Areas**

☐ The APE and adjacent areas contain wetlands or frequently-flooded areas.

☒ The APE and adjacent areas do not contain wetlands or frequently-flooded areas, or this question cannot be answered confidently.

Seabourne Creek does occasionally flood, however, it is not clear how often flooding occurs.

- **Preferred Landforms for Occupation**

☐ The Atlas map or other information shows that the APE does not contain landforms on which human settlement or occupation typically occurred.

☒ The Atlas map or other information shows that the APE does contain landforms on which human settlement or occupation typically occurred, or this issue was not resolved with the available information.

The APE crosses Seabourne Creek and stream terraces are typical landforms where past occupation occurred.

- **Prior Disturbances**

Settings that are favorable for human occupation have been subject to the following previous disturbances *(check all that apply).*

☒ Previous road construction and maintenance.

☒ Installations of utilities.

☒ Modern land use practices like plowing, grade modifications, brush clearing, and tree removal,

☒ Industrial, commercial, urban and/or suburban development

☒ Erosion and scouring by natural causes.

☐ Other (identify)

☐ NO PRIOR DISTURBANCES OR UNKNOWN (do not check any foregoing disturbances)

- **Previous Archeological Surveys**

☒ The majority of the settings with high potential for archeological sites within or adjacent to the APE have been previously surveyed.

Of the ten surveys within one kilometer of the APE, six overlap the APE and approximately 90% of the project area has been surveyed. Most of the portion of the APE along SH 36 was surveyed in 2006 for TxDOT (Atlas number: 8500081064) and in 2015 by AmaTerra Environmental, Inc. (AmaTerra) for TxDOT (Atlas number: 8500080212), this area encompasses both locations where the APE crosses Seabourne Creek. A 1994 survey for the City of Rosenberg (Atlas number: 850009583) intersecting the project area was performed approximately 545 meters (0.34 miles) from the northern terminus of the APE and encompasses the northern location where the APE crosses Seabourne Creek. A 2020 survey for TxDOT (Atlas number: 8500081642) was performed in two segments within the study area; one intersects the APE across FM 2218 from the Greater Power Baptist Church Cemetery. A 2016 survey along FM 2218 was conducted by AmaTerra for TxDOT (Atlas number: 8500080191) and included the TxDOT right-of-way (ROW) immediately adjacent to the Greater Power Baptist Church; no cultural deposits were record in the vicinity of the APE. A 1988 survey for the BLM AAPL (Atlas number: 8400004052) intersects the APE approximately 2.48 kilometers from its northern terminus, no other information is available.

☐ The majority of the settings with high potential for archeological sites within or adjacent to the APE have not been previously surveyed.

Conclusions

- **Results of Previous Investigations**

☒ Previous surveys have covered a sufficient proportion of the APE or adjacent areas to conclude that the APE and adjacent areas are unlikely to contain archeological sites or cemeteries.

☐ Previous surveys have not covered a sufficient proportion of the APE or adjacent areas to draw inferences regarding the presence of archeological sites and cemeteries, or previous surveys show that archeological sites and/or cemeteries are present within the APE.

- **APE Integrity (Prehistoric Sites)**

The APE contains no deposits with sufficient integrity that prehistoric archeological sites would have the potential to address important questions. Any such sites would lack integrity of *(check all that apply):*

☒ Location

☒ Design

☒ Materials

☒ Association

☐ Other (*identify*)

☐ THE APE HAS THE POTENTIAL TO PRESERVE SITES WITH SUFFICIENT INTEGRITY TO QUALIFY THOSE SITES FOR INCLUSION IN THE NATIONAL REGISTER OF HISTORIC PLACES *(if true, do not check any of the forgoing aspects of integrity)*

- **APE Integrity (Historic-Age Sites)**

The APE contains no deposits with sufficient integrity that historic-age archeological sites would have the potential to address important questions. Any such sites would lack integrity of *(check all that apply)*:

☒ Location

☒ Design

☒ Materials

☒ Association

☐ Other (*identify*)

☐ THE APE HAS THE POTENTIAL TO PRESERVE SITES WITH SUFFICIENT INTEGRITY TO QUALIFY THOSE SITES FOR INCLUSION IN THE NATIONAL REGISTER OF HISTORIC PLACES *(if true, do not check any of the forgoing aspects of integrity)*

- **Results of Historic Map Research (Historic Age Sites)**

☐ Historic map research shows that historic-era archeological deposits are not likely to occur within or adjacent to the APE

☒ Historic map research shows that historic-era archeological deposits could occur within or adjacent to the APE; this research was inconclusive; or this research was not completed because it was not necessary to reach justifiable conclusions.

- **Results of Map Research (Cemeteries)**

☒ Map research shows that cemeteries are not likely to occur within or adjacent to the APE.

☐ Map research shows that cemeteries could occur within or adjacent to the APE, or this research was inconclusive.

- **Results of Landform Study**

☐ The APE and adjacent areas occur in a setting that was not conducive to human occupation and activity

☒ The APE and adjacent areas occur in a setting that was conducive to human occupation and activity; research on this issue was inconclusive; or this research was not completed because it was not necessary to reach justifiable conclusions.

Recommendations

- **Shallow Deposits**

Evaluate the potential for shallow deposits (Holocene-age deposits less than three-feet in depth) within the APE to contain archeological historic properties and cemeteries. Make appropriate recommendations regarding the need for further work, including the need for shovel test pits, auger probes, or other methods for evaluating shallow deposits.

A review of historic maps (Attachment 6) and aerial photographs (Attachment 7) determined that there is potential to encounter historic materials associated with historic-age structures within the APE. However, those areas within the APE have been impacted by construction of the existing roadway, buried utilities, driveways, and residential/commercial development along SH 36. Most of the proposed improvements will occur within the existing right-of-way (ROW) (Attachment 1a) and much of the proposed new ROW has been previously surveyed (Attachment 3). The PALM does not recommend survey for much of the APE based on soils data and past disturbance (Attachment 8) and areas where the PALM would suggest a survey have been previously surveyed and/or disturbed by past development. AmaTerra recommend an archeological survey of the APE is not warranted in advance of the proposed project.

- **Deep Deposits**

Evaluation of deep deposits (Holocene-age deposits of three feet or greater depth) may or may not be necessary, depending on the nature of the sediments within the APE and the depth of proposed impacts. If Holocene-age deposits extend to three feet or more within the APE and would be impacted by the project, make appropriate recommendations regarding the need for further work. If no deep, Holocene-age deposits occur within the APE note that they are absent and indicate that no additional work in needed. If the deep Holocene deposits are present but the project either would not affect them or they have been too extensively disturbed to hold intact archeological deposits, provide an appropriate justification that no additional work is needed.

Even though geological and soils data indicate that the APE may by underlain by Holocene deposits (**Attachment 4** and **Attachment 5**), the APE has been significantly impacted by disturbances from the existing and past roadway construction as well as residential and commercial development, and agricultural activities. The maximum proposed depths of impacts are 10 feet; however, the typical depths of impacts will be two feet or less. As it is unlikely that intact deeply buried deposits are present within the APE and the PALM does not recommend deep prospection (**Attachment 8**), backhoe trenching is not recommended in advance of the proposed project.

- **Recommendations Summary (select only one check box)**

☒ No further study needed ☐ Survey of entire APE ☐ Variable

- **Results Valid Within**

The purpose of considering adjacent areas is to define, when possible, a buffer zone around the APE to which findings of no effect and recommendations for no further work can be extended. No additional investigation should be necessary if a subsequent design change expands the APE into the buffer zone. In some cases, however, no buffer zone may be reasonably defined for the project or portions of the project as expansion of the APE may warrant survey. In such cases, check the middle box and indicate that the results are valid within zero feet of the APE.

☐ 50 feet of APE ☒ 10 feet of APE ☐ Variable, see attached figure

- **The Definition and Evaluation of this Horizontal Buffer Zone is Based on One or More of the Following Considerations**

☒ The integrity of the areas within and adjacent to the setting is affected by prior development.

☒ Previous investigations show that archeological materials are unlikely to exist in this area.

☒ Adjacent areas have potential to preserve archeological sites with good integrity.

☐ Other (specify)

Findings of no effect to archeological historic properties and/or State Antiquities Landmarks and recommendations for no further work apply to all areas within the horizontal buffer zone, as specified in the previous section. Any design change within this study area would not require further action or review beyond those actions recommended in this study. Design changes that either extend beyond the buffer zone or result in potential impacts deeper than the impacts considered in this report would require additional review. Note that no buffer zone may be defined for some projects, based on local conditions.

References Cited

Bureau of Economic Geology (BEG)

1991 Geologic Atlas of Texas, Sherman Sheet. Created by the Bureau of Economic Geology, the University of Texas at Austin. Available online at the Geologic Atlas of Texas 2014, an electronic resource in the Texas Natural Resources Information System (TNRIS), https://data.tnris.org/collection/e28d8df6-cd30-4e89-bf0f-833e1ed0e670, accessed November 2022.

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

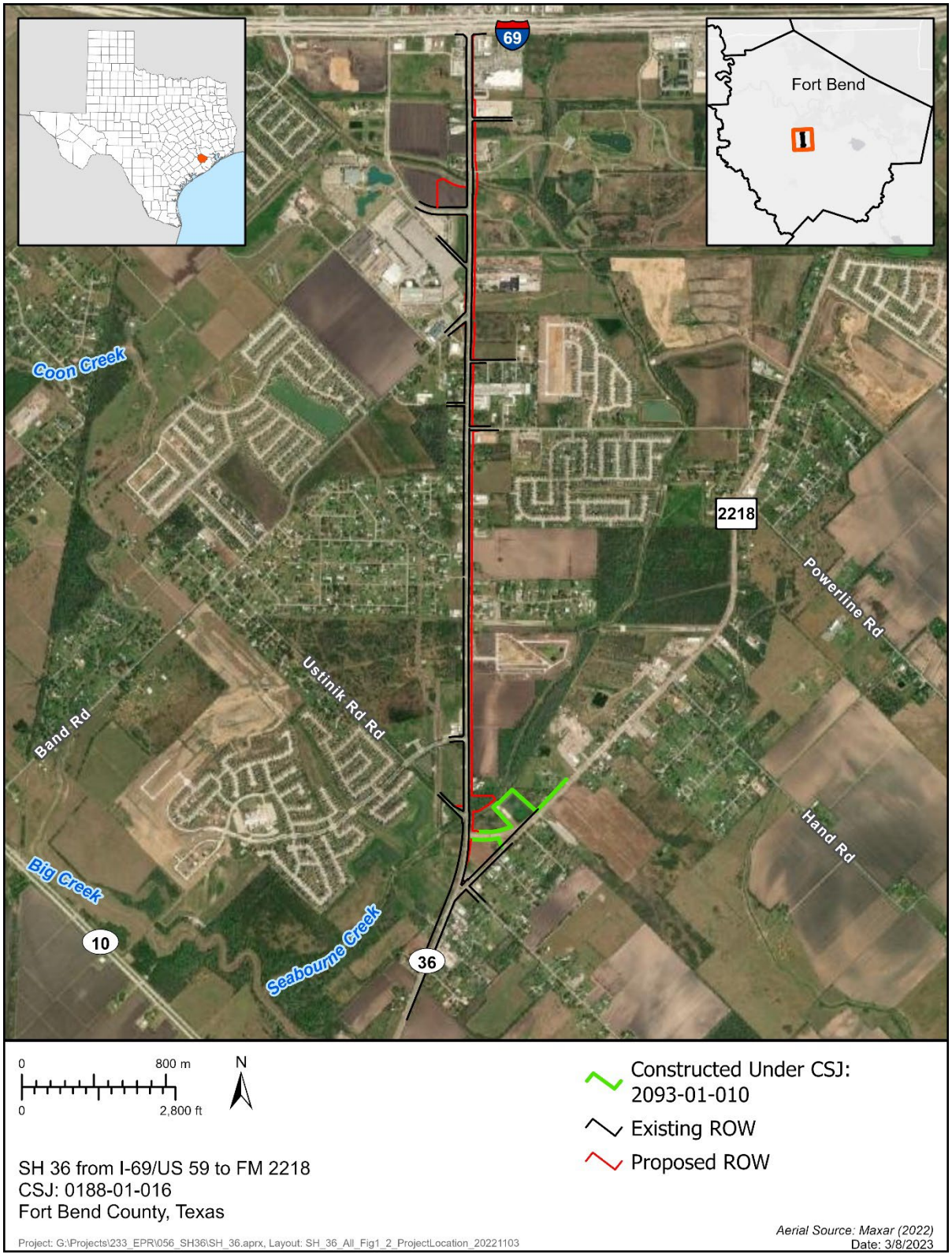
2022 Web Soil Survey. Electronic resource, http://websoilsurvey.sc.egov.usda.gov/, accessed November 2022.

Texas Historical Commission (THC)

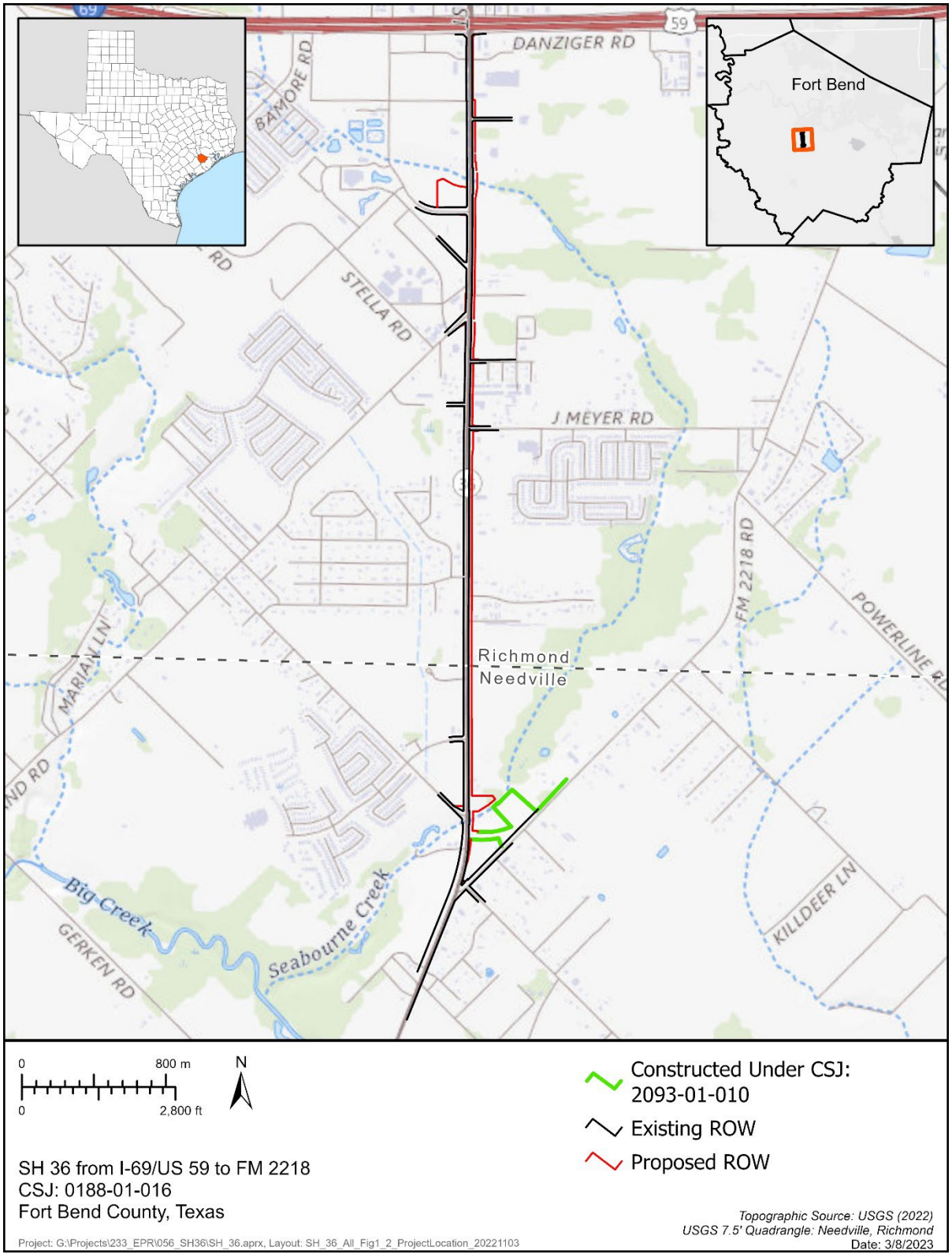
2022 Texas Archeological Sites Atlas Online. Electronic document, http://nueces.thc.state.tx.us/, accessed November 2022.

Attachments

Attachment 1a – Map showing horizontal extent of APE on recent satellite imagery.



Attachment 1b – Map showing horizontal extent of APE on a USGS topographic map.



Attachment 2– Project information

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- WPD Section I - Project Definition
- WPD Section II - Tool
- WPD Section III - Project Work Plan
- WPD Section IV - Findings

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Project Definition

Project Name: SH 36 Widening from US 59 to FM 2218

CSJ: 0188 - 01 - 016

Anticipated Environmental Classification: CE

Type: (D)-List

Criterion: Open-Ended D

Is this an FHWA project that normally requires an EIS per 23 CFR 771.115(a)?

Project Association(s)

Auto Associate CSJ from DCIS

Manually Associate CSJ:

CSJ	DCIS Funding	DCIS Number	Env Classification	DCIS Classification	Main or Associate	Doc Tracked In	Actions

There are currently no Project Associations added to this project.

DCIS Project Funding and Location

Funding

DCIS Funding Type:

☑ Federal ☑ State ☐ Local ☐ Private

Location

DCIS Project Number: NH ( )

Highway: SH 36

District: HOUSTON

County: FORT BEND

Project Limit -- From: IH 69(S)

Project Limit -- To: FM 2218

Begin Latitude: + 29 . 53183169

Begin Longitude: - 95 . 80816269

End Latitude: + 29 . 4886576

End Longitude: - 95 . 80773354

DCIS & P6 Letting Dates

DCIS District: 01/26

DCIS Approved:

DCIS Actual:

P6 Ready To Let: 10/31/2017

P6 Proposed Letting:

DCIS Project Description

Type of Work: Spell

The proposed project sets out to widen a portion of SH 36 from 2 to 4 lanes. The purpose of the proposed project is to improve the existing roadway facility and bridge-class culverts with a

Layman's Description:

WIDEN ROAD - ADD LANES

DCIS Project Classification: WNF - WIDEN NON-FREEWAY

Design Standard: 4R - New Location and Reconstruction

Roadway Functional Classification: 3 - Rural principal arterial

Jurisdiction

No — Does the project cross a state boundary, or require a new Presidential Permit or modification of an existing Presidential Permit?

Who is the lead agency responsible for the approval of the entire project?

☑ FHWA - Assigned to TxDOT ☐ TxDOT - No Federal Funding ☐ FHWA - Not Assigned to TxDOT

TXDOT — Who is the project sponsor as defined by 43 TAC 2.7?

No — Is a local government's or a private developer's own staff or consultant preparing the CE documentation, EA or EIS?

Yes — Does the project require any federal permit, license, or approval?

☑ USACE ☐ IBWC ☐ USCG ☐ NPS ☐ IAJR ☐ Other USACE 404 permit anticipated for impacts to

No — Does the project occur, in part or in total, on federal or tribal lands?

Environmental Clearance Project Description

Project Area

Typical Depth of Impacts: 2 (Feet) Maximum Depth of Impacts: 10 (Feet)

New ROW Required: 25 (Acres)

New Perm. Easement Required: 0 (Acres) New Temp. Easement Required: 0 (Acres)

Project Description

Describe Limits of All Activities: Spell

The proposed project has been identified as Segment 7 of the collective SH 36 corridor improvement and will widen and reconstruct starting at the intersection of I-69 and will tie into Segment 8 of SH 36 at the old FM 2218 intersection, for a total length of under 3 miles.

The existing ROW along the SH 36 project corridor is 100 feet wide. The proposed project would require acquisition of approximately 25 acres of additional ROW including impacts to 52 parcels along SH 36 within the project limits, including a public, recreational park (Seaborne Creek Nature Park) protected under Section 4(f) and Ch. 26.

The project anticipates full displacement of 9 structures (4 residential + 5 business) leaving driveway length and/or parking losses to remaining parcels.

There are no temporary or permanent easements required for the proposed project.

Two detention ponds, for roadway drainage are included, in the project footprint.

Describe Project Setting: Spell

The proposed project is mostly located in a rural/suburban area set in the city of Rosenberg, TX but also reaches into the Village of Pleak.

Land use within or adjacent to the proposed project corridor consists of a mix of commercial businesses, residential properties and undeveloped properties. Most of the residential properties along SH 36 are located west of the roadway; the majority of the ROW would be acquired from the east side of the existing roadway facility. No zoning ordinances are in effect in either the City of Rosenberg or Fort Bend County.

Vegetation: Grasses and herbaceous roadside and drainage ditch vegetation typical of roadway ROW was observed within the project limits. Some trees, shrubs, and vines associated with fence line communities are located adjacent to the project ROW in a few areas; fence line vegetation is consistent with vegetation observed outside the project ROW. There are no natural plant communities or native prairie remnants within or immediately adjacent to the project ROW; no unusual vegetative areas or features were observed within the project limits.

Water Features: Two tributaries with associated wetland fringe and four wetlands were identified within the project area. All water features noted are hydrologically associated with Seaborne Creek. Once ROE is granted for the entire ROW, additional wetland delineation survey activities will be required to address the waters/wetlands in any areas not previously accessible due to <50% ROE granted at time delineation was conducted.

Describe Existing Facility: Spell

The existing SH 36 roadway, from I-69 to FM 2218, consists of a two-lane undivided roadway with approximately 12-foot travel lanes and variable width shoulders within an existing 100-foot right-of-way (ROW). Open roadside drainage ditches along the east and west sides of SH 36 convey storm water toward Seabourne Creek. Turning lanes are present at selected intersections
within the project limits.

I-69 consists of a divided highway with frontage roads at the SH 36 northern project terminus. A grade separation exists at the intersection of I-69 and SH 36; SH 36 passes beneath the I-69 mainlanes while frontage roads intersect SH 36 at grade. FM 2218 intersects SH 36 near the southern project terminus (in Pleak, Texas). At this intersection, FM 2218 provides a connection to the northeast from SH 36 to I-69, east of the SH 36 (I-69 to FM 2218) project limits.

Two bridge-class culverts allow SH 36 traffic to cross Seabourne Creek at two different locations, one near the northern project terminus (north crossing) and one near the southern project terminus (south crossing). A bridge class culvert is a culvert with a clear opening of more than 20-feet. The north crossing bridge length is 42.5 feet with a width of 49.3 feet and is comprised of five 8-foot by 6-foot concrete culverts. The south crossing bridge length is 59 feet with a width of 49.3 feet and is comprised of six 8-foot by 6-foot and

Describe Proposed Facility: Spell

The proposed project (preferred alternative now branded as the 2022 Design Refresh) would widen SH 36 from two to four travel lanes (two 12-foot inside travel lanes within the project limits (I-69 to FM 2218). The proposed roadway would consist of a four-lane roadway. Additionally, sidewalks would be added along both sides of SH 36 for pedestrians and cyclists would utilize a bike lane separated from the roadway with a buffer. Signalized intersections would be incorporated into the project as warranted.

Open roadside drainage ditches would continue to convey storm water toward Seabourne Creek. The existing bridge-class culverts at the north crossing of Seabourne Creek would be replaced by a bridge. The existing bridge-classculverts at the south crossing of Seabourne Creek would be replaced with similar structureswhich would be sized to accommodate the width of the proposed roadway. Detention will also be needed and is included as part of the 2022 Design Refresh assessment.

The 2022 Design Refresh now considers extensive local government street access preferences (as coordinated with the City of Rosenberg), a MOA accepted and signed by the City Council for State support on TPWD parkland conversion efforts at the Civic Center site, an updated H&H study that identified the current ROW and drainage needs, as well as modified the proposed bike/pedestrian layout to meet current State guidance on bicycle accommodations.

Yes Would the project add capacity?

Transportation Planning

Yes Is the project within an MPO's boundaries?

No Does the project meet the definition for a grouped category for planning and programming purposes?

The project is located in Non-Attainment/Maintenance area.

This status applies to:

- ☐ CO - Carbon Monoxide
- ☑ O3 - Ozone
- ☐ NO2 - Nitrogen Dioxide
- ☐ PM10 - Particulate
- ☐ PM2.5 - Particulate

Environmental Clearance Information

Environmental Clearance Date:

Environmental LOA Date:

Closed Date:

Archived Date:

Approved Environmental Classification: SEA

Project Contacts

Created By: David G Najvar-C

Date Created: 10/19/2007

Project Sponsor: ◉ TXDOT (Or) ○ Local Government

Sponsor Point Of Contact: Tunisia Smith - Environmental Program Manager

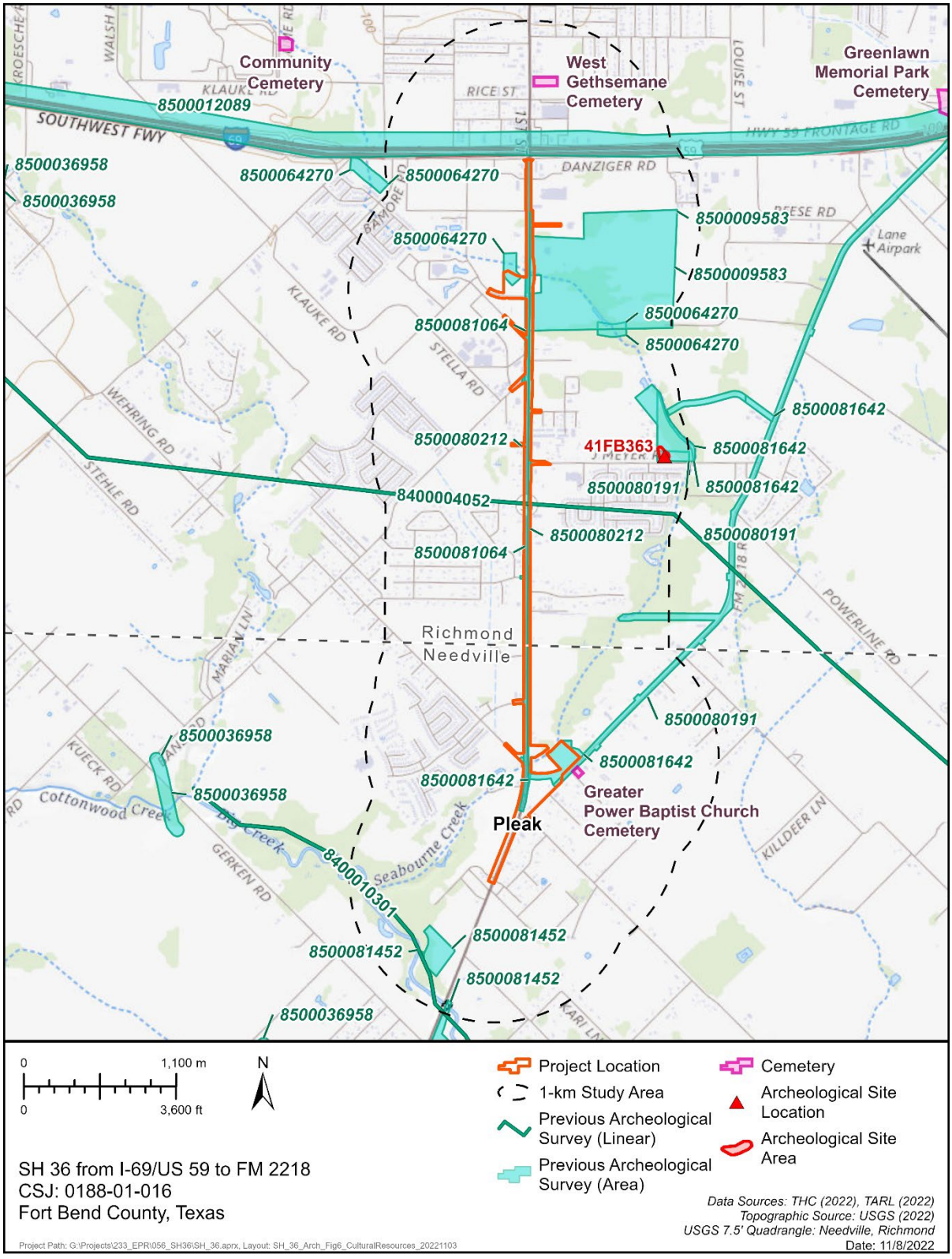
Delegate Point Of Contact: Tunisia Smith - Environmental Program Manager

Other Point of Contact(s): Spell

Last Updated By: Tunisia Smith

Last Updated Date: 01/31/2023 02:03:01

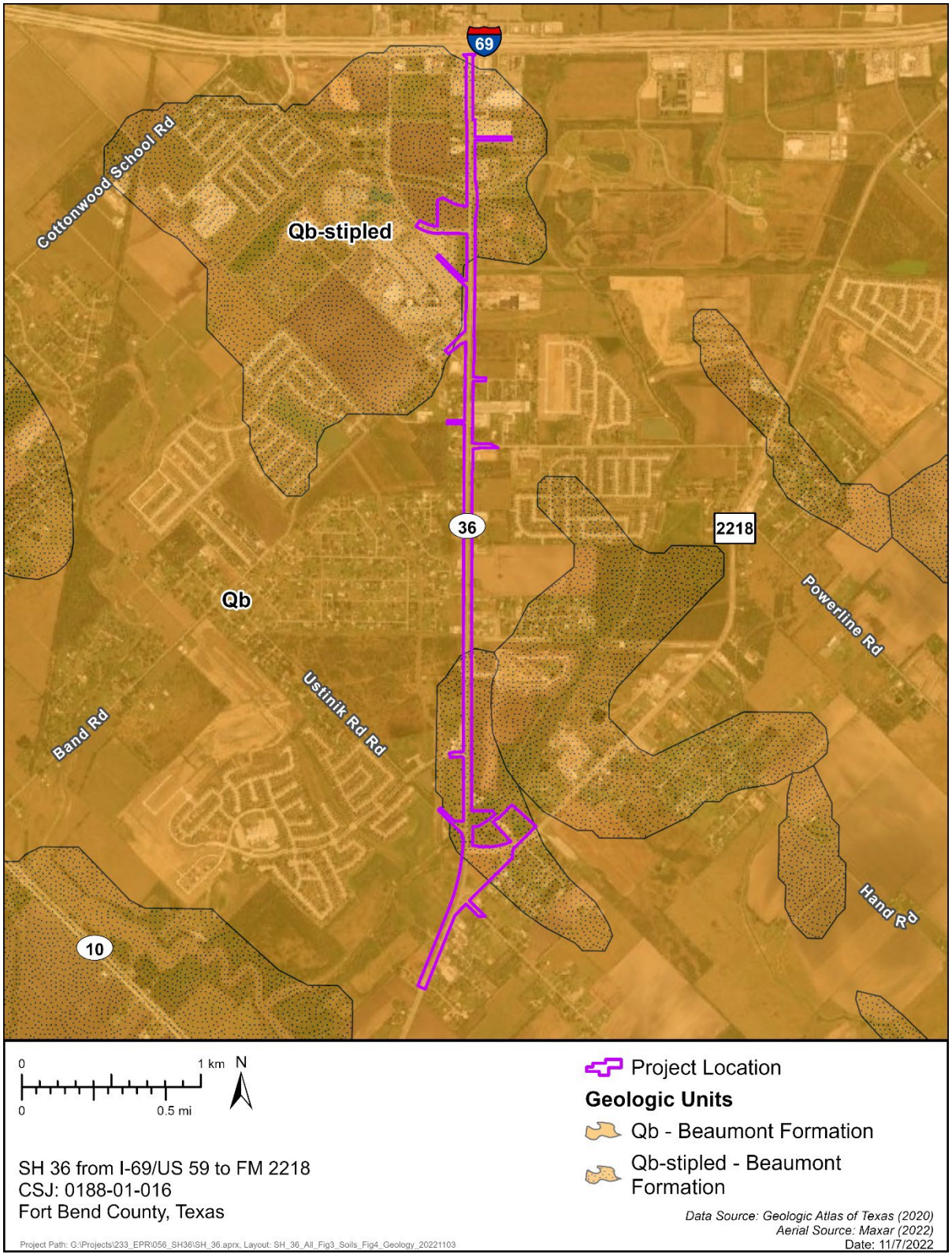
Attachment 3 – THC Atlas Map – archeological sites and previous surveys within a kilometer of the APE.



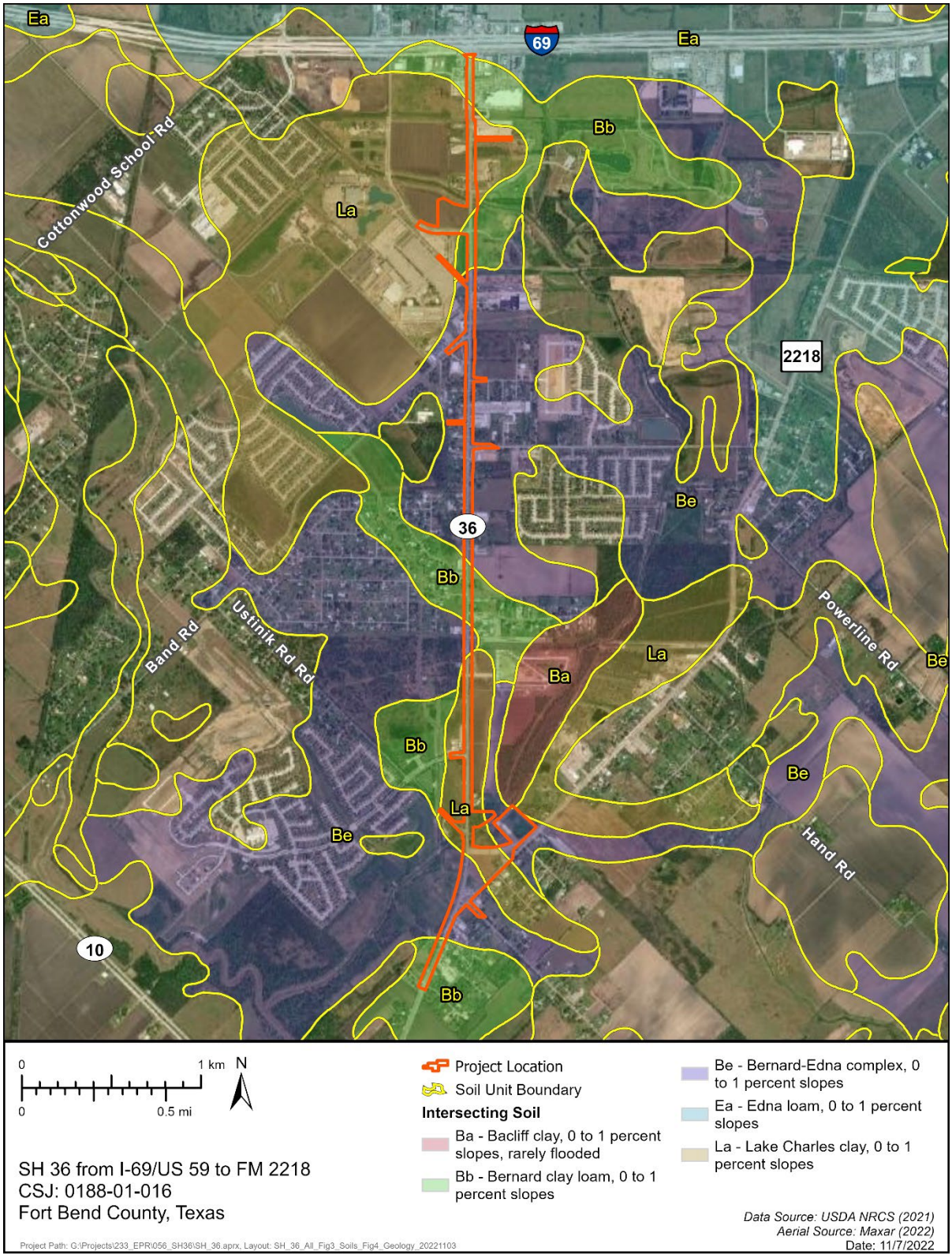
Survey Map Key to Accompany Figure 3

Atlas Number	Date	Permit	Sponsor	Investigator	Overlaps
8500012089	2003	3218	TxDOT, FHWA	Michael Baker Jr. Inc.	No
8500064270	2014		Corps of Engineers - Galveston District	SWCA	No
8500009583	1994	1388	City of Rosenberg		Yes
8500080191	2016	7802	TxDOT	AmaTerra Environmental, Inc.	Yes
8500080212	2015	7379	TxDOT	AmaTerra Environmental, Inc.	Yes
8500081064	2006	4275	TxDOT	Moore Archeological Consulting, Inc.	Yes
8500081452	2019	8868	TxDOT	AmaTerra Environmental, Inc.	No
8500081642	2020	9293	TxDOT	TxDOT	Yes
8400004052	1988		Unknown		Yes
8400010301	1999		Unknown		No

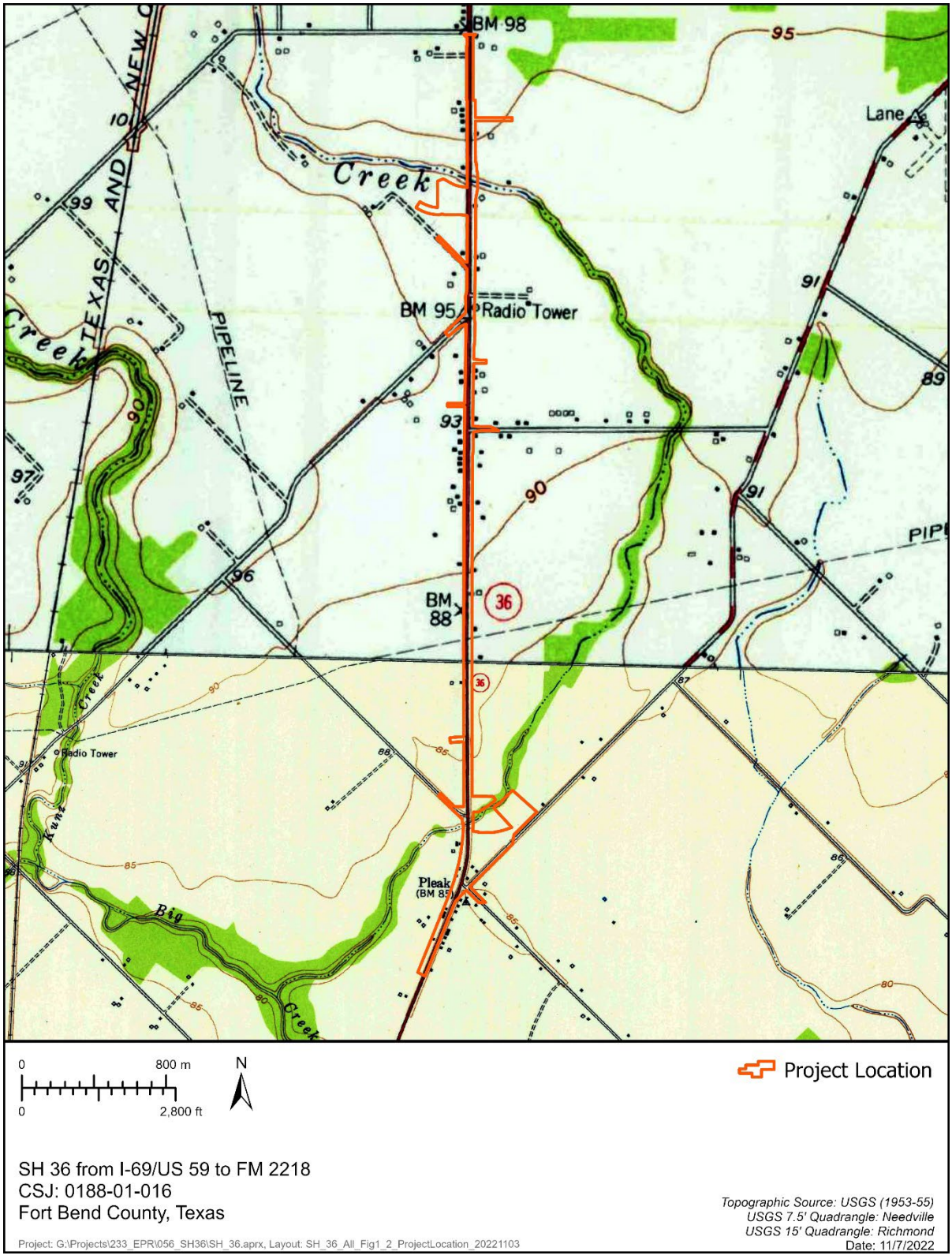
Attachment 4 – APE depicted on a geologic map



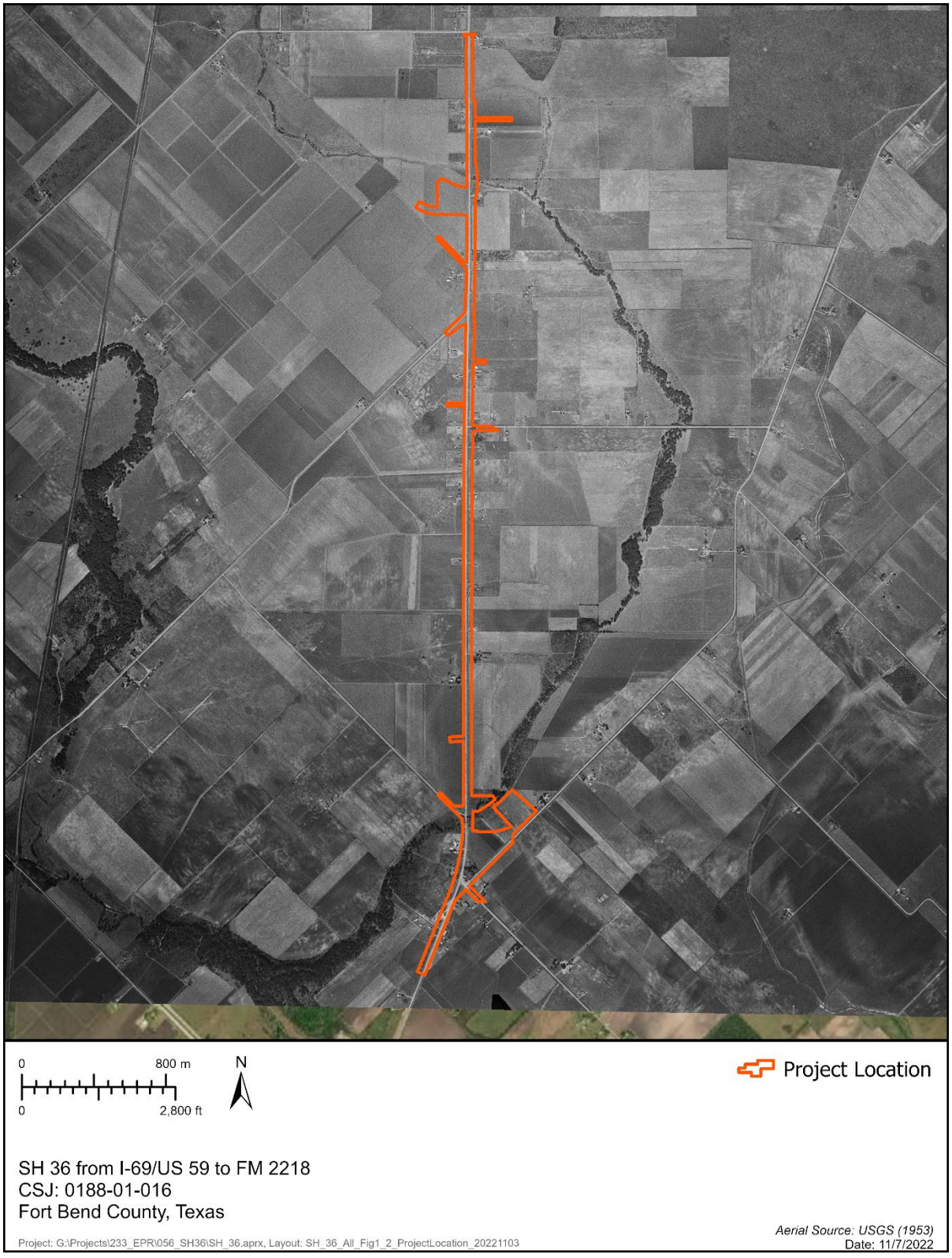
Attachment 5 – Soils map of the APE.



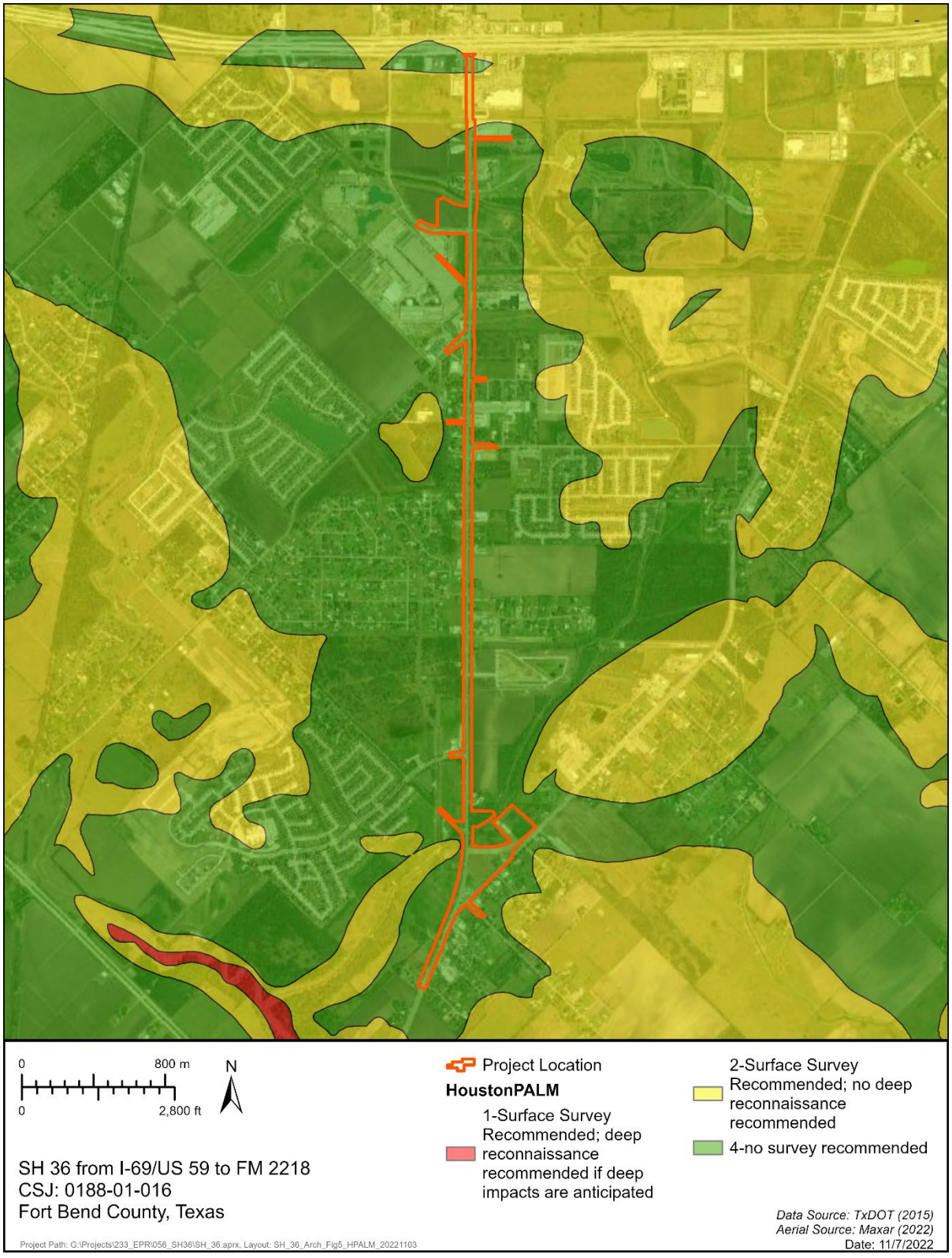
Attachment 6 – 1953-55 USGS historic topographic map of the APE.



Attachment 7 –1953 aerial photograph of the APE.



Attachment 8 – HoustonPALM map of the APE.



This report was written on behalf of the City of San Antonio and the Texas Department of Transportation by:

11842 Rim Rock Trail
Austin, Texas 78737