



Draft Water Resources Technical Report

SH 130 from SH 45N to SH 71

CSJ: 0440-06-017 & 0440-06-018

Texas Department of Transportation, Austin District
July 2017

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.

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1.0 INTRODUCTION

The Texas Department of Transportation (TxDOT) Austin District proposes to widen the existing State Highway (SH) 130 to include additional travel lanes and auxiliary lanes in Travis County, Texas. The proposed project is located on SH 130 and extends from SH 45N to SH 71 for a total project length of approximately 22 miles (see **Figures 1 and 2** in **Appendix A**). The proposed project includes adding a mainlane in each direction and auxiliary lanes between ramps (where warranted); widening bridges and culverts; and crossover improvements.

The existing SH 130 facility consists of two to three 12-foot-wide lanes in each direction with 12-foot-wide outside shoulders and 6-foot-wide inside shoulders. Directions of travel are separated by a grassy depressed median, usually 135 feet in width. If completed, the mainlanes of the SH 130 facility would consist of three to five 12-foot-wide lanes in each direction with 12-foot-wide outside shoulders and 10- to 12-foot-wide inside shoulders.

The proposed improvements would be constructed within the existing right of way; therefore, no new right of way would be required.

2.0 SPECIFIC AREAS OF ENVIRONMENTAL CONCERN

2.1 WATER RESOURCES

The proposed project area lies entirely within the Colorado River drainage basin. The Colorado River headwaters are located in northeastern Dawson County; from here, the river flows southeast for 862 miles to its final destination in Matagorda Bay. Topography of the proposed project area is rolling, with elevations ranging from approximately 750 feet above mean sea level (MSL) at the northern terminus of the proposed project area to approximately 400 feet above MSL along the Colorado River near the southern terminus of the proposed project area (U.S. Geological Survey [USGS] 1987 and 1988).

The subcrop of the Trinity aquifer underlies the proposed project (see **Figure 3** in **Appendix A**). The Trinity aquifer is a major aquifer that extends across much of the central and the northeastern part of Texas. It is composed of limestones, sands, gravels, clay, and conglomerates. Recharge to the Trinity is very slow and primarily from infiltration of precipitation on the surface and as seepage from streams and ponds where the head gradient is downward (Ryder 2006). The aquifer's primary use is for municipalities, but it is also used for irrigation, livestock, and other domestic purposes (TWDB 2017).

The Environmental Protection Agency (EPA) defines a sole or principal source aquifer as one which supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. According to data published by the EPA for Region 6, where the project area is located, the Trinity aquifer is not a sole-source aquifer.

2.1.1 Edwards Aquifer Recharge, Contributing and Transition Zones

Title 30 Texas Administrative Code Chapter 213 defines rules that address activities that could pose a threat to water quality in the Edwards Aquifer, including wells and springs fed by the aquifer and water sources to the aquifer, including upland areas draining directly to it and surface streams. These rules, often referred to as the “Edwards Rules,” apply specifically to the Edwards Aquifer in eight counties including Medina, Bexar, Comal, Kinney, Uvalde, Hays, Travis and Williamson. The rules are not intended for any other aquifers in Texas. The proposed project is located within Travis County but is not over the Edwards Aquifer Recharge, Contributing, or Transition Zones; therefore, the Edwards Aquifer Rules would not apply.

2.1.2 Water Wells

A search was made for water wells on and adjacent to the project area. A review of Texas Commission on Environmental Quality (TCEQ) and the Texas Water Development Board (TWDB) records revealed multiple wells within the immediate vicinity of the proposed project area (see **Figure 4-1** through **4-26** in **Appendix A** and **Table 1** below).

State Well #	Owner	Type	Use	Borehole Depth (feet)	Location	
					Latitude	Longitude
67584	Lone Star Infrastructure	New	Industrial	800	30.465556	- 97.593334
5836701	H.W. Lester	Water Withdrawal	Domestic	20	30.406112	- 97.584167
271853	City of Austin	New	Monitoring	30	30.353889	- 97.590278
224596	City of Austin	New	Monitoring	30	30.353334	-97.590834
216189	Transfield Services-North America- Tr	New	Monitoring	45	30.294167	- 97.570555
216187	Transfield Services-North America- Tr	New	Monitoring	60	30.292778	- 97.571389
5844701	J. Hornsby	Water Withdrawal	Stock	40	30.253612	- 97.603334
61671	Lone Star Infrastructure	New	Monitoring	24	30.248334	-97.606112

Table 1: Groundwater Wells Within the Study Area						
State Well #	Owner	Type	Use	Borehole Depth (feet)	Location	
					Latitude	Longitude
61670	Lone Star Infrastructure	New	Monitoring	24	30.2475	-97.606945
61669	Lone Star Infrastructure	New	Monitoring	19	30.246667	- 97.607778
58851	Lone Star Infrastructure	New	Monitoring	19.8	30.236667	-97.614445
58850	Lone Star Infrastructure	New	Monitoring	19.8	30.235834	-97.615001
61531	Lone Star Infrastructure	New	Monitoring	19.5	30.234722	-97.615278
58848	Lone Star Infrastructure	New	Monitoring	19.5	30.233889	-97.615556
58546	Lone Star Infrastructure	New	Monitoring	19.5	30.233889	-97.615556
58849	Lone Star Infrastructure	New	Monitoring	19.5	30.238056	-97.6175
58544	Lone Star Infrastructure	New	Monitoring	33	30.236945	-97.618055
63663	Lone Star Infrastructure	New	Monitoring	31.5	30.227222	-97.6225
63662	Lone Star Infrastructure	New	Monitoring	32.5	30.226389	-97.623611

Source: Texas Water Development Board (TWDB). 2016. Water Data Interactive (WDI) Groundwater Data Viewer. <http://www2.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer> Accessed July 3, 2017

2.1.3 Section 404 of the Clean Water Act: Waters of the U.S.

The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into wetlands and other waters of the U.S. under Section 404, subsection 330.5(a)(21) of the Clean Water Act (CWA). Section 404 of the CWA authorizes the USACE to issue permits for the discharge of dredged or fill material into waters of the U.S., including wetlands. The intent of this act is to protect the nation's waters from the indiscriminate discharge of material capable of causing pollution, and to restore and maintain their chemical, physical, and biological integrity. Any discharge into waters of the U.S. must be in accordance with Section 404(b)(1) guidelines developed by the EPA in conjunction with the USACE.

Permits are required from the USACE for any activities that would result in the discharge of dredged or fill material into waters of the U.S. Regulated activities may be permitted through the USACE via Individual Permits (IP), Regional General Permits (RGP), or Nationwide Permits (NWP).

The *1987 Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) defines wetlands based on three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. In general, all three criteria must be present for an area to be characterized as a wetland. Some exceptions occur in disturbed areas or in newly formed wetlands, where one indicator (such as hydric soils) might be lacking. These areas are dealt with on an individual basis as outlined in the Field Guide for Wetland Delineation. In addition to jurisdictional wetlands as defined above, the CWA regulates impacts to other waters of the U.S. The term “waters of the U.S.” has broad meaning and incorporates both deepwater aquatic habitats and special aquatic sites, including wetlands, as listed below:

1. The territorial seas with respect to the discharge of fill material;
2. Coastal and inland waters, lakes, rivers, and streams that are navigable waters of the U.S. including their adjacent wetlands;
3. Tributaries to navigable waters of the U.S., including adjacent wetlands;
4. Interstate waters and their tributaries, including adjacent wetlands; and,
5. All other waters of the U.S. not identified above, such as lakes, intermittent streams, prairie potholes, and other waters that are not a part of a tributary system to interstate waters or navigable waters of the United States, the degradation or destruction of which could affect interstate commerce. Note that a 2006 U.S. Supreme Court decision found that, in many instances, isolated wetlands are not subject to USACE jurisdiction (*Rapanos vs. the U.S.* [2006] and *Carabell vs. the USACE* [2004]).

For linear features, the Ordinary High Water Mark (OHWM) is determined by assessing a combination of factors at each site. In accordance with Section 328.3(e) of the CWA, the following factors were considered in determining the jurisdictional boundary:

- Clear, natural line on the bank;
- Shelving;
- Changes in soil;
- Destruction of terrestrial vegetation; and,
- Presence of litter and debris.

Determination of Jurisdictional Areas

A review of National Wetland Inventory (NWI) and City of Austin (COA) Streams maps, the Travis County Soil Survey (NRCS 1974), USGS 7.5-minute quadrangle sheets (Pflugerville East, Webberville, Manor and Montopolis) and recent aerial photography resulted in the determination that potential waters of the U.S. exist within the vicinity of the proposed project. Field reconnaissance conducted June 1, 2 and 21, 2017, confirmed this determination.

Following the completion of preliminary data gathering and synthesis, the routine method of wetland delineation outlined in the *1987 Corps of Engineers Wetlands Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)* were utilized for wetland determinations within the proposed project. Field activities focused primarily on waters of the U.S. identification and mapping and wetland determination and delineation. It should be noted that due to the limited extent of the proposed improvements, only the proposed project footprint and the immediate surrounding area was surveyed for waters of the U.S., including wetlands.

One wetland site and thirty potential waters of the U.S. sites were identified within the proposed project footprint. Of these, twenty-six were determined to be potentially jurisdictional streams and four were determined to be potentially non-jurisdictional ditches/swales. The OHWMs of the streams were determined using a combination of data collected during the original construction of SH 130, field verification of this data, and, where warranted, new delineations. These features are detailed below in **Table 2** and illustrated on **Figures 4-1** through **4-29** in **Appendix A**. Project area photographs are provided as **Appendix B** and Wetland Determination Forms are provided as **Appendix C**.

Results and Discussion

Based on current design and preliminary water resources field investigations, permanent fill would be placed below the OHWM of Site 11, a perennial stream that is an unnamed Tributary to Gilleland Creek; Site 26, Elm Creek; and Site 31, the Colorado River (see **Table 2**). Impacts to Sites 11 and 26 have been previously accounted and mitigated for during the original construction of SH 130 under Individual Permit #199600228. The placement of temporary or permanent dredge or fill material within the OHWM of the Colorado River would be authorized under a USACE Section 404 Nationwide Permit 14 (NWP), Linear Transportation Projects.

Table 2: Potential Impacts to Waters of the U.S. within Proposed Construction Limits								
Site Number/Description	Individual Permit #199600228 Crossing Number	Average OHWM (feet)	Crossing	Permanent Fill (acres)	Temporary Fill (acres)	Has Fill Been Accounted For Under Individual Permit #199600228 (Y/N)	NWP	PCN (Y/N)
1 Intermittent Stream	42	8	Culvert	0.00	NA*	NA	NA	NA

Table 2: Potential Impacts to Waters of the U.S. within Proposed Construction Limits								
Site Number/Description	Individual Permit #199600228 Crossing Number	Average OHWM (feet)	Crossing	Permanent Fill (acres)	Temporary Fill (acres)	Has Fill Been Accounted For Under Individual Permit #199600228 (Y/N)	NWP	PCN (Y/N)
2 Wilbarger Creek (Perennial Stream)	44	8	Bridge	0.00	NA*	NA	NA	NA
3 Intermittent Stream	46	10	Culvert	0.00	NA*	NA	NA	NA
4 Ephemeral Stream	48	10	Culvert	0.00	NA*	NA	NA	NA
5 Intermittent Stream	NA	17	Culvert	0.00	NA*	NA	NA	NA
6 Intermittent Stream	NA	6	Culvert	0.00	NA*	NA	NA	NA
7 Ephemeral Stream	56	4	Bridge	0.00	NA*	NA	NA	NA
8 Gilleland Creek (Perennial Stream)	57	25	Bridge	0.00	NA*	NA	NA	NA
9 Harris Branch (Perennial Stream)	58	35	Bridge	0.00	NA*	NA	NA	NA
10 Emergent Wetland	W16	NA; 0.18 acres	Bridge	0.00	NA*	NA	NA	NA
11 Perennial Stream	61	52	Bridge	0.0002	NA*	Yes	NA	NA
12 Ephemeral Stream	65	3	Culvert	0.00	NA*	NA	NA	NA
13 Intermittent Stream	66	6	Culvert	0.00	NA*	NA	NA	NA
14 Intermittent Stream	68	5	Culvert	0.00	NA*	NA	NA	NA

Table 2: Potential Impacts to Waters of the U.S. within Proposed Construction Limits								
Site Number/Description	Individual Permit #199600228 Crossing Number	Average OHWM (feet)	Crossing	Permanent Fill (acres)	Temporary Fill (acres)	Has Fill Been Accounted For Under Individual Permit #199600228 (Y/N)	NWP	PCN (Y/N)
15 Intermittent Stream	73	3	Culvert	0.00	NA*	NA	NA	NA
16 Ephemeral Stream	76	3	Culvert	0.00	NA*	NA	NA	NA
17 Ephemeral Stream	77	5	Culvert	0.00	NA*	NA	NA	NA
18 Ephemeral Stream	79	2	Culvert	0.00	NA*	NA	NA	NA
19 Ephemeral Stream	82	12	Culvert	0.00	NA*	NA	NA	NA
20 Ephemeral Stream	83	5	Culvert	0.00	NA*	NA	NA	NA
21 Ephemeral Stream	NA	5	Culvert	0.00	NA*	NA	NA	NA
22 Intermittent Stream	86	12	Culvert	0.00	NA*	NA	NA	NA
23 Intermittent Stream	NA	22	Culvert	0.00	NA*	NA	NA	NA
24 Decker Creek (Perennial Stream)	89	25	Bridge	0.00	NA*	NA	NA	NA
25 Ephemeral Stream	94	8	Culvert	0.00	NA*	NA	NA	NA
26 Elm Creek (Intermittent Stream)	98	18	Bridge	0.0003	NA*	Yes	NA	NA
27 Ditch/Swale	NA	NA	Culvert	0.00	NA*	NA	NA	NA
28 Ditch/Swale	NA	NA	Culvert	0.00	NA*	NA	NA	NA
29 Ditch/Swale	NA	NA	Bridge	0.00	NA*	NA	NA	NA

Site Number/Description	Individual Permit #199600228 Crossing Number	Average OHWM (feet)	Crossing	Permanent Fill (acres)	Temporary Fill (acres)	Has Fill Been Accounted For Under Individual Permit #199600228 (Y/N)	NWP	PCN (Y/N)
30 Ditch/Swale	NA	NA	Bridge	0.00	NA*	NA	NA	NA
31 Colorado River (Perennial Stream)	101	250	Bridge	0.001	NA*	No	NWP 14	No

* Information on temporary fill amounts is not available at this stage of the project.

An element of the proposed activity is to expand and improve the linear transportation facility at Sites 11, 26 and 32; an unnamed Tributary to Gilleland Creek, Elm Creek and the Colorado River, respectively. Appropriate measures would be taken to maintain normal downstream flows and minimize flooding.

A PCN for NWP 14 is required for the following potentially relevant scenarios:

1. The loss of waters of the U.S. exceeds 0.10 acre.
2. There is a discharge in a special aquatic site.

Impacts are not expected to exceed the 0.10-acre PCN threshold for NWP 14; therefore, a PCN for NWP 14 would not be required. Wetlands, which are considered special aquatic sites, would not be impacted.

2.1.4 Section 401 of the Clean Water Act: Water Quality Certification

The proposed project would be authorized under a USACE Section 404 permit; therefore, construction activities would require compliance with the State of Texas Water Quality Certification Program. The Section 401 Certification requirements for a NWP 14 would be met by implementing Best Management Practices (BMPs) from the Texas Commission on Environmental Quality's (TCEQ) 401 Water Quality Certification Conditions for NWPs. Compliance with Section 401 of the Clean Water Act requires the use of BMPs to manage water quality on sites affecting jurisdictional waters. These BMPs would address each of the following categories: 1) erosion control, 2) post construction total suspended solids (TSS) control, and 3) sedimentation control. Water quality BMPs that would be implemented may include the following:

- Approved temporary vegetation
- Blankets/matting or mulch filter berms
- Vegetated filter strips
- Silt fence, sand bag and/or compost filter berms and socks

2.1.5 Executive Order 11990, Wetlands

Executive Order 11990 requires federal agencies to provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and preserve and enhance the natural and beneficial values of wetlands. No wetlands would be impacted by the proposed project, and additional action under the Executive Order is not required.

2.1.6 Rivers and Harbors Act of 1899 and the General Bridge Act of 1946

Section 9 of the Rivers and Harbors Act of 1899 prohibits the construction of any bridge or causeway over or in navigable waterways of the U.S. without Congressional consent and approval through the Secretary of Transportation. Under Section 10 of the Act, the building of any wharfs, piers, jetties, and other structures is prohibited without Congressional approval, and excavation or fill within navigable waters requires USACE approval. The typical permitting process for bridges and causeways, however, was modified by the General Bridge Act of 1946, which granted the consent of Congress for any construction, maintenance and operation of bridges and approaches over navigable waters of the U.S. that are approved by the U.S. Coast Guard (USCG). According to the USACE Fort Worth District, the Colorado River is considered navigable “from the Bastrop-Fayette county line upstream to Longhorn Dam in Travis County, Texas.” Therefore, the portion of the Colorado River that would be impacted by proposed project is considered navigable waters and Section 10 of the Rivers and Harbors Act would apply. The Section 10 activity would be covered under NWP 14 without a PCN.

Under the General Bridge Act, a Bridge Project Questionnaire was submitted to the USCG on October 10, 2001, for the original construction of SH 130. The USCG responded on October 22, 2001 (**Appendix D**), and determined that at the site of the proposed bridge project, the Colorado River was determined to be non-navigable for the purposes of USCG jurisdiction. Therefore, the proposed project would not be subject to the provisions of the General Bridge Act.

2.1.7 Section 303(d) of the Clean Water Act

The State of Texas is required, under Sections 305(b) and 303(d) of the federal CWA, to prepare biennial statewide water quality assessments that identify the status of use attainment for water bodies, and to identify water bodies for which effluent limitations are not stringent enough to implement water quality standards. Based on the assessments, the areas of potential effect are accounted for on the 303(d) list. Runoff from this project would discharge directly into Segment 1428C, Gilleland Creek (see **Figure 5** in **Appendix A**). This segment is listed as threatened/impaired for bacteria. Because bacteria are not typical components of roadway runoff, the project is not expected to contribute to this constituent of concern. The 2014 303(d) list and 2014 Index of Water Quality Impairments were utilized in this assessment (**Appendix E**). Because the proposed project is being processed as a Categorical Exclusion, coordination with the TCEQ would not be required.

2.1.8 Clean Water Act Section 402

Section 402 of the CWA regulates discharge of pollutants to waters of the U.S. This not only regulates point-source discharges but also non-point source discharges, such as stormwater runoff from construction sites. The State of Texas has received authority from the EPA to administer Section 402 of the CWA. To accomplish this, the TCEQ developed the Texas Pollutant Discharge Elimination System (TPDES) program to regulate point and non-point sources of water pollution.

The proposed project would include five or more acres of earth disturbance. TxDOT would comply with TCEQ's TPDES Construction General Permit (CGP). A Stormwater Pollution Prevention Plan (SW3P) would be implemented, and a construction site notice would be posted on the construction site. A Notice of Intent (NOI) would be required.

The project is located within portions of the boundaries of the City of Pflugerville and Travis County's Phase II Municipal Separate Storm Sewer Systems (MS4) as well as the City of Austin and TxDOT Austin District's Phase I MS4, and the contractor would comply with the applicable MS4 requirements.

2.1.9 Floodplains

Executive Order 11988 "Floodplain Management" requires federal agencies to avoid, to the extent practicable, actions that would result in development within floodplains and/or affect floodplain values. The project is located within Federal Emergency Management Agency's (FEMA) designated 100-year floodplain (map panels 48453C0610K and 48453C0630K, effective January 6, 2016; and 48453C0490J, 48453C0480J, 48453C0290J, and 48453C0280J, effective August 18, 2014). The hydraulic design for this project would be in accordance with current FHWA and TxDOT design policies. The facility would permit the conveyance of the 100-year floodplain, inundation of the roadway being acceptable, without causing significant damage to the facility, stream or other property. The proposed project would not increase the base flood elevation to a level that would violate applicable floodplain regulations and ordinances. Coordination with the local Floodplain Administrators (Cities of Pflugerville and Austin and Travis County) would be required.

3.0 PERMITS/COMMITMENTS

The following permits and commitments would be required for the proposed project:

The placement of temporary or permanent dredge or fill material into potentially jurisdictional waters of the U.S. would be authorized under a USACE Section 404 Nationwide Permit (NWP) 14 without a pre-construction notification (PCN). The contractor should be advised that waters of the U.S. and wetlands exist within the right of way and outside of the area of proposed improvements. Staging of equipment, selection of laydown areas, temporary access, and other construction related activities should avoid impacting waters of the U.S. and wetlands, and coordination with the TxDOT District Environmental Staff is recommended prior to construction.

The portion of the Colorado River that would be impacted by proposed project is considered navigable waters and Section 10 of the Rivers and Harbors Act and the provisions of the General Bridge Act would apply. The Section 10 activity would be covered under NWP 14 without a PCN. Coordination with the USCG under the General Bridge Act was conducted during the preparation of the EIS for the original construction of SH 130. The USCG determined the portion of the Colorado River crossed by the proposed project to be non-navigable (see letter in **Appendix D**) and further coordination with the USCG is not required.

Water quality BMPs would be implemented and include the following:

- Approved temporary vegetation
- Blankets/matting or mulch filter berms
- Vegetated filter strips
- Silt fence, sand bag and/or compost filter berms and socks

TxDOT would comply with the requirements of the TCEQ's TPDES Construction General Permit. A SW3P would be implemented, and a construction site notice would be posted at the construction site. A NOI would be prepared and submitted to the TCEQ.

The project is located within portions of the boundaries of the City of Pflugerville and Travis County's Phase II Municipal Separate Storm Sewer Systems (MS4) as well as the City of Austin and TxDOT Austin District's Phase I MS4, and the contractor would comply with the applicable MS4 requirements.

The proposed project includes work within a FEMA-designated 100-year floodplain; therefore, coordination with the local Floodplain Administrators (Cities of Pflugerville and Austin and Travis County) would be required.

4.0 REFERENCES

- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station. Vicksburg, MS.
- Environmental Laboratory. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0), Technical Report ERDC/EL TR-10-1. U.S. Army Engineer Research and Development Center. Vicksburg, MS.
- Ryder, Paul D. 2006. Ground Water Atlas of the United States; Oklahoma, Texas. HA 730-E. http://pubs.usgs.gov/ha/ha730/ch_e/E-text8.html (accessed December 11, 2013).
- Texas Water Development Board (TWDB). 2017. Trinity Aquifer. <http://www.twdb.texas.gov/groundwater/aquifer/majors/trinity.asp>.
- USDA-Soil Conservation Service (NRCS). 1974. Soil Survey of Travis County, Texas.
- U.S. Geological Survey (USGS). 1987. 7.5-minute series topographic maps, Pflugerville East and Webberville, Texas, quadrangles.
- . 1988. 7.5-minute series topographic maps, Manor and Montopolis, Texas, quadrangles.

APPENDIX A

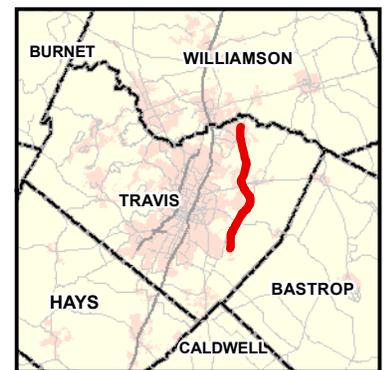
FIGURES



**Figure 1
Project Location**

SH 130 from SH 45N to SH 71

CSJ: 0440-06-017 and 0440-06-018



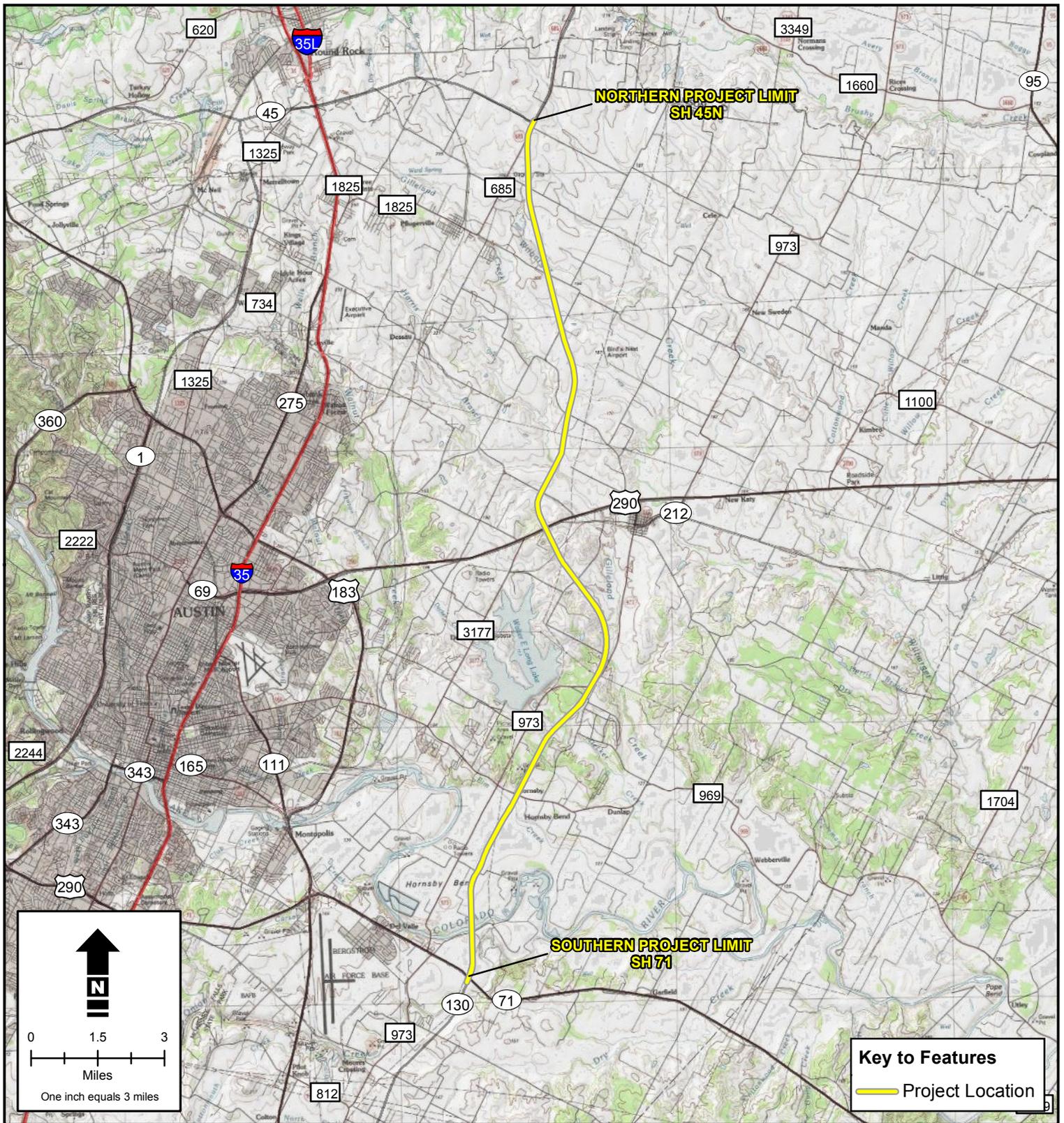
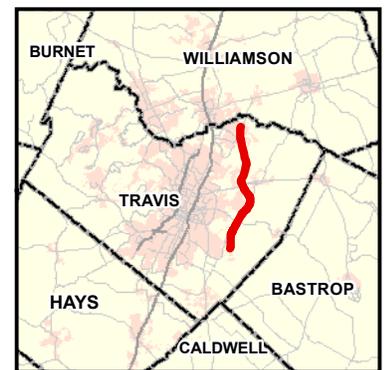


Figure 2
Project Area Location

SH 130 from SH 45N to SH 71

CSJ: 0440-06-017 and 0440-06-018

USGS 7.5 Minute Topographic Quadrangles:
Manor (USGS# 30097-C5), Montopolis (USGS# 30097-B6), Pflugerville East,
(USGS# 30097-D5), and Webberville (USGS# 30097-B5), TX



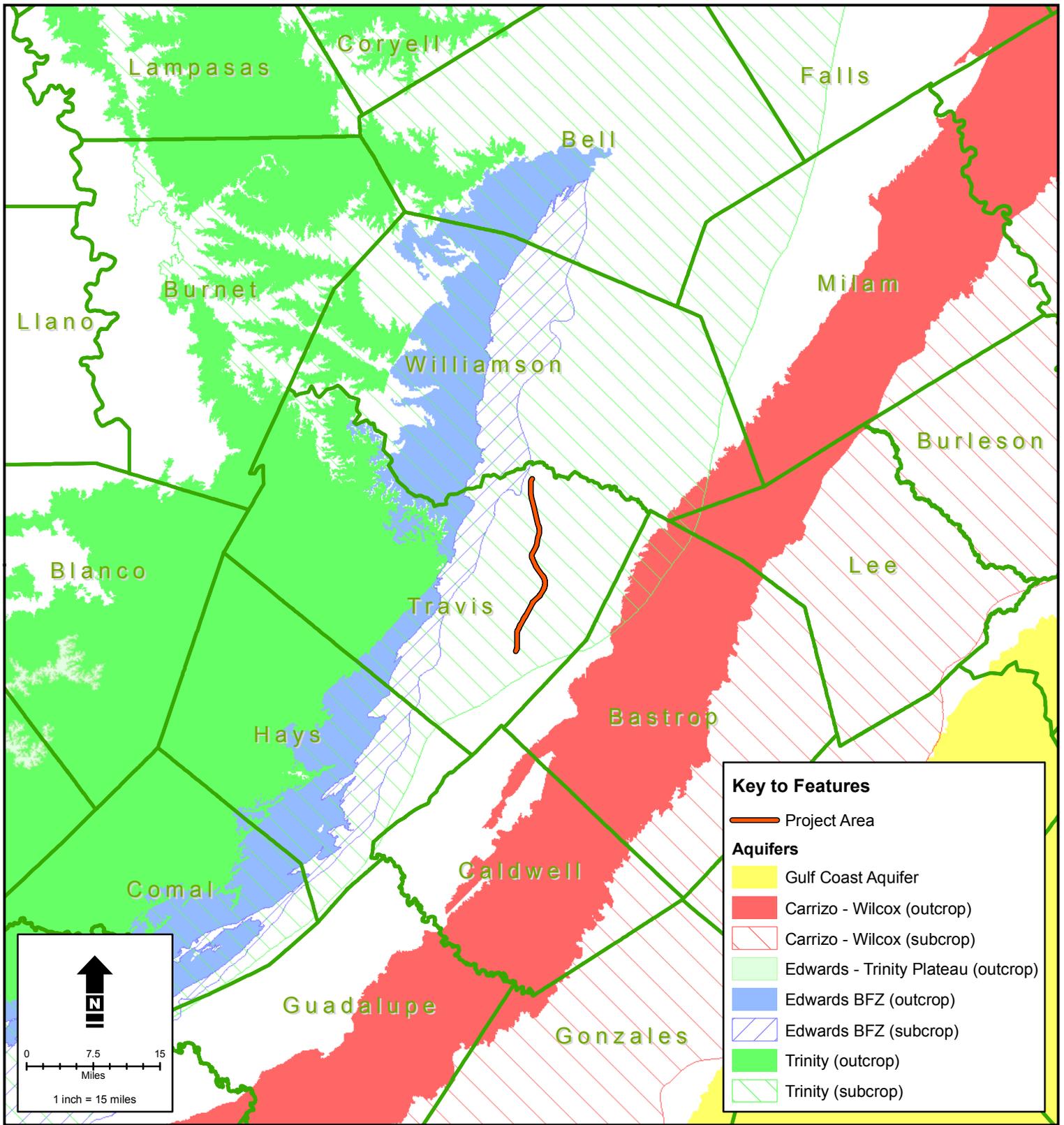
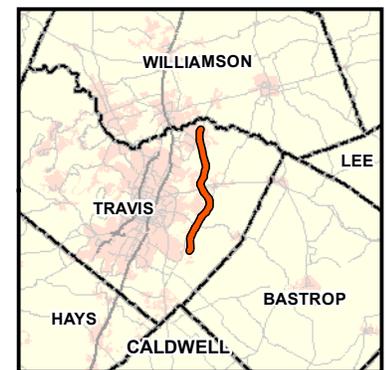


Figure 3
Major and Minor Aquifers of Texas

SH 130 from SH 45N to SH 71

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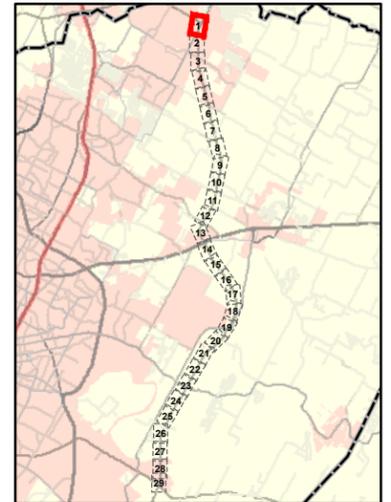


ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES

SH 130 from SH 45N to SH 71

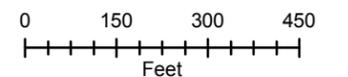
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LOCATOR DIAGRAM



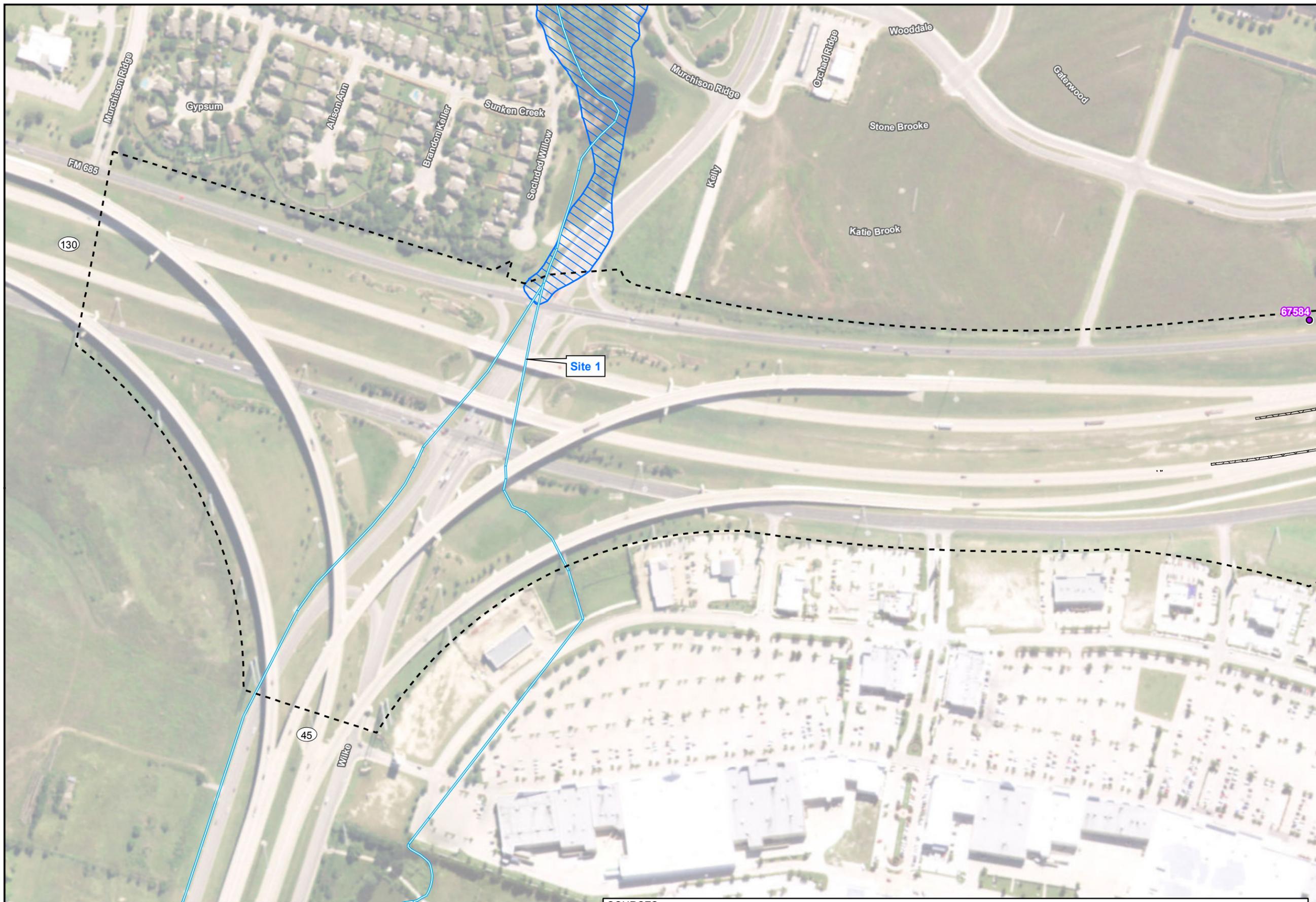
Key to Features

- Wetland Sample Point
- Water Wells (SDRDB)
- Water Wells (GWDB)
- Streams (COA)
- Proposed Additional Lane
- Proposed Bridge Extension
- Project Area
- Floodzones (FEMA)
- Delineated Wetlands
- Ordinary High Water Mark (OHWM)



1 inch equals 300 ft

FIGURE 4 - 1



NOTE:
Only the proposed project footprint and immediate surrounding area was surveyed for water resources. OHWMs were determined using a combination of data collected from the OHWM determinations associated with the original construction of SH130, field verification, and, where warranted, new delineations.

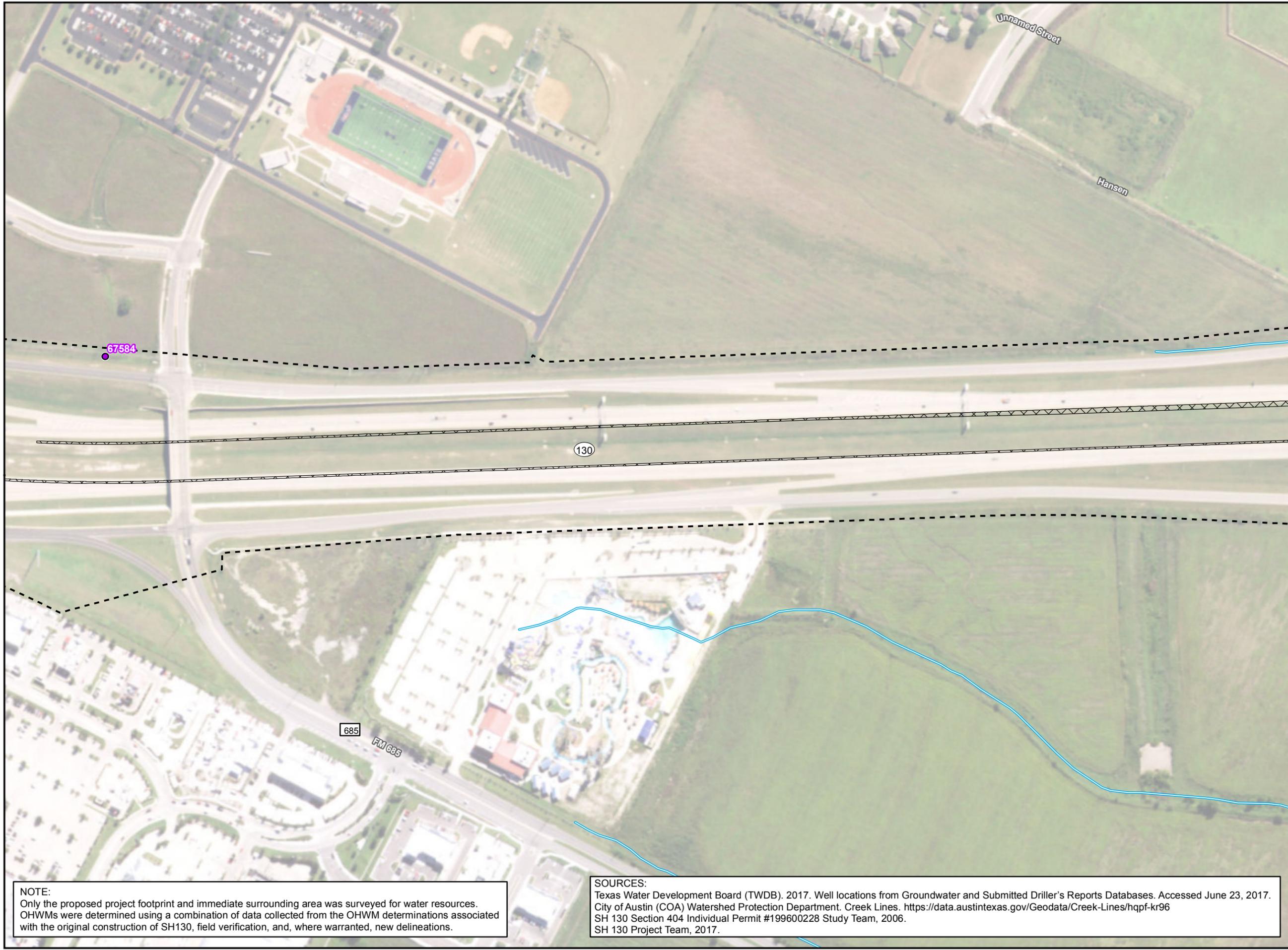
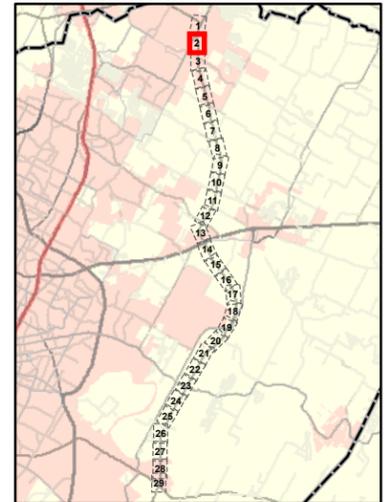
SOURCES:
Texas Water Development Board (TWDB). 2017. Well locations from Groundwater and Submitted Driller's Reports Databases. Accessed June 23, 2017.
City of Austin (COA) Watershed Protection Department. Creek Lines. <https://data.austintexas.gov/Geodata/Creek-Lines/hqpf-kr96>
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ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES

SH 130 from SH 45N to SH 71

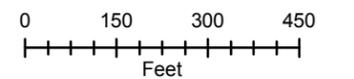
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

- Wetland Sample Point
- Water Wells (SDRDB)
- Water Wells (GWDB)
- Streams (COA)
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- Project Area
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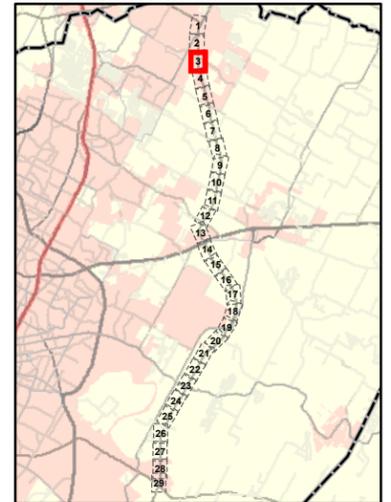
FIGURE 4 - 2

**ENVIRONMENTAL
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WATER RESOURCES**

SH 130 from SH 45N to SH 71

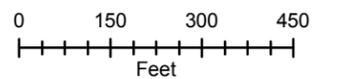
CSJ: 0440-06-017 &
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LOCATOR DIAGRAM



Key to Features

- Wetland Sample Point
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- Water Wells (GWDB)
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SH 130 Section 404 Individual Permit #199600228 Study Team, 2006.
SH 130 Project Team, 2017.

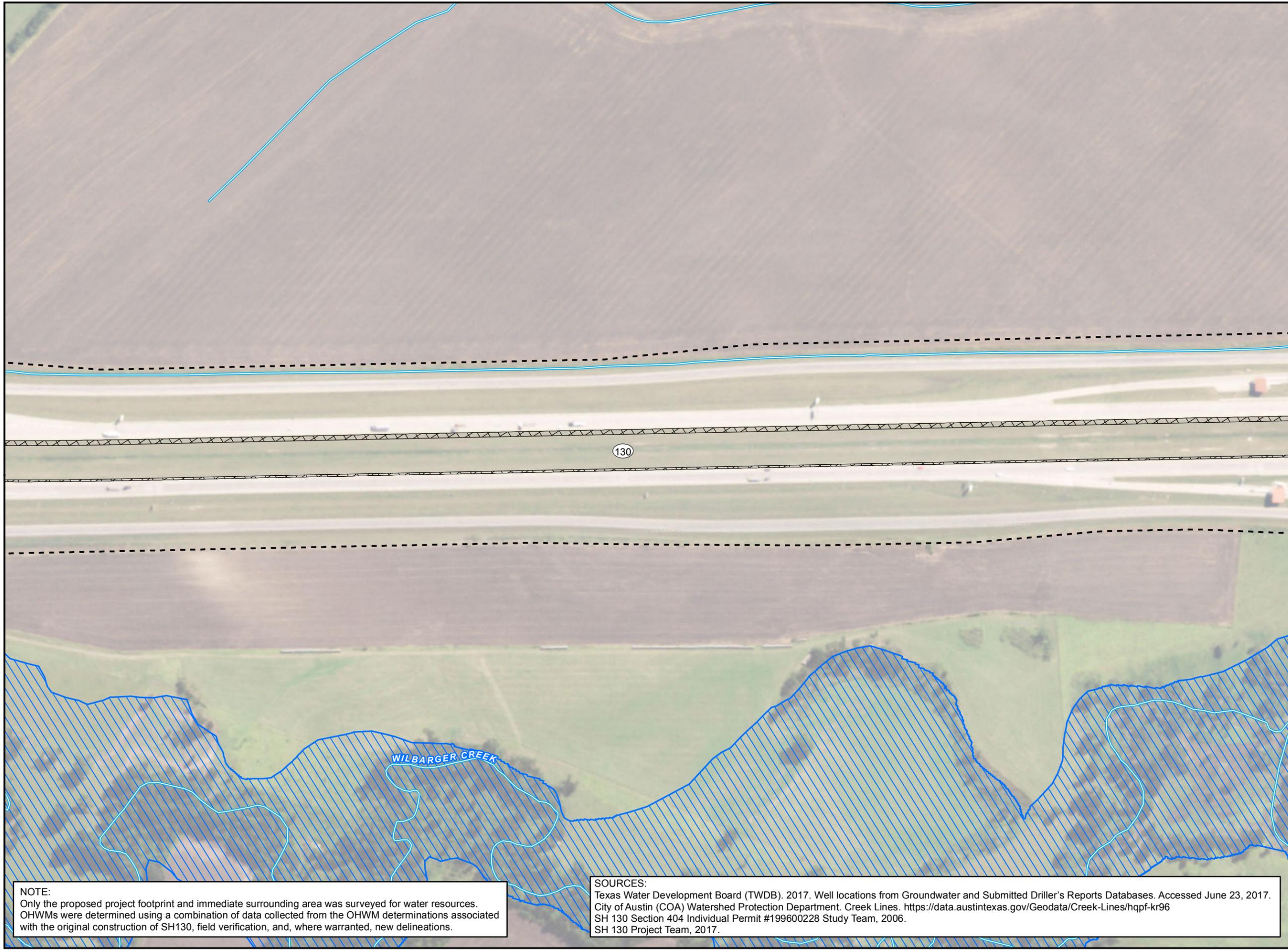
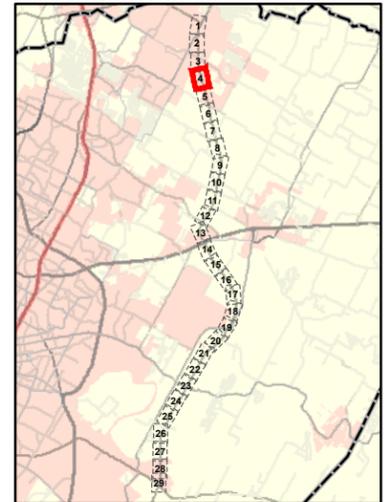
FIGURE 4 - 3

ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES

SH 130 from SH 45N to SH 71

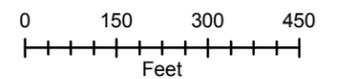
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

- Wetland Sample Point
- Water Wells (SDRDB)
- Water Wells (GWDB)
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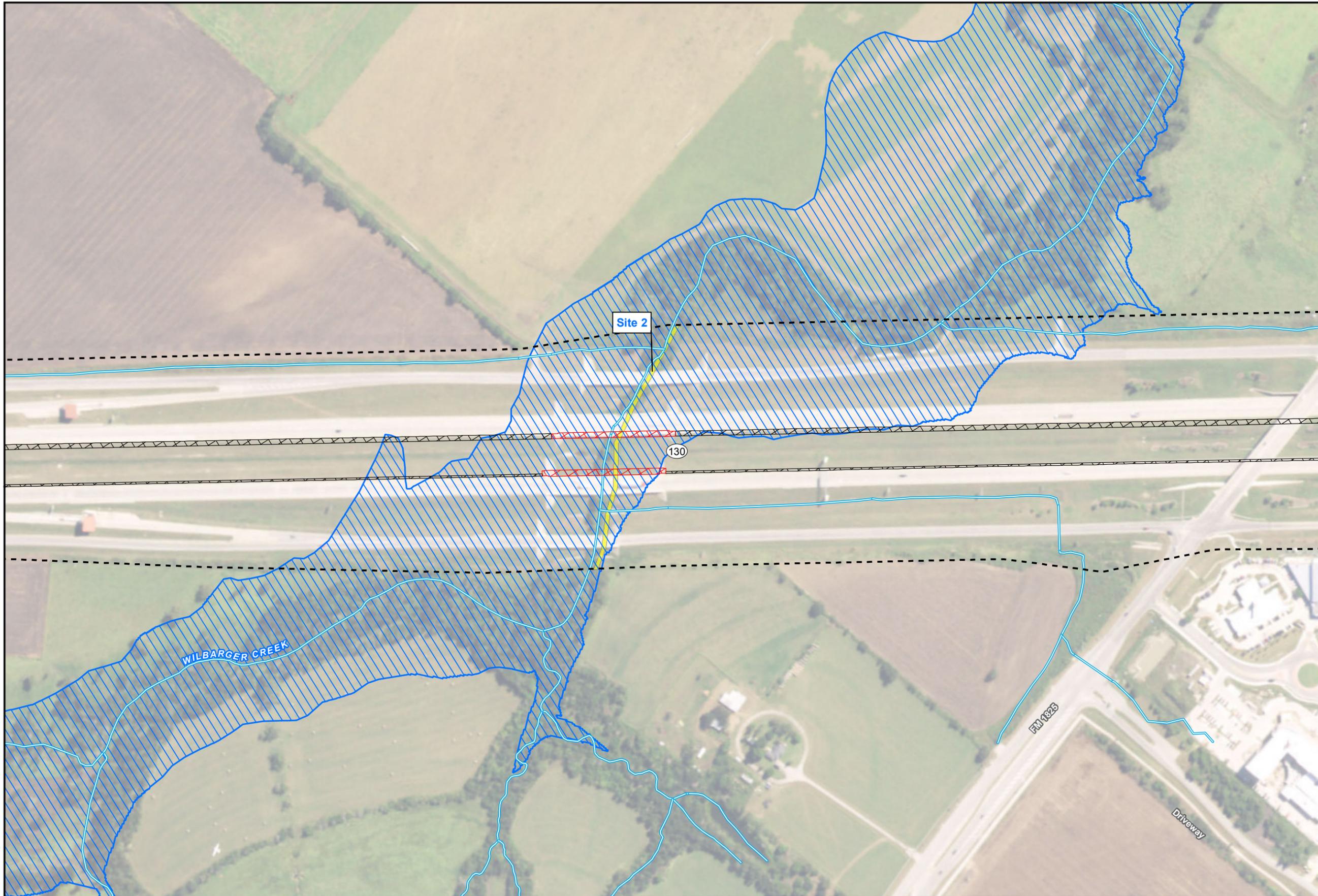
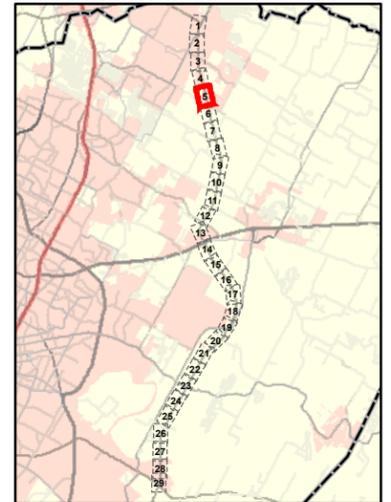
FIGURE 4 - 4

**ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES**

SH 130 from SH 45N to SH 71

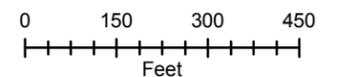
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

- Wetland Sample Point
- Water Wells (SDRDB)
- Water Wells (GWDB)
- Streams (COA)
- ▨ Proposed Additional Lane
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SH 130 Section 404 Individual Permit #199600228 Study Team, 2006.
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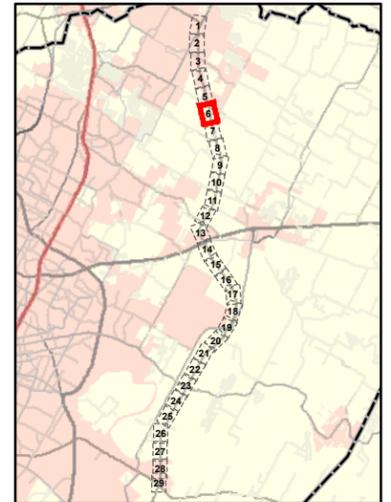
FIGURE 4 - 5

**ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES**

SH 130 from SH 45N to SH 71

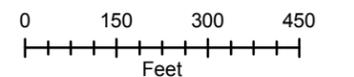
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

- Wetland Sample Point
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- Water Wells (GWDB)
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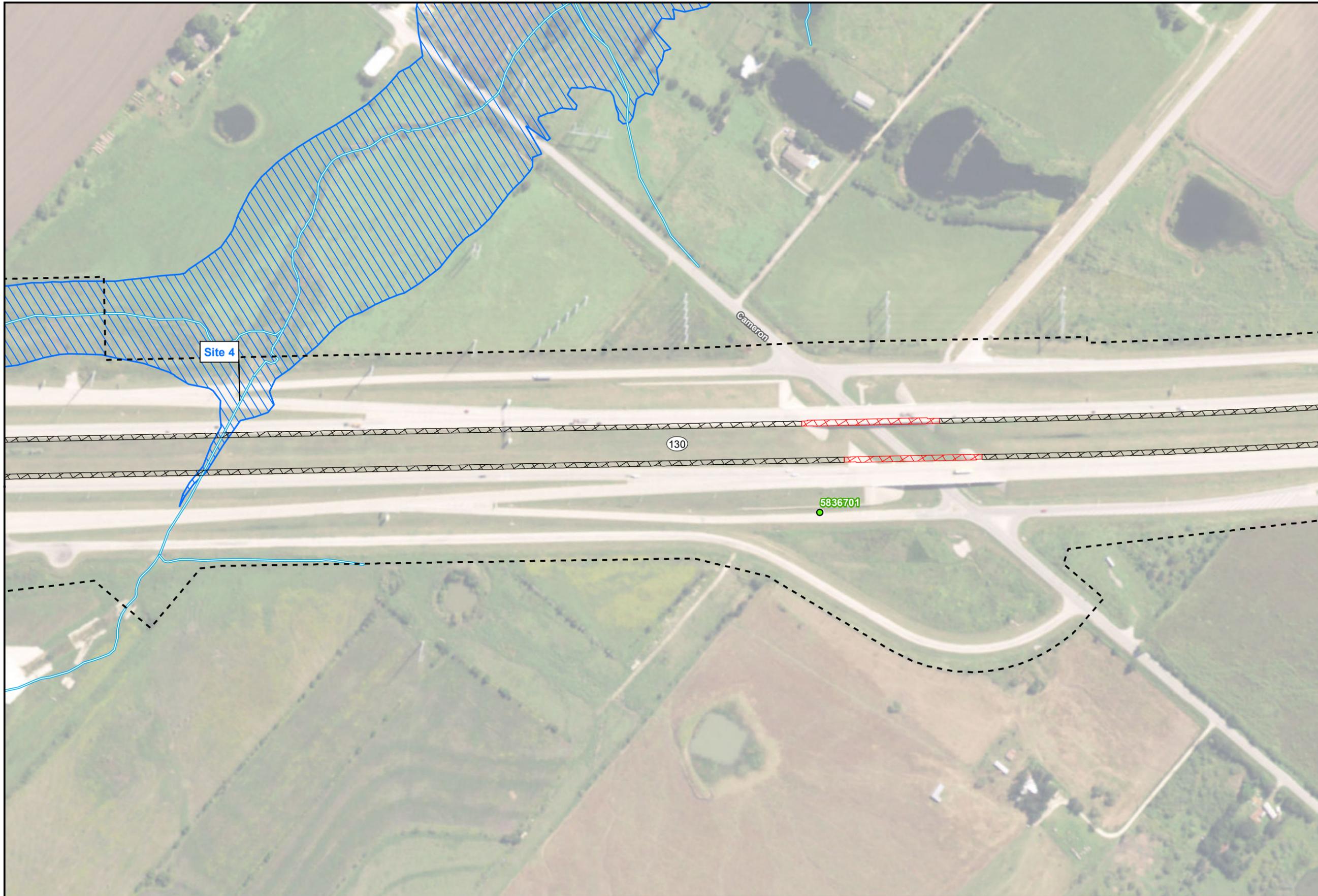
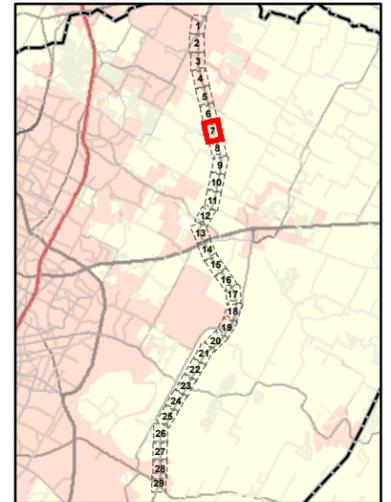
FIGURE 4 - 6

ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES

SH 130 from SH 45N to SH 71

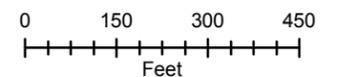
CSJ: 0440-06-017 &
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LOCATOR DIAGRAM



Key to Features

- Wetland Sample Point
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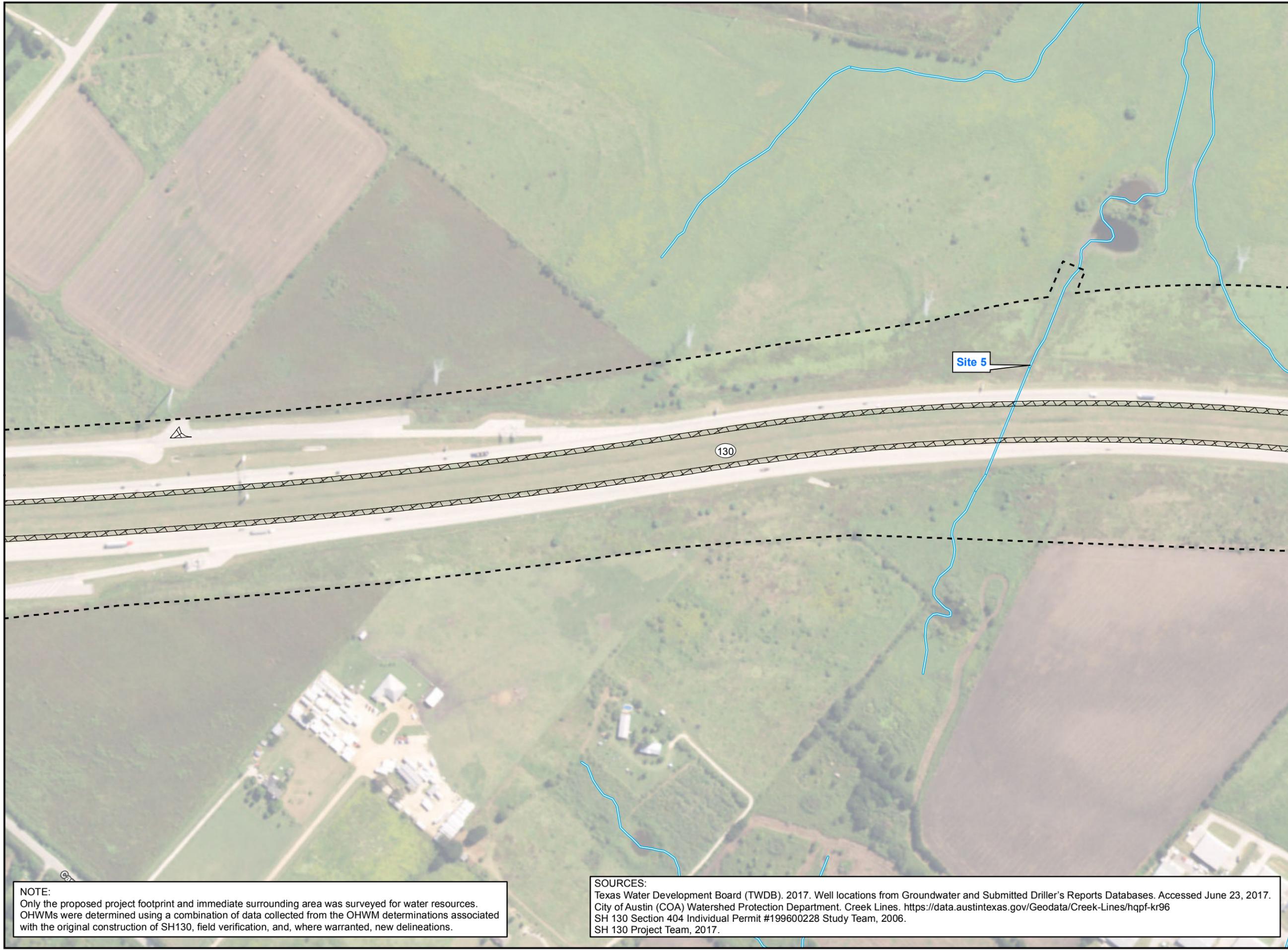
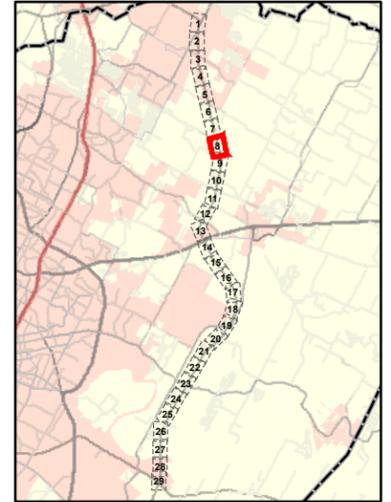
FIGURE 4 - 7

ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES

SH 130 from SH 45N to SH 71

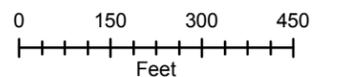
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

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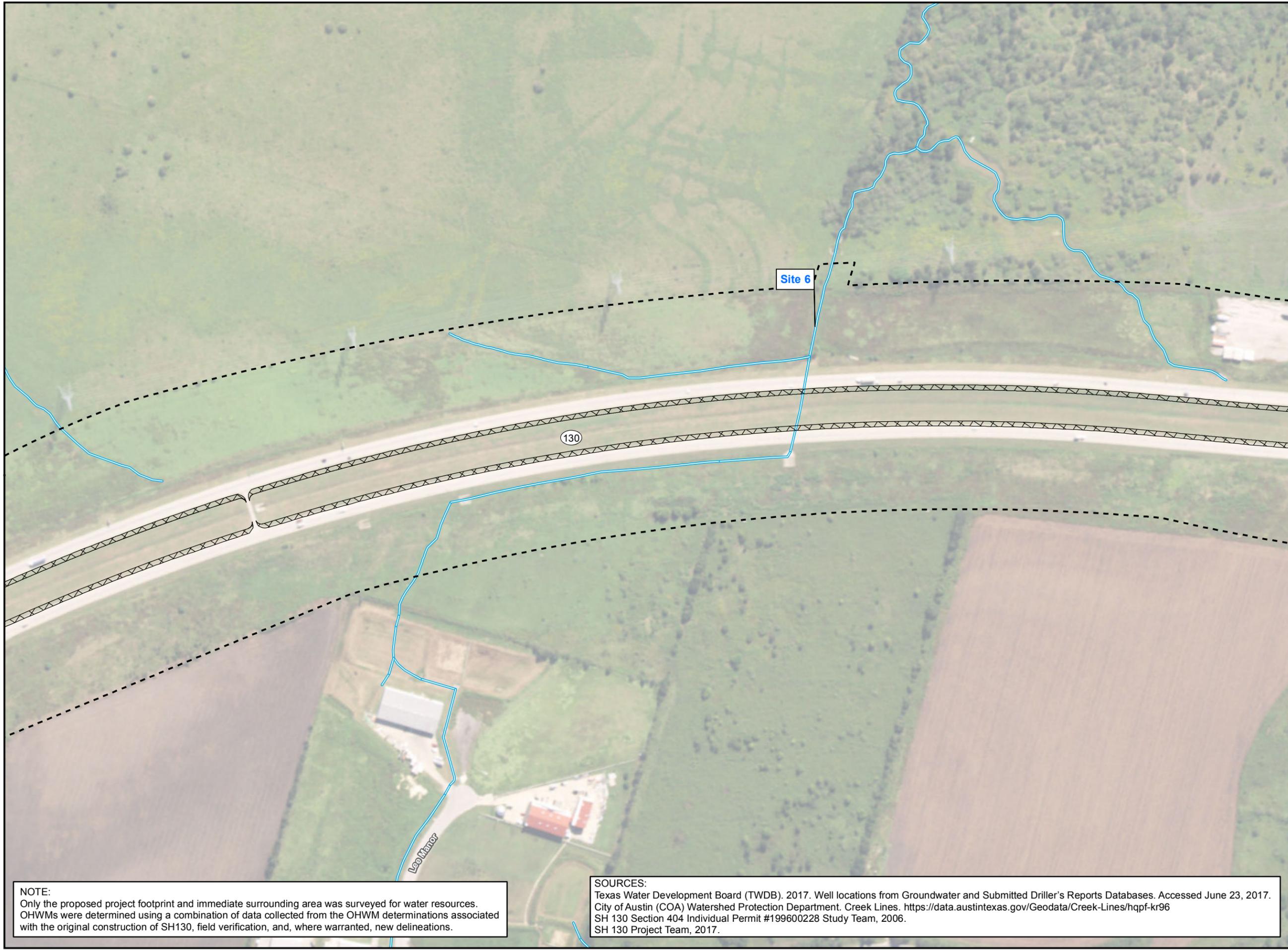
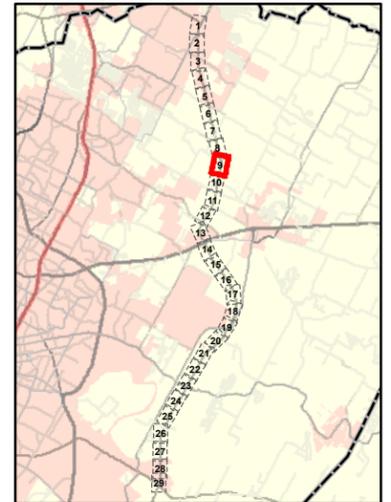
FIGURE 4 - 8

ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES

SH 130 from SH 45N to SH 71

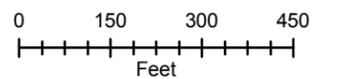
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

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- Water Wells (SDRDB)
- Water Wells (GWDB)
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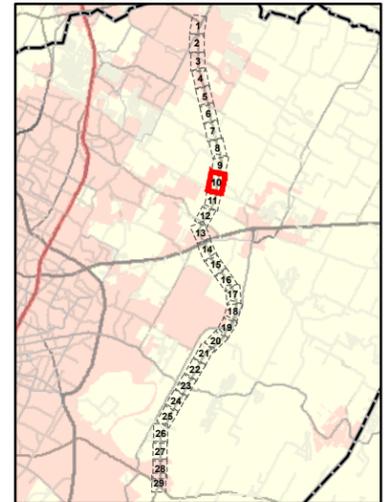
FIGURE 4 - 9

ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES

SH 130 from SH 45N to SH 71

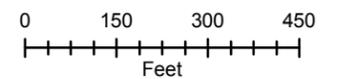
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



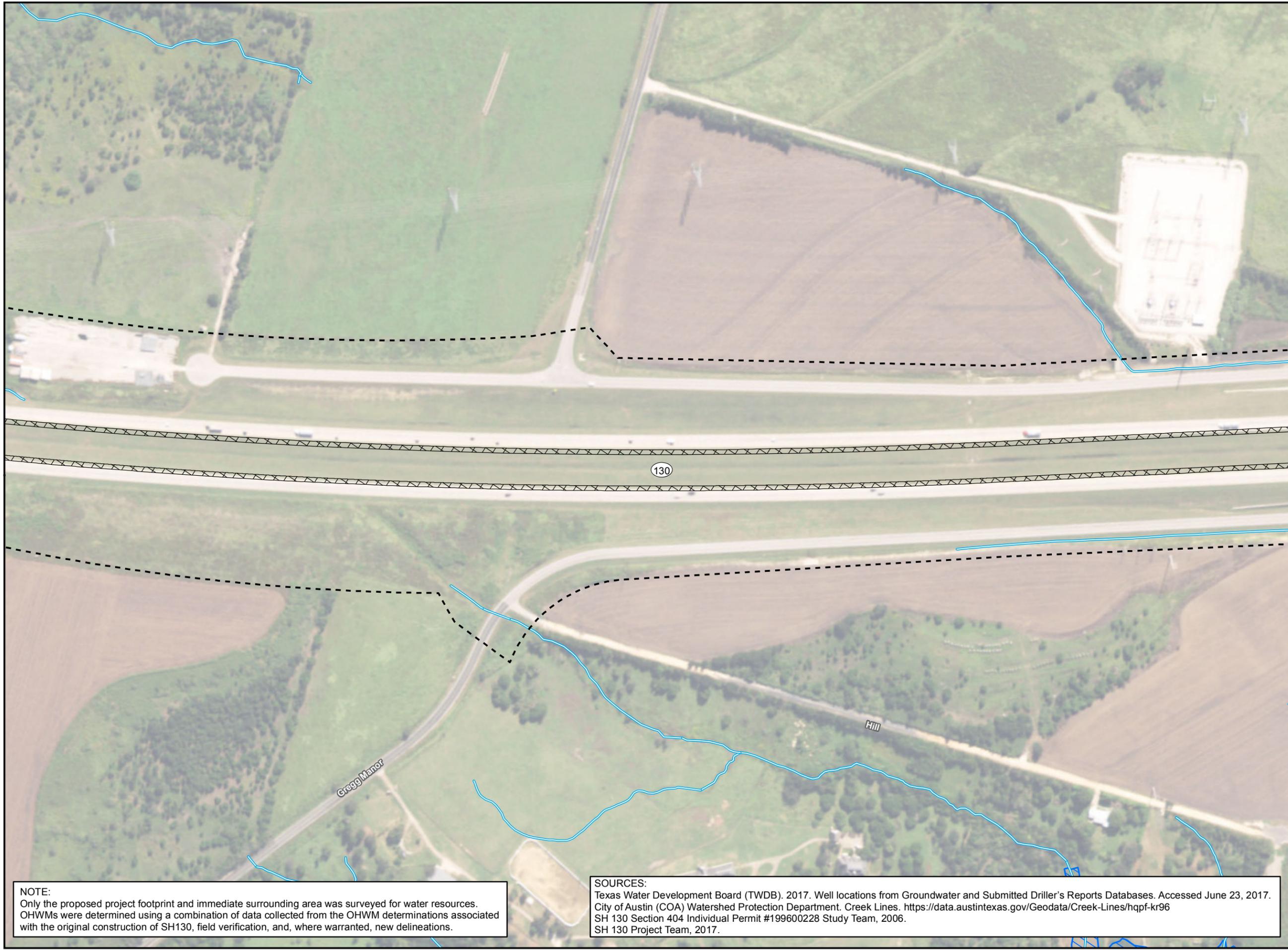
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FIGURE 4 - 10



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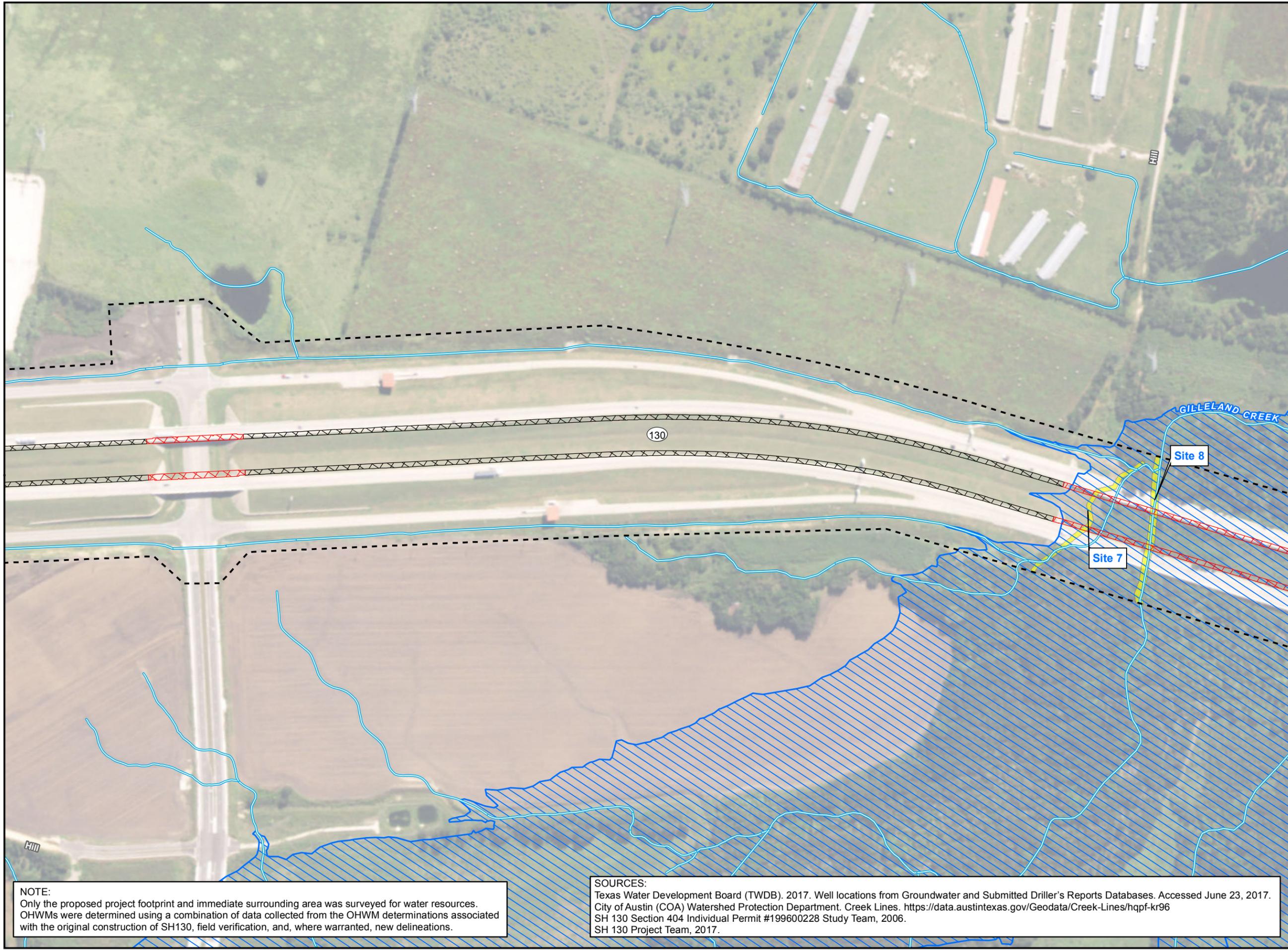
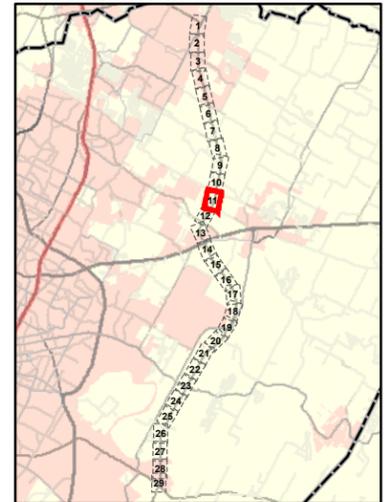
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ENVIRONMENTAL
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WATER RESOURCES

SH 130 from SH 45N to SH 71

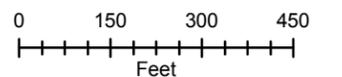
CSJ: 0440-06-017 &
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LOCATOR DIAGRAM



Key to Features

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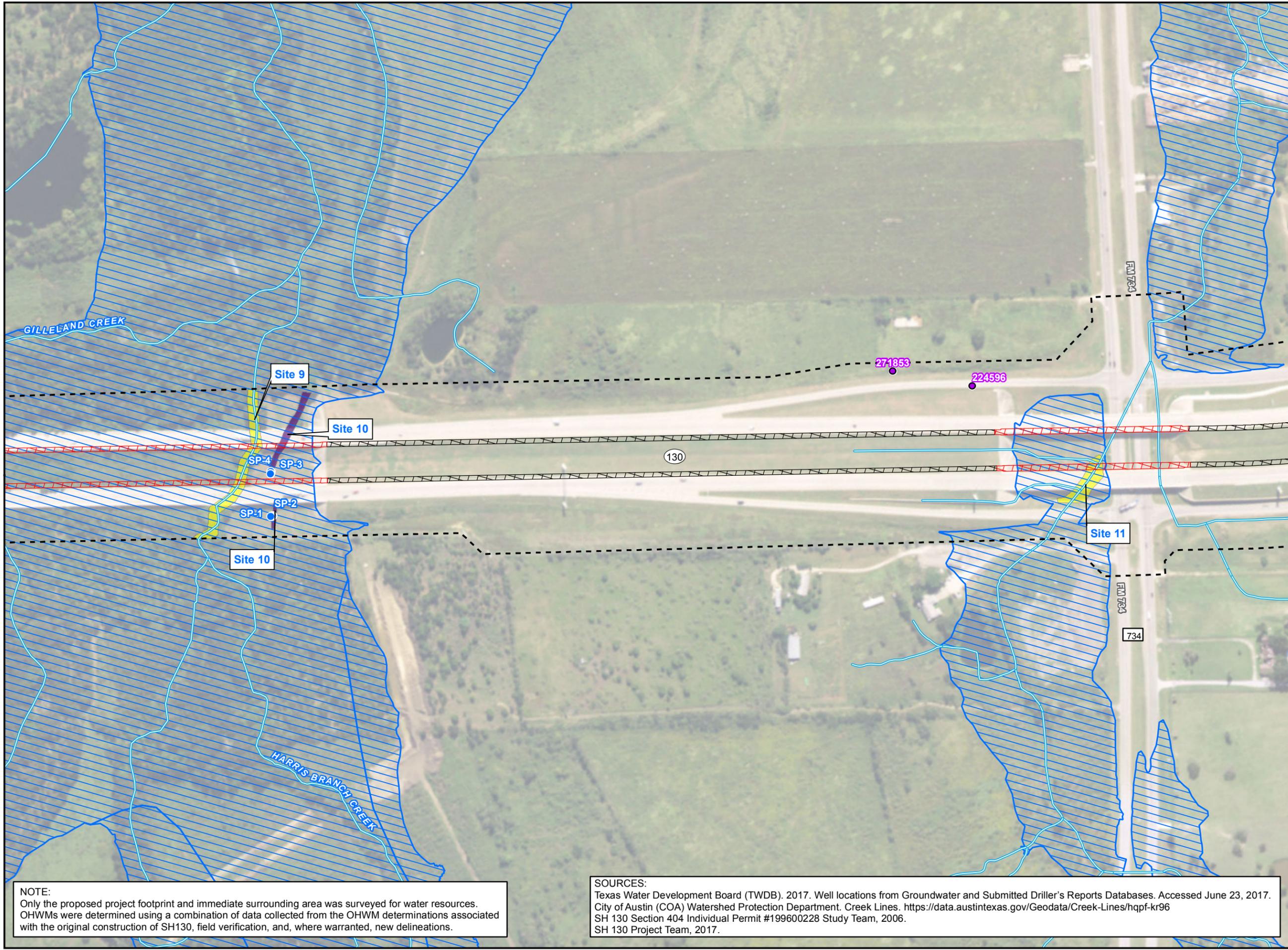
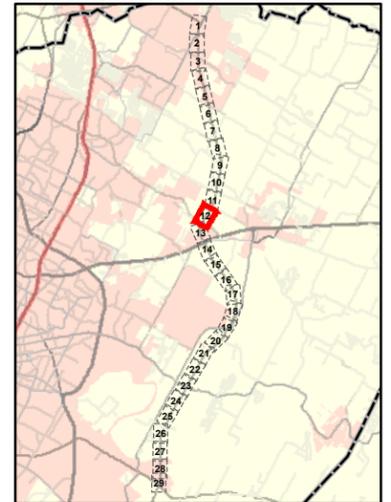
FIGURE 4 - 11

**ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES**

SH 130 from SH 45N to SH 71

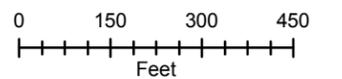
CSJ: 0440-06-017 &
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LOCATOR DIAGRAM



Key to Features

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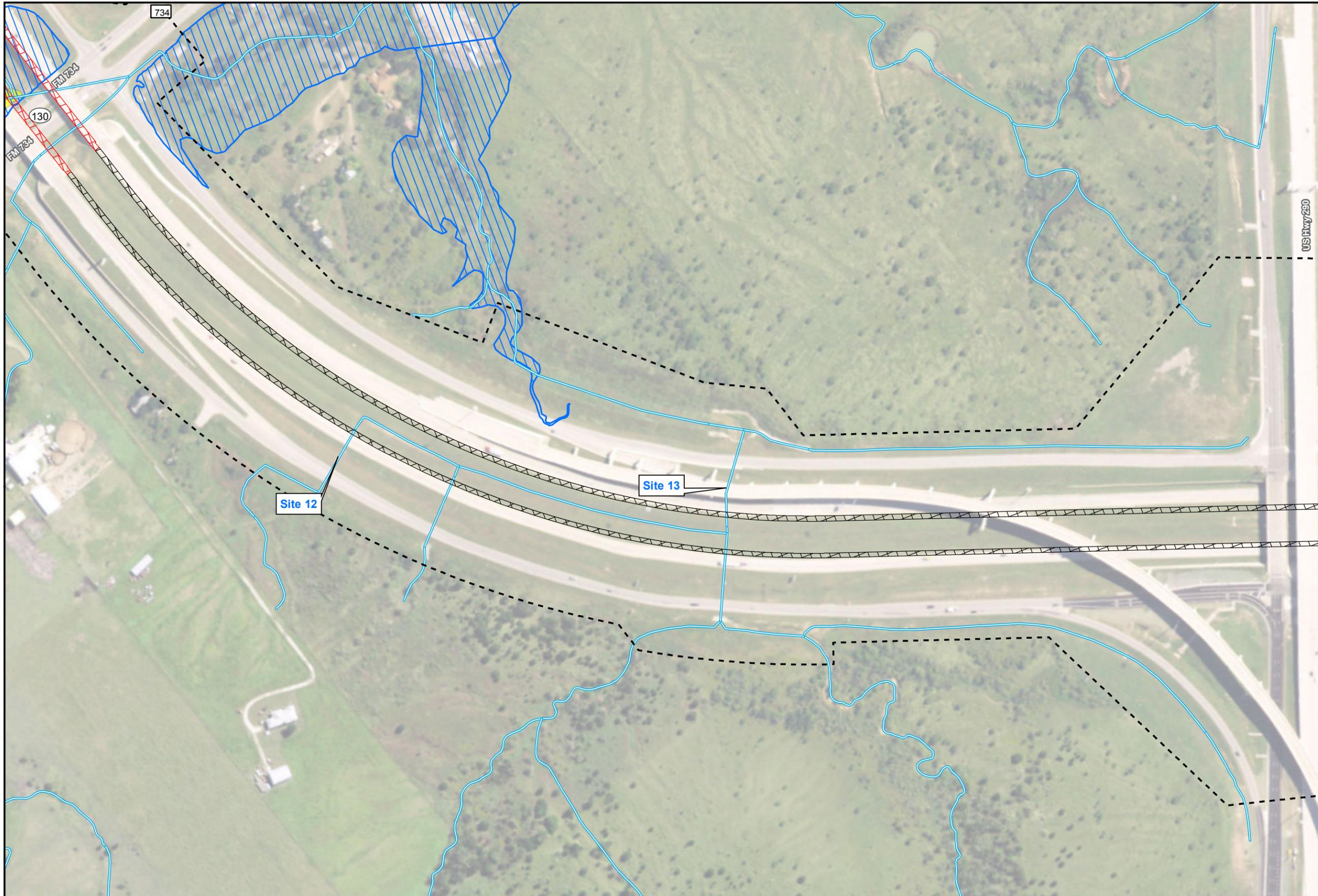
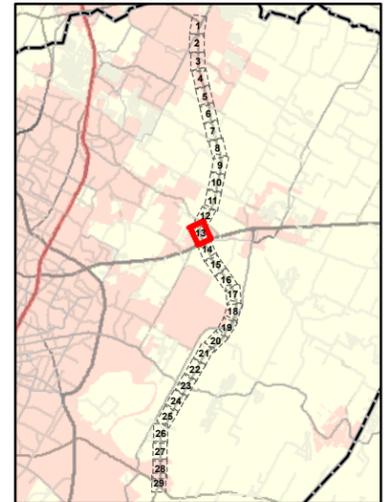
FIGURE 4 - 12

**ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES**

SH 130 from SH 45N to SH 71

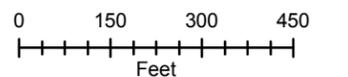
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

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- Water Wells (GWDB)
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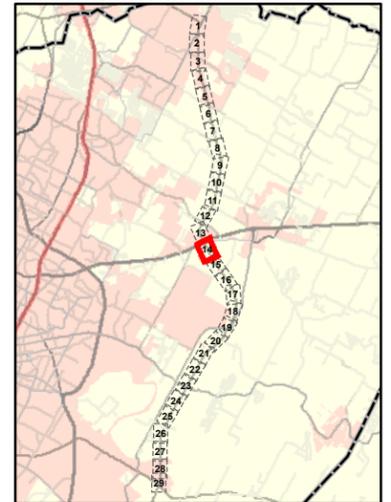
FIGURE 4 - 13

ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES

SH 130 from SH 45N to SH 71

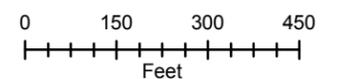
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

- Wetland Sample Point
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- Water Wells (GWDB)
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FIGURE 4 - 14



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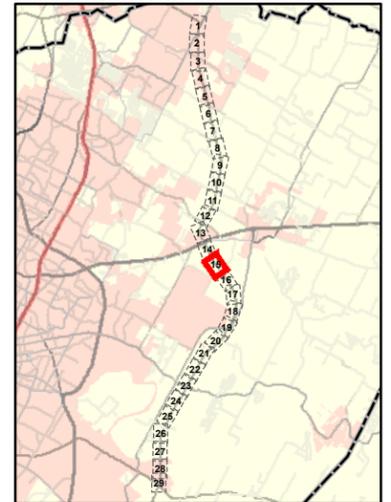
SOURCES:
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**ENVIRONMENTAL
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WATER RESOURCES**

SH 130 from SH 45N to SH 71

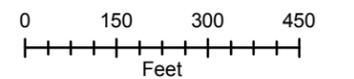
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



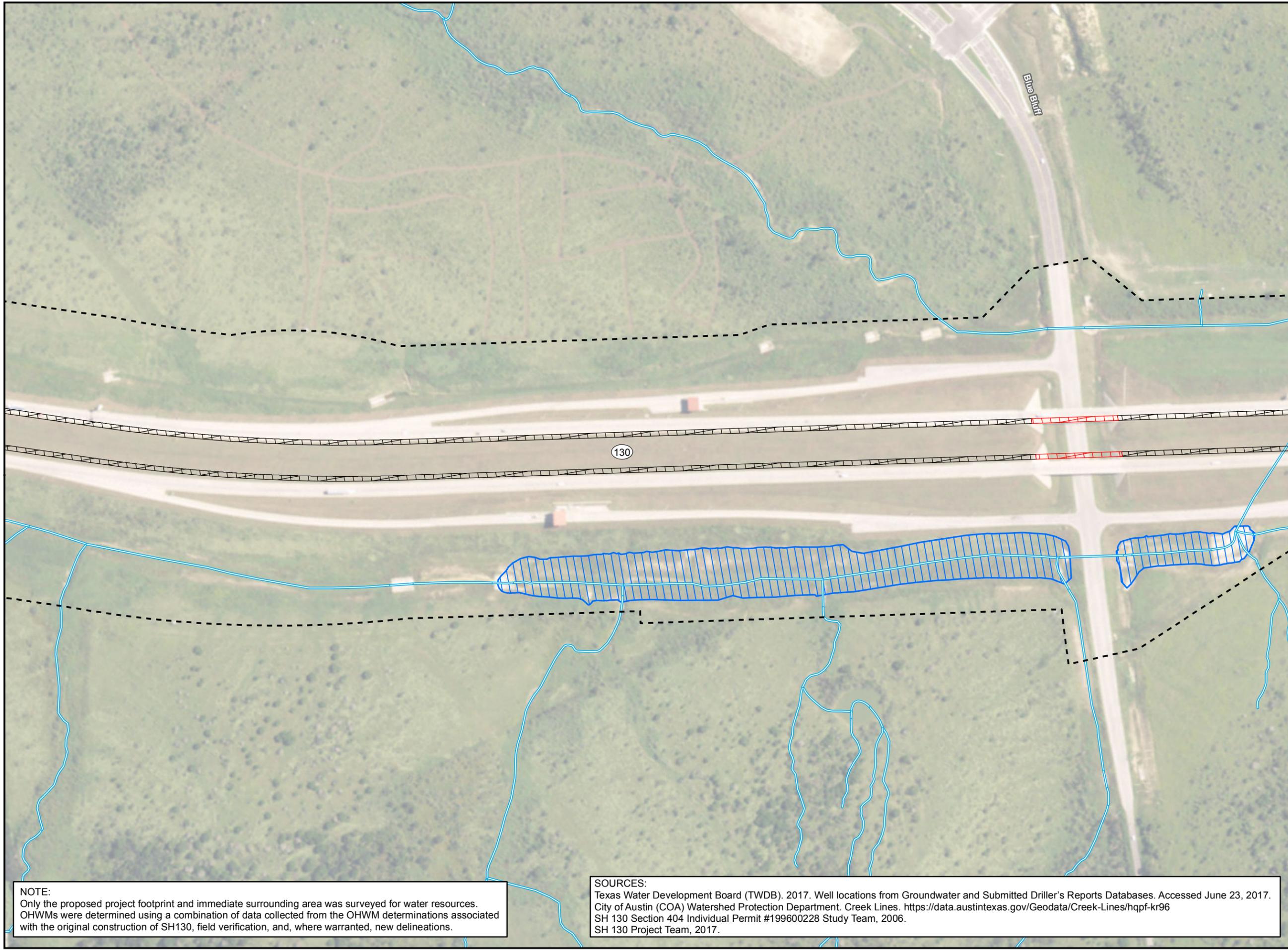
Key to Features

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- Water Wells (GWDB)
- Streams (COA)
- Proposed Additional Lane
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FIGURE 4 - 15



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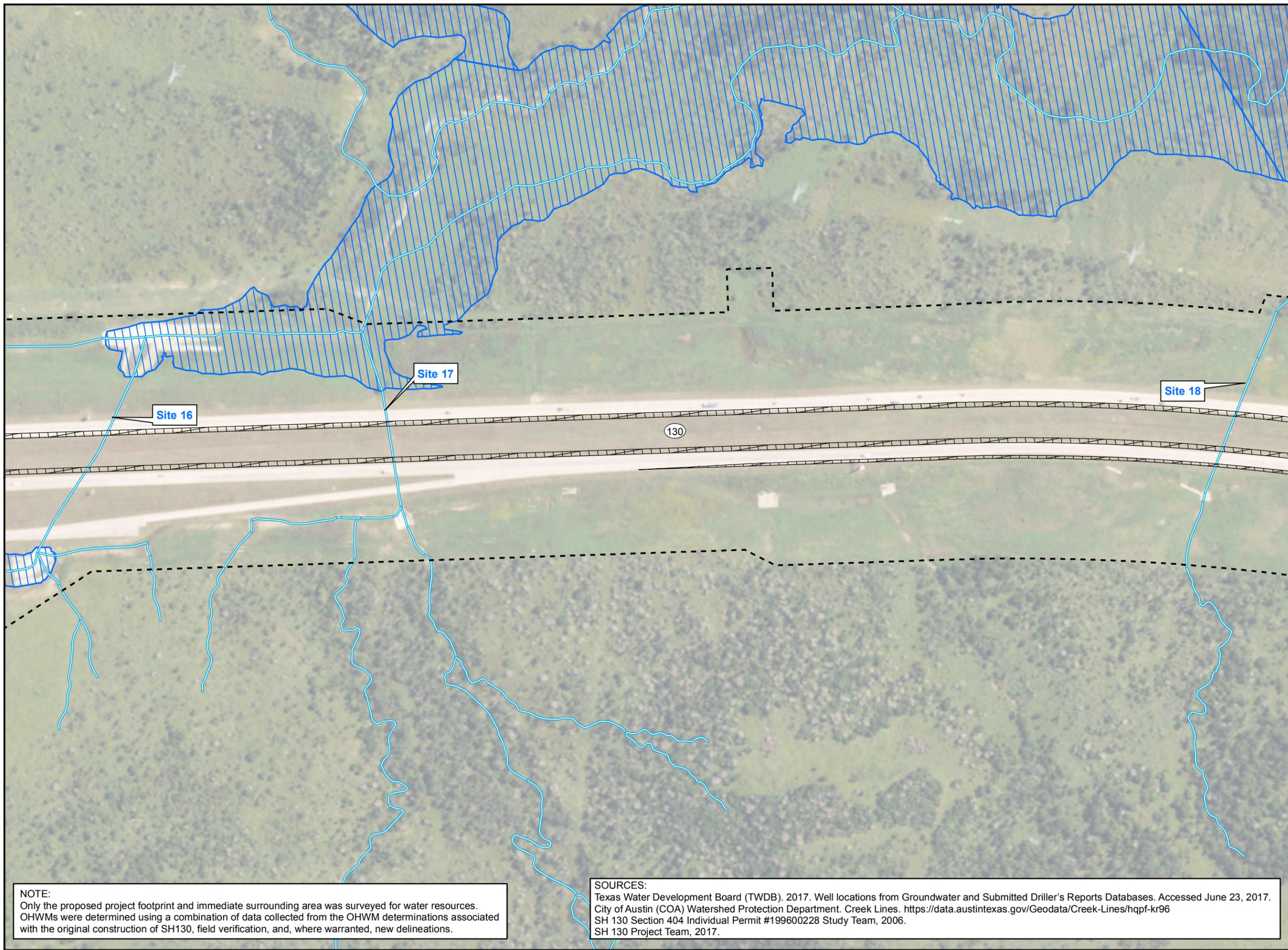
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**ENVIRONMENTAL
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WATER RESOURCES**

SH 130 from SH 45N to SH 71

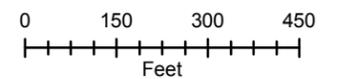
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

- Wetland Sample Point
- Water Wells (SDRDB)
- Water Wells (GWDB)
- Streams (COA)
- ▨ Proposed Additional Lane
- ▨ Proposed Bridge Extension
- - - Project Area
- ▨ Floodzones (FEMA)
- Delineated Wetlands
- Ordinary High Water Mark (OHWM)



1 inch equals 300 ft

NOTE:
Only the proposed project footprint and immediate surrounding area was surveyed for water resources. OHWMs were determined using a combination of data collected from the OHWM determinations associated with the original construction of SH130, field verification, and, where warranted, new delineations.

SOURCES:
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City of Austin (COA) Watershed Protection Department. Creek Lines. <https://data.austintexas.gov/Geodata/Creek-Lines/hqpf-kr96>
SH 130 Section 404 Individual Permit #199600228 Study Team, 2006.
SH 130 Project Team, 2017.

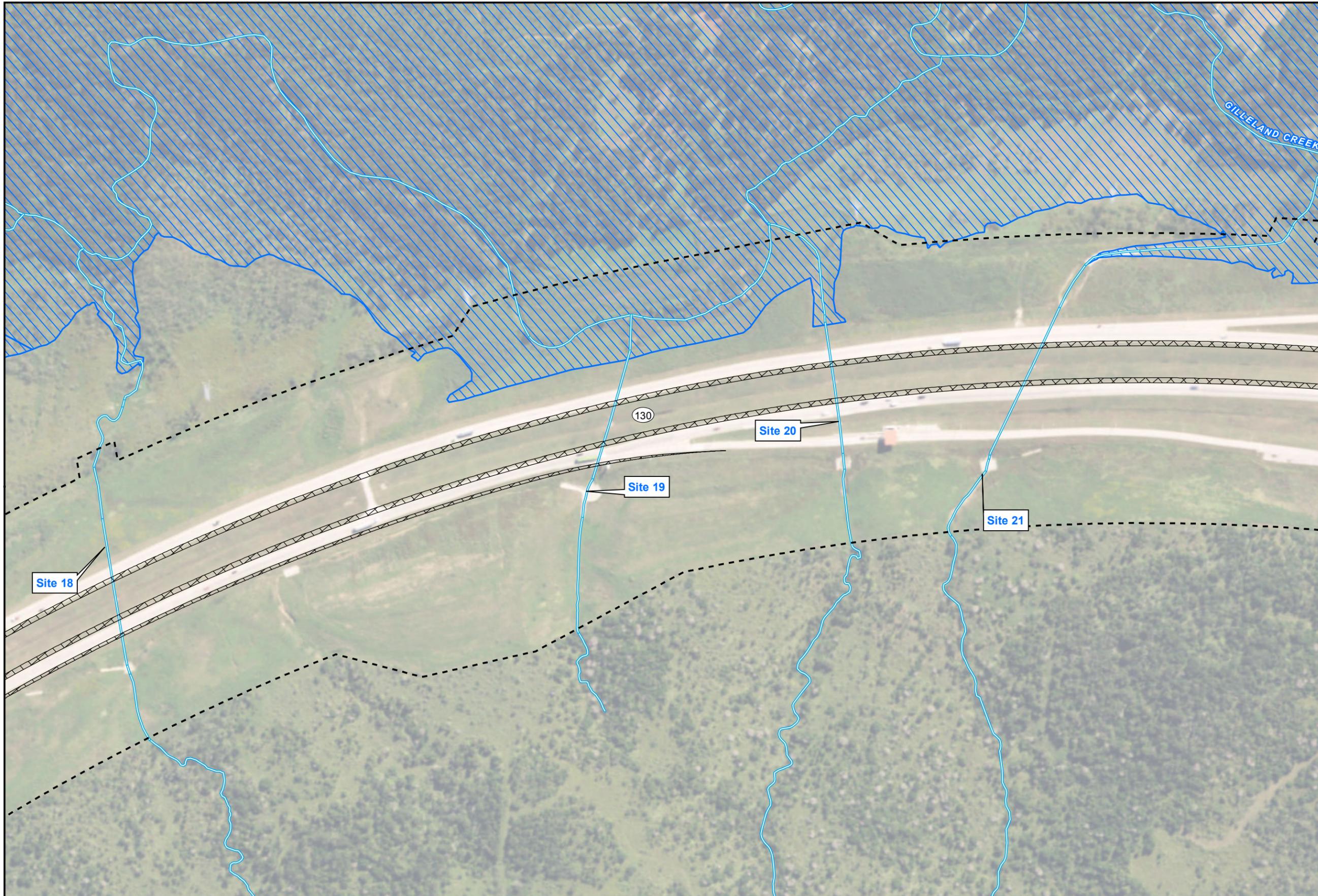
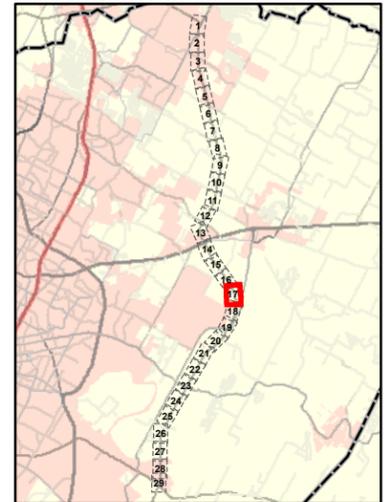
FIGURE 4 - 16

**ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES**

SH 130 from SH 45N to SH 71

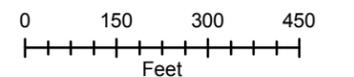
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

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- Water Wells (GWDB)
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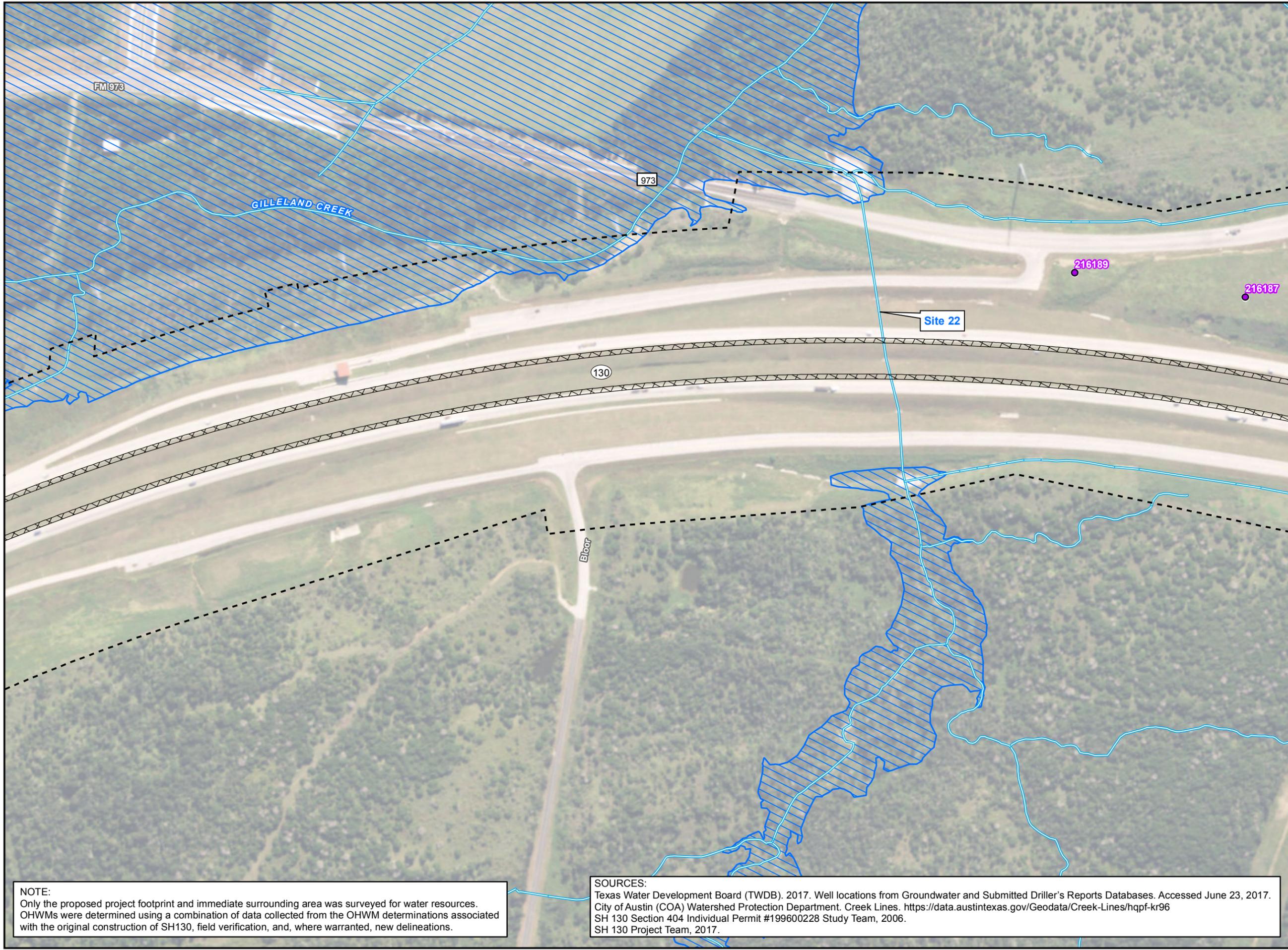
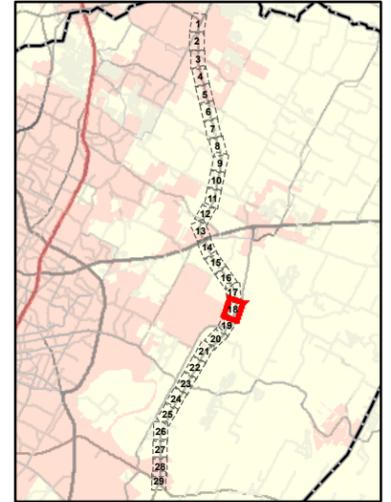
FIGURE 4 - 17

**ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES**

SH 130 from SH 45N to SH 71

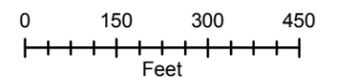
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

- Wetland Sample Point
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- Water Wells (GWDB)
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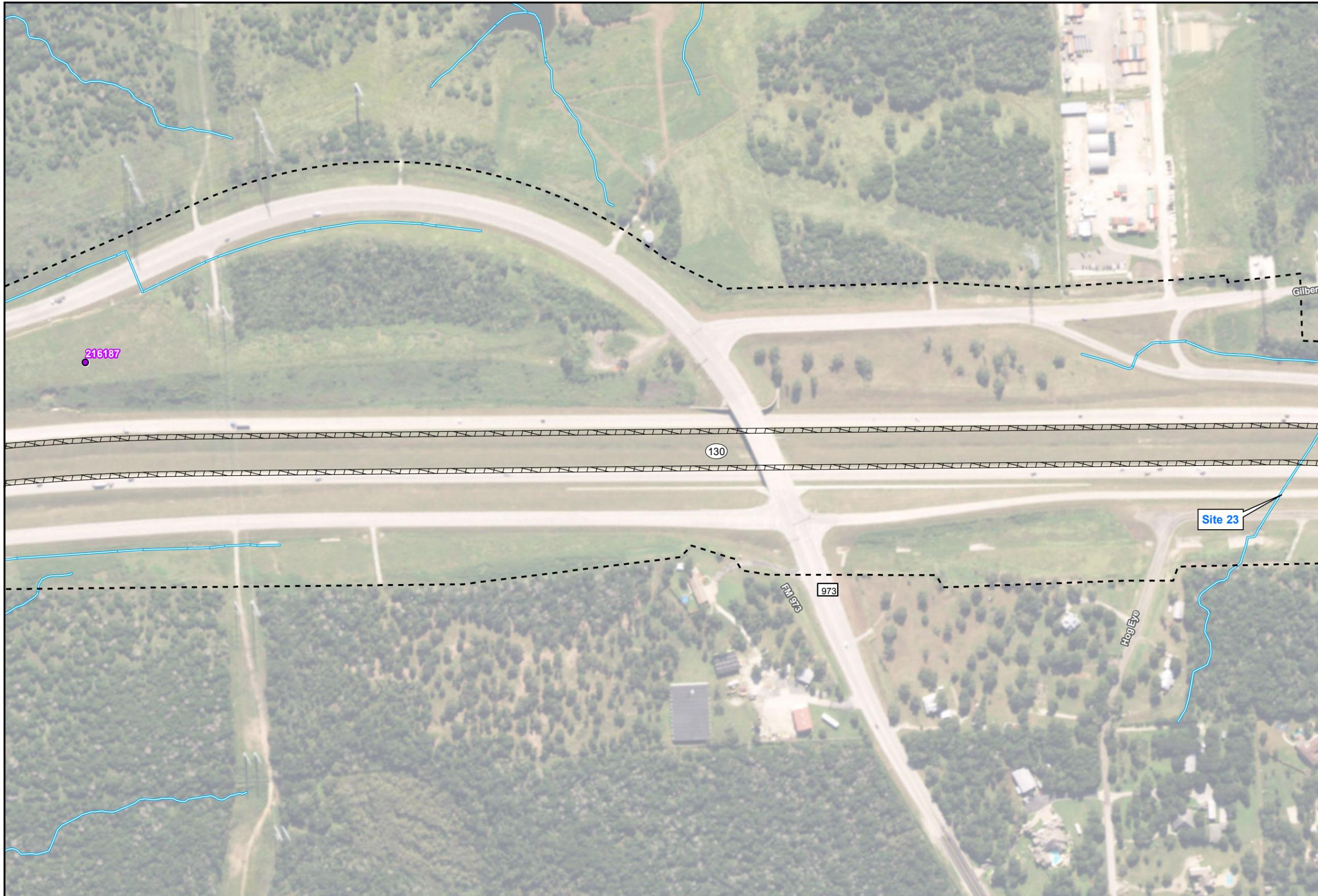
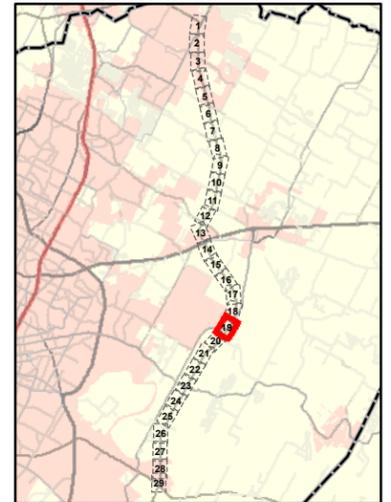
FIGURE 4 - 18

ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES

SH 130 from SH 45N to SH 71

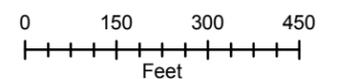
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

- Wetland Sample Point
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- Water Wells (GWDB)
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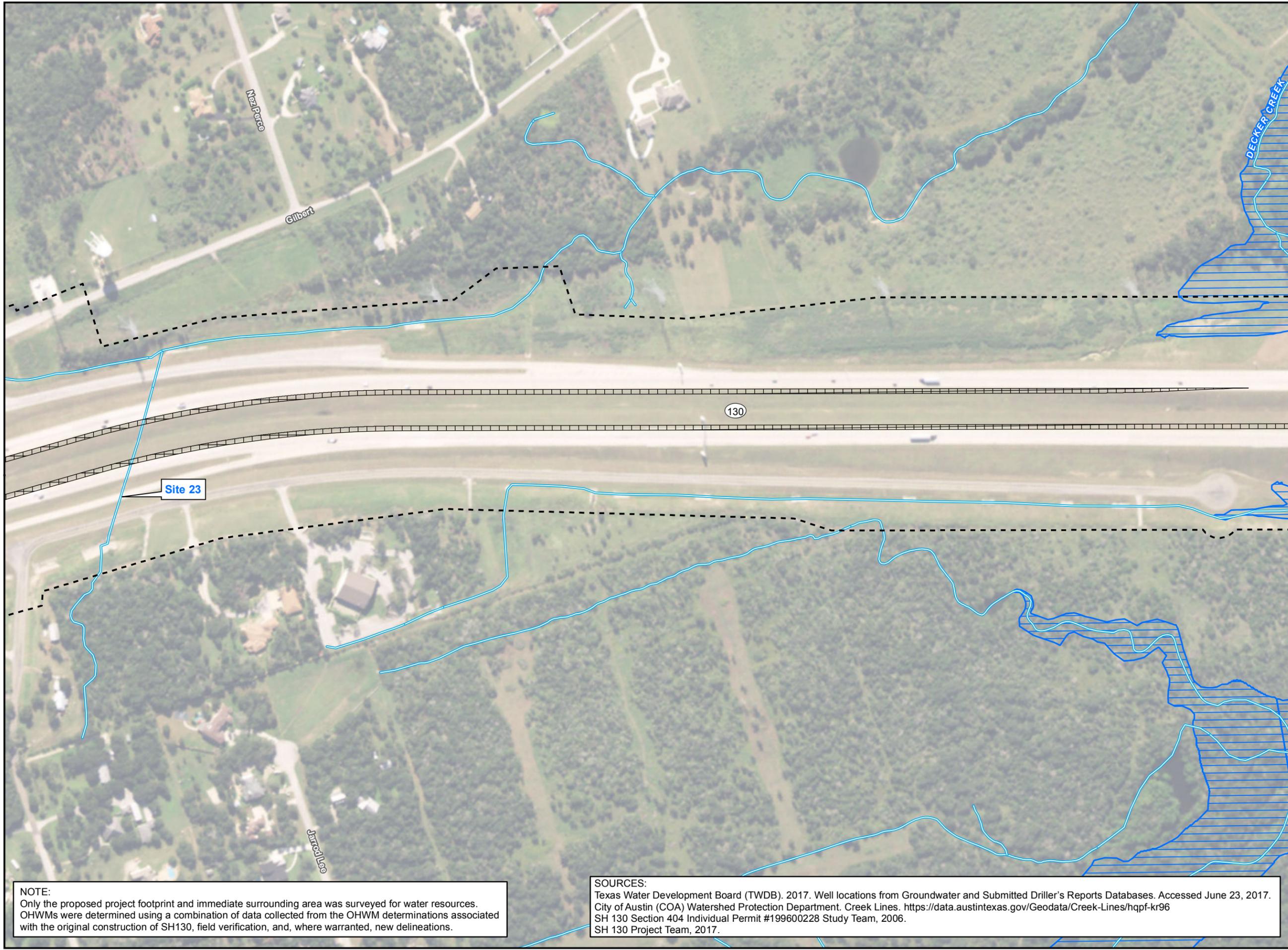
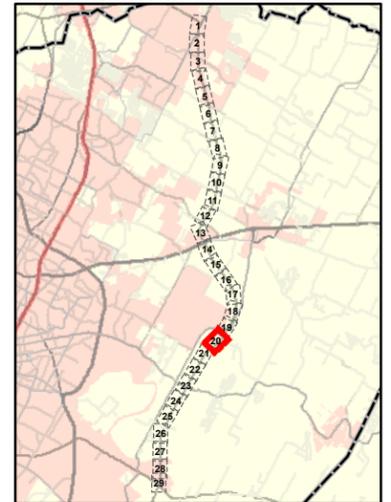
FIGURE 4 - 19

**ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES**

SH 130 from SH 45N to SH 71

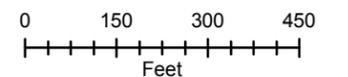
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

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- Water Wells (GWDB)
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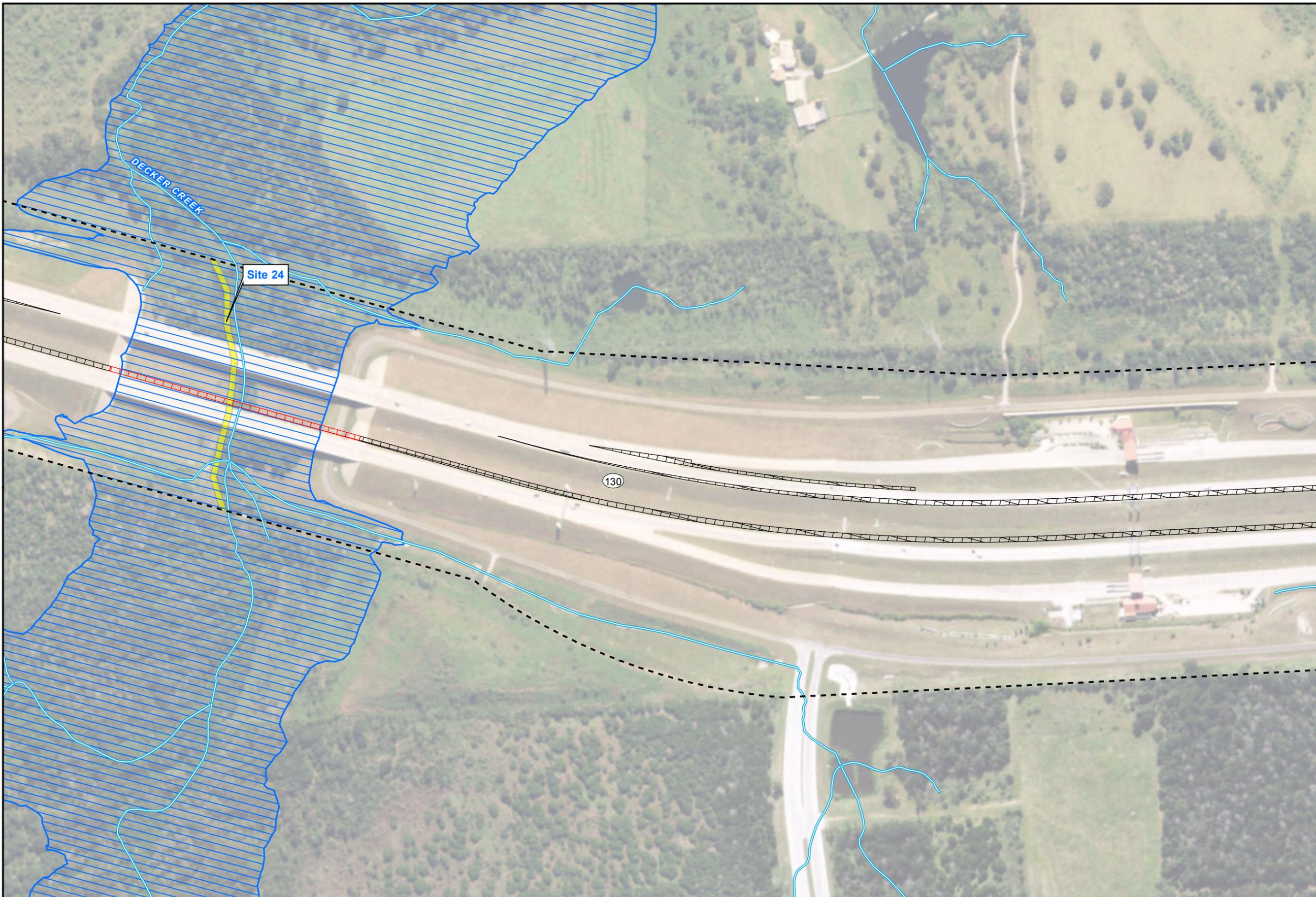
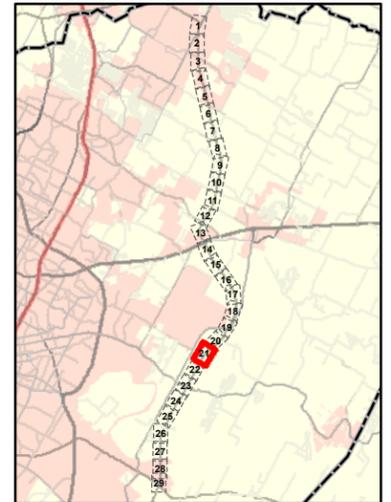
FIGURE 4 - 20

ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES

SH 130 from SH 45N to SH 71

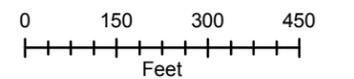
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

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- Water Wells (GWDB)
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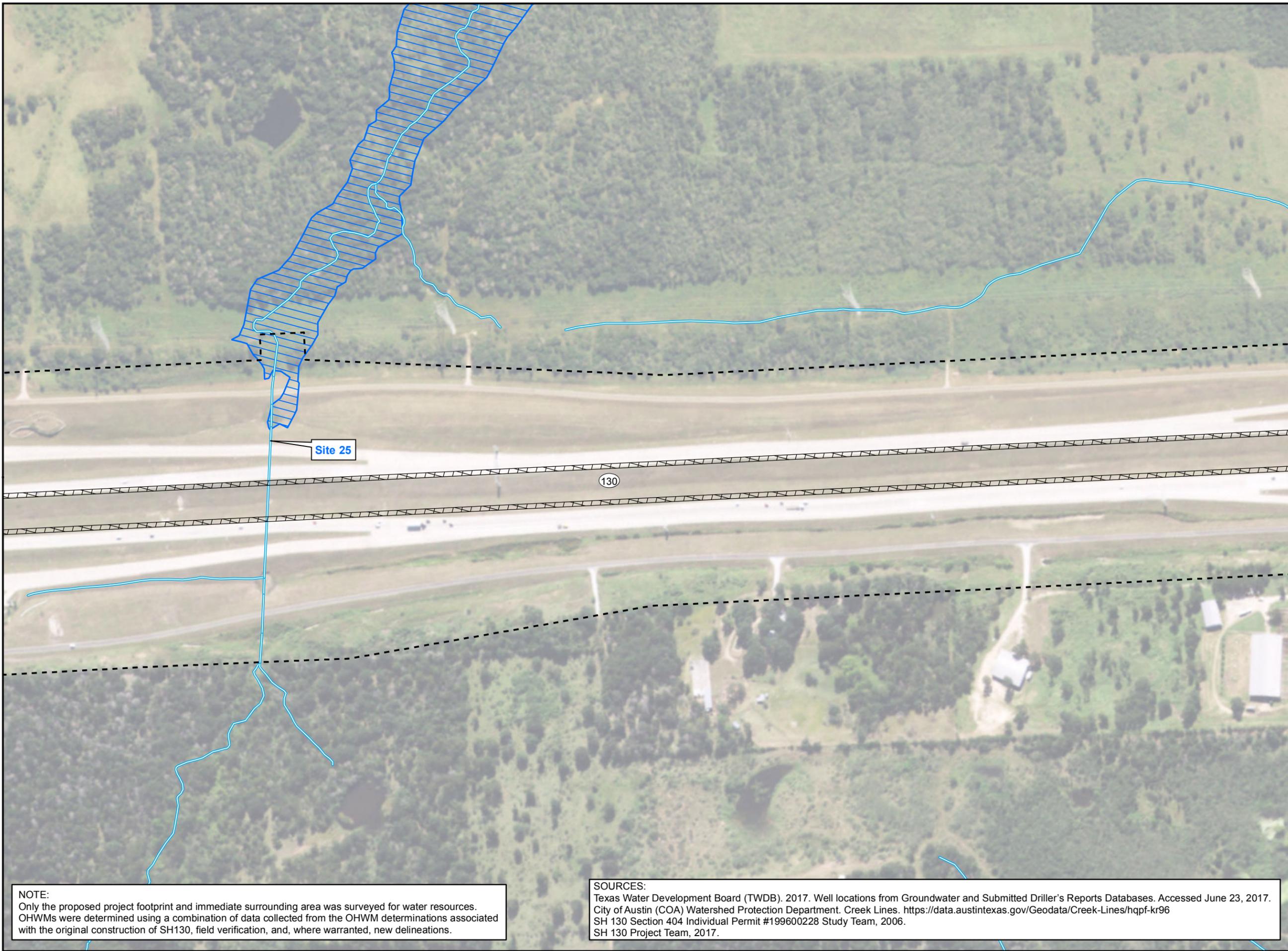
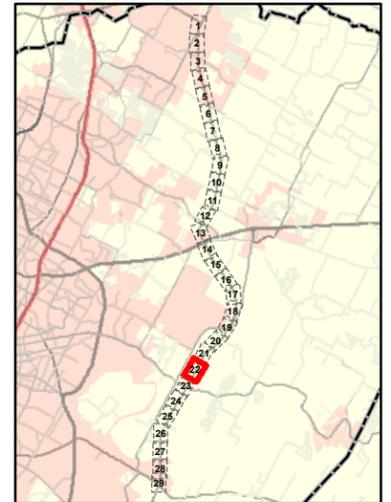
FIGURE 4 - 21

**ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES**

SH 130 from SH 45N to SH 71

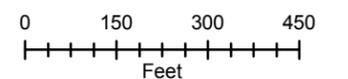
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

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- Water Wells (GWDB)
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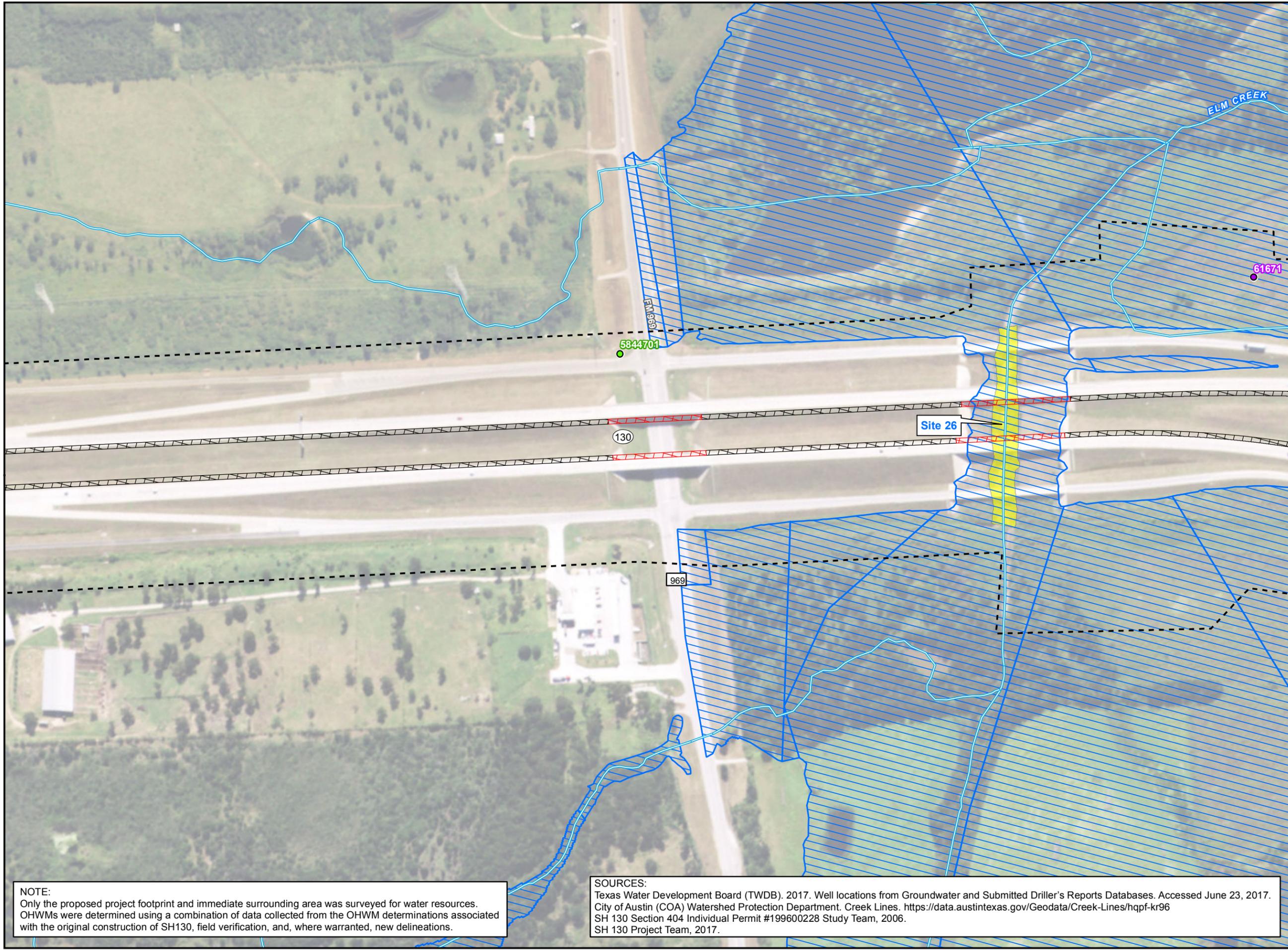
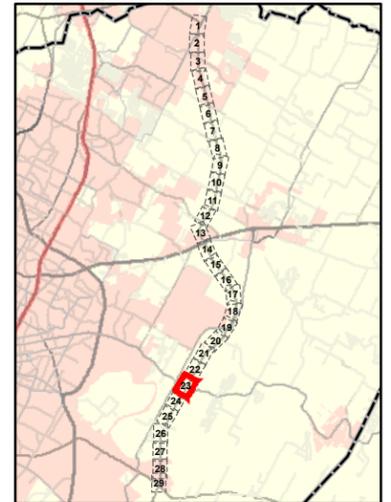
FIGURE 4 - 22

ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES

SH 130 from SH 45N to SH 71

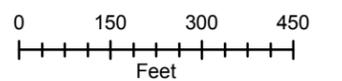
CSJ: 0440-06-017 &
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LOCATOR DIAGRAM



Key to Features

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- Water Wells (GWDB)
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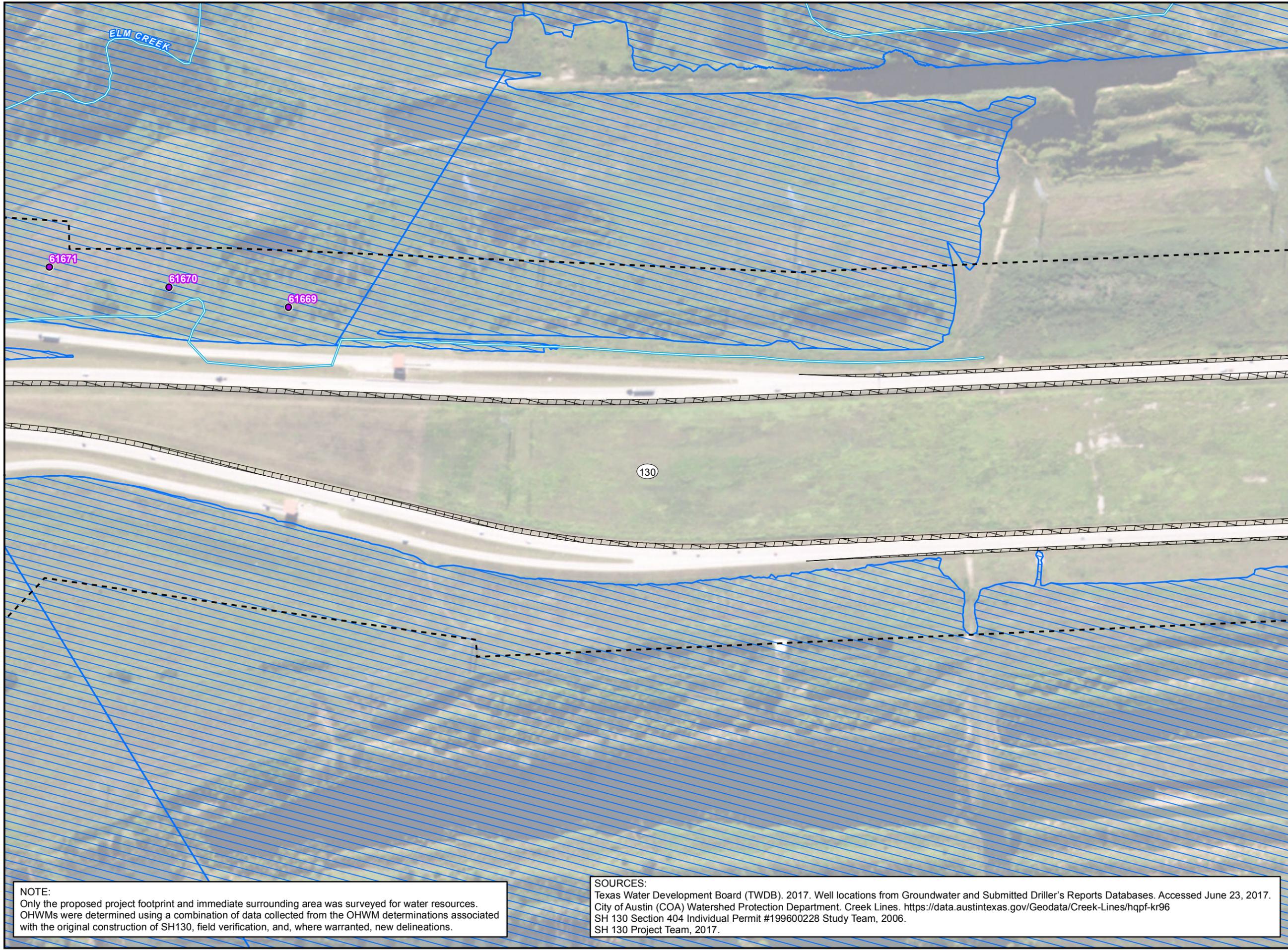
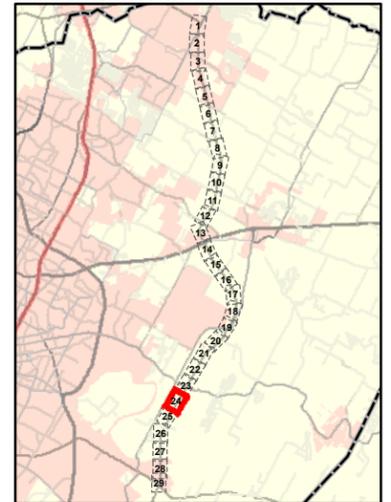
FIGURE 4 - 23

ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES

SH 130 from SH 45N to SH 71

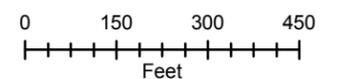
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LOCATOR DIAGRAM



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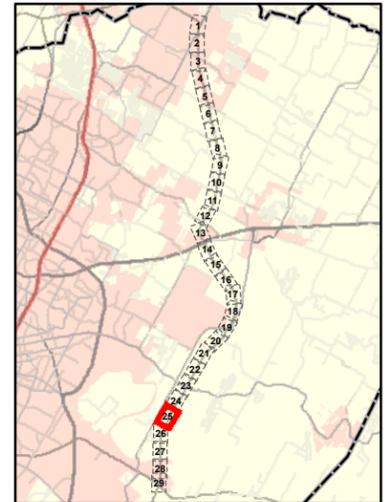
FIGURE 4 - 24

**ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES**

SH 130 from SH 45N to SH 71

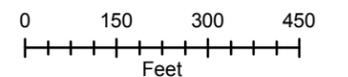
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



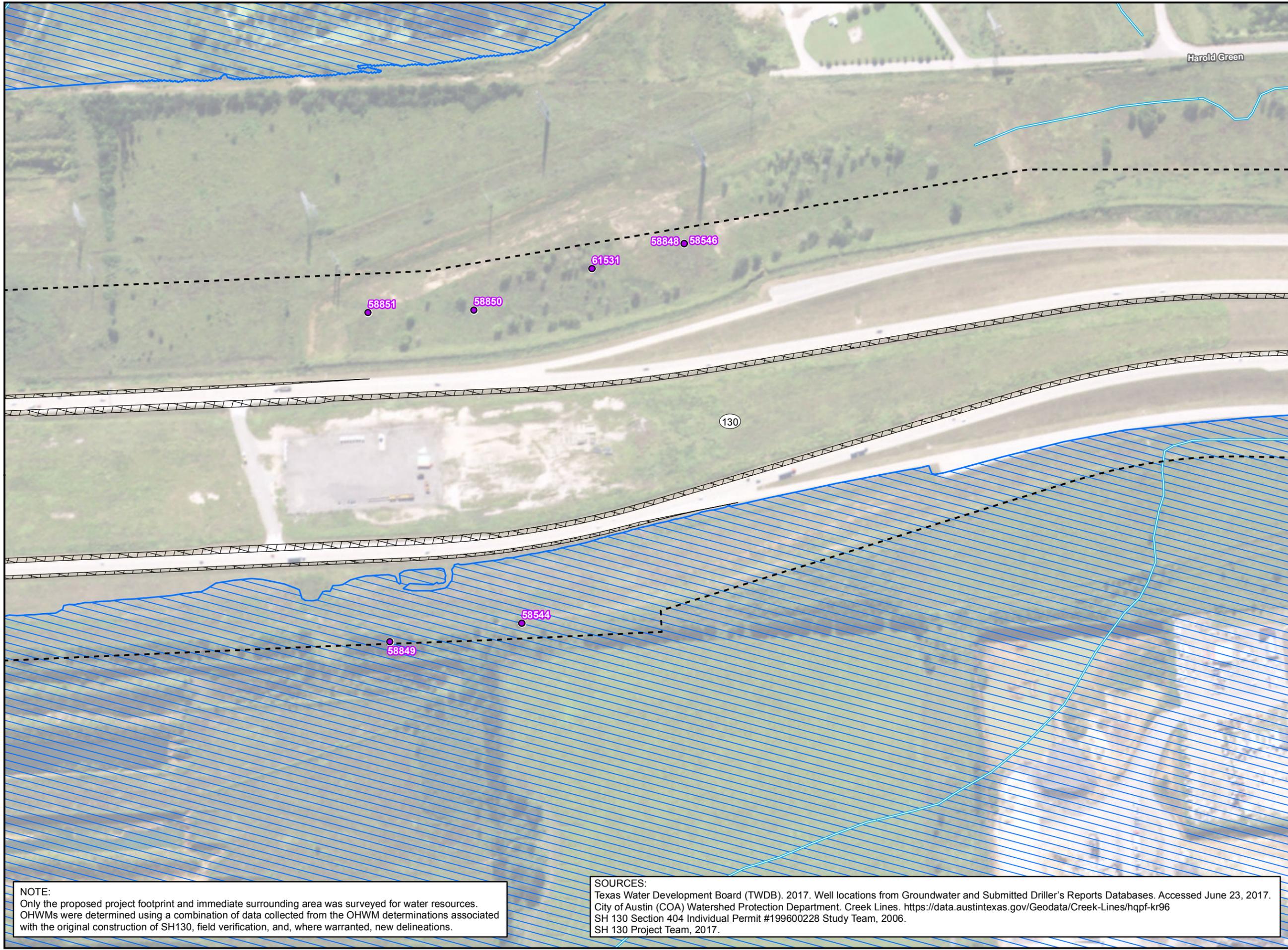
Key to Features

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FIGURE 4 - 25



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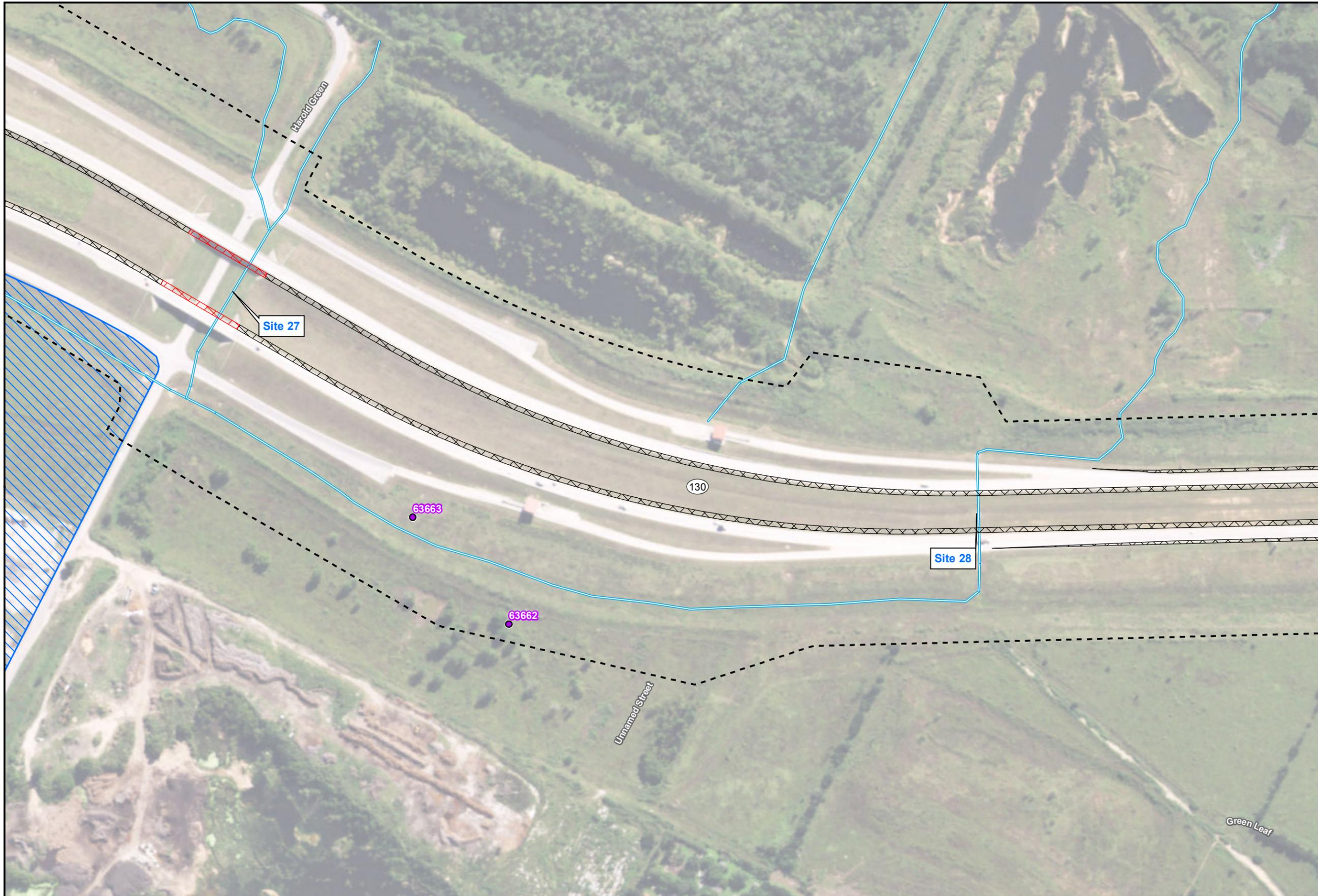
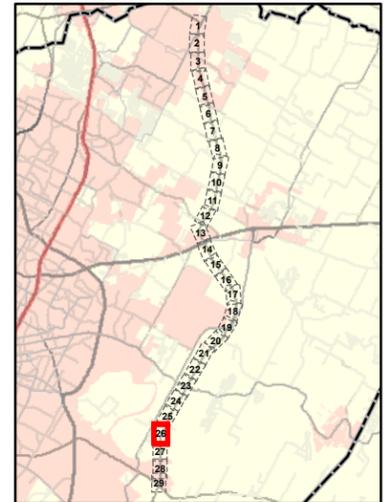
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**ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES**

SH 130 from SH 45N to SH 71

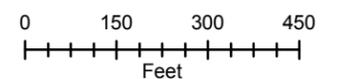
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LOCATOR DIAGRAM



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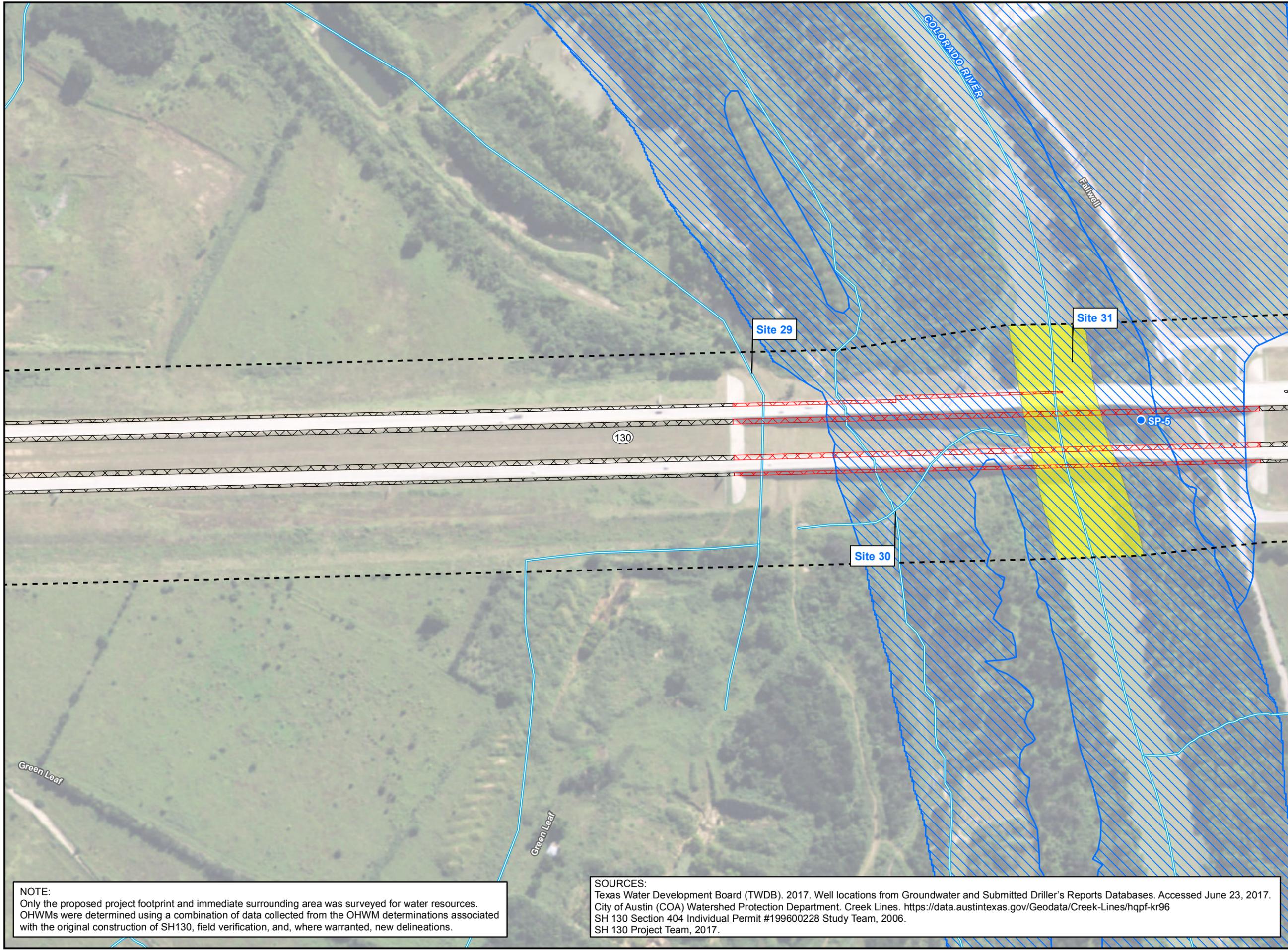
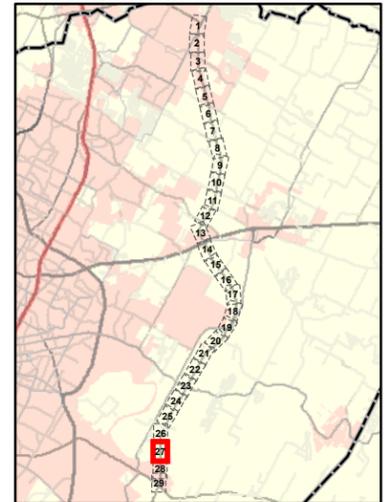
FIGURE 4 - 26

**ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES**

SH 130 from SH 45N to SH 71

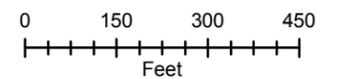
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LOCATOR DIAGRAM



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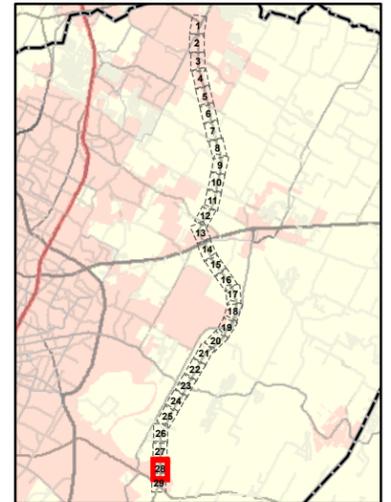
FIGURE 4 - 27

**ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES**

SH 130 from SH 45N to SH 71

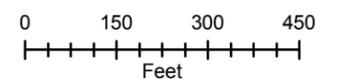
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LOCATOR DIAGRAM



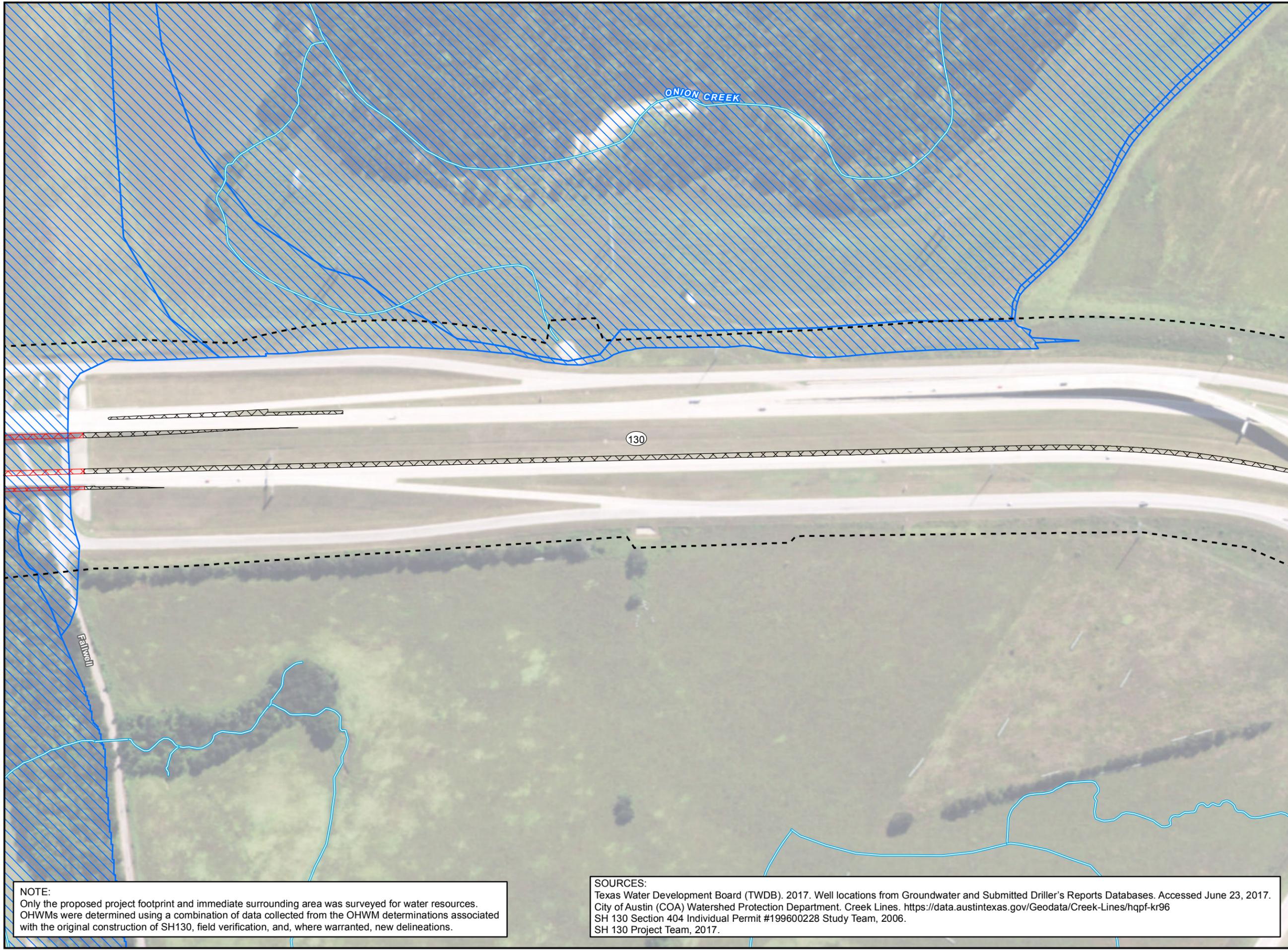
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FIGURE 4 - 28



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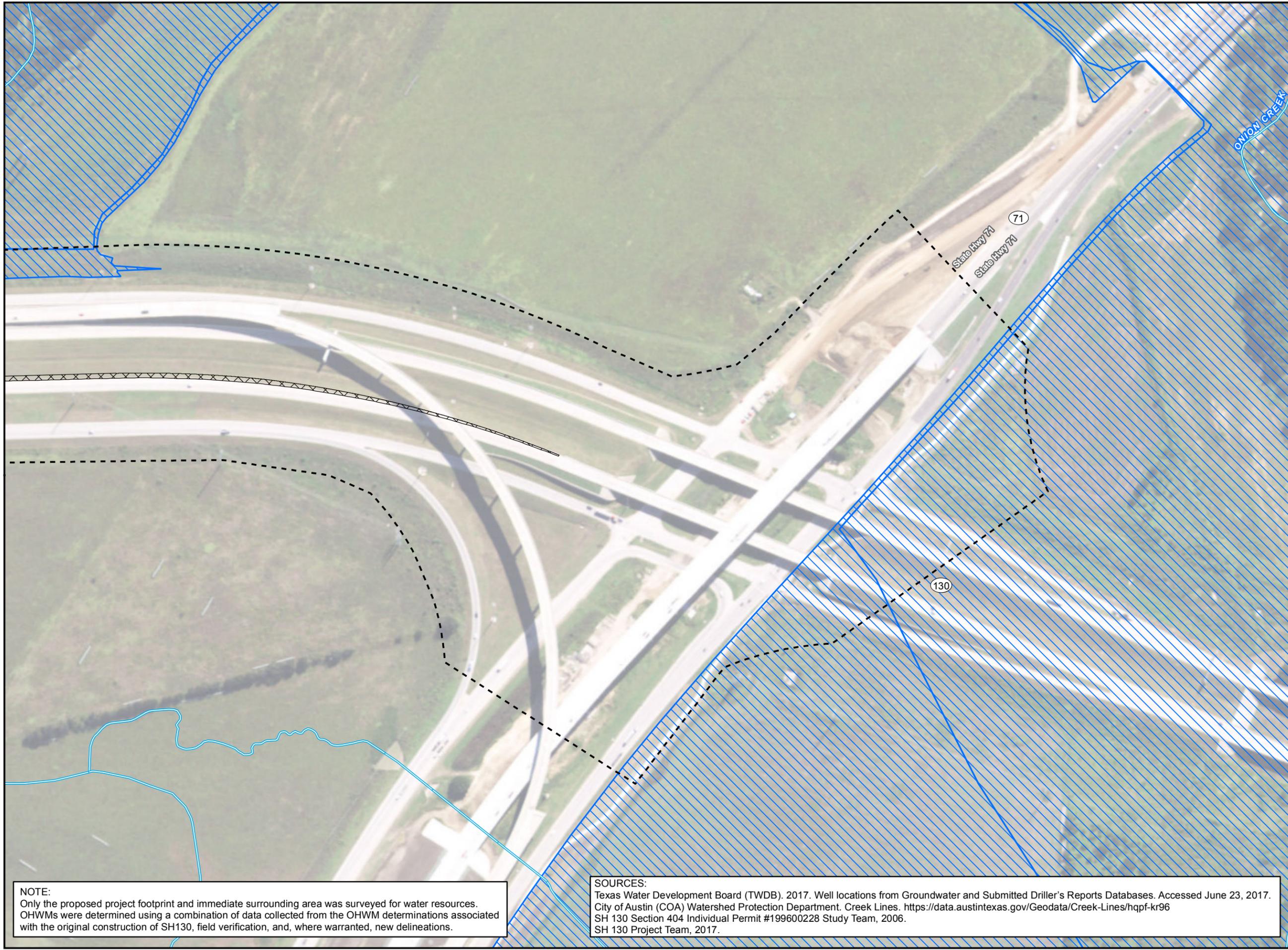
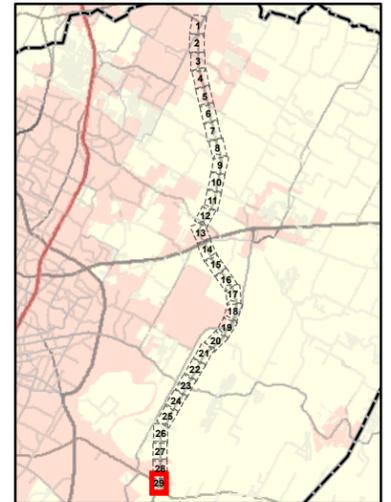
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**ENVIRONMENTAL
CONSTRAINTS
WATER RESOURCES**

SH 130 from SH 45N to SH 71

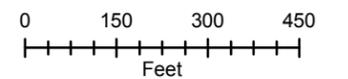
CSJ: 0440-06-017 &
0440-06-018

LOCATOR DIAGRAM



Key to Features

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- Water Wells (GWDB)
- Streams (COA)
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FIGURE 4 - 29

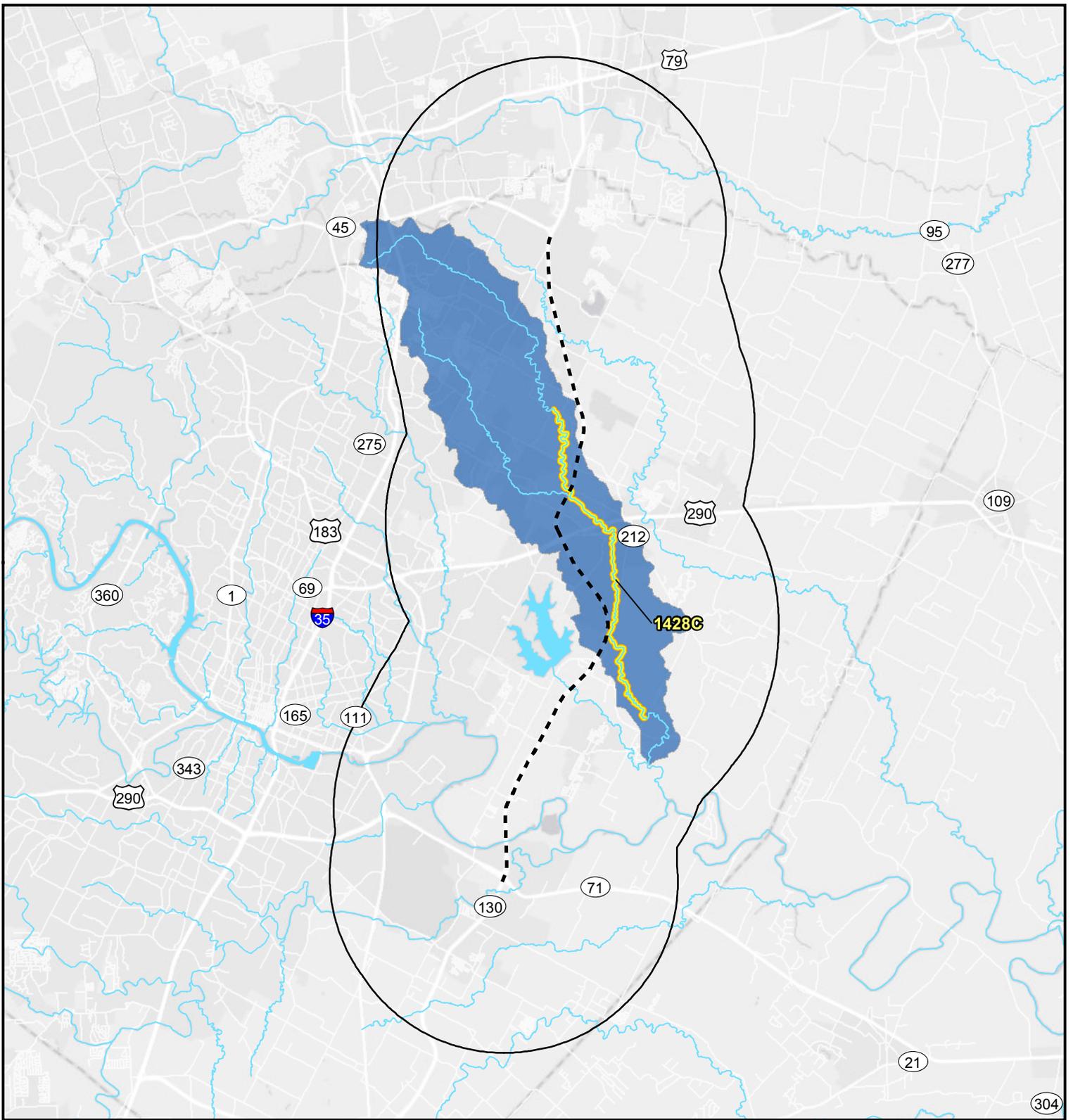


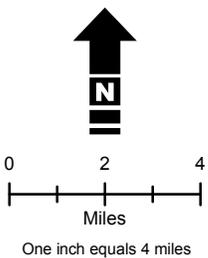
Figure 5
303(d) Stream Segments

SH 130 from SH 45N to SH 71

CSJ: 0440-06-017 and 0440-06-018

Key to Features

- - - Project Location
- 303(d) Impaired Stream
- Segment (1428C - Gilleland Creek)
- Gilleland Creek Watershed (HUC-12)
- 5-Mile Buffer



APPENDIX B

PROJECT AREA PHOTOGRAPHS



Photo 1: General view of the project area. Northbound SH 130 frontage road north of the Colorado River, facing north.



Photo 2: Site 1, just south of Secluded Willow, facing west towards SH 130 northbound lanes.



Photo 3: Site 2, Wilbarger Creek, facing southwest.



Photo 4: Site 3, facing northwest towards SH 130 northbound lanes.



Photo 5: Site 4, facing northwest towards SH 130 northbound lanes.



Photo 6: Site 5, facing southwest towards SH 130 northbound lanes.



Photo 7: Site 6, facing east from SH 130 northbound lanes.



Photo 8: Site 7, Unnamed Tributary to Gilleland Creek, facing southwest.



Photo 9: Site 8, Gilleland Creek, facing southeast.

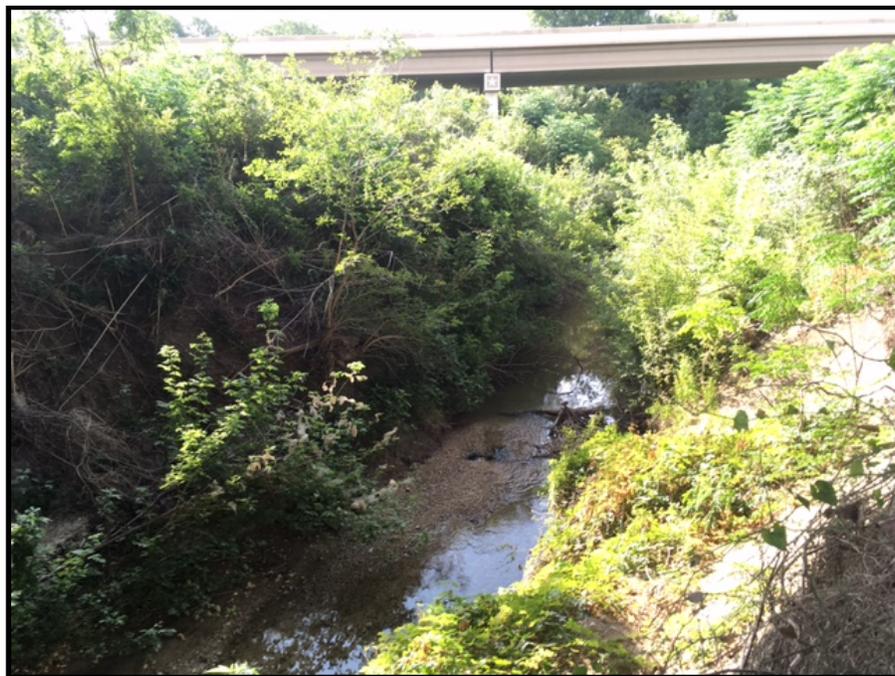


Photo 10: Site 9, Harris Branch, facing east.



Photo 11: Site 10, emergent wetland.



Photo 12: Sample Point (SP) 1 at Site 10.



Photo 13: SP2 at Site 10.



Photo 14: SP 3 at Site 10.



Photo 15: SP 4.



Photo 16: Site 11, facing southeast.



Photo 17: Site 12, facing northeast towards SH 130 southbound lanes.



Photo 18: Site 13, facing northeast towards SH 130 southbound lanes.



Photo 19: Site 14, facing west towards SH 130 northbound lanes.



Photo 20: Site 15, facing east towards SH 130 bridge.



Photo 21: Site 16, facing south along SH 130 southbound lanes.



Photo 22: Site 17, facing west towards SH 130 northbound lanes.



Photo 23: Site 18, facing east from SH 130 northbound lanes.



Photo 24: Site 19, facing north along SH 130 northbound lanes.



Photo 25: Site 20, facing west towards SH 130 northbound lanes.



Photo 26: Site 21, facing northwest towards SH 130 northbound lanes.



Photo 27: Site 22, facing east towards SH 130 southbound lanes.



Photo 28: Site 23, facing northwest towards SH 130 northbound lanes.



Photo 29: Site 24, Decker Creek, facing southeast.



Photo 30: Site 25, facing east from SH 130 northbound lanes.



Photo 31: Site 26, north bank of Elm Creek, facing southwest.



Photo 32: Site 27, just south of Harold Green, facing west towards SH 130 northbound lanes.



Photo 33: Site 28, facing southeast from SH 130 northbound lanes.



Photo 34: Site 29, facing east towards SH 130 bridges.



Photo 35: Site 30, facing south towards the Colorado River.



Photo 36: Site 31, Colorado River.



Photo 37: SP 5.

APPENDIX C

WETLAND DETERMINATION FORMS

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 130 City/County: Travis Sampling Date: 012117
 Applicant/Owner: TKDOT State: TX Sampling Point: 1
 Investigator(s): Heclair Schuster Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): Floodplain Depression Local relief (concave, convex, none): concave Slope (%): 22
 Subregion (LRR): J Lat: -97.58829 Long: 30.359415 Datum: NAD83
 Soil Map Unit Name: Tw-Tinn Clay, 0-1° slopes, frequently flooded NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>) 1. <u>Va annua</u> <u>40</u> <u>Yes</u> <u>FAC</u> 2. <u>Phyla nodiflora</u> <u>5</u> <u>No</u> <u>FAC</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>) 1. <u>Ampelopsis arborea</u> <u>2</u> <u>Yes</u> <u>FAC</u> 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>100</u>				
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
Remarks:				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR2/12	70	7.5YR2/16	30	C	PL	clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> High Plains Depressions (F16)

(MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> High Plains Depressions (F16)
(LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	(where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 130 City/County: Travis Sampling Date: 01/21/17
 Applicant/Owner: TxDOT State: TX Sampling Point: 2-upland
 Investigator(s): Heclair, Schaefer Section, Township, Range: N1A
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 5.8
 Subregion (LRR): J Lat: -97.588286 Long: 30.359432 Datum: NAD83
 Soil Map Unit Name: TW-Tinn clay, 0-1% slopes, frequently flooded NWI classification: NDNC
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>80</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Shrub/Straw Stratum (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)				
1. <u>Cynodon dactylon</u>	<u>70</u>	<u>Yes</u>	<u>UPL</u>	
2. <u>Sorghum halepense</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Phyla nodiflora</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	
4. <u>Rafjacksonia phyllanthoides</u>	<u>3</u>	<u>No</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>163</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

SOIL

Sampling Point: 2-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR2/12	100					clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) <input type="checkbox"/> Dark Surface (S7) (LRR G) <input type="checkbox"/> High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
 Water Table Present? Yes _____ No _____ Depth (inches): _____
 Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: 8H130 City/County: Travis Sampling Date: 10/2/17
 Applicant/Owner: TxDOT State: TX Sampling Point: 3
 Investigator(s): Michael Schmitt Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): Floodplain Depression Local relief (concave, convex, none): concave Slope (%): <2
 Subregion (LRR): J Lat: -97.587884 Long: 30.59226 Datum: NAD 83
 Soil Map Unit Name: TW-Tinnday, 0-1% slope, frequently flooded NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)				
1. <u>Elyonurus parvulus</u>	<u>100</u>	<u>Yes</u>	<u>OBL</u>	
2. <u>Ambrosia trifida</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Pectocarya pensylvanica</u>	<u>20</u>	<u>No</u>	<u>FACW</u>	
4. <u>Rumex crispus</u>	<u>2</u>	<u>No</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
_____ = Total Cover				
Remarks:				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR4/2	70	7.5YR4/6	30	C	PL	clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

- 1 cm Muck (A9) (LRR I, J)
 - Coast Prairie Redox (A16) (LRR F, G, H)
 - Dark Surface (S7) (LRR G)
 - High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
 - Reduced Vertic (F18)
 - Red Parent Material (TF2)
 - Very Shallow Dark Surface (TF12)
 - Other (Explain in Remarks)
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (minimum of two required)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 13
 Saturation Present? Yes No Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH130 City/County: Travis Sampling Date: 6/2/17
 Applicant/Owner: TxDOT State: _____ Sampling Point: 4-upland
 Investigator(s): McClair / Schaefer Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): < 2
 Subregion (LRR): J Lat: -97.5879 Long: 30.359239 Datum: NAD83
 Soil Map Unit Name: TW-Tinn clay, 0-1% slope, frequently Aeric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)				
1. <u>Ambrosia trifida</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Cynodon dactylon</u>	<u>30</u>	<u>Yes</u>	<u>UPL</u>	
3. <u>Panicum virginicum</u>	<u>20</u>	<u>No</u>	<u>FAC</u>	
4. <u>Sorghum halepense</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
5. <u>Rumex crispus</u>	<u>2</u>	<u>No</u>	<u>FAC</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>112</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				
Remarks:				

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR5/4	100					Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) <input type="checkbox"/> Dark Surface (S7) (LRR G) <input type="checkbox"/> High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks: *soil is 10BSC alluvium*

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX D

OCTOBER 22, 2001, LETTER FROM THE USCG

U.S. Department
of Transportation

United States
Coast Guard



Commander
Eighth Coast Guard District

501 Magazine Street
New Orleans, LA 70130-3396
Staff Symbol: (obc)
Phone: (504) 589-2965
FAX: (504) 589-3063

16591D
October 22, 2001

Ms. Stacy Benningfield
Environmental Program Manager
TTA Project Office
1421 Wells Branch Parkway
Building 1, Suite 107
Pflugerville, Texas 78660

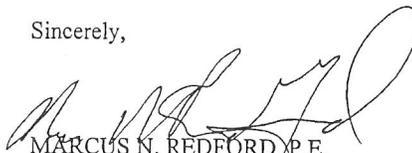
Dear Mr. Benningfield:

This refers to your Bridge Project Questionnaire dated October 10, 2001, with attachments, requesting Coast Guard permit requirements for a proposed new bridge on Texas State Route 130 across the Colorado River, mile 250, at Austin, Travis County, Texas.

At the site of the proposed bridge project, the Colorado River has been determined to be non-navigable for purposes of Coast Guard jurisdiction. As a result, no Coast Guard bridge permit will be required. Please be advised that plans for the bridge should provide sufficient clearances to pass all existing recreational boating and must have no significant impact on the environment. Specifically, the bridge should provide vertical and horizontal clearances equal to or greater than those of the existing bridges immediately upstream and downstream of the proposed bridge site. Furthermore, you should contact the Federal Emergency Management Agency (FEMA), as well as your local floodplain administrator, to ensure that the clearances of the proposed bridge are sufficient to pass flood waters. You are also responsible for obtaining permits from all other Federal, state or local agencies having jurisdiction in this matter.

If you have any questions regarding this determination or if you require additional guidance, please contact us.

Sincerely,


MARCUS N. REDFORD, P.E.
Chief, Bridge Administration Branch
By direction of the Commander
Eighth Coast Guard District



APPENDIX E

2014 INDEX OF WATER QUALITY IMPAIRMENTS

SegID: 1426 **Colorado River Below E. V. Spence Reservoir**
 From a point 3.7 km (2.3 miles) below the confluence of Mustang Creek in Runnels County to Robert Lee Dam in Coke County

<u>Parameter(s)</u>		<u>Category</u>	<u>Carryforward</u>
chloride			
1426_01	Lower end of segment to Country Club Lake	4a	No
1426_02	Country Club Lake to Coke County line	4a	No
1426_03	Coke County line to SH 208	4a	No
1426_04	SH 208 to dam	4a	No

<u>Parameter(s)</u>		<u>Category</u>	<u>Carryforward</u>
total dissolved solids			
1426_01	Lower end of segment to Country Club Lake	4a	No
1426_02	Country Club Lake to Coke County line	4a	No
1426_03	Coke County line to SH 208	4a	No
1426_04	SH 208 to dam	4a	No

SegID: 1427 **Onion Creek**
 From the confluence with the Colorado River in Travis County to the most upstream crossing of FM 165 in Blanco County

<u>Parameter(s)</u>		<u>Category</u>	<u>Carryforward</u>
sulfate			
1427_03	From FM 967 upstream to Jackson Branch confluence	5c	No
1427_04	From Jackson Branch confluence to end of segment	5c	No

SegID: 1427A **Slaughter Creek**
 Intermittent stream with perennial pools from the confluence with Onion Creek to above US 290 west of Austin

<u>Parameter(s)</u>		<u>Category</u>	<u>Carryforward</u>
impaired macrobenthic community			
1427A_01	Entire water body	5b	Yes

SegID: 1428B **Walnut Creek**
 From the confluence of the Colorado River in east Austin in Travis County to the upstream perennial portion of the stream in north Austin in Travis County

<u>Parameter(s)</u>		<u>Category</u>	<u>Carryforward</u>
bacteria			
1428B_05	From MoPac/Loop 1 upstream to Union Pacific Railroad tracks south of McNeil Drive	5a	Yes

SegID: 1428C **Gilleland Creek**
 Perennial stream and intermittent stream with perennial pools from the confluence with the Colorado River up to the spring source (Ward Spring) northwest of Pflugerville, in Travis County

<u>Parameter(s)</u>		<u>Category</u>	<u>Carryforward</u>
bacteria			
1428C_03	From Old Highway 20 to Cameron Road	4a	No