DRAFT
Water Resources Technical Report

SH 71 at FM 1209

Bastrop County, Texas

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Prepared for the Texas Department of Transportation, Austin District

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 is proposing to add a grade separation and other roadway improvements to State Highway (SH) 71 from County Road (CR) 206 to SH 21 in Bastrop County, Texas (**Figures 1** and **2** in **Appendix A**). The proposed improvements would include constructing new frontage roads, a grade-separation over Farm-to-Market (FM) 1209, and shared use paths. FM 1209 would be widened to include a second travel lane, a right turn lane, and a 14-foot-wide left turn lane in each direction. East/west turnarounds would also be added on either side of the SH 71 and FM 1209 intersection and on the west side of the SH 71 intersection with SH 21.

The existing SH 71 facility consists of two 12-foot-wide travel lanes in each direction with 10-foot-wide outside shoulders and 4-foot-wide inside shoulders. Directions of travel are separated by a grassy depressed median, approximately 68 feet in width. The existing right-of-way along SH 71 is approximately 240 feet wide. The existing FM 1209 facility consists of one 12-foot-wide travel lane in each direction. The existing right-of-way along FM 1209 is approximately 80 feet wide.

The proposed project would add a grade separation at FM 1209 and construct new frontage roads along SH 71 while maintaining access to adjacent properties. Access to FM 1209 would be provided via ramps to the anticipated signalized intersection. If completed, the mainlanes of the SH 71 facility would consist of two 12-foot-wide lanes in each direction with 4-foot-wide inside shoulders and 10- to 22-foot-wide outside shoulders. Directions of travel would be separated by a grassy median that would be approximately 64 feet in width.

Each frontage road would consist of two 12-foot-wide travel lanes with 2-foot-wide inside and outside curb and gutter. Ramps would have a 14-foot-wide travel lane with a 4-foot-wide inside shoulder, a 6-foot-wide outside shoulder, and 2-foot-wide curb and gutter on both sides.

Median openings would be removed along SH 71 at the River Oaks Drive, Blue Flame Road, and Stephen F. Austin Boulevard intersections, and farther east just past the Shell gas station near the eastern project limit. Deceleration and acceleration lanes would be added to the median break along SH 71 just west of the CR 206 intersection.

The proposed improvements to FM 1209 at SH 71 include construction of one 12-foot-wide travel lane and a 12-foot-wide left turn lane in each direction. Twenty-four-foot-wide at-grade turnarounds for east/west traffic would be added at the SH 71/FM 1209 intersection, and an east/west turnaround would be added on the west side of the SH 71/SH 21 intersection. A 10-foot-wide shared-use path would be constructed on each side of SH 71 and FM 1209.

The length of the proposed project is approximately 2.5 miles. It is anticipated that the project would require approximately 32.5 acres of additional right-of-way.

This report provides the results of a study to evaluate the water resources in the project area, anticipated impacts of the proposed project on those resources, and applicable regulatory requirements and anticipated permits. **Section 2.0** provides a regional description and project site description, **Section 3.0** provides a discussion of the study methods, and **Section 4.0** provides the results of water resource investigations and discusses the regulatory programs that could be applicable to water resources in the project area. **Figures 1** and **2** (**Appendix A**) show the project location on a county map base and U.S. Geological Survey (USGS) topographic map base, respectively. **Figure 3** shows the locations of potential water of the U.S. crossings, and **Figures 4.1** through **4.5** show the boundaries of water features present at each crossing in relation to the proposed and existing road right-of-way. Representative photographs of the project area and water resources are located in **Appendix B**, and wetland determination data forms are provided in **Appendix C**.

2.0 PROJECT SITE AND SURROUNDING AREA

The project area is located within the Colorado River drainage basin and is drained locally by several unnamed tributaries to Cedar Creek. The surrounding area is partially developed but also contains tracts of undeveloped post oak woodlands and disturbed prairies. Primary land use in and around the project area includes residential and commercial development, and agriculture (livestock grazing).

2.1 Project Site Description

2.1.1 *Site Topography*

The project area is gently sloping with subtle changes in elevation. Elevations range from approximately 520 feet above mean sea level (msl) at the western terminus to approximately 440 feet above msl at the eastern terminus of the project area (USGS 1982a, 1982b).

2.1.2 *Site Plant Communities*

The project is located within the Eastern Central Texas Plains ecoregion (Griffith et al. 2007). The project area includes the existing maintained road right-of-way along SH 71 and adjacent properties proposed as new right-of-way. Vegetation communities located within the existing right-of-way median and shoulders include maintained herbaceous grasses and forbs. Vegetation communities located within the proposed new right-of-way include disturbed prairie, small riparian corridors, and urban landscapes.

Within the project area, the disturbed prairies are dominated by bermudagrass (*Cynodon dactylon*), Johnsongrass (*Sorghum halepense*), little bluestem (*Schizachyrium scoparium*), western ragweed (*Ambrosia psilostachya*), and Canada goldenrod (*Solidago canadensis*). Small honey mesquite (*Prosopis glandulosa*) and sugar hackberry (*Celtis laevigata*) trees are often associated with fence lines and occur as patches within disturbed prairies. Dominant

plant species in the maintained right-of-way include bermudagrass, King Ranch bluestem (*Bothriochloa ischaemum*), rescue grass (*Bromus catharticus*), and perennial ryegrass (*Lolium perenne*), with forbs such as stork's-bill (*Geranium carolinianum*), bur-clover (*Medicago polymorpha*), evening-primrose (*Oenothera speciosa*), and bastard-cabbage (*Rapistrum rugosum*) as common associates.

Post oak woodlands are common in the adjacent properties of SH 71, including portions of the proposed right-of-way. This community is dominated by post oak (*Quercus stellata*), with eastern red cedar (*Juniperus virginiana*), cedar elm (*Ulmus crassifolia*), and sugar hackberry trees occurring as strong associates. Common shrubs in these woodlands are yaupon (*Ilex vomitoria*) and shrubby eastern red cedar. The riparian zones of the drainages in the project area are very similar in species composition to the surrounding upland post oak woodlands.

2.1.3 *Soils*

The Natural Resources Conservation Service identifies six soil mapping units within the project area (USDA 2018a) (**Table 1**). Two of the mapping units, Mabank loam (0 to 1 percent slopes) and Tabor fine sandy loam (0 to 1 percent slopes), include 1 percent and 5 percent hydric components, respectively. The Mabank loam is a deep, moderately well drained soil that formed in clayey alluvium of Quaternary age derived from mixed sources (USDA 2018a, 2018b). The Tabor fine sandy loam is a deep, moderately well drained soil that formed in loamy and clayey alluvium of Pleistocene age derived from mixed sources (USDA 2018a, 2018b). During field investigations, low value/low chroma soils prevailed within the project area, with textures ranging from sandy loam to clay. In the existing right-of-way, native soil was often intermixed with fill material.

Table 1: Soils Mapped in the Project Area

Soil Mapping Unit	% Hydric Soil
Edge gravelly fine sandy loam, 3 to 8 percent slopes (AtD)	0
Mabank loam, 0 to 1 percent slopes (MaA)	1
Tabor fine sandy loam, 0 to 1 percent slopes (TfA)	5
Tabor fine sandy loam, 1 to 3 percent slopes (TfB)	0
Vernia very gravelly loamy sand, 1 to 8 percent slopes (VeD)	0
Wilson clay loam, 0 to 1 percent slopes (WsA)	0

Source: USDA 2018a

2.1.4 *Hydrology*

The project area is located within the Lower Colorado-Cummins sub-watershed (USGS Hydrologic Unit Code 12090301) (USGS 2018). Runoff from the project area enters several unnamed tributaries of Cedar Creek (USGS 1982a, 1982b).

3.0 METHODS

3.1 Description of Wetland/Waters Delineation Methods

Investigations to identify potential waters of the U.S. included an initial review of background information, including natural color and infrared aerial photography from various years, USGS 7.5-minute topographic quadrangle maps, soil maps, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps (USFWS 2018), and Federal Emergency Management Agency (FEMA) floodplain maps (FEMA 2018). Following the background review, wetland specialists conducted field surveys of the project area on August 22 and October 3, 2018. During the survey, all of the existing right-of-way in the project area was visited with a focus on stream crossings, all other culvert crossings, NWI features, and other areas showing potential wetland indicators such as hydrology or hydrophytic vegetation. Right-of-entry (ROE) was not available for some areas of the proposed right-of-way. In those areas, the extent of water features was visually estimated from the existing right-of-way. Wetland determinations/delineations were conducted in accordance with the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual (Environmental Laboratory 1987) and the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0) (USACE 2010). The 2016 National Wetland Plant List was referenced for the wetland indicator status of plant species encountered during wetland determinations/delineations (Lichvar et al. 2016).

Wetland determination data forms were completed along streams and within potential wetland areas. When an area was determined to be a wetland, paired wetland determination observation points (OP) were established to delineate and map the wetland boundaries. Completed wetland determination data forms are provided in **Appendix C**. Ordinary high water marks (OHWM) and wetland boundaries were mapped using a differentially-corrected Global Positioning System (GPS) unit with sub-meter accuracy.

3.2 Jurisdictional Determinations of Identified Waters

Proposed jurisdictional determinations of water resources identified in the project area were made based on 33 Code of Federal Regulations (CFR) 328.3(a) and joint USACE-Environmental Protection Agency (EPA) guidance following the U.S. Supreme Court's decision in Rapanos v. United States and Carabell v. United States (USACE 2007).

4.0 RESULTS AND DISCUSSION

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

Streams and wetlands that are expected to be jurisdictional waters of the U.S. subject to regulation under Section 404 of the Clean Water Act (CWA) were identified and delineated at

four single and complete crossings, which are described below as Crossings 1 through 4 (**Table 2**). **Figure 3** in **Appendix A** shows the locations of the crossings and **Figures 4.1** through **4.5** shows the boundaries of water features present in the project area at each crossing. **Table 2** summarizes the acreage of potential waters of the U.S. features present at each crossing. Additionally, one scour feature (**Figure 4.1**) that is not expected be a jurisdictional water of the U.S. was identified and is described below.

Table 2: Potential Waters of the U.S. Present in the Project Area

Crossing No.	Water Feature ID	Water Feature Type[1]	Area within Project Area (acres) [2]	Length (Linear Feet) [2]
Crossing 1	Stream 1	IS	0.02	225
	Wetland 1	REM	<0.01 (105 sq. ft.)	NA
Crossing 2	Stream 2	IS	0.28	532
Crossing 3	Stream 3	IS	0.05	287
Crossing 4	Stream 4	IS	0.01	54
	Wetland 2	PEM	0.11	NA

[1] IS = Intermittent stream; REM = Riverine emergent wetland; PEM = Palustrine emergent wetland
[2] Includes area within existing right-of-way and estimated area within proposed right-of-way where access was not available

Scour Feature 1 (Not a Water of the U.S.)

Scour Feature 1 was noted within the project area just southeast of Union Chapel Road (**Figure 4.1**). This feature begins at the southern culvert crossing of SH 71 and flows southeast for a short distance before widening into a gentle swale with no defined OHWM (**Photos 1** and **2** in **Appendix B**). Within the existing right-of-way, Scour Feature 1 averages approximately 5 feet wide. Vegetation associated with Scour Feature 1 consists primarily of a woodland edge with a mowed herbaceous understory. Woody species are dominated by post oak and cedar elm with young blackjack oak (*Quercus marilandica*) and sugar hackberry present in the understory. Bermudagrss, Johnsongrass, giant ragweed (*Ambrosia trifida*), brownseed paspalum (*Paspalum plicatulum*), and wood sedge (*Carex blanda*) represent the dominant herbaceous plant species within the right-of-way with sumpweed (*Iva annua*) as a common associate.

Scour Feature 1 is not indicated in the National Hydrography Dataset (NHD) or topographic maps and field observations and review of aerial photography from multiple years indicate that this feature was created from roadway stormwater runoff directed through the culvert and has no connection to a traditionally navigable water. Because of this, Scour Feature 1 is not expected to be considered a water of the U.S.

Scour Feature 1 Data Forms

Feature ID:	Non-wetland	Wetland
Scour Feature 1	OP 1 OP 2	None

Crossing 1

Crossing 1 consists of an unnamed tributary to Cedar Creek (Stream 1) and associated wetland (Wetland 1) (**Figure 4.2**). Stream 1 begins southwest of the project area and generally flows northeast, crossing SH 71 through a culvert and continuing northeast to its confluence with Stream 2 (described below) and eventually Cedar Creek (**Photos 3** and **4**). The NHD classifies Stream 1 as intermittent, and field observations and review of aerial photography from multiple years indicate that the stream has intermittent flow. Within the existing and proposed right-of-way, Stream 1 averages approximately 9 feet between OHWMs. The stream channel is approximately 1 foot deep, incised and eroding with gently sloping, vegetated banks. The stream's substrate consists primarily of silt and slow flowing water, with areas of pooled water present at the time of the field investigations. Mosquitofish (*Gambusia* sp.) were noted within a pooled area at the culvert outlet north of SH 71. Riparian vegetation associated with Stream 1 consists primarily of a mowed herbaceous community with one black willow (*Salix nigra*) in the channel north of SH 71. St. Augustine grass (*Stenotaphrum secundatum*), bermudagrass, and bristlegrass (*Setaria parviflora*) represent the dominant plant species within the existing and proposed right-of-way, with straggler daisy (*Calyptocarpus vialis*) and brownseed paspalum as common associates. In-stream wetland vegetation established during periods of low flow was noted within the OHWM north of SH 71 and consists primarily of eleocharis (*Eleocharis montevidensis*) and water hyssop (*Bacopa monnieri*).

Wetland 1 is an emergent wetland located north of SH 71 that directly abuts Stream 1 (**Figure 4.2**; **Photo 7**). This wetland has established in a low area alongside the stream channel. Wetland vegetation is dominated by barnyardgrass (*Echinochloa crus-galli*) and eleocharis with saltmarsh aster (*Symphyotrichum subulatum*) and creeping primrose-willow (*Ludwigia repens*) as common associates.

Stream 1 is expected to be considered a jurisdictional water of the U.S. because it is a relatively permanent water that contributes to the Colorado River, a traditionally navigable water. An estimated 0.02 acre (225 linear feet) of Stream 1 is located within the existing and proposed right-of-way. Wetland 1 is also likely to be considered a jurisdictional water of the U.S. as it has a significant nexus (surface water connectivity) to Stream 1. Less than 0.01 acre (105 sq. ft.) of Wetland 1 is located within the proposed right-of-way.

Crossing 1 Data Forms

Feature ID:	Non-wetland	Wetland
Stream 1 (Unnamed tributary to Cedar Creek)	OP 5 OP 6	None
Wetland 1	OP 4	OP 3

Crossing 2

Crossing 2 consists of an unnamed tributary to Cedar Creek (Stream 2) (**Figure 4.3**). Stream 2 begins north of the project area and generally flows southeast, crossing SH 71 under two bridges lined with concrete aprons and continues southeast to its confluence with a primary unnamed tributary to Cedar Creek (**Photo 8**). The NHD classifies the stream as intermittent, and field observations and review of aerial photography from multiple years indicate that the stream has intermittent flow. Within the existing right-of-way, Stream 2 averages approximately 23 feet between OHWMs. The stream channel, which averages approximately 3 feet deep, is incised and eroding in areas with sloping, vegetated banks. The stream's substrate consists primarily of cobble and silt, and pooled water was present within the stream channel north of SH 71 (**Photo 9**). Water staining approximately 2 to 3 feet deep was noted on the concrete apron slopes under both bridges. Riparian vegetation associated with Stream 2 consists primarily of a mowed herbaceous community with disturbed herbaceous and shrub vegetation within the channel influenced by flow events. Bermudagrass represents the dominant plant species along the stream banks within the right-of-way, with Johnsongrass, brownseed paspalum, giant ragweed, and tall goldenrod (*Solidago altissima*) as common associates. Within the OHWM, disturbed herbaceous and shrub vegetation consists primarily of small black willow, buttonbush (*Cephalanthus occidentalis*), and switchgrass (*Panicum virgatum*), with rattlebush (*Sesbania drummondii*), southern cattail (*Typha domingensis*), guara (*Oenothera lindheimeri*), floating primrose-willow (*Ludwigia peploides*), curly dock (*Rumex crispus*), and rosemallow (*Hibiscus laevis*) as less commonly occurring plant species. No wetlands are associated with Stream 2 within the existing right-of-way.

Stream 2 is expected to be considered a jurisdictional water of the U.S. because it is a relatively permanent water that contributes to the Colorado River, a traditionally navigable water. Approximately 0.28 acre (532 linear feet) of Stream 2 is located within the existing and proposed right-of-way.

Crossing 2 Data Forms

Feature ID:	Non-wetland	Wetland
Stream 2 (Unnamed tributary to Cedar Creek)	OP 7 OP 8	None

Crossing 3

Crossing 3 consists of an unnamed tributary to Cedar Creek (Stream 3) (**Figure 4.4**). Stream 3 begins north of the project area and flows south, crossing SH 71 through a culvert, and continuing south to its confluence with Stream 2 (described above) (**Photos 10** and **11**). The NHD classifies the stream as intermittent, and field observations and review of aerial photography from multiple years indicate that the stream has intermittent flow. Within the existing right-of-way, Stream 3 averages approximately 13 feet between OHWMs. The stream channel is approximately 2 feet deep, incised, and eroded with sloping banks and overhanging vegetation. The stream's substrate consists primarily of cobble and silt and approximately 6 to 8 inches of standing water was present within the stream channel south of SH 71. Riparian vegetation associated with Stream 3 consists primarily of a disturbed grassland community. Cedar elm saplings, bagpod (*Sesbania vesicaria*), giant ragweed, Johnsongrass, bermudagass, and peppervine (*Ampelopsis arborea*) represent the dominant plant species along the stream banks within the right-of-way, with silver bluestem (*Bothriochloa laguroides*), sumpweed, Virginia wildrye (*Elymus virginicus*), and switchgrass as common associates. In-stream wetland vegetation established during periods of low flow was noted within the OHWM south of SH 71 and consists primarily of floating primrose-willow and duckweed (*Lemna minor*). No wetlands are associated with Stream 3 within the existing right-of-way.

Stream 3 is expected to be considered a jurisdictional water of the U.S. because it is a relatively permanent water that contributes to the Colorado River, a traditionally navigable water. An estimated 0.05 acre (287 linear feet) of Stream 3 is located within the existing and proposed right-of-way.

Crossing 3 Data Forms

Feature ID:	Non-wetland	Wetland
Stream 3 (Unnamed tributary to Cedar Creek)	OP 9 OP 10	None

Crossing 4

Crossing 4 consists of an unnamed tributary to Cedar Creek (Stream 4) and an adjacent wetland (Wetland 2) (**Figure 4.5**). Stream 4 begins at the culvert outlet south of SH 71 and

flows south to its confluence with a primary unnamed tributary to Cedar Creek (**Photo 12**). The NHD classifies the stream as intermittent, and field observations and review of aerial photography from multiple years indicate that the stream has intermittent flow. Within the existing right-of-way, Stream 4 averages approximately 9 feet between OHWMs. The stream channel is approximately 2 feet deep, incised, and eroded with sloping banks that have recently been modified by the mechanized scraping of this feature (likely for maintenance). During the field investigation it was noted that vegetation was reestablishing in the scraped areas. The stream's substrate consists primarily of silt and approximately 4 to 6 inches of standing water was present within the stream channel during the field investigation. Mosquitofish were noted within pooled water at the culvert outlet. Riparian vegetation associated with Stream 4 consists primarily of a mowed herbaceous community. Johnsongrass, bermudagass, Silveus' grass (*Trichoneura elegans*), and tievine (*Ipomoea cordatotriloba*) represent the dominant plant species along the stream banks within the right-of-way. In-stream wetland vegetation established during periods of low flow was noted within the OHWM south of SH 71 and consists primarily of southern cattail and crowfoot sedge (*Carex crus-corvi*).

Upstream of the SH 71 culvert was investigated to determine the extent of the stream or the potential presence of headwater wetlands. This area presented as a grass-lined swale with no defined OHWM and did not meet the criteria of a wetland as designated by the USACE (see data forms for OP 11 and OP 12 in **Appendix C**).

Wetland 2 is an emergent wetland located northeast of Stream 4 and SH 71 (**Figure 4.5**; **Photo 16**). This wetland has established in a low area and drains to Stream 4 by way of a non-jurisdictional, grass-lined swale. Wetland vegetation is dominated by southern cattail.

Stream 4 is likely to be considered a jurisdictional water of the U.S. because it is a relatively permanent water that contributes to the Colorado River, a traditionally navigable water. An estimated 0.01 acre (54 linear feet) of Stream 4 is located within the existing and proposed right-of-way. Wetland 2 is also likely to be considered a jurisdictional water of the U.S. as it has a significant nexus (surface water connectivity) to Stream 4. An estimated 0.11 acre of Wetland 2 is located within the existing and proposed right-of-way.

Crossing 4 Data Forms

Feature ID:	Non-wetland	Wetland
Stream 1 (Unnamed tributary to Cedar Creek)	OP 11 OP 12 OP 18	None
Wetland 2	OP 14 OP 16 OP 17	OP 15

4.1.1 *Potential Impacts to Waters of the U.S.*

Based on preliminary design, the following work and impacts are anticipated at water of the U.S. crossings. **Table 3** below summarizes the estimated impacts and anticipated Section 404 permits needed.

- Crossing 1: Proposed work at Stream 1 and associated Wetland 1 includes the replacement of the existing 4-foot-by-2-foot reinforced concrete box (RCB) culvert with a new, proposed 2-box 5-foot-by-2-foot RCB culvert. The proposed work is expected to result in permanent impacts to approximately 0.01 acre (108 linear feet) of Stream 1 and less than 0.01 acre of Wetland 1, depending on the amount of riprap or other stream/bank stabilization method placed in the stream at the proposed outfall. Construction activities are expected to temporarily impact up to 0.01 acre (117 linear feet) of Stream 1 and less than 0.01 acre of Wetland 1 and would be minimized by use of best management practices (BMPs).

- Crossing 2: Proposed work at Stream 2 includes the removal and replacement or extension of the two existing bridges for the proposed eastbound lanes as well as the construction of two new bridges for the proposed westbound lanes. The channel of Stream 2 would be widened to 90 feet and the new, wider channel would be stabilized with concrete riprap under both the proposed and existing bridges to accommodate the hydraulic needs of the proposed project at this crossing. The proposed work is expected to result in permanent impacts to approximately 0.08 acre (177 linear feet) of Stream 2. Additionally, the existing culvert under the restaurant driveway just east of the Stream 2 bridge crossing (consisting of five corrugated metal pipes [CMPs]) would be replaced with a new, proposed 8-box 5-foot-by-5-foot RCB culvert that would be constructed within a temporary construction easement. The proposed culvert would be constructed within the existing culvert footprint and no permanent impacts to Stream 2 are expected to occur. Construction activities are expected to temporarily impact up to 0.20 acre (355 linear feet) of Stream 2 and would be minimized by use of BMPs.

- Crossing 3: Proposed work at Stream 3 includes the replacement of the existing 2-box 5-foot-by-4-foot RCB culvert with a new, proposed 4-box 11-foot-by-6-foot RCB culvert. The proposed work is expected to result in permanent impacts to approximately 0.02 acre (99 linear feet) of Stream 3, depending on the amount of riprap or other stream/bank stabilization method placed in the stream at the proposed outfall. Construction activities are expected to temporarily impact up to 0.03 acre (188 linear feet) of Stream 3 and would be minimized by use of BMPs.

- Crossing 4: No work is proposed at Stream 4 and Wetland 2 and therefore these areas would not be permanently or temporarily impacted by the proposed project. The existing 6-foot-by-3-foot RCB culvert at Stream 4 would remain.

Table 3: Anticipated Impacts to Waters of the U.S.

Crossing No.	Existing Structure	Proposed Work	Anticipated Permanent Loss[1]		Anticipated Temporary Impacts[1,2]		Anticipated Section 404 Permit
			Non-wetland Stream Channel (acres)	Wetlands or other special aquatic sites (acres)	Non-wetland Stream Channel (acres)	Wetlands or other special aquatic sites (acres)	
Crossing 1	4'x2' RCB culvert	Remove and replace with 2-box 5'x2' RCB culvert	0.01 (108 LF)	<0.01	0.01 (117 LF)	<0.01	NWP 14 with PCN
Crossing 2	Two bridges (SH 71); 5-CMP culvert (driveway)	Removal and replacement or extension of the two existing bridges and construction of two additional bridges; channel modification and stabilization with concrete riprap; replace driveway culvert with 8-box 5-foot-by-5-foot RCB culvert	0.08 (177 LF)	N/A	0.20 (355 LF)	N/A	NWP 14 without PCN
Crossing 3	2-box 5'x4' RCB culvert	Remove and replace with 4-box 11'x6' RCB culvert	0.02 (99 LF)	N/A	0.03 (188 LF)	N/A	NWP 14 without PCN
Crossing 4	6'x3' RCB culvert	None; existing 6'x3' RCB culvert to remain	None	None	None	None	None

[1] Includes area within existing right-of-way and estimated area within proposed right-of-way

[2] Anticipated temporary impacts assumes all waters in the project area that are not permanently impacted may be temporarily impacted.

Note: Impacts were estimated based on preliminary design.

Based on the estimated permanent impacts, the project is expected to be authorized by Nationwide Permit (NWP) 14 *Linear Transportation Projects*, with a Pre-construction Notification (PCN) being required because the proposed work at Crossing 1 would result in discharge into Wetland 1, a special aquatic site.

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

Since the proposed construction within waters of the U.S. is expected to be authorized by NWP 14, Section 401 compliance would entail the implementation of at least one approved BMP from each of the three categories identified in the Texas Commission of Environmental Quality's (TCEQ) *401 Water Quality Certification Conditions for Nationwide Permits*. The categories include erosion control, sedimentation control, and post-construction total suspended solids (TSS) control. With the implementation of temporary and permanent BMPs at these crossings, no long-term impacts to water quality in the area are anticipated, and no coordination with TCEQ would be required.

4.3 Floodplains

A portion of the project is located within a Federal Emergency Management Agency (FEMA)-designated 100-year floodplain (**Figure 3.0**). This project is subject to and will comply with federal Executive Order 11988 on Floodplain Management. The department implements this Executive Order on a programmatic basis through its Hydraulic Design Manual. Design of this project will be conducted in accordance with the department's Hydraulic Design Manual. Adherence to the TxDOT Hydraulic Design Manual ensures that this project will not result in a "significant encroachment" as defined by FHWA's rules implementing Executive Order 11988 at 23 CFR 650.105(q)."

4.4 Executive Order 11990 on 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. Wetland 1 would be impacted by the proposed project. Alternatives were reviewed as required by Executive Order 11990, and no practicable alternatives to discharges in Wetland 1 were identified.

4.5 Rivers and Harbors Act of 1899, Sections 9 and 10

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, which is obtained through approval by the U.S. Coast Guard (USCG). Under Section 10 of the Act, the building of any wharfs, piers, jetties, and other structures is prohibited without Congressional

approval. No water features within the project area are navigable waters under the River and Harbors Act; therefore, Sections 9 and 10 of the Rivers and Harbors Act do not apply.

4.6 Section 303(d) of the Clean Water Act

Runoff from the project area would not discharge directly into a Section 303(d) listed threatened or impaired water, or into a stream within 5 miles upstream of a Section 303(d) listed threatened or impaired water. The most recent 2014 Texas integrated Report Index of Water Quality Impairments was utilized in this assessment (TCEQ 2014).

4.7 Section 402 of the Clean Water Act

The proposed project would include 5 or more acres of earth disturbance. Since Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP) authorization and compliance (and the associated documentation) occur outside of the environmental clearance process, compliance is ensured by the policies and procedures that govern the design and construction phases of the project. The Project Development Process Manual and the Plans, Specifications, and Estimates (PS&E) Preparation Manual require a Storm Water Pollution Prevention Plan (SW3P) be included in the plans that disturbed one or more acres. The Construction Contract Administration Manual requires that the appropriate CGP authorization documents (Notice of Intent or site notice) be completed, posted, and submitted, when required by the CGP, to the TCEQ and the Municipal Separate Storm Sewer System (MS4) operator. It also requires that projects be inspected to ensure compliance with the CGP.

The PS&E Preparation Manual requires that all projects include Standards Specification Item 506 (Temporary Erosion, Sedimentation, and Environmental Controls), and the "Required Specifications Checklists" require Special Provisions 506-003 on all Projects that need authorization under CGP. These documents require the project contractor to comply with the CGP and SW3P and complete the appropriate authorization documents.

5.0 LITERATURE CITED

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1, U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

Federal Emergency Management Agency (FEMA). 2018. Flood Map Service Center. Available at https://msc.fema.gov/portal/advanceSearch. Accessed August 2018.

Griffith, G., S. Bryce, J. Omernik, and A. Rogers. 2007. *Ecoregions of Texas*. Project report to Texas Commission on Environmental Quality. Austin Texas, USA.

Lichvar, R. W., D. L. Banks, W. N. Kirchner, and N. C. Melvin. 2016. *The National Wetland Plant List*: 2016 wetland ratings. Phytoneuron 2016-30:1-17. Published 28 April 2016. ISSN 2153 733X.

Texas Commission on Environmental Quality (TCEQ). 2014. 2014 Texas 303(d) List. Available at https://www.tceq.texas.gov/assets/public/waterquality/swqm/assess/14txir/2014_303d.pdf Accessed August 2018.

U.S. Army Corps of Engineers (USACE). 2007. Jurisdictional Determination Form Instructional Handbook. Available at http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/cwa_guide/jd_guidebook_051207final.pdf. Accessed August 2018.

_____. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0). ERDC/EL TR-10-20. USACE Research and Development Center, Vicksburg, Mississippi, USA.

United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2018a. Web Soil Survey. Available at http://websoilsurvey.nrcs.usda.gov/. Accessed August 2018.

_____. 2018b. Official Soil Series Descriptions (OSDs). Available at https://soilseries.sc.egov.usda.gov/osdname.aspx. Accessed August 2018.

U.S. Fish and Wildlife Service (USFWS). 2018. National Wetlands Inventory Mapper. Available at http://www.fws.gov/wetlands/Data/ Mapper.html. Accessed August 2018.

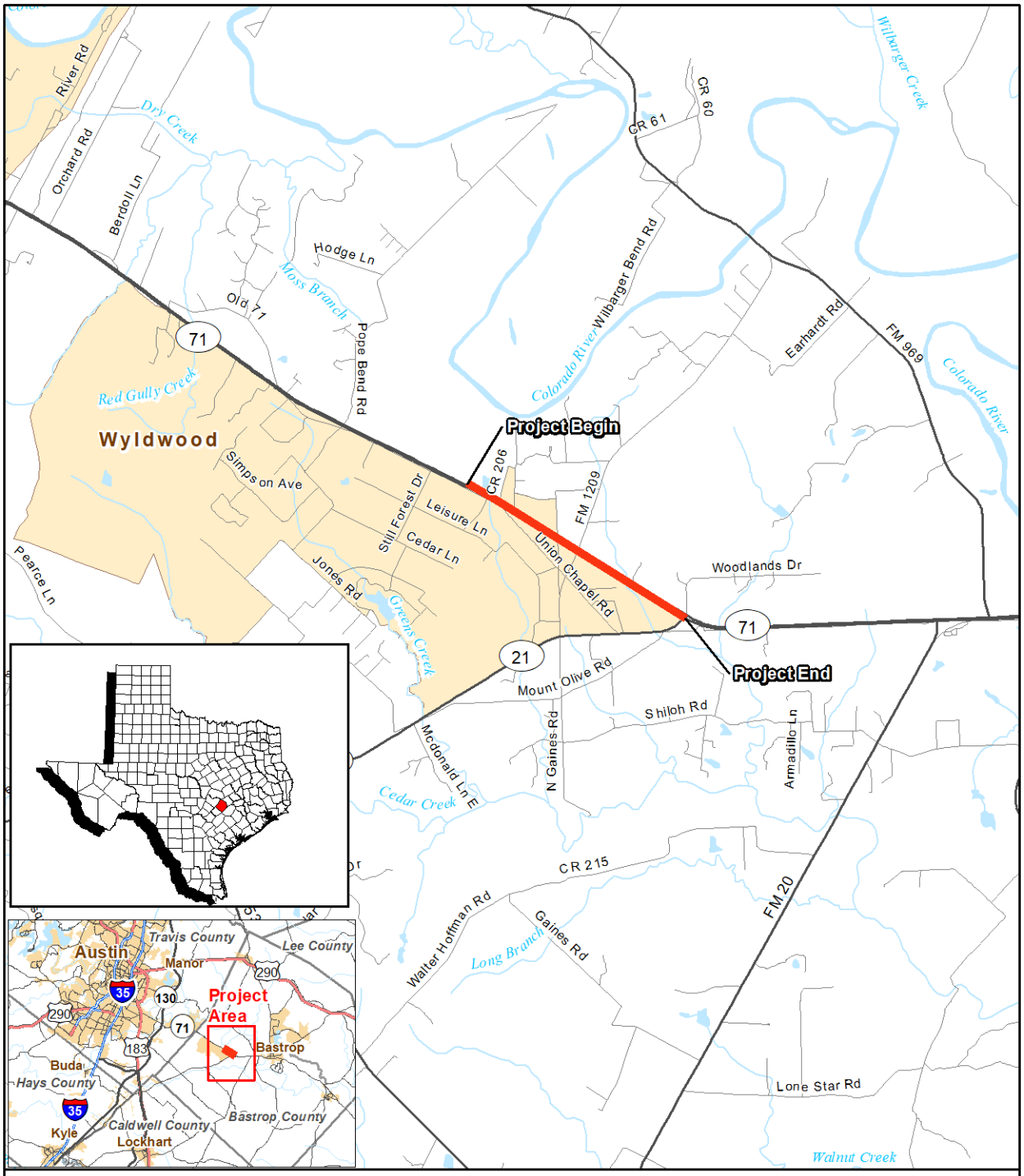
U.S. Geological Survey (USGS). 1982a. 7.5-minute series topographic map (1:24,000 scale), Bastrop SW, Texas. USGS. Denver, Colorado, and Reston, Virginia, USA.

_____. 1982b. 7.5-minute series topographic map (1:24,000 scale), Utley, Texas. USGS. Denver, Colorado, and Reston, Virginia, USA.

_____. 2018. Science in Your Watershed. Available at http://water.usgs.gov/wsc/map_index.html. Accessed August 2018.

Appendix A

Figures



Base Map: ESRI- US Base Map;

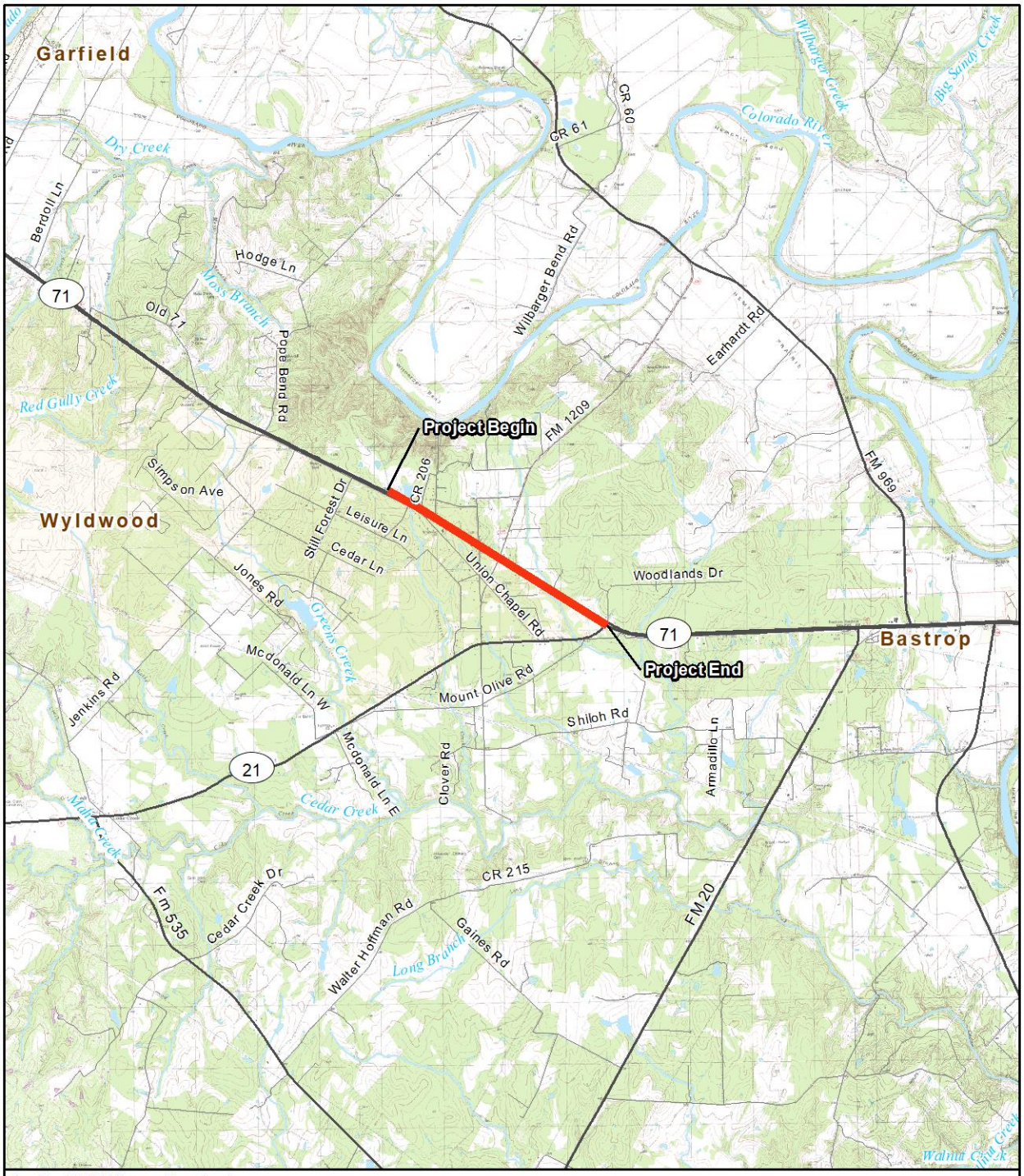
Project Location

1:100,000

Miles

0 0.5 1 1.5 2

Figure 1
Project Location on County Map
SH 71 from CR 206 to SH 21
Bastrop County, Texas
CSJ: 0265-03-041



Base Map: 7.5' USGS topographic quadrangle:
Webberville, Texas
(1987, Map ID No. 30097-B5)
Utley, Texas
(1982, Map ID No. 30097-B4)
Bastrop SW, Texas
(1982, Map ID No. 30097-A4)
Lytton Springs, Texas
(1968, Map ID No. 30097-A5)

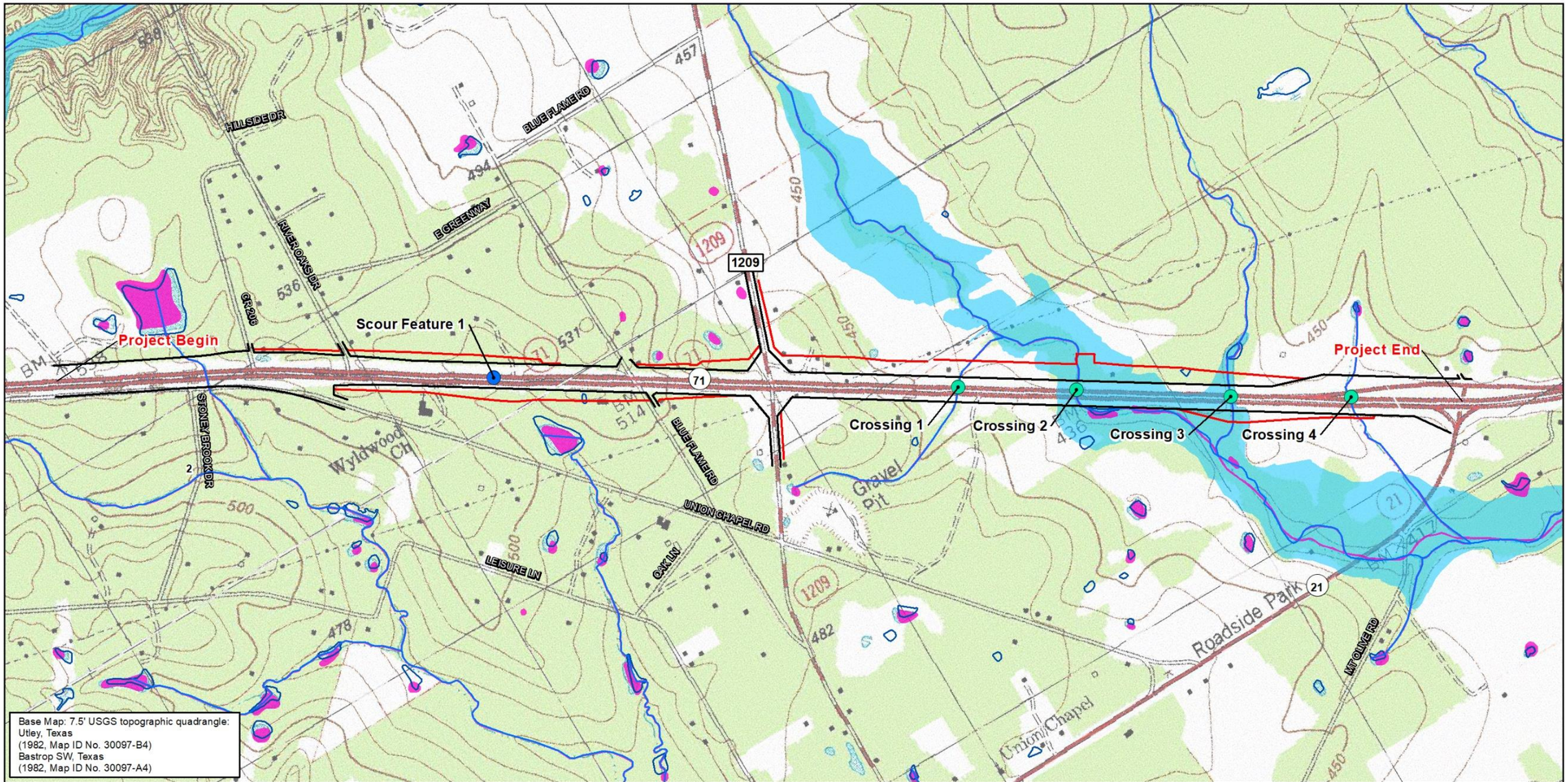
Project Location

N
W E
S

1:100,000

Miles
0 0.5 1 1.5 2

Figure 2
Project Location on Topographic Map
SH 71 from CR 206 to SH 21
Bastrop County, Texas
CSJ: 0265-03-041

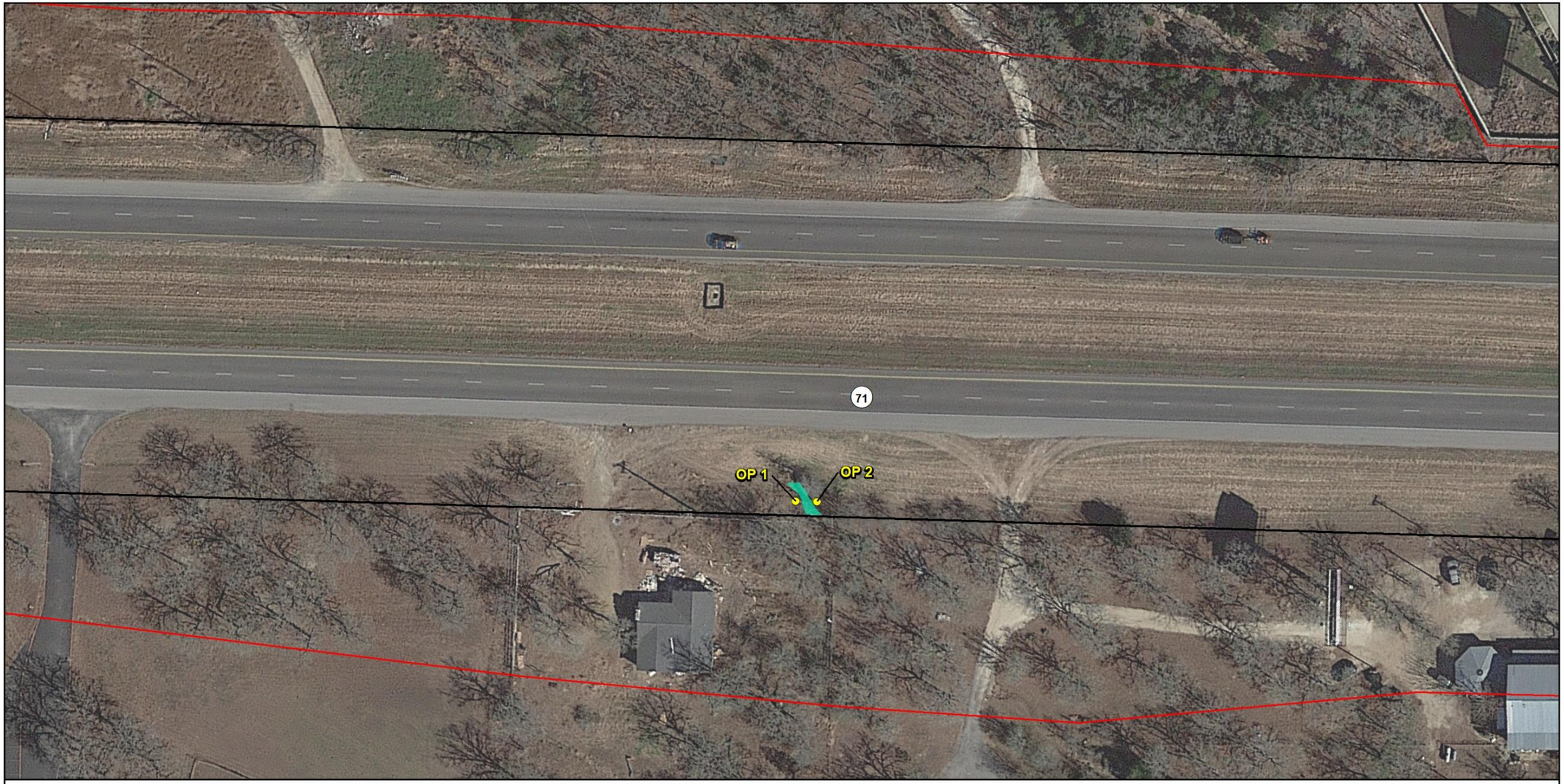


Scour Feature 1 (Not a Water of the U.S.)
Waters of the U.S. Crossing
Existing Right-of-way
Proposed Right-of-way
River/Stream (NHD)
Waterbody (NHD)
National Wetlands Inventory Feature (NWI)
100-year Floodplain

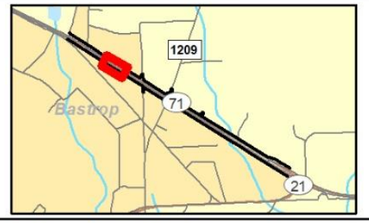
1:12,000

Feet
0 250 500 750

Figure 3
Water Resources
SH 71 from CR 206 to SH 21
Bastrop County, Texas
CSJ: 0265-03-041



Observation Point
Existing Right-of-way
Proposed Right-of-way
Scour Feature 1 (Not a Water of the U.S.)



1:800

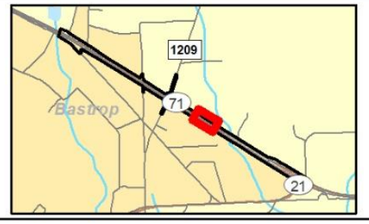
Feet

0 25 50 75

Base Map Image: 2018 Google Imagery

Figure 4.1
Scour Feature 1
SH 71 from CR 206 to SH 21
Bastrop County, Texas
CSJ: 0265-03-041

Observation Point
Existing Right-of-way
Proposed Right-of-way
Stream
Wetland



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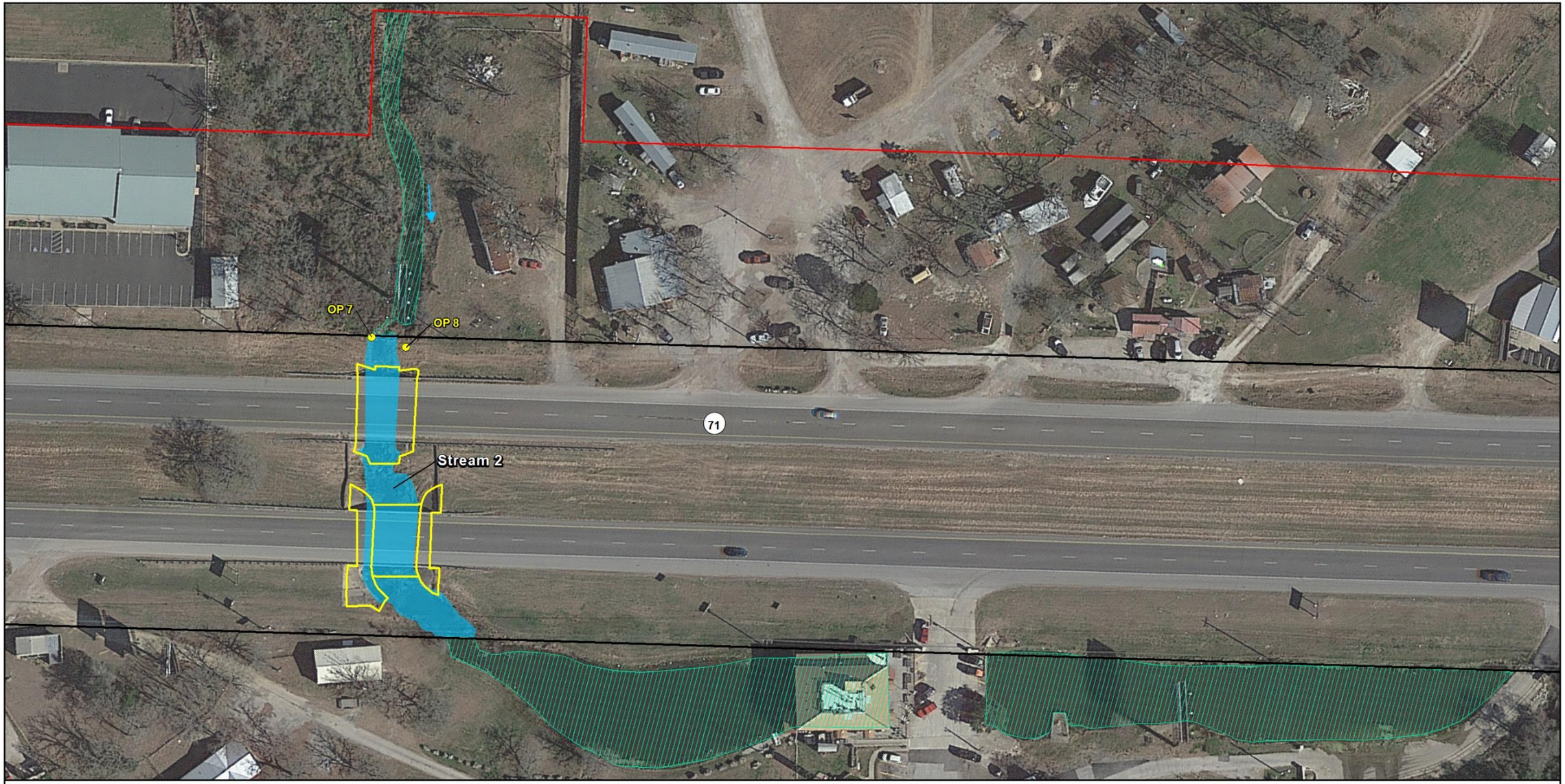
Feet

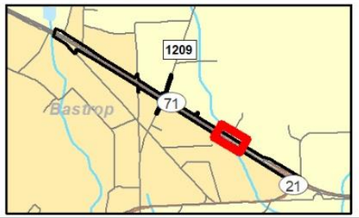
0 25 50 75

Base Map Image: 2018 Google Imagery

Figure 4.2
Potential Waters of the U.S. at Crossing 1
SH 71 from CR 206 to SH 21
Bastrop County, Texas
CSJ: 0265-03-041



Observation Point
Existing Right-of-way
Proposed Right-of-way
Existing Concrete Riprap
Estimated Stream
Stream



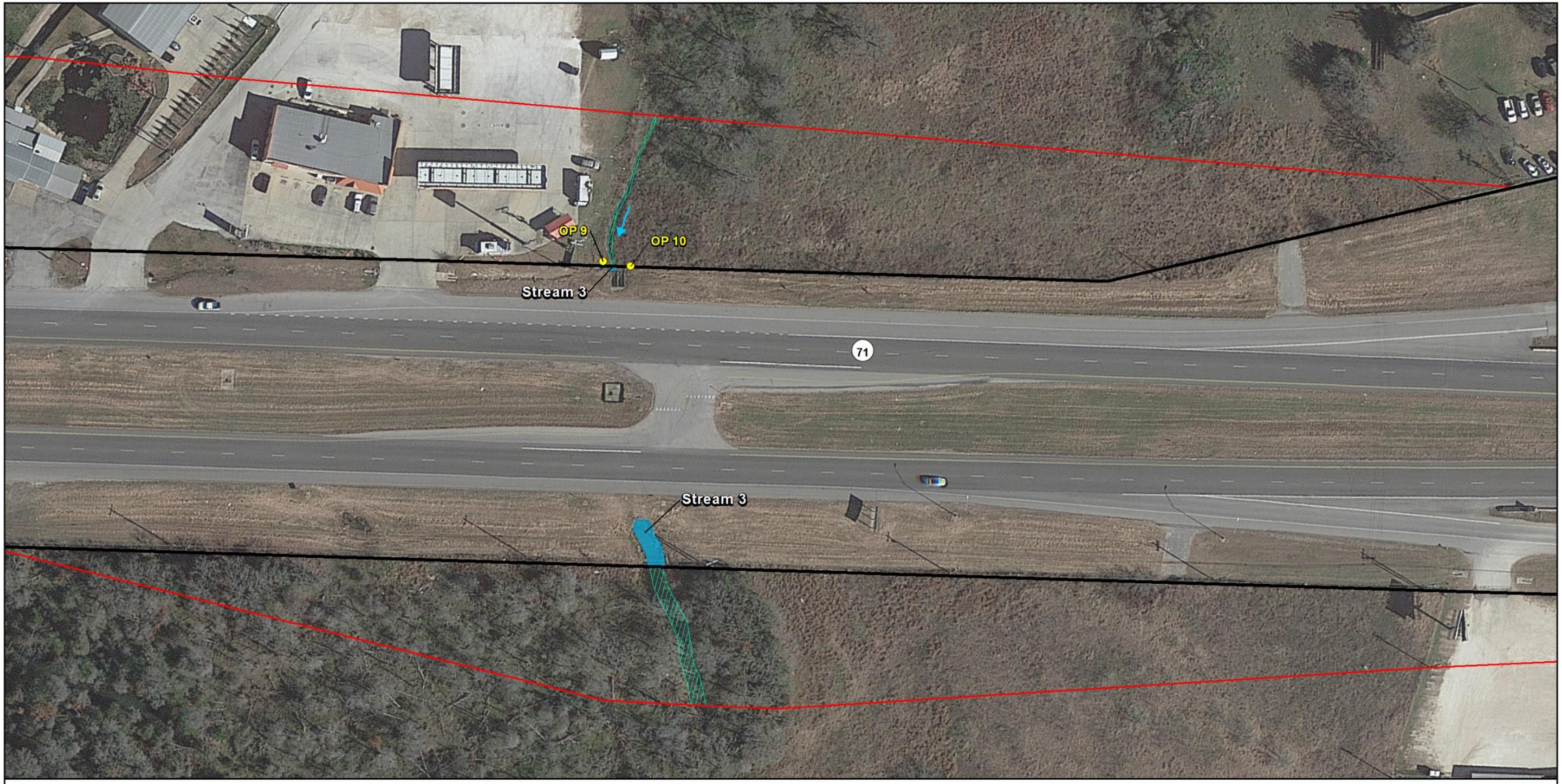
1:1,000

Feet

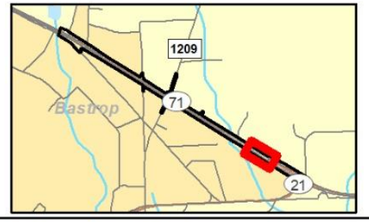
0 25 50 75

Base Map Image: 2018 Google Imagery

Figure 4.3
Potential Waters of the U.S. at Crossing 2
SH 71 from CR 206 to SH 21
Bastrop County, Texas
CSJ: 0265-03-041



Observation Point
Existing Right-of-way
Proposed Right-of-way
Estimated Stream
Stream



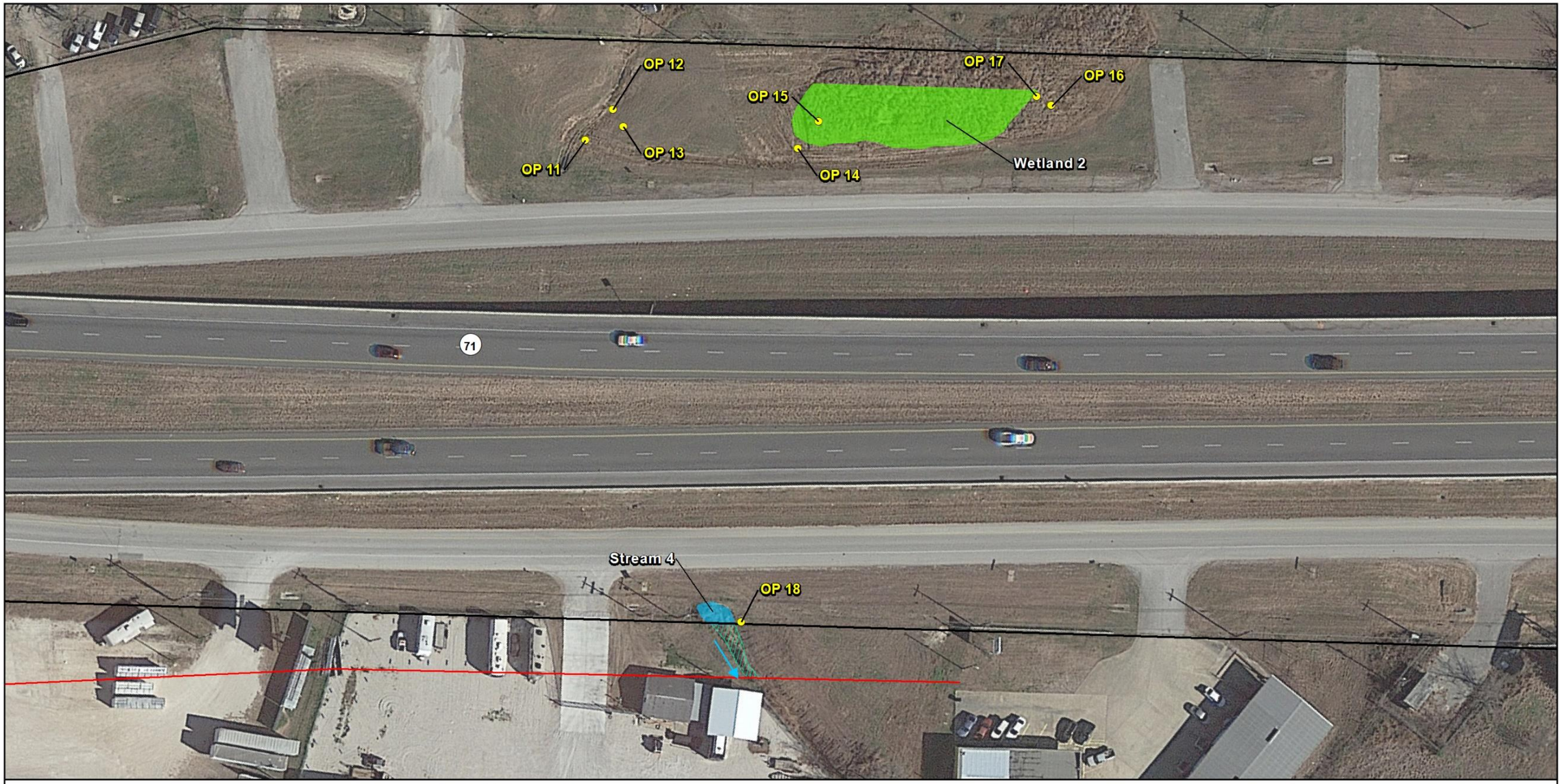
1:1,000

Feet

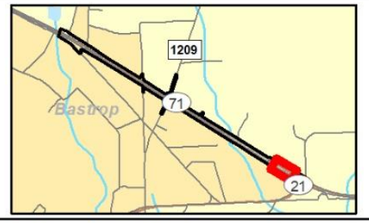
0 25 50 75

Base Map Image: 2018 Google Imagery

Figure 4.4
Potential Waters of the U.S. at Crossing 3
SH 71 from CR 206 to SH 21
Bastrop County, Texas
CSJ: 0265-03-041



Observation Point
Existing Right-of-way
Proposed Right-of-way
Estimated Stream
Stream
Wetland



1:800

Feet

0 25 50 75

Base Map Image: 2018 Google Imagery

Figure 4.5
Potential Waters of the U.S. at Crossing 4
SH 71 from CR 206 to SH 21
Bastrop County, Texas
CSJ: 0265-03-041

Appendix B

Representative Photographs

Photo 1. Scour Feature 1; facing downstream from SH 71 culvert.

Photo 2. Scour Feature 1, from the property's private driveway facing southeast to where it widens into a swale with no discernable OHWM.

Photo 3. Crossing 1 – Stream 1 upstream of SH 71, facing upstream to the southwest.

Photo 4. Crossing 1 – Stream 1 downstream of SH 71, facing downstream to the northeast.

Photo 5. Crossing 1 – OP 3, facing south.

Photo 6. Crossing 1 – OP 4, facing east.

Photo 7. Crossing 1 – Stream 1 and Wetland 1, facing south.

Photo 8. Crossing 2 – Stream 2 upstream of SH 71, facing downstream to the south towards SH 71.

Photo 9. Crossing 2 – Stream 2 with intermittent pool upstream of SH 71, facing upstream.

Photo 10. Crossing 3 – Stream 3 downstream of SH 71, facing upstream to the north towards SH 71.

Photo 11. Crossing 3 – Stream 3 upstream of SH 71, facing upstream to the north.

Photo 12. Crossing 4 – Stream 4 downstream of SH 71, facing upstream to the north towards SH 71.

Photo 13. OP 11, facing northwest.

Photo 14. OP 12, facing north.

Photo 15. OP 13, facing northwest.

Photo 16. OP 15 and Wetland 2, facing southeast.

Photo 17. OP 14, facing southeast.

Photo 18. OP 16, facing west

Photo 19. OP 17 at Wetland 2 edge, facing northwest.

Appendix C

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 1

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR): J Lat: 30.126058 Long: -97.440005 Datum: NAD83

Soil Map Unit Name: Edge Gravelly Fine Sandy Loam, 0 to 8 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 X	
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X

Remarks: Does not meet the three criteria for a wetland.

This feature appears to be an erosional feature with a discontinuous OHWM that widens into a faint swale to the southeast.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus stellata*	25	Yes	FACU
2. *Ulmus crassifolia*	10	Yes	FAC
3.			
4.			
	35	= Total Cover	
50% of total cover:	17.5	20% of total cover:	7

Sapling/Shrub Stratum (Plot size: 15-ft R)			
1. *Quercus marilandica*	7	Yes	UPL
2. *Ulmus crassifolia*	5	Yes	FAC
3. *Celtis laevigata*	2	No	FAC
4.			
5.			
	14	= Total Cover	
50% of total cover:	7	20% of total cover:	2.8

Herb Stratum (Plot size: 5-ft R)			
1. *Paspalum plicatulum*	20	Yes	FAC
2. *Sorghum halepense*	15	Yes	FACU
3. *Iva annua*	10	No	FAC
4. *Cynodon dactylon*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	55	= Total Cover	
50% of total cover:	27.5	20% of total cover:	11

Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0	= Total Cover	
50% of total cover:	0	20% of total cover:	0

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (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 ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present **Yes** ____ **No** X

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 1

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	100					loamy sand	
6-16	10YR 4/2	97	10YR 3/6	3	C	M	sandy clay loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks: Meets the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)

Secondary Indicators (minimum of two required)

- ___ 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 X	Depth (inches):	___
Water Table Present?	Yes ___	No X	Depth (inches):	___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	___

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 2

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR): J Lat: 30.126038 Long: -97.439968 Datum: NAD83

Soil Map Unit Name: Edge Gravelly Fine Sandy Loam, 0 to 8 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No _____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are vegetation No , soil No , or hydrology No 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 **X**	No _____	
Hydric Soil Present?	Yes _____	No **X**	
Wetland Hydrology Present?	Yes _____	No **X**	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** **X**

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus stellata*	15	Yes	FACU
2. *Ulmus crassifolia*	10	Yes	FAC
3.			
4.			
	25	= Total Cover	
50% of total cover:	12.5	20% of total cover:	5
Sapling/Shrub Stratum (Plot size: 15-ft R)			
1. *Quercus stellata*	7	Yes	FACU
2. *Ulmus crassifolia*	5	Yes	FAC
3.			
4.			
5.			
	12	= Total Cover	
50% of total cover:	6	20% of total cover:	2.4
Herb Stratum (Plot size: 5-ft R)			
1. *Cynodon dactylon*	40	Yes	FACU
2. *Ambrosia trifida*	25	Yes	FAC
3. *Carex blanda*	20	Yes	FAC
4. *Sorghum halepense*	10	No	FACU
5. *Iva annua*	3	No	FAC
6.			
7.			
8.			
9.			
10.			
	98	= Total Cover	
50% of total cover:	49	20% of total cover:	19.6
Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0	= Total Cover	
50% of total cover:	0	20% of total cover:	0
% Bare Ground in Herb Stratum 20			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57% (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
- X 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)

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

Hydrophytic Vegetation Present **Yes** X **No** _____

Remarks: Meets the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 2

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 4/2	100					Sandy loam	Restrictive layer at 6 inches

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if present):

Type: Cobble

Depth (inches): 6

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)

Secondary Indicators (minimum of two required)

- ___ 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 X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 3-Oct-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 3

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Toe of slope Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): J Lat: 30.120209 Long: -97.427714 Datum: WGS84

Soil Map Unit Name: Mabank Loam, 0 to 1 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 **X**	No ____	
Hydric Soil Present?	Yes **X**	No ____	
Wetland Hydrology Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland? Yes X No ____**

Remarks: Meets the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Herb Stratum (Plot size: 5-ft R)			
1. *Cynodon dactylon*	30	Yes	FACU
2. *Echinochloa crus-galli*	25	Yes	FAC
3. *Eleocharis montevidensis*	20	Yes	FACW
4. *Symphyotrichum subulatum*	15	No	OBL
5. *Ludwigia repens*	8	No	OBL
6.			
7.			
8.			
9.			
10.			
	98 = Total Cover		
50% of total cover:	49	20% of total cover:	19.6

Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

% Bare Ground in Herb Stratum 0

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% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	23	x 1 =	23
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals	73 (A)		183 (B)

Prevalence Index = B/A = 2.51

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- X 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)

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

Hydrophytic Vegetation Present **Yes X No X**

Remarks: Meets the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 3

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	90	5YR 3/4	10	C	PL	sandy loam	
8-16	10YR 3/2	100					clay	some gravel/cobble mixing

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** **X** **No** ___

Remarks: Meets the criteria for hydric soil.

Some clay inclusions and gravel mixing was noted in in the upper 8 inches of the soil profile.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X 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	X	No ___	Depth (inches):	2
Water Table Present?	Yes	___	No X	Depth (inches):	___
Saturation Present? (includes capillary fringe)	Yes	___	No X	Depth (inches):	___

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks: Meets the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 3-Oct-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 4

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR): J Lat: 30.120169 Long: -97.42773 Datum: NAD83

Soil Map Unit Name: Mabank Loam, 0 to 1 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No _____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are vegetation No , soil No , or hydrology No 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 **X**	
Hydric Soil Present?	Yes **X**	No ____	
Wetland Hydrology Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland? Yes ____ No X**

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Herb Stratum (Plot size: 5-ft R)			
1. *Cynodon dactylon*	85	Yes	FACU
2. *Eleocharis montevidensis*	10	No	UPL
3. *Paspalum plicatulum*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
50% of total cover:	50	20% of total cover:	20

Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (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 ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present **Yes** _____ **No** **X**

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 4

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	60					loam	Mixed matrix
	10YR 5/2	40					sand	
4-8	10YR 3/1	98	5YR 3/4	2	C	PL	loam	
8-16	10YR 4/1	95	5YR 3/4	5	C	PL	sandy clay loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks: Meets the criteria for hydric soil.

Some clay inclusions and gravel mixing was noted in in the upper 8 inches of the soil profile.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X 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 X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___	

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 5

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR): J Lat: 30.119917 Long: -97.427919 Datum: NAD83

Soil Map Unit Name: Mabank Loam, 0 to 1 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 **X**	No ____	
Hydric Soil Present?	Yes ____	No **X**	
Wetland Hydrology Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** **X**

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Herb Stratum (Plot size: 5-ft R)			
1. *Stenotaphrum secundatum*	100	Yes	FAC
2. *Calyptocarpus vialis*	10	No	FAC
3. *Paspalum plicatulum*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	115 = Total Cover		
50% of total cover:	57.5	20% of total cover:	23

Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

% Bare Ground in Herb Stratum 0

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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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
- X 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)

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

Hydrophytic Vegetation Present **Yes** X **No** ____

Remarks: Meets the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 5

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	100					sandy loam	
6-16	10YR 3/3	97					andy clay loam r	Mixed matrix
6-16	10 YR 6/2	3					andy clay loam r	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[3]Indicators 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** X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)

Secondary Indicators (minimum of two required)

- ___ 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 X	Depth (inches):	
Water Table Present?	Yes ___	No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 6

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR): J Lat: 30.119896 Long: -97.427888 Datum: WGS84

Soil Map Unit Name: Mabank Loam, 0 to 1 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 **X**	No ____	
Hydric Soil Present?	Yes ____	No **X**	
Wetland Hydrology Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** **X**

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	2	Yes	FACW
2.			
3.			
4.			
	2 = Total Cover		
50% of total cover:	1	20% of total cover:	0.4

Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Herb Stratum (Plot size: 5-ft R)			
1. *Stenotaphrum secundatum*	100	Yes	FAC
2. *Calyptocarpus vialis*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	105 = Total Cover		
50% of total cover:	52.5	20% of total cover:	21

Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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
- X 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)

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

Hydrophytic Vegetation Present **Yes** X **No** ____

Remarks: Meets the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 6

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					sandy loam	
4-16	10YR 3/3	97					andy clay loam r	Mixed matrix
4-16	10YR 6/2	3					andy clay loam r	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[3]Indicators 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** X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)

Secondary Indicators (minimum of two required)

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

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 7

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR): J Lat: 30.118204 Long: -97.424904 Datum: NAD83

Soil Map Unit Name: Wilson Clay Loam, 0 to 1 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 **X**	
Hydric Soil Present?	Yes ____	No **X**	
Wetland Hydrology Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland? Yes ____ No X**

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Herb Stratum (Plot size: 5-ft R)			
1. *Cynodon dactylon*	90	Yes	FACU
2. *Sorghum halepense*	20	No	FACU
3. *Solidago altissima*	7	No	FACU
4. *Ambrosia trifida*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	122 = Total Cover		
50% of total cover:	61	20% of total cover:	24.4

Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (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 ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present **Yes** ____ **No X**

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 7

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	100					sandy loam	Restrictive layer at 6 inches

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if present):

Type: Cobble

Depth (inches): 6

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)

Secondary Indicators (minimum of two required)

- ___ 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 X	Depth (inches):	
Water Table Present?	Yes ___	No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 8

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR): J Lat: 30.118146 Long: -97.424842 Datum: NAD83

Soil Map Unit Name: Wilson Clay Loam, 0 to 1 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 **X**	
Hydric Soil Present?	Yes ____	No **X**	
Wetland Hydrology Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland? Yes ____ No X**

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0
Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0
Herb Stratum (Plot size: 5-ft R)			
1. *Cynodon dactylon*	95	Yes	FACU
2. *Sorghum halepense*	15	No	FACU
3. *Paspalum plicatulum*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	120 = Total Cover		
50% of total cover:	60	20% of total cover:	24
Woody Vine Stratum (Plot size: 30-ft R)			
1. *Ampelopsis arborea*	5	Yes	FAC
2.			
	5 = Total Cover		
50% of total cover:	2.5	20% of total cover:	1

% Bare Ground in Herb Stratum ____

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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (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 ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present **Yes** ____ **No X**

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 8

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5	10YR 4/2	100					Sandy loam	Restrictive layer at 5 inches

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if present):

Type: Cobble

Depth (inches): 5

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)

Secondary Indicators (minimum of two required)

- ___ 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 X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 9

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 10

Subregion (LRR): J Lat: 30.11601 Long: -97.421026 Datum: NAD83

Soil Map Unit Name: Tabor fine sandy loam, 0 to 1 percent slopes NWI Classification: R4SBC

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 **X**	
Hydric Soil Present?	Yes ____	No **X**	
Wetland Hydrology Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland? Yes ____ No X**

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0
Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0
Herb Stratum (Plot size: 5-ft R)			
1. *Cynodon dactylon*	60	Yes	FACU
2. *Ambrosia psilostachya*	30	Yes	FACU
3. *Sorghum halepense*	20	No	FACU
4. *Bothriochloa laguroides*	15	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
	125 = Total Cover		
50% of total cover:	62.5	20% of total cover:	25
Woody Vine Stratum (Plot size: 30-ft R)			
1. *Ampelopsis arborea*	5	Yes	FAC
2.			
	5 = Total Cover		
50% of total cover:	2.5	20% of total cover:	1
% Bare Ground in Herb Stratum 0			

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% (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 ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present **Yes** ____ **No X**

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 9

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR 4/2	100					sandy loam	Restrictive layer at 4 inches

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

___ 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)**

Indicators for Problematic Hydric Soils[3]:

___ 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)

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

Restrictive Layer (if present):

Type: Rock/Cobble/Road Fill
Depth (inches): 4

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

___ 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)

Secondary Indicators (minimum of two required)

___ 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 X Depth (inches): ___
Water Table Present? Yes ___ No X Depth (inches): ___
Saturation Present? Yes ___ No X Depth (inches): ___
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 10

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 10

Subregion (LRR): J Lat: 30.11597 Long: -97.420973 Datum: NAD83

Soil Map Unit Name: Tabor fine sandy loam, 0 to 1 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 **X**	No ____	
Hydric Soil Present?	Yes ____	No **X**	
Wetland Hydrology Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland? Yes ____ No X**

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0
Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0
Herb Stratum (Plot size: 5-ft R)			
1. *Sorghum halepense*	50	Yes	FACU
2. *Ambrosia trifida*	35	Yes	FAC
3. *Iva annua*	30	No	FAC
4. *Cynodon dactylon*	30	No	FACU
5. *Bothriochloa laguroides*	10	No	UPL
6.			
7.			
8.			
9.			
10.			
	155 = Total Cover		
50% of total cover:	77.5	20% of total cover:	31
Woody Vine Stratum (Plot size: 30-ft R)			
1. *Ampelopsis arborea*	5	Yes	FAC
2.			
	5 = Total Cover		
50% of total cover:	2.5	20% of total cover:	1

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (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
- X 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)

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

Hydrophytic Vegetation Present **Yes X No ____**

Remarks: Meets the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 10

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10YR 4/1	100					sandy loam	Restrictive layer at 2 inches

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if present):

Type: Rock/Cobble

Depth (inches): 2

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)

Secondary Indicators (minimum of two required)

- ___ 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 X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 11

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): J Lat: 30.11443 Long: -97.417888 Datum: NAD83

Soil Map Unit Name: Wilson Clay Loam, 0 to 1 percent slopes NWI Classification: R4SBC

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 X	
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	**Is the Sampled Area within a Wetland? Yes ____ No X**

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)		Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Herb Stratum (Plot size: 5-ft R)			
1. *Cynodon dactylon*	50	Yes	FACU
2. *Typha domingensis*	15	No	OBL
3. *Eleocharis montevidensis*	15	No	FACW
4. *Setaria parviflora*	10	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	90 = Total Cover		
50% of total cover:	45	20% of total cover:	18

Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (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 ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present Yes ____ No X

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 11

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 2/1	100					silty clay loam	
1-5	10YR 4/4	90					loamy sand	
1-5	10YR 4/1	10					clay loam	
5-16	2.5YR 5/3	60	5YR 4/6	10			sandy clay loam	
5-16	10YR 6/1	30					sandy clay loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[3]Indicators 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** X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- X 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)

Secondary Indicators (minimum of two required)

- ___ 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)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes	X	No	___	Depth (inches): 2
Water Table Present?	Yes	___	No	X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0-16

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks: Meets the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 12

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): J Lat: 30.114451 Long: -97.417808 Datum: NAD83

Soil Map Unit Name: Wilson Clay Loam, 0 to 1 percent slopes NWI Classification: R4SBC

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 **X**	
Hydric Soil Present?	Yes **X**	No ____	
Wetland Hydrology Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** **X**

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Herb Stratum (Plot size: 5-ft R)			
1. *Cynodon dactylon*	90	Yes	FACU
2. *Paspalum plicatulum*	20	No	FAC
3. *Setaria parviflora*	10	No	FAC
4. *Rumex crispus*	2	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	122 = Total Cover		
50% of total cover:	61	20% of total cover:	24.4

Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	32	x 3 =	96
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals	122 (A)		456 (B)

Prevalence Index = B/A = 3.74

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ____ 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)

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

Hydrophytic Vegetation Present **Yes** ____ **No** **X**

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 12

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					silty clay loam	
2-8	10YR 4/2	58	10YR 4/6	2	C	M	sandy loam	
2-8	10YR 5/3	40					sandy loam	
8-16	10YR 4/2	99	10YR 4/6	1			sandy loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks: Meets the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- X 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)

Secondary Indicators (minimum of two required)

- ___ 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)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes	X	No	___	Depth (inches): 1
Water Table Present?	Yes	___	No	X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0-16

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks: Meets the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 13

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 15

Subregion (LRR): J Lat: 30.114416 Long: -97.417808 Datum: NAD83

Soil Map Unit Name: Wilson Clay Loam, 0 to 1 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 X	
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	**Is the Sampled Area within a Wetland? Yes ____ No X**

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0
Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0
Herb Stratum (Plot size: 5-ft R)			
1. *Paspalum plicatulum*	35	Yes	FAC
2. *Cynodon dactylon*	20	Yes	FACU
3. *Polypremum procumbens*	20	Yes	UPL
4. *Bothriochloa ischaemum*	10	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
	85 = Total Cover		
50% of total cover:	42.5	20% of total cover:	17
Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0
% Bare Ground in Herb Stratum	30		

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% (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 ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present Yes ____ No X

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 13

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 5/3	95	10YR 5/6	5	C	M	loamy sand	
6-16	10YR 5/3	90	7.5YR 4/6	10	C	M	sandy loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

[3]Indicators 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** X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)

Secondary Indicators (minimum of two required)

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

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 14

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): J Lat: 30.114221 Long: -97.41752 Datum: NAD83

Soil Map Unit Name: Wilson Clay Loam, 0 to 1 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 **X**	
Hydric Soil Present?	Yes ____	No **X**	
Wetland Hydrology Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland? Yes ____ No X**

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0
Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0
Herb Stratum (Plot size: 5-ft R)			
1. *Cynodon dactylon*	100	Yes	FACU
2. *Trichoneura elegans*	10	No	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	110 = Total Cover		
50% of total cover:	55	20% of total cover:	22
Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0
% Bare Ground in Herb Stratum 0			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (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 ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present Yes ____ No X

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 14

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR 4/1	100					sandy loam	Restrictive layer at 4 inches

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if present):

Type: Cobble/Rock

Depth (inches): 4

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: Does not meet the criteria for hydric soil.

Substantial mixing of gravel was noted in the soil profile.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)

Secondary Indicators (minimum of two required)

- ___ 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)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 15

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): J Lat: 30.114243 Long: -97.417465 Datum: NAD83

Soil Map Unit Name: Wilson Clay Loam, 0 to 1 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 **X**	No ____	
Hydric Soil Present?	Yes **X**	No ____	
Wetland Hydrology Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland? Yes X No ____**

Remarks: Meets the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5-ft R)			
1. *Typha domingensis*	60	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
% Bare Ground in Herb Stratum 0			

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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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
- X 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)

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

Hydrophytic Vegetation Present **Yes X No ____**

Remarks: Meets the criteria for hydrophytic vegetation.
Approximately 40% *Typha domingensis* leaf litter was noted in the herbaceous stratum.

SOIL

Sampling Point: OP 15

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	98	7.5YR 5/4	2	C	M	sandy clay loam	
4-8	10YR 4/3	95	7.5YR 3/4	5	C	M	sandy loam	
8-16	10YR 3/2	70	7.5YR 4/6	30	C	M	clay	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** **X** **No** ___

Remarks: Meets the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ 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)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

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

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks: Meets the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 16

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Roadside Ditch Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): J Lat: 30.114053 Long: -97.417045 Datum: NAD83

Soil Map Unit Name: Wilson Clay Loam, 0 to 1 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 X	
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5-ft R)			
1. *Cynodon dactylon*	95	Yes	FACU
2. *Trichoneura elegans*	15	No	UPL
3. *Typha domingensis*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	115 = Total Cover		
50% of total cover: 57.5	20% of total cover: 23		
Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
% Bare Ground in Herb Stratum 0			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	95	x 4 =	380
UPL species	15	x 5 =	75
Column Totals	115 (A)		460 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 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)

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

Hydrophytic Vegetation Present **Yes** ____ **No** X

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 16

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/2	100					sandy loam	
3-6	10YR 4/1	80	7.5YR 4/6	20	C	PL/M	clay	
6-16	10YR 4/2	90	7.5YR 4/6	10	C	PL/M	sandy loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** **X** **No** ___

Remarks: Meets the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ 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 X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks: Meets the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 17

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Roadside Ditch Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): J Lat: 30.11408 Long: -97.417061 Datum: NAD83

Soil Map Unit Name: Wilson Clay Loam, 0 to 1 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 **X**	
Hydric Soil Present?	Yes **X**	No ____	
Wetland Hydrology Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland? Yes ____ No X**

Remarks: Does not meet the three criteria for a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

Herb Stratum (Plot size: 5-ft R)			
1. *Cynodon dactylon*	90	Yes	FACU
2. *Trichoneura elegans*	20	No	UPL
3. *Typha domingensis*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	115 = Total Cover		
50% of total cover:	57.5	20% of total cover:	23

Woody Vine Stratum (Plot size: 30-ft R)			
1.			
2.			
	0 = Total Cover		
50% of total cover:	0	20% of total cover:	0

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	90	x 4 =	360
UPL species	20	x 5 =	100
Column Totals	115 (A)		465 (B)

Prevalence Index = B/A = 4.04

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 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)

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

Hydrophytic Vegetation Present **Yes** ____ **No X**

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 17

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	95					sandy loam	Mixed matrix with gravel
0-8	10YR 4/1	5					clay	and clay inclusions
8-16	10YR 4/1	60	7.5YR 4/6	40	C	PL/M	clay	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** **X** **No** ___

Remarks: Meets the criteria for hydric soil.

Some clay inclusions and gravel mixing was noted in in the upper 8 inches of the soil profile.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X 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 X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks: Meets the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 71 @ FM 1209 City/County: Bastrop Sampling Date: 22-Aug-18

Applicant/Owner: TxDOT Austin District State: Texas Sampling Point: OP 18

Investigator(s): I. Hauss, J. LeClair, N. Wallisch Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Slope/Bank Local relief (concave, convex, none): None Slope (%): 3

Subregion (LRR): J Lat: 30.113561 Long: -97.41813 Datum: NAD83

Soil Map Unit Name: Wilson Clay Loam, 0 to 1 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ____ (If no, explain in remarks)

Are vegetation No , soil No , or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are vegetation No , soil No , or hydrology No 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 X	
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X

Remarks: Does not meet the three criteria for a wetland.

This feature appears to have been mechanically maintained and cleaned out in the recent past. Bank vegetation is reestablishing.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
50% of total cover:	0	20% of total cover:	0
Sapling/Shrub Stratum (Plot size: 15-ft R)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover:	0	20% of total cover:	0
Herb Stratum (Plot size: 5-ft R)			
1. *Cynodon dactylon*	40	Yes	FACU
2. *Sorghum halepense*	20	Yes	FACU
3. *Trichoneura elegans*	10	No	UPL
4. *Carex crus-corvi*	7	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
	77	= Total Cover	
50% of total cover:	38.5	20% of total cover:	15.4
Woody Vine Stratum (Plot size: 30-ft R)			
1. *Ipomoea cordatotriloba*	3	Yes	FAC
2.			
	3	= Total Cover	
50% of total cover:	1.5	20% of total cover:	0.6

% Bare Ground in Herb Stratum ____

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% (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 ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present Yes ____ No X

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: OP 18

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	98	7.5YR 5/6	2	C	PL	sandy loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

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

- ___ 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 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)

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks: Meets the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)

Secondary Indicators (minimum of two required)

- ___ 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 X	Depth (inches):	___
Water Table Present?	Yes ___	No X	Depth (inches):	___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks: Does not meet the criteria for wetland hydrology.