

APPENDIX D

**JURISDICTIONAL DETERMINATION OF WATERS OF THE UNITED STATES
AND SUPPLEMENTAL DOCUMENTATION**

JURISDICTIONAL DETERMINATION OF WATERS OF THE UNITED STATES

For:

Tres Palacios Creek Drainage Improvement Project
City of El Campo, Wharton County, Texas

FEMA SRL Grant: 06-TX-2011-008

Prepared For:

City of El Campo
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May 2012



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1.0 PURPOSE

Halff Associates, Inc. (Halff) has been retained by the City of El Campo to provide the environmental services necessary to perform a Section 404 jurisdictional determination for the proposed Tres Palacios Creek Drainage Improvement Project in the City of El Campo, Wharton County, Texas.

The approximate 115-acre study area is located within the City of El Campo, along Tres Palacios Creek from Business U.S. 59 to County Road 406. **Figure 1** shows the project vicinity, and **Figure 2** depicts the limits of the proposed project.

The City of El Campo has been awarded a Severe Repetitive Loss Grant from the Federal Emergency Management Agency (FEMA), which is administered by the Texas Water Development Board (TWDB). The preparation of this jurisdictional determination report is part of the Environmental Assessment prepared per FEMA requirements as required by the National Environmental Policy Act (NEPA). This document has been prepared to meet jurisdictional determination guidelines published by the U.S. Army Corps of Engineers (USACE), and to serve as the jurisdictional determination for any future USACE permit, should one be required.

2.0 METHODS

Supporting information including topographic maps, soil survey, floodplain maps, and aerial photography were reviewed prior to conducting site investigations. During January 2012, site investigations over the course of three days were conducted to determine the present day extent of the waters of the United States, including wetlands. The identification of a study area began with a 200-foot buffer on either side of Tres Palacios Creek. Since the drainage improvements are designed to avoid impacting existing structures, parcels of property with existing structures, large stands of trees, and other known constraints, these areas were excluded from the study area prior to the field visit. The study area shown in **Figure 3** is approximately 115 acres and includes all project elements such as grading, staging, and temporary construction access.

Limits of waters of the United States were identified in the field by Halff personnel with training and experience in the identification and mapping of jurisdictional waters, including wetlands. Water feature limits were based on the presence of the ordinary high water mark (OHWM) of

the surface tributary system, or the presence of wetland indicators where applicable. Limits of waters of the United States were measured in the field with a R8 Trimble Global Positioning System (GPS) receiver and processed using Trimble Geomatic Office. Field data was then analyzed using ArcView GIS software. All coordinates are United States State Plane 1983, Texas South Central Zone (4204), U.S. Survey Feet.

Since the proposed study area is linear, both the north and south sides of Tres Palacios Creek were investigated within the study area. The OHWMs of Tres Palacios Creek and associated tributaries within the study area were delineated. Wetland data points were recorded, documenting vegetation, hydrology, and soil characteristics in the areas exhibiting one or more of these features. The collection of wetland data points was consistent with the USACE guidelines for wetland delineations per the “1987 Corps of Engineers Wetlands Delineation Manual,” in addition to the “Interim Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Atlantic & Gulf Coastal Plain Region.” Once all data had been recorded, limits of wetlands were flagged in the field and mapped with the GPS unit.

3.0 RESULTS

Supporting information for this jurisdictional determination report include topographic maps, soil survey maps, floodplain maps, and aerial photographs which are shown in **Appendix A**. A discussion of these maps is provided in **Section 3.1**. Results of the site investigation are provided in **Section 3.2**.

3.1 Supporting Information

3.1.1 Topographic Map Information

The United States Geological Survey (USGS) Quadrangle Map for “El Campo, Texas” (**Appendix A, USGS Topographic Map**) shows the study area with relatively flat topography generally sloping toward Tres Palacios Creek. Features shaded in violet are 1981 photorevisions of the original USGS map published in 1965. The map shows the Tres Palacios Creek flowing east and then southeast in the study area. The northern three-fourths of the study area are developed within and near the City of El Campo. Two unnamed tributaries of Tres Palacios Creek are shown, flowing across the study area to Tres Palacios Creek. Along the southeastern end of the study area, Stage Stand Creek is mapped. One isolated pond to

the south of U.S. Highway 59 is shown just west of the study area. All features are shown as the original 1965 published edition. Only minor additions such as city boundaries, buildings, and roadways were revised in 1981.

3.1.2 Soil Survey Information

Soils data for the study area were obtained from the March 1974 U.S. Department of Agriculture (USDA) soil survey for Wharton County. The soil units mapped from USDA GIS data are shown atop a 2010 aerial photograph of the study area in **Appendix A, Wharton Co. Soils Map**, and **Table 1** provides key characteristics for these soil types.

Table 1 - Soil Types within the Study Area

| Soil ID | Soil Units | Topography | Drainage Class | Permeability | Available Water Capacity | Runoff |
|------------|----------------------|-----------------------|-------------------------|--------------|--------------------------|-----------|
| BcA | Bernard clay loam | 0 to 1 percent slopes | somewhat poorly drained | very slow | high | - |
| EdA | Edna fine sandy loam | 0 to 1 percent slopes | poorly drained | very slow | high | very slow |
| BeA | Bernard-Edna complex | 0 to 1 percent slopes | poorly drained | very slow | high | very slow |

All three soil units identified within the study area are listed as hydric on the National Resources Conservation Service (NRCS) state hydric soil list for Wharton County. These soils, Bernard clay loam, Edna fine sandy loam, and the Bernard-Edna complex, occur on uplands. All are somewhat poorly drained to poorly drained with very slow permeability and high water capacity. The majority of the study area is within the Bernard-Edna complex and Bernard clay loam mapped unit; only a small portion is within the Edna fine sandy loam soil unit.

3.1.3 Floodplain Information

Per the FEMA flood insurance rate map (FIRM) of Wharton County, Tres Palacios Creek is shown with a broad floodplain throughout the study area (**Appendix A, USGS Topographic & Floodplain Map**). According to map panels 48481C0510E and 48481C0520E, effective April 5, 2006, the entire study area is mapped within Zone AE (1% annual chance flood hazard) with the exception of small portion within Zone X (0.2% annual chance flood hazard). Wide floodplains can also be seen on these panels for Stage Stand Creek and Tributary to Tres Palacios Creek. Both flow toward the study area from the west.

3.1.4 Aerial Photography

Black and white aerial photography reviewed from the 1974 Soil Survey of Wharton County, Texas dates to 1969 and shows the majority of the study area as developed within the City of El Campo with undeveloped agricultural land near the southern project extent. The soil survey maps three stream features in the study area: Tres Palacios Creek, an unnamed tributary to Tres Palacios Creek, and Stage Stand Creek. The unnamed tributary to the Tres Palacios Creek is shown at the northern extent of the project, parallel to the Southern Pacific rail line. Just south of U.S. Highway 59, Stage Stand Creek enters the study area from the west. The soil survey shows the three streams identified on the USGS quadrangle map, but does not map an additional unnamed tributary of Tres Palacios Creek. As depicted on the USGS map, the tributary is near East 2nd Street.

The aerial photographs in **Appendix A** dated 1953, 1964, 1972, 1978, 1996, and 2004, illustrate the drainage history of the study area. The aerial photograph from 1953 shows Tres Palacios Creek, Tributary to Tres Palacios Creek parallel to the Southern Pacific rail line, and Stage Stand Creek. The 1964 aerial photograph shows an additional unnamed tributary to Tres Palacios Creek near E. 2nd Street, a large impoundment on Stage Stand Creek to the west of the study area, and U.S. Highway 59 (constructed between 1953 and 1964). The 1972 aerial photograph is almost identical to the 1978 image with few notable changes. The 1996 and 2004 aerials are similar except for the addition of two ponds north of County Road 406. An inundated area can be seen on the 1996 aerial to the west of the study area, south of U.S. Highway 59. The inundated area is then shown as a defined pond on the 2004 image, which corresponds with the USGS quadrangle map. Unlike the earlier aerials or the USGS quadrangle maps, the 2004 aerial photograph also shows a distinct pond east of the study area, north of County Road 406.

3.2 Field Conditions

3.2.1 Surface Tributary System

After reviewing relevant background literature, potential stream channels were identified on a map for field verification. Half identified the location of different stream segments which would later be compared to a 2006 flown 1-foot LIDAR (Light Detection and Ranging) contour topographic base map. Initial field measurements were placed atop the topographic map and it

was concluded that the 1-foot contour topographic map was an accurate representation of the potential stream channels. Field investigations were conducted when conditions were damp as moderate rain was experienced two days prior to the field visit.

The observable characteristics used to field estimate the OHWM for streams varied between segments, but generally included the presence of shelving and/or the destruction of terrestrial vegetation unless otherwise noted. One perennial stream (Tres Palacios Creek), two intermittent streams (Tributary to Tres Palacios Creek and Stage Stand Creek), and four ephemeral streams (ES-1 to ES-4) are located within the study area. Tres Palacios Creek is considered a perennial stream because it flows throughout the year with groundwater as the primary source of stream flow. Stage Stand Creek and Tributary to Tres Palacios Creek are both intermittent because they flow during certain times of the year when groundwater provides water for stream flow and rainfall provides supplemental water. Four ephemeral stream segments (ES-1 to ES-4) were identified within the study area. ES-1 has steeply cut banks that gradually taper at the confluence with Tres Palacios Creek. Water was present at the time of the site visit. ES-2 and ES-3 had little or no water present during the site visit. OHWM determinations were based on matted and bent vegetation; concrete fragments line portions of the stream channel bottoms. ES-4 cut steeply down bank to Tres Palacios Creek. These stream segments were classified as ephemeral streams because the primary hydrologic influence is from surface runoff, without any groundwater influence. **Figure 3-1** through **Figure 3-10** show the location of these segments on an aerial map. **Table 2** provides a summary of all mapped tributary segments.

Table 2 - Summary of Mapped Tributary Segments within the Study Area

| Feature Name | Figure 3 Sheet # | Stream Classification | Channel Length* (linear feet) | OHWM Width (feet)* | Area (acres)* |
|----------------------------------|------------------|-----------------------|-------------------------------|--------------------|---------------|
| Tres Palacios Creek | 3-1 through 3-10 | Perennial | 14,439 | 15-45 | 9.94** |
| Tributary to Tres Palacios Creek | 3-1 | Intermittent | 241 | 12 | 0.07 |
| ES-1 | 3-3 | Ephemeral | 295 | 15 | 0.10 |
| ES-2 | 3-4 | Ephemeral | 501 | 4 | 0.05 |
| ES-3 | 3-5 | Ephemeral | 162 | 9 | 0.03 |
| ES-4 | 3-8 | Ephemeral | 120 | 2 | 0.01 |
| Stage Stand Creek | 3-9 | Intermittent | 204 | 4 | 0.02 |

Notes: *Channel Length, OHWM, and Area are calculated within the limits of the study area. Length, Area, and OHWM are approximated by measurements from topographic map and survey data.

**Acreage is calculated from an average OHWM of 30 feet.

3.2.2 Wetlands

Figure 3, Sheet 4 depicts the two wetlands observed within the study area. The following discussion provides a general summary of each of the wetland indicators observed within the sampling points of the two wetlands, based on USACE wetland delineation guidelines cited in **Section 2.0**. This is followed by a description of specific data collected that were used to define the limits of wetlands. **Appendix B** contains copies of wetland data sheets for each wetland. Photographs from each data point location are provided in **Appendix C**. **Table 4** provides a summary of all mapped wetland areas.

Table 3 - Summary of Mapped Wetlands

| Feature Name | Figure 3, Sheet # | Wetland Classification | Area (acres) |
|--------------|-------------------|------------------------|--------------|
| EW-1 | 3-4 | Emergent | 0.05 |
| EW-2 | 3-4 | Emergent | 0.02 |

3.2.2.1 Indicator Descriptions

Vegetation

Similar vegetation was identified within both emergent wetlands. Dominant herbaceous species in EW-1 included crowfoot sedge (*Carex crus-corvi*) and curly dock (*Rumex crispus*). Hackberry (*Celtis laevigata*) dominated the tree stratum with cottonwood (*Populus deltoides*) and green

ash (*Fraxinus pennsylvanica*) also present. Herbaceous species found in EW-2 included crowfoot sedge and a small cluster of lilies (*Lilium sp.*). Hackberry dominated the tree stratum with retama (*Parkinsonia aculeata*), huisache (*Acacia farnesiana*), and cottonwood also present.

Hydrology

Surface hydrology indicators observed in mapped wetland areas generally consisted of water marks on the trees and water-stained leaves. Field observation of saturation was present in EW-1; however, no water was seen at EW-2. Along with the primary indicator of water marks and water-stained leaves, geomorphic position and crawfish burrows were also included as secondary indicators for these areas.

Soils

Loamy and clayey soils dominate the study area. Primary indicators of hydric soils were the presence of redox depressions primarily within the upper six inches of the soil profile and depleted dark surface within the upper twelve inches. To meet hydric criteria, soils generally had to have a dominant chroma of two or less, or the layer(s) with a dominant chroma of more than 2 must be less than 6 inches thick.

4.0 CONCLUSION

Federal regulations (33 CFR § 328.3(a)) note that waters of the United States may include intrastate rivers and streams, including impoundments and other waters. In response to a Supreme Court decision (*Rapanos v. U.S.*, 547 S. Ct. 715 [2006]) addressing the limits of federal jurisdiction, the USACE and Environmental Protection Agency (EPA) have issued further guidance, and require additional documentation to support jurisdiction. The USACE continues to assert jurisdiction over traditionally navigable waters and non-navigable tributaries of traditionally navigable waters where the tributaries are relatively permanent waters (i.e., tributaries that typically flow year round or have continuous flow at least seasonally). Navigable waters in the USACE Galveston District are determined on a case-by-case basis. It is assumed for the purpose of this report that Tres Palacios Bay and a portion of Tres Palacios Creek, upstream of Tres Palacios Bay, would be considered traditionally navigable waters. Although the reach of navigability of Tres Palacios Creek upstream of Tres Palacios Bay has not been determined, Tres Palacios Creek within the limits of the study area is a perennial stream.

Therefore, Tres Palacios Creek qualifies as relatively permanent water and would be classified as a water of the United States under the new guidance.

Further evaluation is needed to determine the jurisdictional status for the aquatic features in the study area. The current USACE guidelines require a jurisdictional evaluation to determine if the features have a significant nexus to traditionally navigable waters for: (1) waterbodies and tributaries that are not relatively permanent waters, including adjacent wetlands if present; and, (2) wetlands adjacent to, but not directly abutting, a relatively permanent tributary. A significant nexus exists if the tributary has more than a speculative or insubstantial effect on the chemical, physical, and/or biological integrity of a traditionally navigable water. Establishment of a significant nexus is necessary to establish jurisdiction as a water of the United States.

The intermittent Tributary to Tres Palacios Creek and intermittent Stage Stand Creek both flow at least seasonally and would be considered relatively permanent waters. Under current guidance, both would be considered waters of the United States.

By definition of ephemeral, ES-1, ES-2, ES-3, and ES-4 do not qualify as relatively permanent waters. As non-permanent waters, all ephemeral streams in the study area require a significant nexus determination. A significant nexus exists if the stream has more than a speculative or insubstantial effect on the chemical, physical, and/or biological integrity of the Tres Palacios Creek system. As in many cases, riparian areas associated with ephemeral streams include a majority of the woody vegetation. Associated with most riparian ecosystems is the substantial development of edge at the interface between stream channel and riparian vegetation and at the transition from floodplain to upland plant communities. The interface is of great value to wildlife because both density and diversity of species tend to be higher at this ecotone than in adjacent uplands. Furthermore, the linear nature of riparian ecosystems provides distinct corridors that are important as migration and dispersal routes and as forested connectors between habitats for wildlife. Sediment carried by overland flow from adjacent uplands is generally intercepted by the riparian area, where it settles out. Nutrients that could be transported with sediment, as may be expected in areas where cattle feed in high concentration, would also be trapped in the riparian area. These would then be broken down by physical or biochemical processes, and reduced to harmless forms. Based on the lack of these factors, further discussion is needed to make a water of the United States determination on ES-1, ES-2, ES-3 and ES-4.

During two separate site investigations, water was present in ES-1. A direct OHWM connection to Tres Palacios Creek was observed and a review of the USGS topographic map indicated the presence of the stream. During rain events, ES-1 drains a large area to the north of the study area and holds back water for Tres Palacios Creek. Based on these factors, ES-1 contributes more than a speculative or insubstantial effect on the chemical, physical, or biological integrity to Tres Palacios Creek and would be considered a water of the United States.

ES-2 and ES-3 were constructed wholly in uplands as drainage ditches to transport storm water runoff from adjacent streets and residential properties. Both ditches have steeply cut banks with concrete fragments along the bottom of the channels. Vegetation consisted of maintain grasses and neither ES-2 or ES-3 appear on the USGS topographic map. ES-2 maintains an OHWM connection to Tres Palacios Creek; however, it drains a relatively small area and only flows a short distance during rain events. ES-3 flows into Tres Palacios Creek above the OHWM of Tres Palacios Creek and drains a small area during rain events. Based on these findings, ES-2 and ES-3 do not contribute more than a speculative or insubstantial effect on the chemical, physical, or biological integrity to Tres Palacios Creek and would not be considered waters of the United States.

ES-4 is wholly in uplands and transports storm water runoff from an agricultural field and upland forest to the north. A continuous OHWM was identified, but quickly disappeared further up bank within the study area. No adjacent wetlands were identified and no water was present at the time of the site visit. Based on these factors, ES-4 does not contribute more than a speculative or insubstantial effect on the chemical, physical, or biological integrity to Tres Palacios Creek and would not be considered a water of the United States.

In summary, Halff believes that one of the ephemeral streams (ES-1) in the study area would be considered a water of the United States.

The USACE Galveston District interpretation of “adjacent” generally begins with aquatic features located within the 100-year floodplain (referred to as “1% annual chance flood hazard zone” on the **FEMA Floodplain Map in Appendix A**). EW-1 and EW-2 lie within the 100-year floodplain of the Tres Palacios Creek and would be considered adjacent wetlands. As noted above, wetlands adjacent to a relatively permanent tributary require a determination of significant nexus to establish jurisdiction. An argument for significant nexus can be made for EW-1 and EW-2 in

that they function in the same manner as the rest of the Tres Palacios Creek riparian corridor. In sum, these features would be considered waters of the United States.

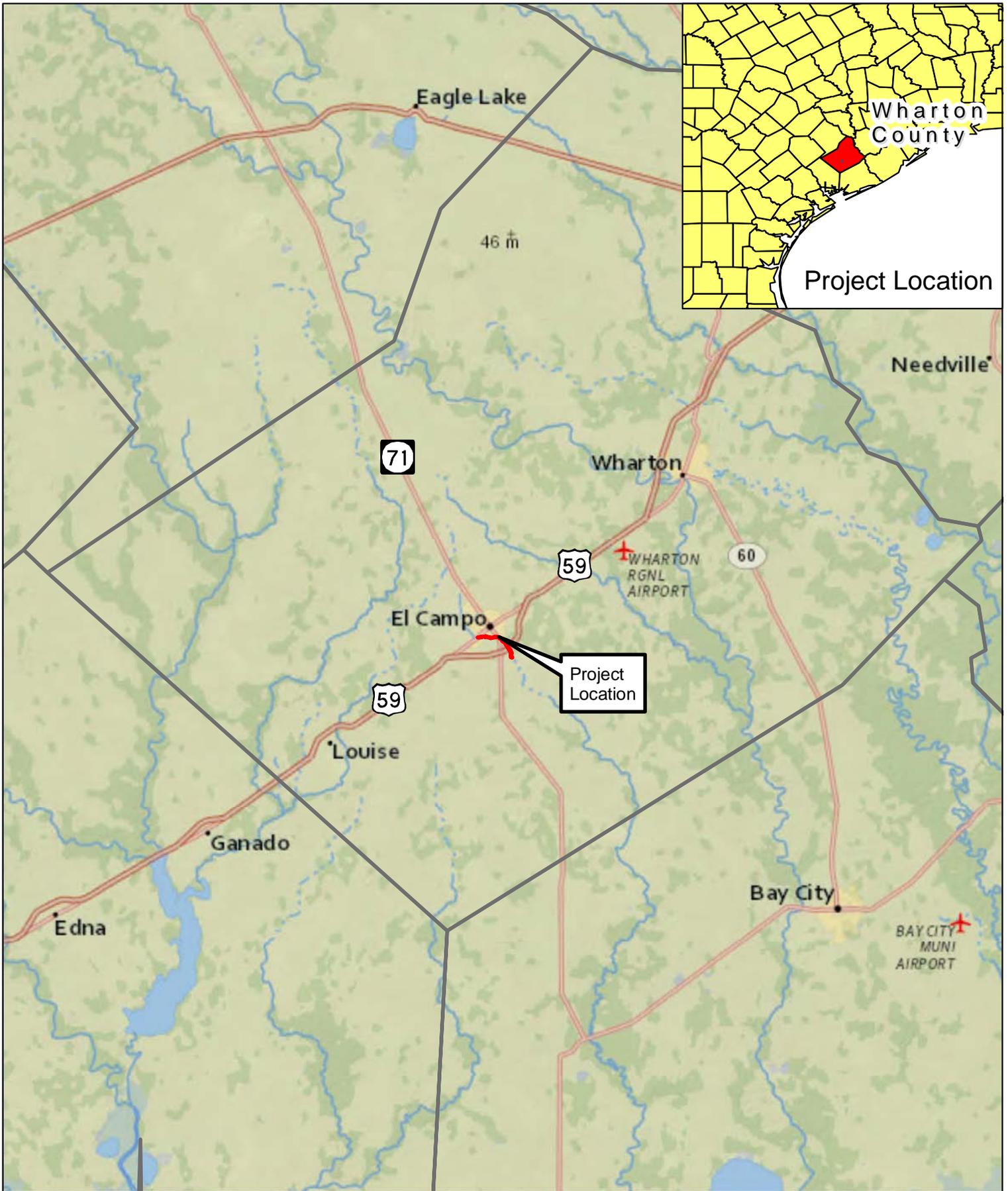
Based on the foregoing descriptions and analyses, **Table 5** summarizes the classification, proposed jurisdictional determination, and physical characteristics for mapped water features in the study area (shown in **Figure 3, Sheets 1 to 10**).

Table 4 - Waters of the United States Determination of Mapped Aquatic Features

| Feature Name | Figure # | Classification | Water of the United States | Channel Length (l.f.)* | Area (acres) |
|----------------------------------|-----------------|-----------------------|-----------------------------------|-------------------------------|---------------------|
| Tres Palacios Creek | 3.1- 3.10 | Perennial Stream | Yes | 14,439 | 9.94** |
| Tributary to Tres Palacios Creek | 3.1 | Intermittent Stream | Yes | 241 | 0.07 |
| ES-1 | 3.3 | Ephemeral Stream | Yes | 295 | 0.10 |
| ES-2 | 3.4 | Ephemeral Stream | No | 501 | 0.05 |
| EW-1 | 3.4 | Emergent Wetland | Yes | -- | 0.05 |
| EW-2 | 3.4 | Emergent Wetland | Yes | -- | 0.02 |
| ES-3 | 3.5 | Ephemeral Stream | No | 162 | 0.03 |
| ES-4 | 3.8 | Ephemeral Stream | No | 120 | 0.01 |
| Stage Stand Creek | 3.9 | Intermittent Stream | Yes | 204 | 0.02 |

*Channel Length, OHWM, and Area are calculated within the limits of the study area. Length, Area, and OHWM are approximated by measurements from topographic map and survey data. **Acreage is calculated from an average OHWM of 30 feet

FIGURES



Legend

- Proposed Project Location
- El Campo City Limits

Note: Esri National Geographic World Map is shown

Project Vicinity Map
Tres Palacios Jurisdictional Determination
Figure 1



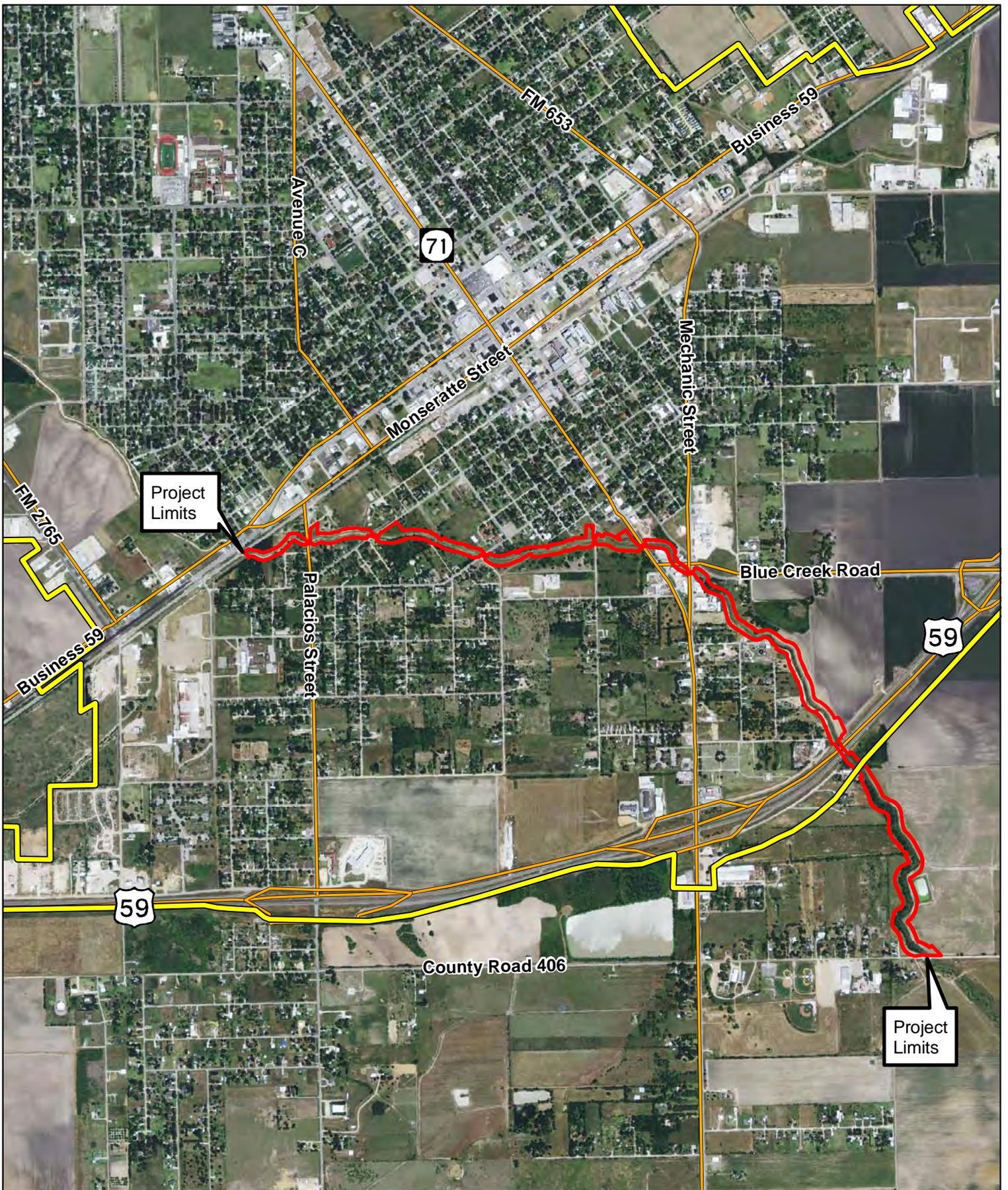





0 20,000 40,000



Feet



Legend

- Proposed Project Location
- Roads
- El Campo City Limits

Note: 2010 NAIP Aerial Shown

Project Location Map
Tres Palacios Jurisdictional Determination
Figure 2






N



0 1,000 2,000



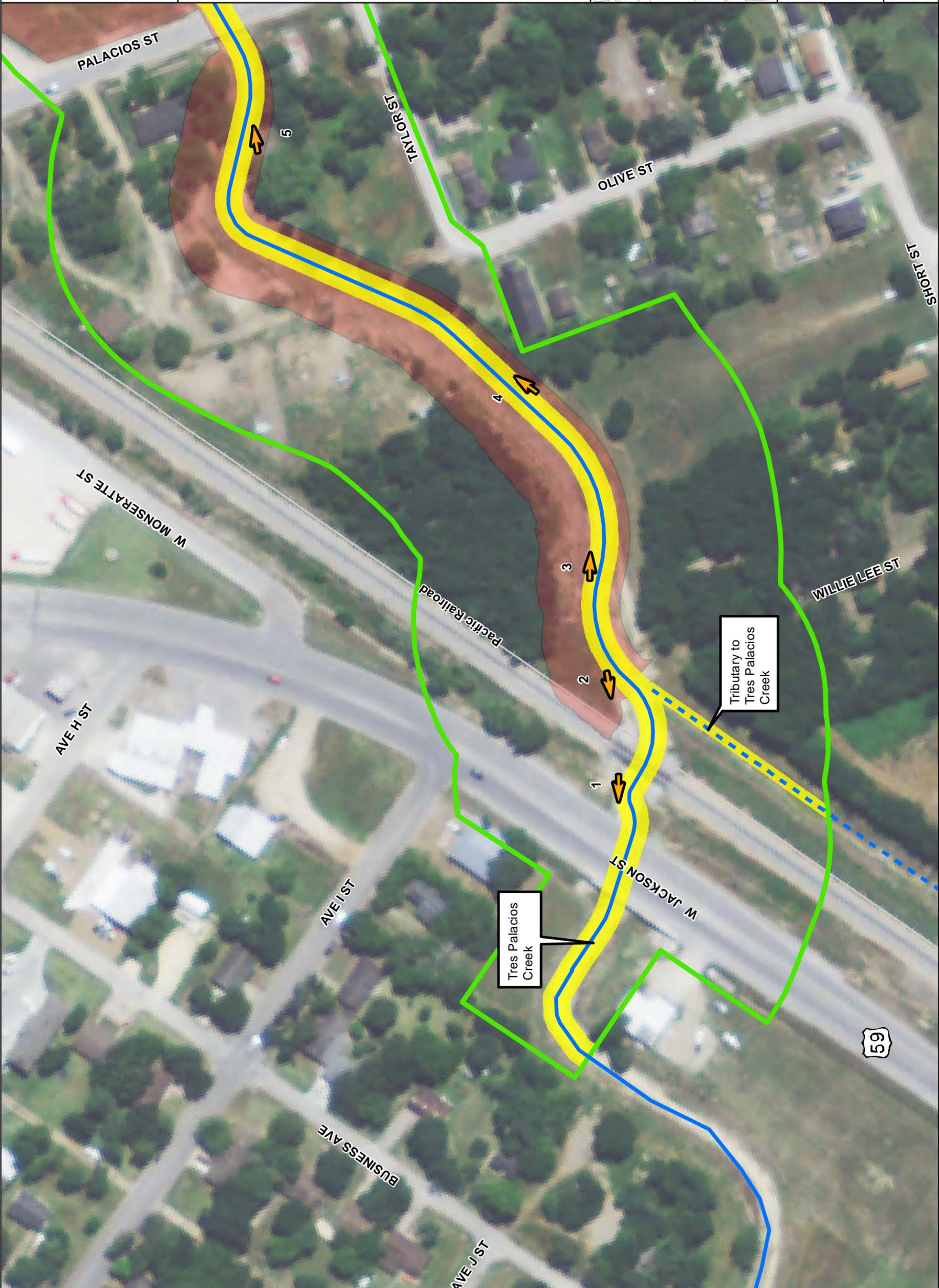
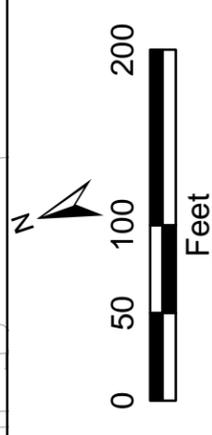
Feet

Study Area Map
Tres Palacios Jurisdictional
Determination
Figure 3



- Legend**
- Limits of Construction
 - Approximate OHWM
 - Study Area
 - Perennial Creek
 - Intermittent Stream
 - Ephemeral Stream
 - + Wetland Data Point
 - ▶ Photo Location
 - Delineated Wetlands
 - USFWS National Wetland Inventory
 - Railroad
 - City Limits

Note: 2010 NAIP Aerial Shown

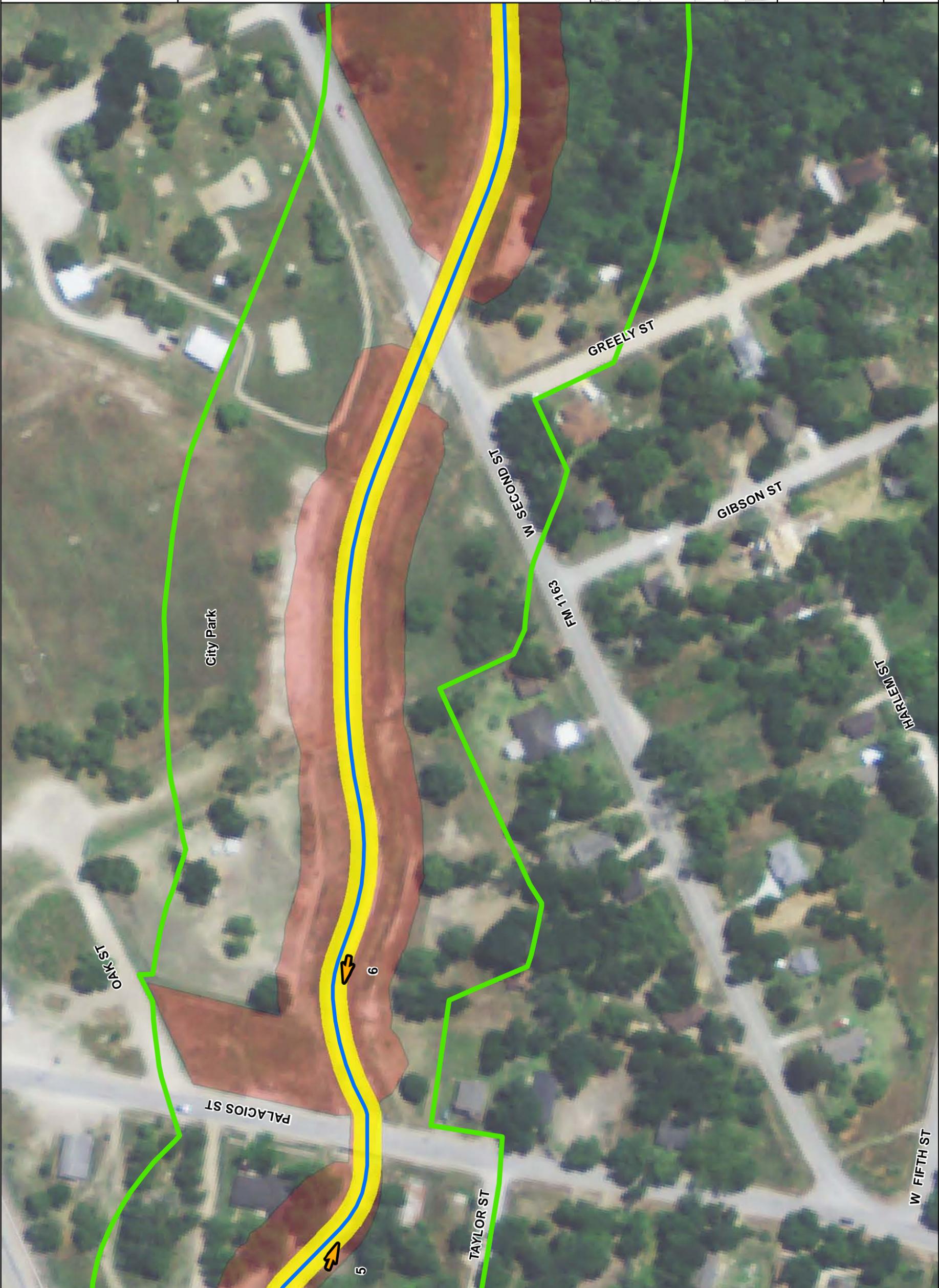
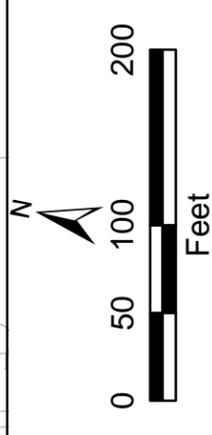


Study Area Map
Tres Palacios Jurisdictional
Determination
Figure 3



- Legend**
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Note: 2010 NAIP Aerial Shown

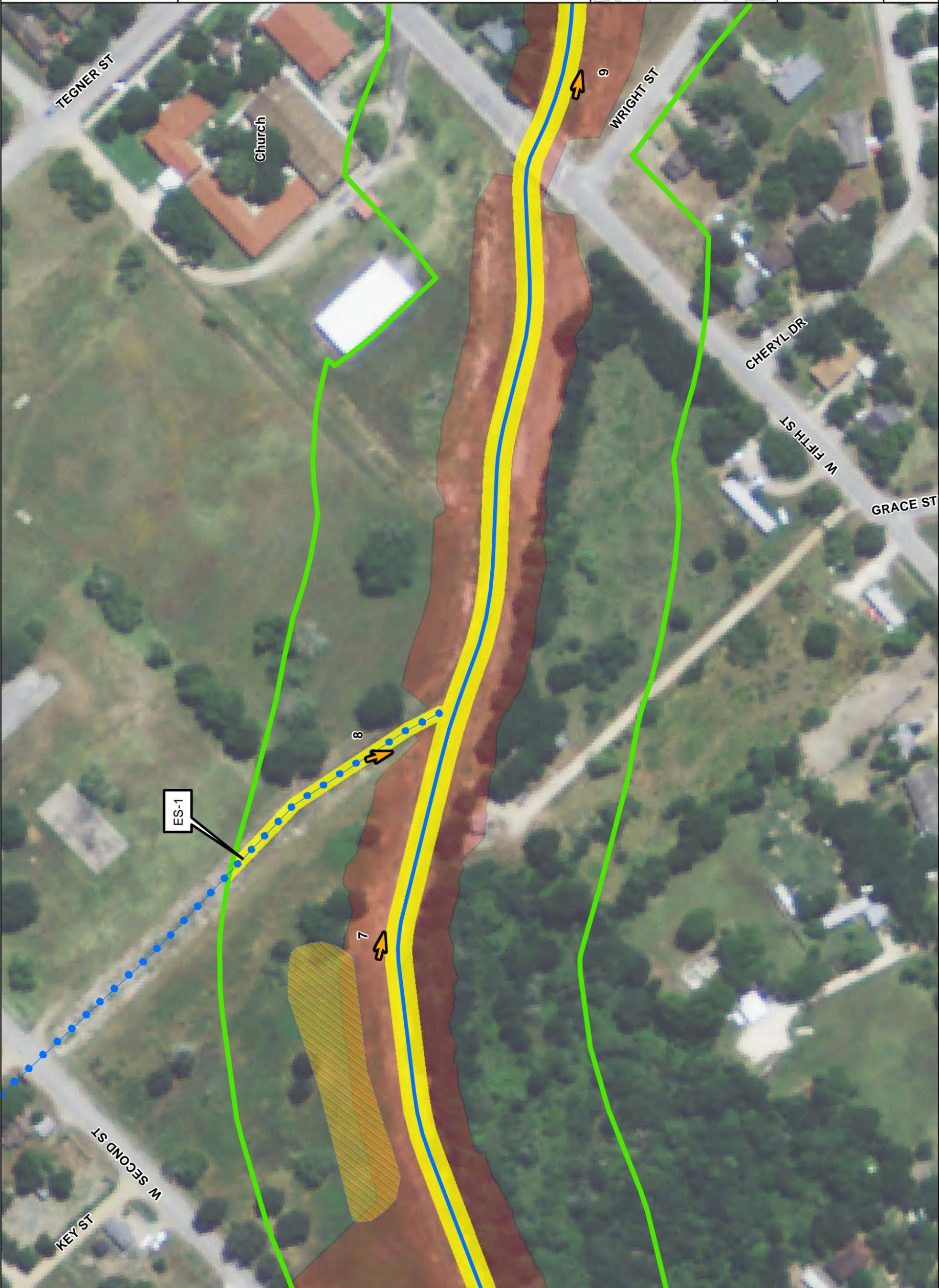
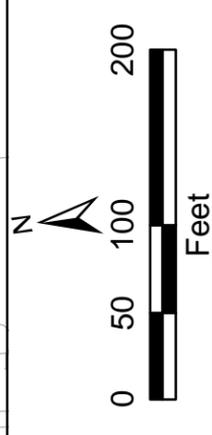
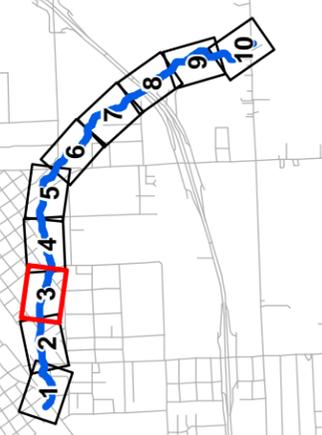


Study Area Map
Tres Palacios Jurisdictional
Determination
Figure 3



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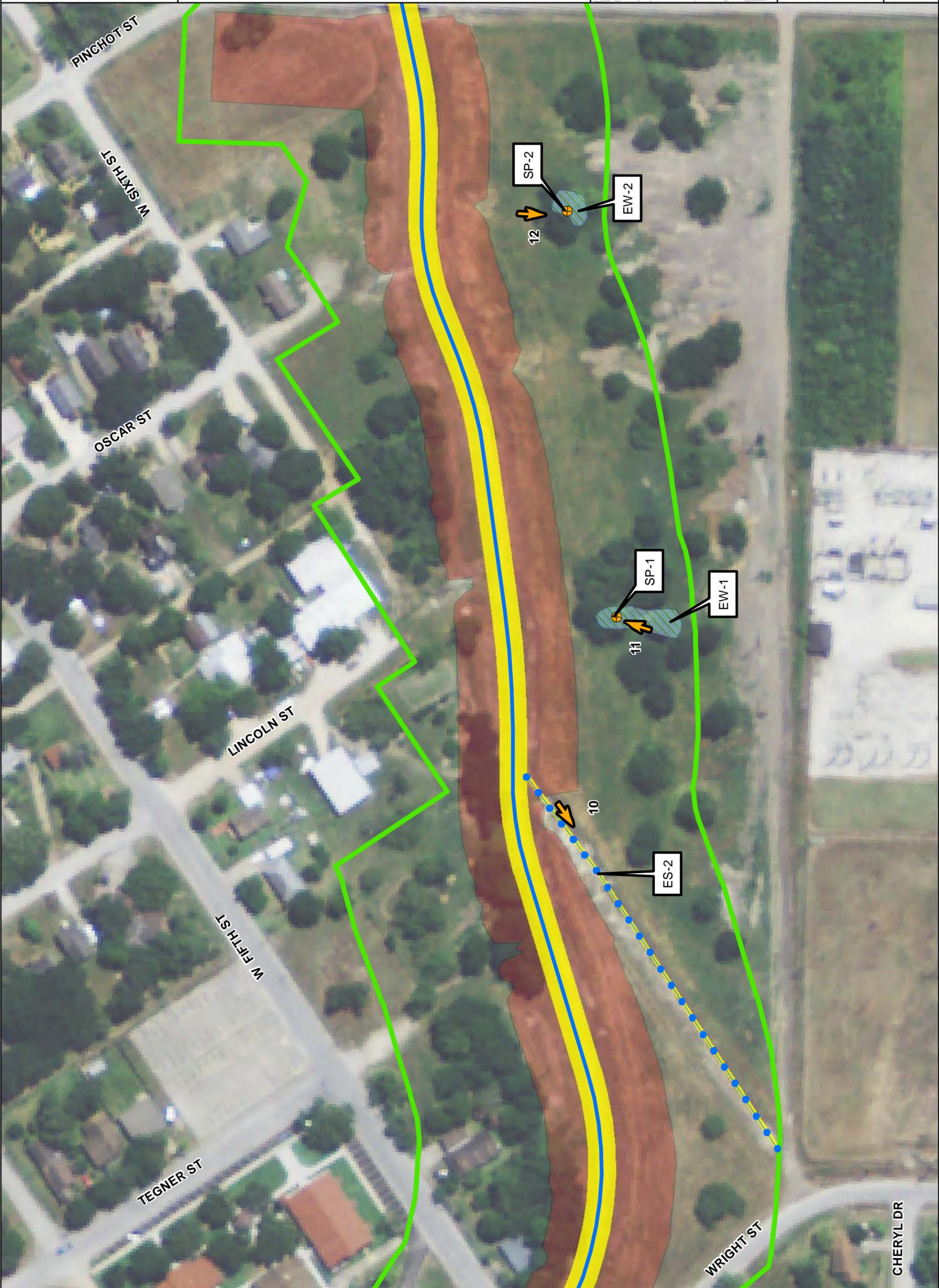
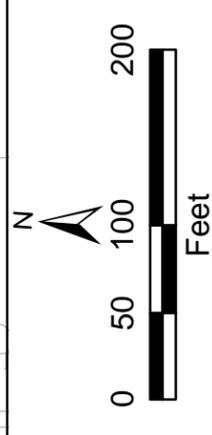
Note: 2010 NAIP Aerial Shown



Study Area Map
Tres Palacios Jurisdictional
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Figure 3



- Legend**
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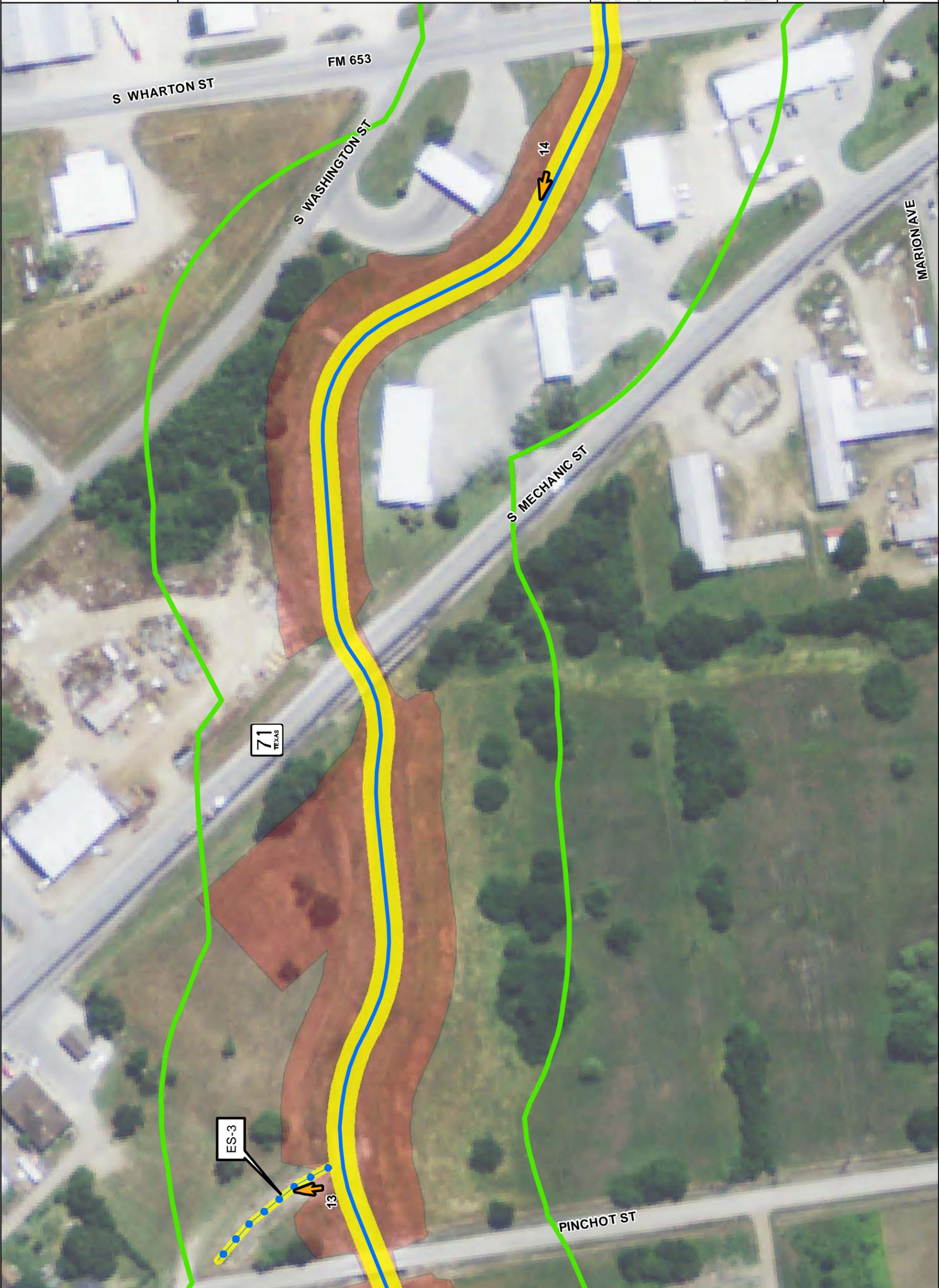
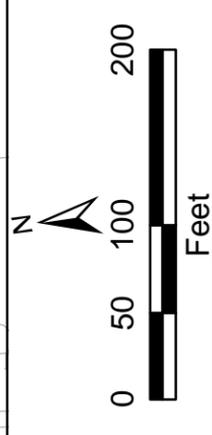
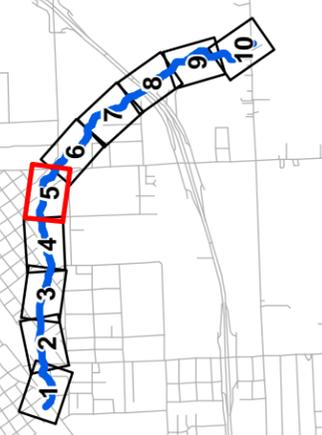


Study Area Map
Tres Palacios Jurisdictional
Determination
Figure 3



- Legend**
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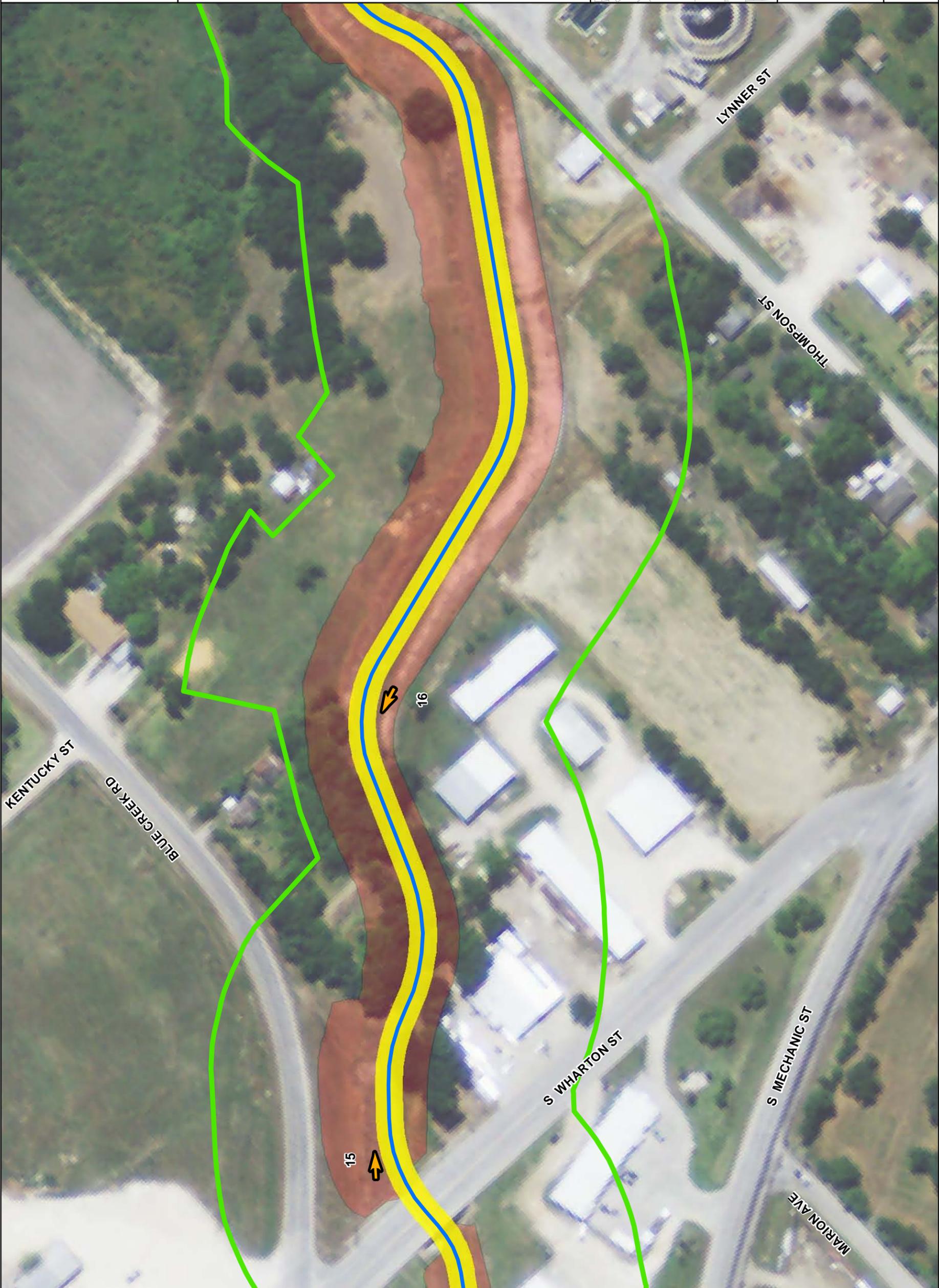
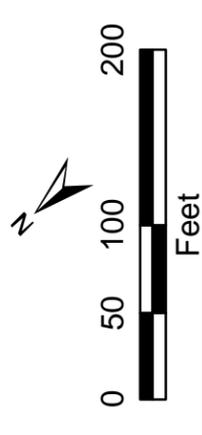
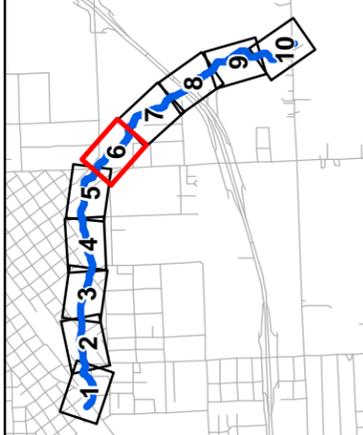


Study Area Map
Tres Palacios Jurisdictional
Determination
Figure 3



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 - City Limits

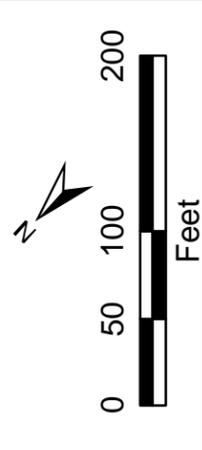
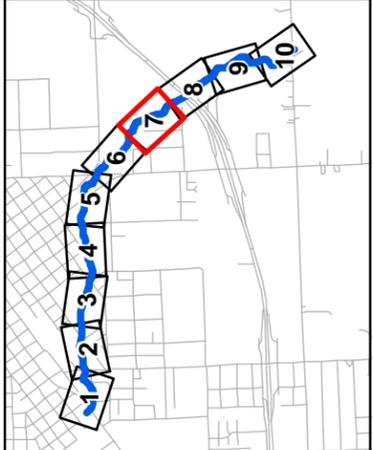
Note: 2010 NAIP Aerial Shown



Study Area Map
Tres Palacios Jurisdictional
Determination
Figure 3



- Legend**
- Limits of Construction
 - Approximate OHWM
 - Study Area
 - Perennial Creek
 - Intermittent Stream
 - Ephemeral Stream
 - + Wetland Data Point
 - Photo Location
 - Delineated Wetlands
 - USFWS National Wetland Inventory
 - Railroad
 - City Limits

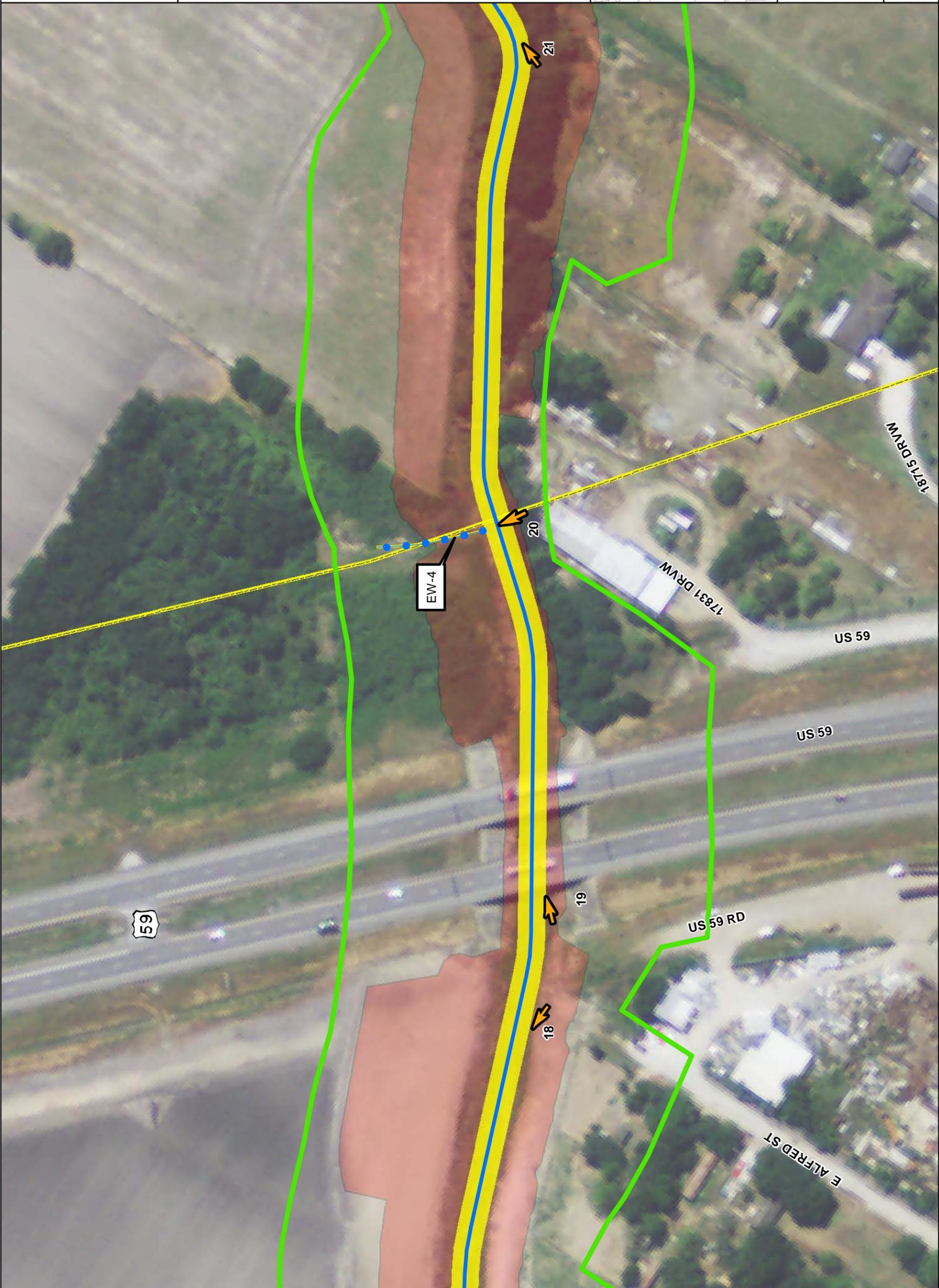
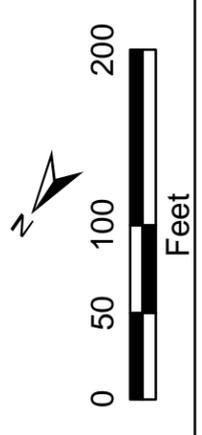
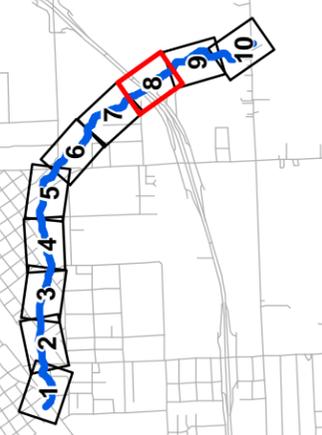


Study Area Map
Tres Palacios Jurisdictional
Determination
Figure 3



- Legend**
- Limits of Construction
 - Approximate OHWM
 - Study Area
 - Perennial Creek
 - Intermittent Stream
 - Ephemeral Stream
 - + Wetland Data Point
 - ▶ Photo Location
 - Delineated Wetlands
 - USFWS National Wetland Inventory
 - Railroad
 - City Limits

Note: 2010 NAIP Aerial Shown



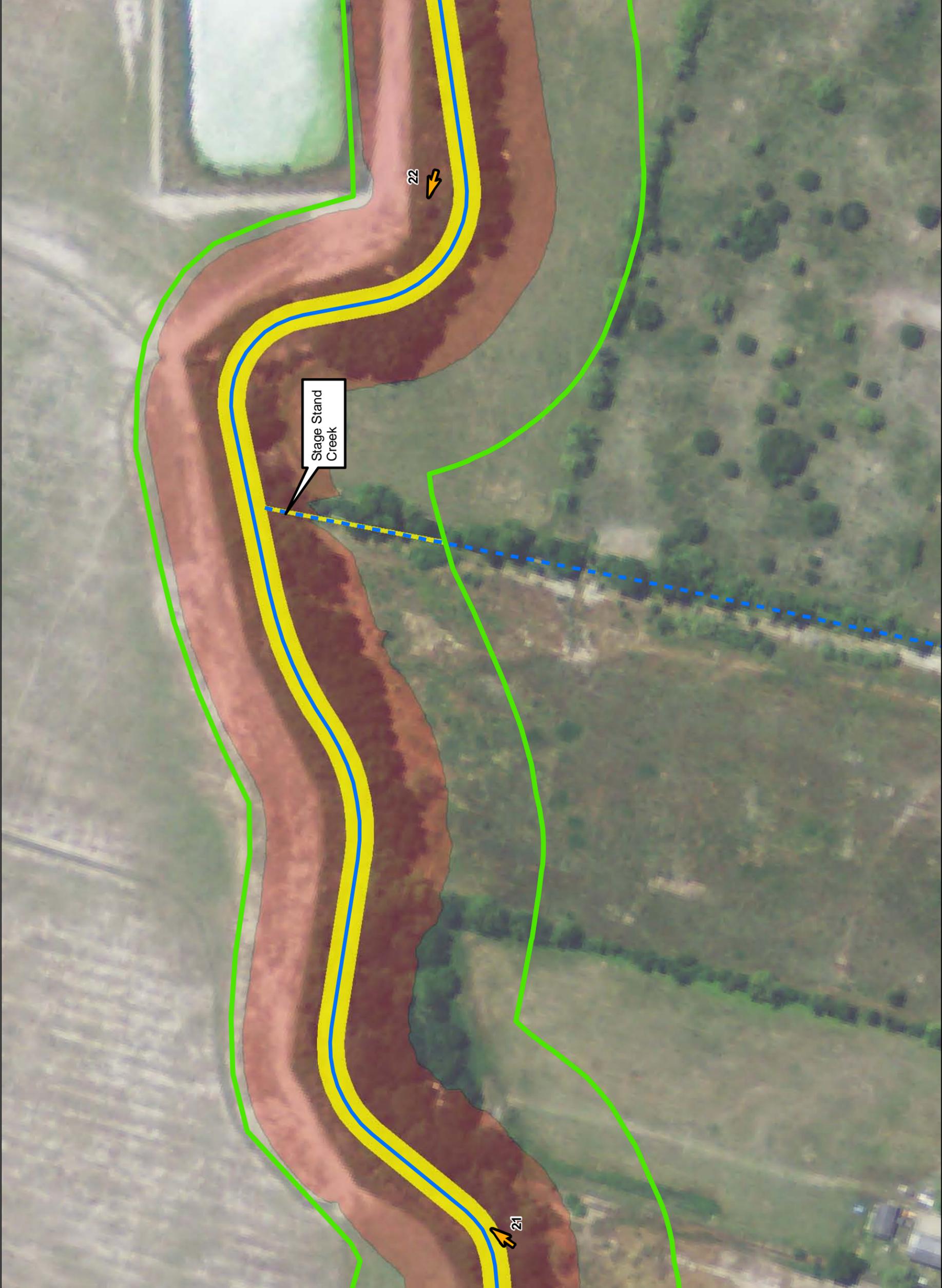
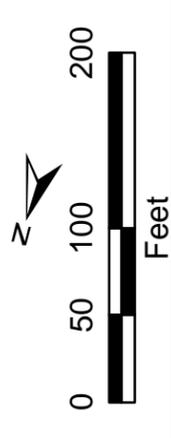
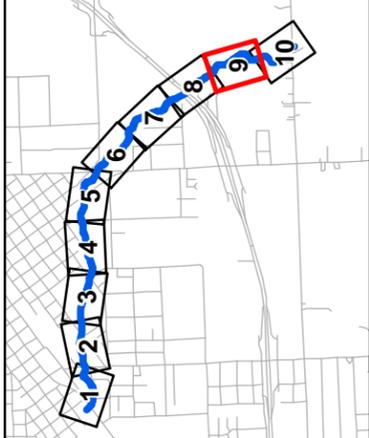
Study Area Map
Tres Palacios Jurisdictional
Determination
Figure 3



Legend

- Limits of Construction
- Approximate OHWM
- Study Area
- Perennial Creek
- Intermittent Stream
- Ephemeral Stream
- + Wetland Data Point
- Photo Location
- Delineated Wetlands
- USFWS National Wetland Inventory
- Railroad
- City Limits

Note: 2010 NAIP Aerial Shown

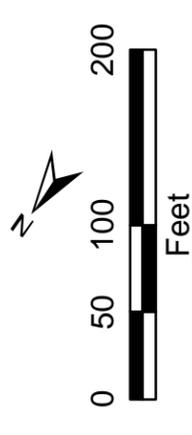
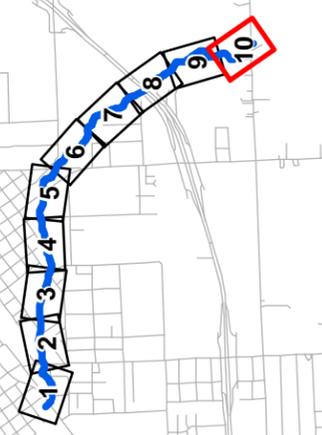


Study Area Map
Tres Palacios Jurisdictional
Determination
Figure 3

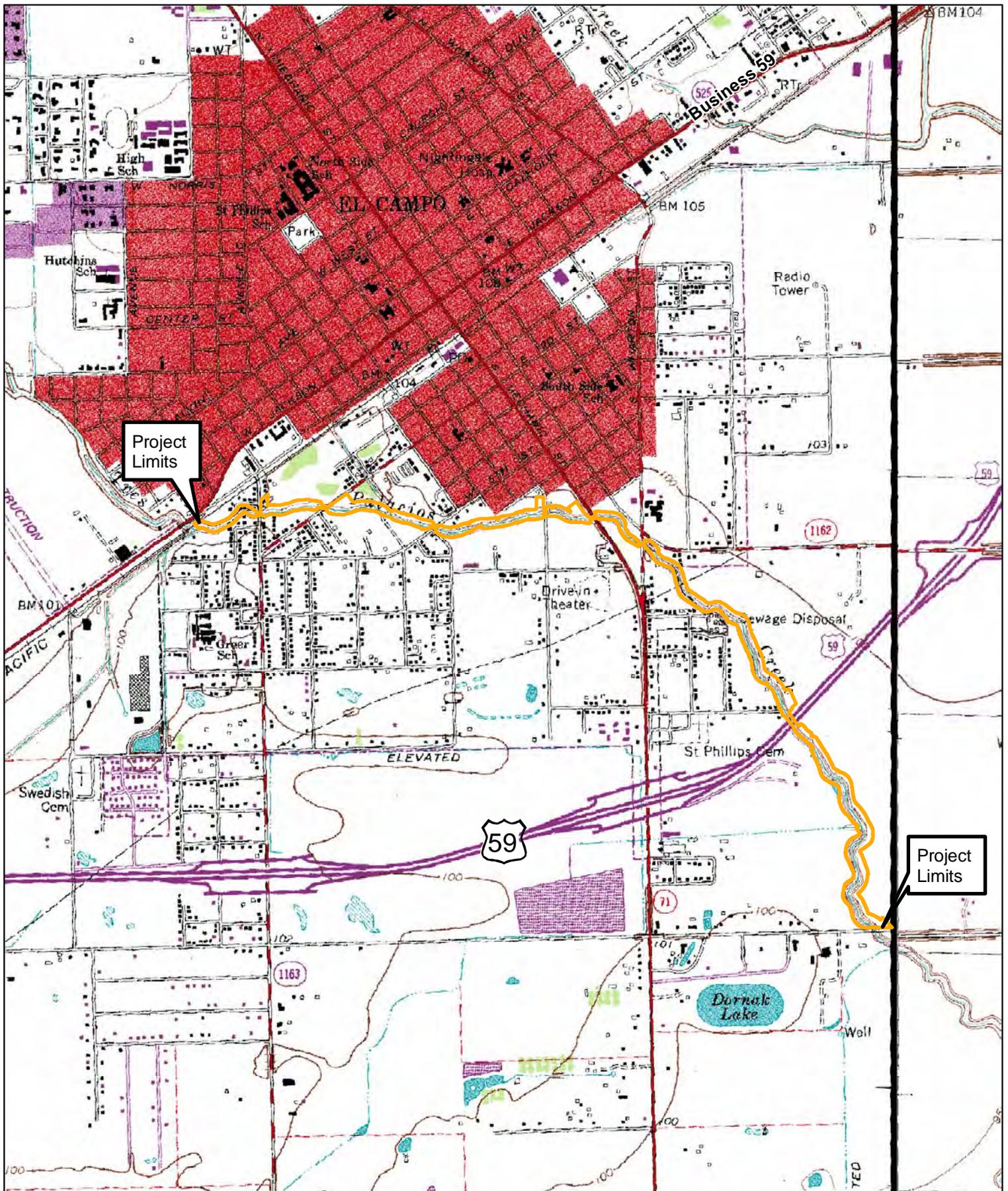


- Legend**
- Limits of Construction
 - Approximate OHWM
 - Study Area
 - Perennial Creek
 - Intermittent Stream
 - Ephemeral Stream
 - Wetland Data Point
 - Photo Location
 - Delineated Wetlands
 - USFWS National Wetland Inventory
 - Railroad
 - City Limits

Note: 2010 NAIP Aerial Shown



APPENDIX A
BACKGROUND INFORMATION



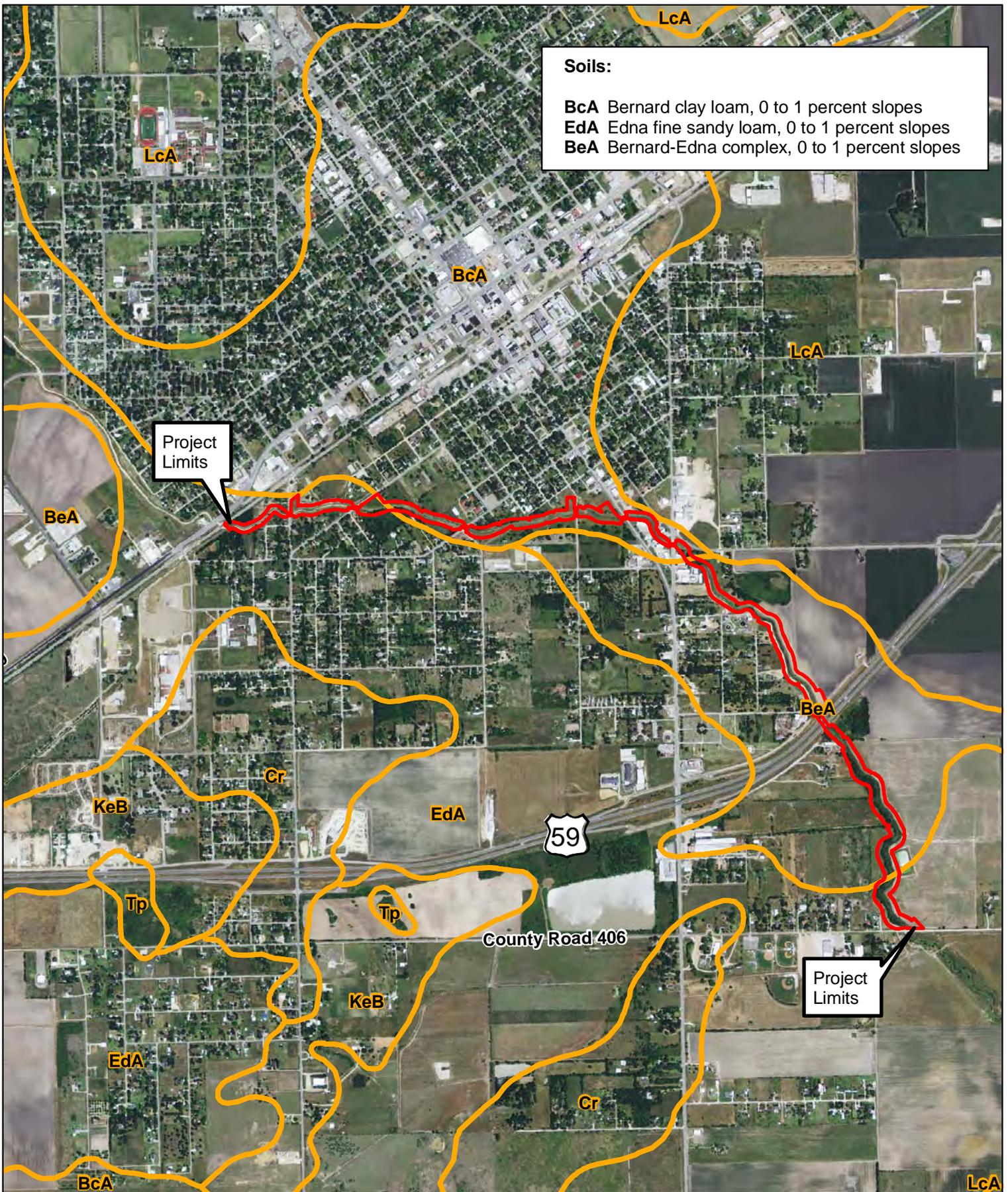
Legend

— Proposed Project Location

El Campo USGS 7.5-minute
Quadrangle (Photorevised 1981)

United States Geological Survey
Topographic Map
Tres Palacios Jurisdictional Determination

0 1,000 2,000
 Feet



Soils:
BcA Bernard clay loam, 0 to 1 percent slopes
EdA Edna fine sandy loam, 0 to 1 percent slopes
BeA Bernard-Edna complex, 0 to 1 percent slopes

Legend

- Proposed Project Location
- Soil Map Unit Boundary

Note: 2010 NAIP Aerial Shown

Wharton County Soil Map
Tres Palacios Jurisdictional Determination



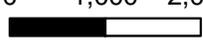




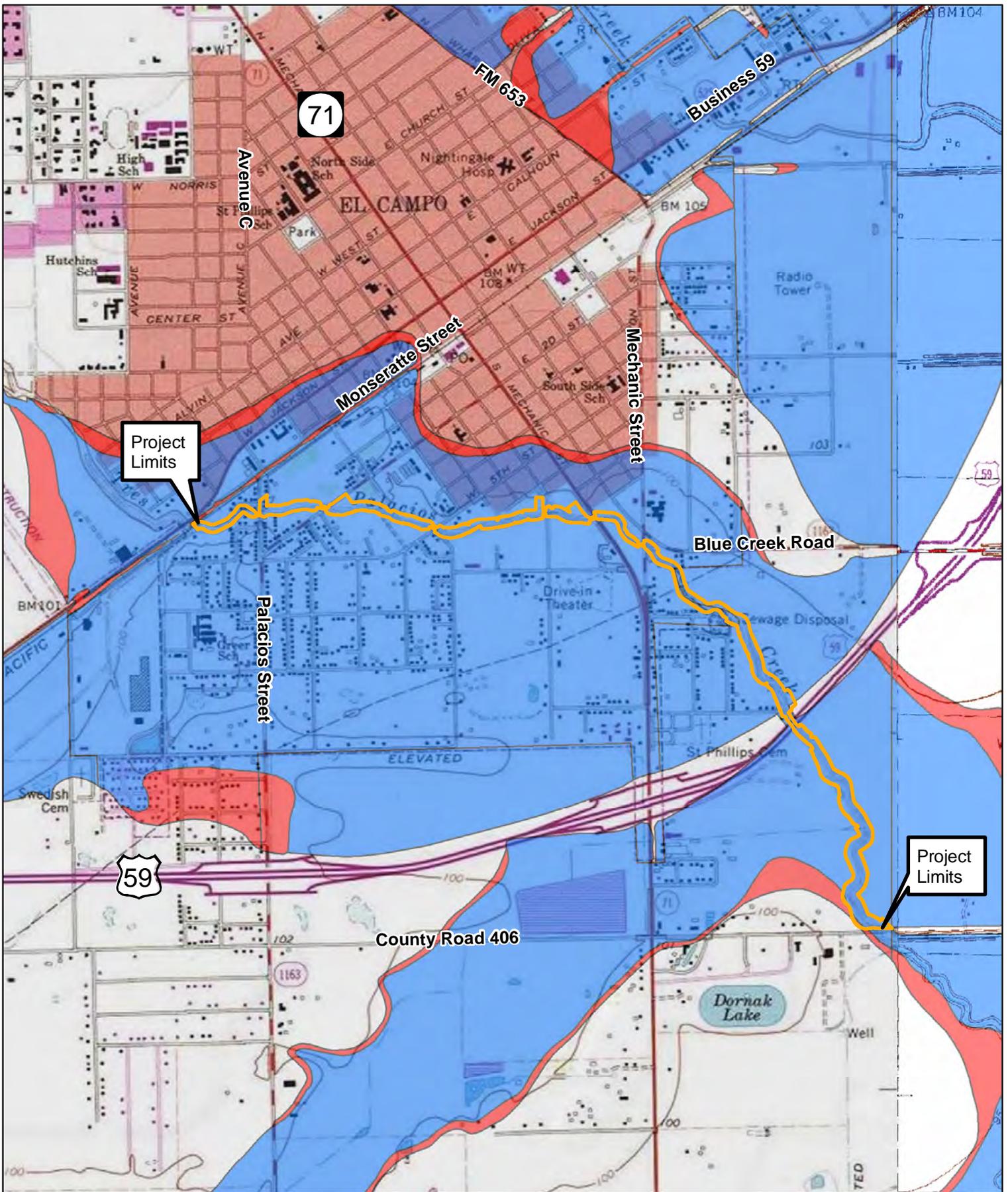
N

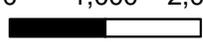


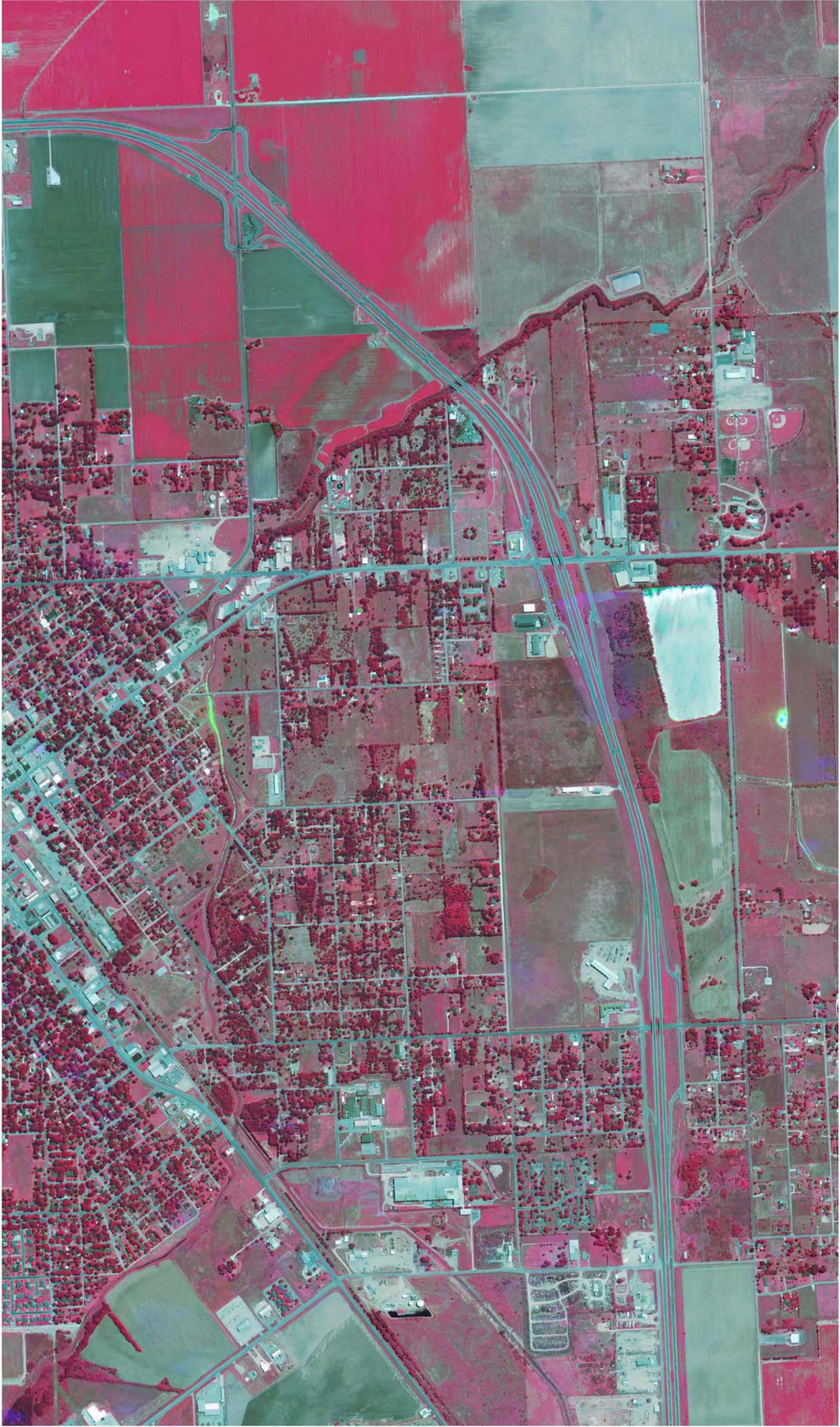
0 1,000 2,000



Feet

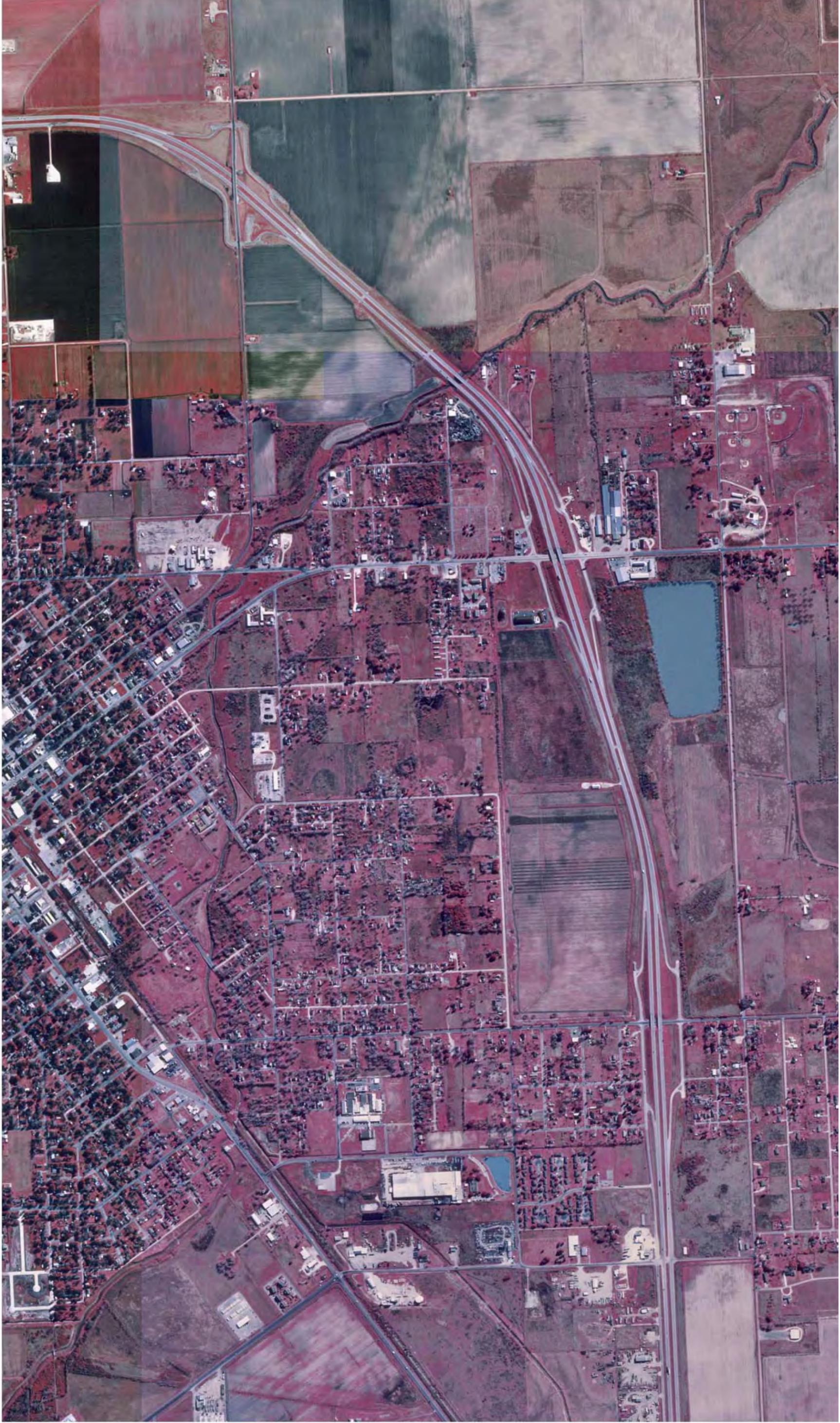


| | | |
|--|---|---|
| <p>Legend</p> <ul style="list-style-type: none"> Proposed Project Location FEMA Zone A (1% chance flood zone) FEMA Zone X (0.2% chance flood zone) | <p>FEMA Floodplain Map Tres Palacios Jurisdictional Determination</p>   | <p>N</p>  <p>0 1,000 2,000</p>  <p>Feet</p> |
|--|---|---|



Site: TRES PALACIOS RIVER
Source: USDA
Date: 2004
County: WHARTON, TX
Scale: 1" = 1000'





Site: TRES PALACIOS RIVER
Source: USGS
Date: 1996
County: WHARTON, TX
Scale: 1" = 1000'





Site: TRES PALACIOS RIVER
Source: USGS
Date: 02-21-78
County: WHARTON, TX
Scale: 1" = 1667'





Site: TRES PALACIOS RIVER
Source: ASCS
Date: 02-19-72
County: WHARTON, TX
Scale: 1" = 1000'





GS-VAVO

2-118

2-10-64



Site: TRES PALACIOS RIVER
Source: USGS
Date: 02-10-64
County: WHARTON, TX
Scale: 1" = 1000'



GS-VAVO

2-119

2-10-64

Site: TRES PALACIOS RIVER
Source: USGS
Date: 02-10-64
County: WHARTON, TX
Scale: 1" = 1000'





Site: TRES PALACIOS RIVER
Source: USGS
Date: 02-10-64
County: WHARTON, TX
Scale: 1" = 1000'





Site: TRES PALACIOS RIVER
Source: USGS
Date: 02-10-64
County: WHARTON, TX
Scale: 1" = 1000'





Site: TRES PALACIOS RIVER
Source: USGS
Date: 02-10-64
County: WHARTON, TX
Scale: 1" = 1000'





Site: TRES PALACIOS RIVER
Source: AMS
Date: 05-06-53
County: WHARTON, TX
Scale: 1" = 1320'



APPENDIX B
WETLAND DATA SHEETS

WETLAND DETERMINATION DATA FORM — Atlantic and Gulf Coastal Plain Region

Project/Site: Tres Palacios City/County: El Campo/Wharton Sampling Date: 2012/1/11

Applicant/Owner: City of El Campo State: TX Sampling Point: SP 1

Investigator(s): C. Hall, D. Griffith Section, Township, Range: _____

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

Subregion (LRR): _____ Lat: _____ °N Long: _____ °W Datum: _____

Soil Map Unit Name: Bernard Clay Loam, 0 - 1% Slopes (BcA) NWI classification: Hydric

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

HYDROLOGY

| | |
|--|---|
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required: |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> | |
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (S4) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (S5) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) |
| <input checked="" type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other |
| | <input type="checkbox"/> Surface Soil Cracks |
| | <input type="checkbox"/> Sparsely Vegetated Concave Surface (A9) |
| | <input type="checkbox"/> Drainage Patterns (B10) |
| | <input type="checkbox"/> Moss Trim Lines (B16) |
| | <input type="checkbox"/> Dry-Season Water Table (C2) |
| | <input type="checkbox"/> Crayfish Burrows (C8) |
| | <input type="checkbox"/> Saturation visible on Aerial Imagery (C9) |
| | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| | <input type="checkbox"/> Shallow Aquitard (D3) |
| | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous in sections), if available:
Aerial illustrates the site is between the Tres Palacios Creek and a unpaved road.

Remarks:
1"-2" of rain the day before; however, the site was not holding water.

VEGETATION - Use scientific names of plants.

| | | Absolute % Cover | Dominant Species? | Indicator Status | |
|---|--|------------------|----------------------|------------------|---|
| Tree Stratum (Plot size: <u>30'</u>) | | | | | |
| 1. | <u>Hackberry (<i>Celtis laevigata</i>)</u> | <u>40</u> | <u>Y</u> | <u>FAC</u> | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
| 2. | <u>Green ash (<i>Fraxinus pennsylvanica</i>)</u> | <u>15</u> | | <u>FACW-</u> | |
| 3. | <u>Cottonwood (<i>Populus deltoides</i>)</u> | <u>20</u> | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| | | <u>75</u> | <u>= Total Cover</u> | | |
| Sapling Stratum (Plot size: <u>15'</u>) | | | | | |
| 1. | <u>Green ash (<i>Fraxinus pennsylvanica</i>)</u> | <u>15</u> | <u>Y</u> | <u>FACW-</u> | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>65</u> x 1 = <u>65</u> FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>50</u> x 3 = <u>150</u> FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>150</u> (A) <u>285</u> (B) Prevalence Index = B/A = <u>1.9</u> |
| 2. | <u>Hackberry (<i>Celtis laevigata</i>)</u> | <u>10</u> | | <u>FAC</u> | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| | | <u>25</u> | <u>= Total Cover</u> | | |
| Shrub Stratum (Plot size: <u>15'</u>) | | | | | |
| 1. | | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide Supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| | | | <u>= Total Cover</u> | | |
| Herb Stratum (Plot size: <u>15'</u>) | | | | | |
| 1. | <u>Crowfoot sedge (<i>Carex crus-corvi</i>)</u> | <u>65</u> | <u>Y</u> | <u>OBL</u> | Definitions of Vegetation Strata: Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. |
| 2. | <u>Curly dock (<i>Rumex crispus</i>)</u> | <u>5</u> | | <u>FACW</u> | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |
| | | <u>70</u> | <u>= Total Cover</u> | | |
| Woody Vine Stratum (Plot size: <u>15'</u>) | | | | | |
| 1. | | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| | | | <u>= Total Cover</u> | | |
| Remarks: (If observed, list morphological adaptations below). | | | | | |

SOIL

Sampling Point: 1

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|-----------|------------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Lot ² | | |
| 0-7 | 10YR 4/2 | 80 | 10YR 4/3 | 20 | C | M | CLAY LOAM | DARK GREYISH BROWN |
| 8-12 | 10YR 3/1 | 85 | 10YR 4/3 | 15 | C | M | CLAY | VERY DARK GREY, RIBBONS WELL |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Mucky Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S8) (LRR P, S, T, U)
- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA, 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR O)
 - 2 CM Muck (A10) (LRR S)
 - Reduced Vertic (F18) (outside MLRA 150A,B)
 - Piedmont Floodplain Soils (F19) (LRR P, S, T)
 - Anomalous Bright Loamy Soils (F20) (MLRA 153B)
 - Red Parent Material (TF2)
 - Very Shallow Dark Surface (TF12) (LRR T, U)
 - Other (Explain in Remarks)
- ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM — Atlantic and Gulf Coastal Plain Region

Project/Site: Tres Palacios City/County: El Campo/Wharton Sampling Date: 2012/1/11

Applicant/Owner: City of El Campo State: TX Sampling Point: SP 2

Investigator(s): C. Hall, D. Griffith Section, Township, Range: _____

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

Subregion (LRR): _____ Lat: _____ °N Long: _____ °W Datum: _____

Soil Map Unit Name: Bernard Clay Loam, 0 - 1% Slopes (BcA) NWI classification: Hydric

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

HYDROLOGY

| | |
|--|---|
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required: |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> | |
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (S4) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (S5) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) |
| <input checked="" type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other |
| | <input type="checkbox"/> Surface Soil Cracks |
| | <input type="checkbox"/> Sparsely Vegetated Concave Surface (A9) |
| | <input type="checkbox"/> Drainage Patterns (B10) |
| | <input type="checkbox"/> Moss Trim Lines (B16) |
| | <input type="checkbox"/> Dry-Season Water Table (C2) |
| | <input checked="" type="checkbox"/> Crayfish Burrows (C8) |
| | <input type="checkbox"/> Saturation visible on Aerial Imagery (C9) |
| | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| | <input type="checkbox"/> Shallow Aquitard (D3) |
| | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous in sections), if available:
Aerial illustrates the site is between the Tres Palacios Creek and a unpaved road.

Remarks:
1"-2" of rain the day before.

VEGETATION - Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status | |
|---|------------------|-------------------|------------------|---|
| 1. <u>Hackberry (Celtis laevigata)</u> | 40 | Y | FAC | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
| 2. <u>Retama (Parkinsonia aculeata)</u> | 15 | | FACW- | |
| 3. <u>Cottonwood (Populus deltoides)</u> | 10 | | FAC | |
| 4. <u>Cedar (Juniperus virginiana)</u> | 10 | | FACU- | |
| 5. <u>Huisache (Acacia farnesiana)</u> | 20 | | FACU | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| | 95 | = Total Cover | | |
| Sapling Stratum (Plot size: 10') | | | | |
| 1. <u>Hackberry (Celtis laevigata)</u> | 20 | Y | FAC | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>60</u> x 1 = <u>60</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>70</u> x 3 = <u>210</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species _____ x 5 = _____ Column Totals: <u>175</u> (A) <u>420</u> (B) Prevalence Index = B/A = <u>2.4</u> |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| | 20 | = Total Cover | | |
| Shrub Stratum (Plot size: 10') | | | | |
| 1. _____ | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide Supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| | | = Total Cover | | |
| Herb Stratum (Plot size: 10') | | | | |
| 1. <u>Crowfoot sedge (Carex crus-corvi)</u> | 60 | Y | OBL | Definitions of Vegetation Strata: Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. |
| 2. <u>Lily (Lilium spp.)</u> | 35 | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| 11. _____ | | | | |
| 12. _____ | | | | |
| | 95 | = Total Cover | | |
| Woody Vine Stratum (Plot size: 10') | | | | |
| 1. _____ | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| | | = Total Cover | | |

Remarks: (If observed, list morphological adaptations below).
 Non-native bulb present (Lilium spp.)

SOIL

Sampling Point: 2

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|---------|----------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Lot ² | | |
| 0-6 | 10YR 5/2 | 85 | 10YR 4/3 | 15 | C | M | CLAY | GREYISH BROWN |
| 7-12 | 10YR 3/1 | 100 | 10YR 4/3 | 15 | C | M | CLAY | VERY DARK GREY |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Mucky Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S8) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA, 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR O)
 - 2 CM Muck (A10) (LRR S)
 - Reduced Vertic (F18) (outside MLRA 150A,B)
 - Piedmont Floodplain Soils (F19) (LRR P, S, T)
 - Anomalous Bright Loamy Soils (F20) (MLRA 153B)
 - Red Parent Material (TF2)
 - Very Shallow Dark Surface (TF12) (LRR T, U)
 - Other (Explain in Remarks)
- ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

SMALL DEPRESSED AREA; UNDISTURBED SOIL.

APPENDIX C
SITE PHOTOGRAPHS



Photo 1: Looking at the Business 59 bridge, facing northwest near the northern extent of the project.

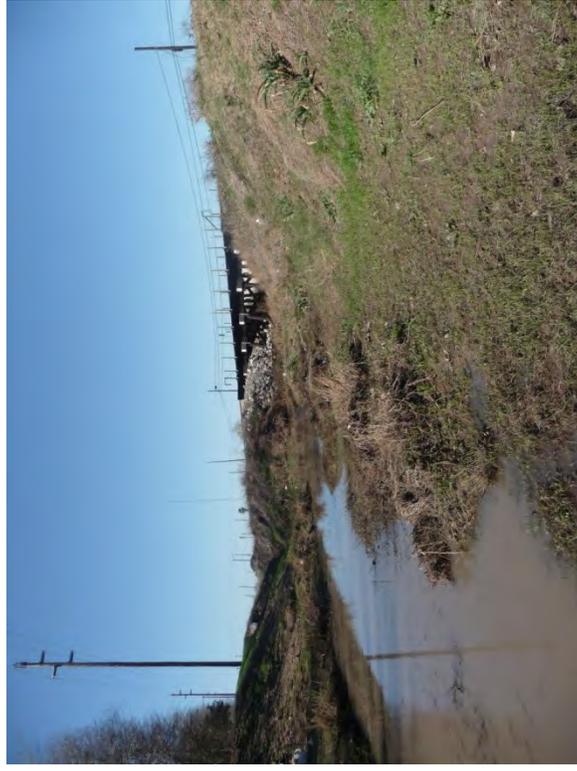


Photo 2: Looking northwest at the Southern Pacific Railroad bridge. Tributary to Tres Palacios Creek is visible on the left side of Tres Palacios Creek.



Photo 3: Facing southeast, a view of Tres Palacios Creek south of the Palacios Street bridge.

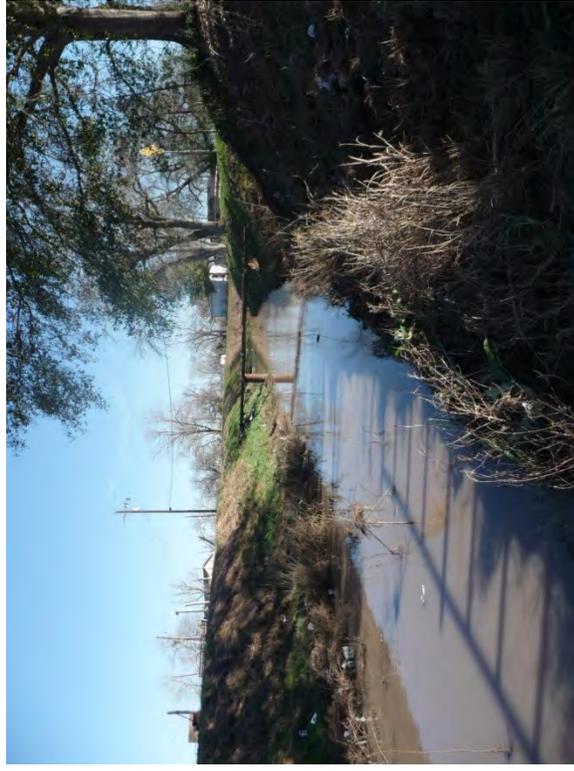


Photo 4: Looking east at Tres Palacios Creek between the Business 59 bridge and Palacios Street bridge near Willie Lee Street.



Photo 5: Looking east at Tres Palacios Creek just west of the Palacios Street Bridge.



Photo 6: Looking west, Tres Palacios Creek just east of the Palacios Street Bridge.



Photo 7: Looking southwest, toward the West 5th Street Bridge. Ephemeral Stream ES-1 can be seen on the left side of the picture.



Photo 8: Looking southeast toward the Tres Palacios Creek from ES-1.



Photo 9: Looking east along Tres Palacios Creek just east of the West 5th Street bridge.



Photo 10: Looking southwest, upland Ephemeral Stream ES-2.



Photo 11: Wetland 1, representative vegetation and geomorphic position shown.



Photo 12: Wetland 2, representative vegetation, water-stained leaves, and geomorphic position shown.

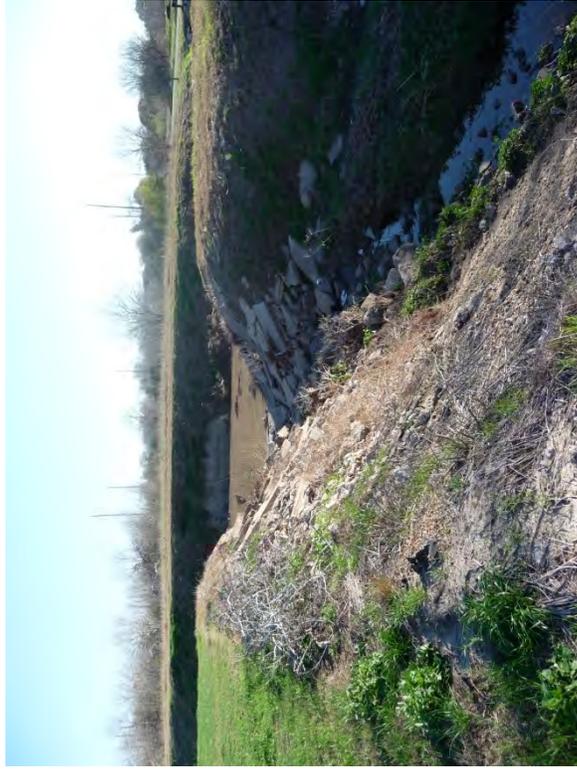


Photo 13: Looking southeast toward Tres Palacios Creek from upland Ephemeral Stream ES-3.



Photo 14: Looking upstream, view of Tres Palacios Creek just west of the South Wharton Street bridge.

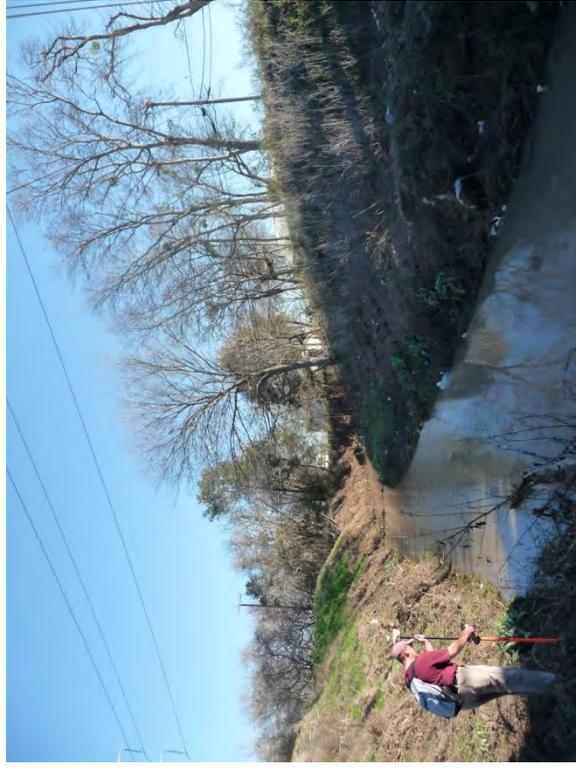


Photo 15: Looking downstream, view of Tres Palacios Creek just east of the South Wharton Street bridge.

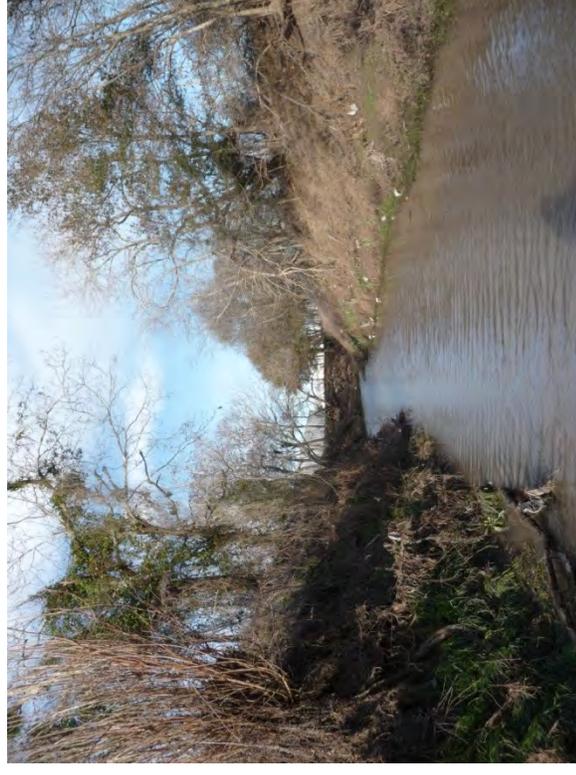


Photo 16: Looking northwest, view of Tres Palacios Creek south of the South Wharton Street bridge.



Photo 17: Looking southeast, view of Tres Palacios Creek north of the US Hwy 59 bridge near the water treatment plant.

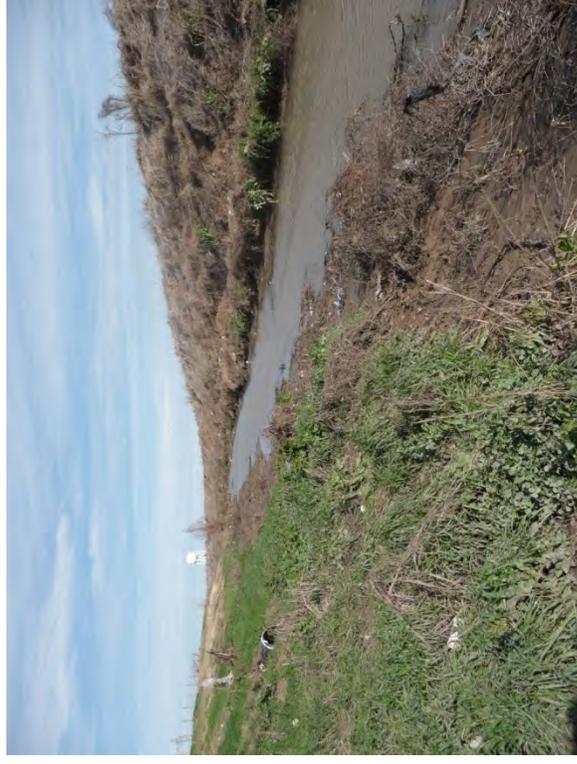


Photo 18: Looking northwest at Tres Palacios Creek just north of the Highway 59 bridge.



Photo 19: View of Tres Palacios Creek upstream of the US Hwy 59 bridge (looking southeast).



Photo 20: Looking northeast, view of upland Ephemeral Stream ES-4.



Photo 21: Looking southeast along Tres Palacios Creek (downstream of the US Hwy 59 bridge).



Photo 22: Looking upstream, view of the Tres Palacios Creek (upstream of the County Road 406 bridge).



Photo 23: Tres Palacios Creek just north of the County Road 406 bridge near the end of the project.



Photo 24: Looking south at the southern project extent, just south of the County Road 406 bridge.

Supplemental Study Area Map
Tres Palacios Jurisdictional
Determination
July 2012



Legend

- Limits of Construction
- Approximate OHWM
- Study Area
- Perennial Creek
- Intermittent Stream
- Ephemeral Stream
- + Wetland Data Point
- Photo Location
- Delineated Wetlands
- USFWS National Wetland Inventory
- Railroad
- City Limits

Note: 2010 NAIP Aerial Shown

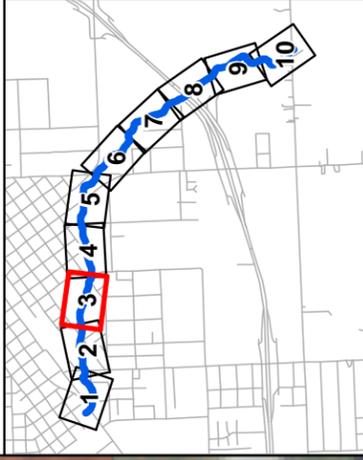




Photo 1: Looking east along the northern extent of the limits of construction near Sample Point 1.



Photo 2: Looking west, a view of the maintained vegetation near Sample Point 3.



Photo 3: Looking west, a view of the limits of construction near Sample Point 5.



Photo 4: Looking south at Sample Point 7. Dense vegetation is present.

WETLAND DETERMINATION DATA FORM — Atlantic and Gulf Coastal Plain Region

Project/Site: Tres Palacios City/County: El Campo / Wharton Sampling Date: 2012/07/16

Applicant/Owner: City of El Campo State: TX Sampling Point: SP1

Investigator(s): C. Hall Section, Township, Range: _____

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

Subregion (LRR): LRRT Lat: 29° 11'20.81" N Long: 96° 16'23.20"W Datum: NAD83

Soil Map Unit Name: EdA – Edna fine sandy loam (0-1% slopes) NWI classification: hydric

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

HYDROLOGY

| | |
|--|--|
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required: |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Surface Soil Cracks |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (A9) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Moss Trim Lines (B16) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Saturation visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (S4) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Aquatic Fauna (S5) | |
| <input type="checkbox"/> Marl Deposits (B15) | |
| <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | |
| <input type="checkbox"/> Oxidized Rhizospheres (C3) | |
| <input type="checkbox"/> Presence of Reduced Iron (C4) | |
| <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | |
| <input type="checkbox"/> Thin Muck Surface (C7) | |
| <input type="checkbox"/> Other | |

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No

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

Remarks:
NOAA indicated light drizzle / light rain in the El Campo area resulting in 0.03" of rain on July 15, 2012.

VEGETATION - Use scientific names of plants.

| <u>Tree Stratum</u> (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: |
|--|------------------|-------------------|------------------|---|
| 1. <u>None</u> | | | | Number of Dominant Species That Are OBL, FACW, or FAC _____ (A) |
| 2. _____ | | | | Total Number of Dominant Species Across All Strata: _____ (B) |
| 3. _____ | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B) |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| | | = Total Cover | | |
| <u>Sapling Stratum</u> (Plot size: <u>15'</u>) | | | | Prevalence Index worksheet: |
| 1. <u>None</u> | | | | Total % Cover of: _____ Multiply by: _____ |
| 2. _____ | | | | OBL species _____ x 1 = _____ |
| 3. _____ | | | | FACW species _____ x 2 = _____ |
| 4. _____ | | | | FAC species _____ x 3 = _____ |
| 5. _____ | | | | FACU species _____ x 4 = _____ |
| 6. _____ | | | | UPL species _____ x 5 = _____ |
| 7. _____ | | | | Column Totals: _____ (A) _____ (B) |
| | | = Total Cover | | Prevalence Index = B/A = _____ |
| <u>Shrub Stratum</u> (Plot size: <u>15'</u>) | | | | Hydrophytic Vegetation Indicators: |
| 1. <u>None</u> | | | | _____ Dominance Test is >50% |
| 2. _____ | | | | _____ Prevalence Index is ≤3.0 ¹ |
| 3. _____ | | | | _____ Morphological Adaptations ¹ (Provide Supporting data in Remarks or on a separate sheet) |
| 4. _____ | | | | _____ Problematic Hydrophytic Vegetation ¹ (Explain) |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| | | = Total Cover | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| <u>Herb Stratum</u> (Plot size: <u>10'</u>) | | | | Definitions of Vegetation Strata: |
| 1. <u>Johnson grass (<i>Sorghum halepense</i>)</u> | <u>20</u> | <u>Y</u> | <u>FACU</u> | Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). |
| 2. <u>Dewberry (<i>Rubus spp.</i>)</u> | <u>10</u> | | | Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. |
| 3. <u>Giant Ragweed (<i>Ambrosia trifida</i>)</u> | <u>10</u> | | | Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. |
| 4. _____ | | | | Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. |
| 5. _____ | | | | Woody vine - All woody vines, regardless of height. |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| 11. _____ | | | | |
| 12. _____ | | | | |
| | <u>40</u> | = Total Cover | | |
| <u>Woody Vine Stratum</u> (Plot size: <u>15'</u>) | | | | Hydrophytic Vegetation Present? Yes _____ No <u>X</u> |
| 1. <u>None</u> | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| | | = Total Cover | | |

Remarks: (If observed, list morphological adaptations below).
 Area appears to have been recently mowed.

SOIL

Sampling Point: SP1

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|-------------|------------------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Lot ² | | |
| 0-2 | 7.5YR 3/2 | 100 | | | | | Sand - Loam | Organic – Dark brown |
| 2-6 | 10YR 4/3 | 100 | | | | | Sand - Loam | Brown – no gravel – abundant roots |
| 6-13 | 10YR 4/1 | 70 | 7.5YR 6/8 | 30 | C | M | Loam - Clay | Dark gray matrix |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

- Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**
- | | | |
|--|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U) | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) | <input type="checkbox"/> 2 CM Muck (A10) (LRR S) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B) |
| <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Muck Presence (A8) (LRR U) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) (LRR T, U) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) | <input type="checkbox"/> Marl (F10) (LRR U) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) | |
| <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) | <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) | <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Reduced Vertic (F18) (MLRA, 150A, 150B) | |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) | |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | |

Dark Surface (S8) (LRR P, S, T, U)

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

Hydric Soil Present? Yes _____ No X

Remarks:
 No hydric soil indicators apparent.

WETLAND DETERMINATION DATA FORM — Atlantic and Gulf Coastal Plain Region

Project/Site: Tres Palacios City/County: El Campo / Wharton Sampling Date: 2012/07/16

Applicant/Owner: City of El Campo State: TX Sampling Point: SP2

Investigator(s): C. Hall Section, Township, Range: _____

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

Subregion (LRR): LRRT Lat: 29° 11'20.81" N Long: 96° 16'23.20"W Datum: NAD83

Soil Map Unit Name: EdA – Edna fine sandy loam (0-1% slopes) NWI classification: hydric

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

HYDROLOGY

| | |
|--|--|
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required: |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Surface Soil Cracks |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (A9) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Moss Trim Lines (B16) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Saturation visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (S4) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Aquatic Fauna (S5) | |
| <input type="checkbox"/> Marl Deposits (B15) | |
| <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | |
| <input type="checkbox"/> Oxidized Rhizospheres (C3) | |
| <input type="checkbox"/> Presence of Reduced Iron (C4) | |
| <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | |
| <input type="checkbox"/> Thin Muck Surface (C7) | |
| <input type="checkbox"/> Other | |

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No

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

Remarks:

NOAA indicated light drizzle / light rain in the El Campo area resulting in 0.03" of rain on July 15, 2012.

VEGETATION - Use scientific names of plants.

| <u>Tree Stratum</u> (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: |
|---|------------------|-------------------|------------------|---|
| 1. <u>None</u> | | | | Number of Dominant Species That Are OBL, FACW, or FAC <u>1</u> (A) |
| 2. _____ | | | | Total Number of Dominant Species Across All Strata: <u>2</u> (B) |
| 3. _____ | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B) |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| | | = Total Cover | | |
| <u>Sapling Stratum</u> (Plot size: <u>15'</u>) | | | | Prevalence Index worksheet: |
| 1. <u>None</u> | | | | Total % Cover of: _____ Multiply by: _____ |
| 2. _____ | | | | OBL species _____ x 1 = _____ |
| 3. _____ | | | | FACW species _____ x 2 = _____ |
| 4. _____ | | | | FAC species _____ x 3 = _____ |
| 5. _____ | | | | FACU species _____ x 4 = _____ |
| 6. _____ | | | | UPL species _____ x 5 = _____ |
| 7. _____ | | | | Column Totals: _____ (A) _____ (B) |
| | | = Total Cover | | Prevalence Index = B/A = _____ |
| <u>Shrub Stratum</u> (Plot size: <u>15'</u>) | | | | Hydrophytic Vegetation Indicators: |
| 1. <u>None</u> | | | | _____ Dominance Test is >50% |
| 2. _____ | | | | _____ Prevalence Index is ≤3.0 ¹ |
| 3. _____ | | | | _____ Morphological Adaptations ¹ (Provide Supporting data in Remarks or on a separate sheet) |
| 4. _____ | | | | _____ Problematic Hydrophytic Vegetation ¹ (Explain) |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| | | = Total Cover | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| <u>Herb Stratum</u> (Plot size: <u>10'</u>) | | | | Definitions of Vegetation Strata: |
| 1. <u>Dewberry (<i>Rubus spp.</i>)</u> | <u>20</u> | | <u>FAC</u> | Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). |
| 2. <u>Giant ragweed (<i>Ambrosia trifida</i>)</u> | <u>20</u> | <u>Y</u> | <u>FAC</u> | Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. |
| 3. <u>Bermuda grass (<i>Cynodon dactylon</i>)</u> | <u>30</u> | <u>Y</u> | <u>FACU+</u> | Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. |
| 4. <u>Johnson grass (<i>Sorghum halepense</i>)</u> | <u>10</u> | | <u>FACU</u> | Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. |
| 5. <u>Cherokee sedge (<i>Cyperus odoratus</i>)</u> | <u>5</u> | | <u>FACW</u> | Woody vine - All woody vines, regardless of height. |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| 11. _____ | | | | |
| 12. _____ | | | | |
| | <u>85</u> | = Total Cover | | |
| <u>Woody Vine Stratum</u> (Plot size: <u>15'</u>) | | | | Hydrophytic Vegetation Present? Yes _____ No <u>X</u> |
| 1. <u>None</u> | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| | | = Total Cover | | |
| Remarks: (If observed, list morphological adaptations below). | | | | |

WETLAND DETERMINATION DATA FORM — Atlantic and Gulf Coastal Plain Region

Project/Site: Tres Palacios City/County: El Campo / Wharton Sampling Date: 2012/07/16

Applicant/Owner: City of El Campo State: TX Sampling Point: SP3

Investigator(s): C. Hall Section, Township, Range: _____

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

Subregion (LRR): LRRT Lat: 29° 11'20.81" N Long: 96° 16'23.20"W Datum: NAD83

Soil Map Unit Name: BcA – Bernard clay loam (0-1% slopes) NWI classification: hydric

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

HYDROLOGY

| | |
|--|--|
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required): |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Surface Soil Cracks |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (A9) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Moss Trim Lines (B16) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Saturation visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (S4) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Aquatic Fauna (S5) | |
| <input type="checkbox"/> Marl Deposits (B15) | |
| <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | |
| <input type="checkbox"/> Oxidized Rhizospheres (C3) | |
| <input type="checkbox"/> Presence of Reduced Iron (C4) | |
| <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | |
| <input type="checkbox"/> Thin Muck Surface (C7) | |
| <input type="checkbox"/> Other | |

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No

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

Remarks:

NOAA indicated light drizzle / light rain in the El Campo area resulting in 0.03" of rain on July 15, 2012.

VEGETATION – Use scientific names of plants.

| <u>Tree Stratum</u> (Plot size: 15' _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: | |
|---|------------------|-------------------|------------------|---|---|
| 1. <u>None</u> | _____ | _____ | _____ | Number of Dominant Species That Are OBL, FACW, or FAC _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B) | |
| 2. _____ | _____ | _____ | _____ | | |
| 3. _____ | _____ | _____ | _____ | | |
| 4. _____ | _____ | _____ | _____ | | |
| 5. _____ | _____ | _____ | _____ | | |
| 6. _____ | _____ | _____ | _____ | | |
| 7. _____ | _____ | _____ | _____ | | |
| | _____ | = Total Cover | | | |
| <u>Sapling Stratum</u> (Plot size: 15' _____) | | | | Prevalence Index worksheet: | |
| 1. <u>Mesquite (<i>Prosopis glandulosa</i>)</u> | 5 | _____ | NA | | 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 = _____ |
| 2. _____ | _____ | _____ | _____ | | |
| 3. _____ | _____ | _____ | _____ | | |
| 4. _____ | _____ | _____ | _____ | | |
| 5. _____ | _____ | _____ | _____ | | |
| 6. _____ | _____ | _____ | _____ | | |
| | 5 | = Total Cover | | | |
| <u>Shrub Stratum</u> (Plot size: 15' _____) | | | | Hydrophytic Vegetation Indicators: _____ Dominance Test is >50% _____ Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide Supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) | |
| 1. <u>None</u> | _____ | _____ | _____ | | |
| 2. _____ | _____ | _____ | _____ | | |
| 3. _____ | _____ | _____ | _____ | | |
| 4. _____ | _____ | _____ | _____ | | |
| 5. _____ | _____ | _____ | _____ | | |
| 6. _____ | _____ | _____ | _____ | | |
| | _____ | = Total Cover | | | |
| <u>Herb Stratum</u> (Plot size: 5' _____) | | | | Definitions of Vegetation Strata: Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. | |
| 1. <u>Bermuda grass (<i>Cynodon dactylon</i>)</u> | 50 | Y | FACU+ | | |
| 2. <u>Dewberry (<i>Rubus spp.</i>)</u> | 5 | _____ | FAC | | |
| 3. _____ | _____ | _____ | _____ | | |
| 4. _____ | _____ | _____ | _____ | | |
| 5. _____ | _____ | _____ | _____ | | |
| 6. _____ | _____ | _____ | _____ | | |
| 7. _____ | _____ | _____ | _____ | | |
| 8. _____ | _____ | _____ | _____ | | |
| 9. _____ | _____ | _____ | _____ | | |
| 10. _____ | _____ | _____ | _____ | | |
| 11. _____ | _____ | _____ | _____ | | |
| | 55 | = Total Cover | | | |
| <u>Woody Vine Stratum</u> (Plot size: 15' _____) | | | | Hydrophytic Vegetation Present? Yes _____ No <u>X</u> | |
| 1. <u>None</u> | _____ | _____ | _____ | | |
| 2. _____ | _____ | _____ | _____ | | |
| 3. _____ | _____ | _____ | _____ | | |
| 4. _____ | _____ | _____ | _____ | | |
| 5. _____ | _____ | _____ | _____ | | |
| | _____ | = Total Cover | | | |
| Remarks: (If observed, list morphological adaptations below). | | | | | |

SOIL

Sampling Point: SP3

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|------------|---------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Lot ² | | |
| 0-1 | 10YR 2/2 | 100 | | | | | Loam | Very dark brown - Organic |
| 1-12 | 10YR 3/2 | 75 | 10YR 7/1 | 15 | C | M | Loamy clay | |
| | | | 10YR 4/6 | 10 | C | M | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) | | Indicators for Problematic Hydric Soils³: |
|--|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) | <input type="checkbox"/> 2 CM Muck (A10) (LRR S) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) | <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B) |
| <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) (LRR T, U) |
| <input type="checkbox"/> Muck Presence (A8) (LRR U) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) | <input type="checkbox"/> Marl (F10) (LRR U) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) | |
| <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) | <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) | <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Reduced Vertic (F18) (MLRA, 150A, 150B) | |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) | |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | |

Dark Surface (S8) (LRR P, S, T, U)

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

Hydric Soil Present? Yes _____ No X

Remarks:

- Along bank of Tres Palacios
- High probability of disturbance from previous flood mitigation procedures

WETLAND DETERMINATION DATA FORM — Atlantic and Gulf Coastal Plain Region

Project/Site: Tres Palacios City/County: El Campo / Wharton Sampling Date: 2012/07/16

Applicant/Owner: City of El Campo State: TX Sampling Point: SP4

Investigator(s): C. Hall Section, Township, Range: _____

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

Subregion (LRR): LRRT Lat: 29° 11'20.81" N Long: 96° 16'23.20"W Datum: NAD83

Soil Map Unit Name: BcA – Bernard clay loam (0-1% slopes) NWI classification: hydric

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ___ No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | | | |
|---------------------------------|---------|-------------|--|---------|-------------|
| Hydrophytic Vegetation Present? | Yes ___ | No <u>x</u> | Is the Sampled Area within a Wetland? | Yes ___ | No <u>X</u> |
| Hydric Soil Present? | Yes ___ | No <u>x</u> | | | |
| Wetland Hydrology Present? | Yes ___ | No <u>X</u> | | | |
| Remarks: | | | | | |

HYDROLOGY

| | |
|--|--|
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required: |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Surface Soil Cracks |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (A9) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Moss Trim Lines (B16) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Saturation visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (S4) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Aquatic Fauna (S5) | |
| <input type="checkbox"/> Marl Deposits (B15) | |
| <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | |
| <input type="checkbox"/> Oxidized Rhizospheres (C3) | |
| <input type="checkbox"/> Presence of Reduced Iron (C4) | |
| <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | |
| <input type="checkbox"/> Thin Muck Surface (C7) | |
| <input type="checkbox"/> Other | |

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 in sections), if available:

Remarks:
NOAA indicated light drizzle / light rain in the El Campo area resulting in 0.03" of rain on July 15, 2012.

VEGETATION - Use scientific names of plants.

| <u>Tree Stratum</u> (Plot size: 15' _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: |
|---|------------------|-------------------|------------------|---|
| 1. <u>None</u> | _____ | _____ | _____ | Number of Dominant Species That Are OBL, FACW, or FAC _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B) |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| | | | = Total Cover | |
| Sapling Stratum (Plot size: 15' _____) | | | | |
| 1. <u>None</u> | _____ | _____ | _____ | 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 = _____ |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| | | | = Total Cover | |
| Shrub Stratum (Plot size: 15' _____) | | | | |
| 1. <u>None</u> | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: _____ Dominance Test is >50% _____ Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide Supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| | | | = Total Cover | |
| Herb Stratum (Plot size: 5' _____) | | | | |
| 1. <u>Bermuda grass (<i>Cynodon dactylon</i>)</u> | 50 | Y | FACU+ | Definitions of Vegetation Strata: Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. |
| 2. <u>Johnson grass (<i>Sorghum halepense</i>)</u> | 15 | _____ | FACU | |
| 3. <u>Dewberry (<i>Rubus spp.</i>)</u> | 10 | _____ | FAC | |
| 4. <u>Sensitive briar (<i>Mimosa microphylla</i>)</u> | 5 | _____ | - | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| 12. _____ | _____ | _____ | _____ | |
| | | | = Total Cover | |
| Woody Vine Stratum (Plot size: 15' _____) | | | | |
| 1. <u>None</u> | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes _____ No <u>X</u> |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| | | | = Total Cover | |
| Remarks: (If observed, list morphological adaptations below). | | | | |

SOIL

Sampling Point: SP4

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Lot ² | | |
| 0-3 | 10YR 4/3 | 100 | | | | | Sandy loam | Brown |
| 3-12 | 10YR 4/3 | 90 | 10YR 3/2 | 10 | C | M | Loamy clay | - |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

- | | | |
|--|---|---|
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) | | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) | <input type="checkbox"/> 2 CM Muck (A10) (LRR S) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) | <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B) |
| <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) (LRR T, U) |
| <input type="checkbox"/> Muck Presence (A8) (LRR U) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) | <input type="checkbox"/> Marl (F10) (LRR U) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) | |
| <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) | <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) | <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Reduced Vertic (F18) (MLRA, 150A, 150B) | |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) | |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | |

Dark Surface (S8) (LRR P, S, T, U)

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
 Soils very compact. Probably disturbed.

WETLAND DETERMINATION DATA FORM — Atlantic and Gulf Coastal Plain Region

Project/Site: Tres Palacios City/County: El Campo / Wharton Sampling Date: 2012/07/16

Applicant/Owner: City of El Campo State: TX Sampling Point: SP5

Investigator(s): C. Hall Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): _____ Slope (%): 4

Subregion (LRR): LRRT Lat: 29° 11'20.81" N Long: 96° 16'23.20"W Datum: NAD83

Soil Map Unit Name: BcA – Bernard clay loam (0-1% slopes) NWI classification: hydric

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ___ No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | | | |
|---------------------------------|---------|-------------|--|---------|-------------|
| Hydrophytic Vegetation Present? | Yes ___ | No <u>X</u> | Is the Sampled Area within a Wetland? | Yes ___ | No <u>X</u> |
| Hydric Soil Present? | Yes ___ | No <u>X</u> | | | |
| Wetland Hydrology Present? | Yes ___ | No <u>X</u> | | | |
| Remarks: | | | | | |

HYDROLOGY

| | |
|--|---|
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required: |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> | |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (S4) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (S5) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other | <input type="checkbox"/> Surface Soil Cracks <input type="checkbox"/> Sparsely Vegetated Concave Surface (A9) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) |

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 in sections), if available:

Remarks:

NOAA indicated light drizzle / light rain in the El Campo area resulting in 0.03" of rain on July 15, 2012.

VEGETATION - Use scientific names of plants.

| <u>Tree Stratum</u> (Plot size: _____) | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> | Dominance Test worksheet: |
|---|-------------------------|--------------------------|-------------------------|---|
| 1. _____ | _____ | _____ | _____ | Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B) |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| <u>Sapling Stratum</u> (Plot size: _____) | | | | 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 = _____ |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| <u>Shrub Stratum</u> (Plot size: _____) | | | | Hydrophytic Vegetation Indicators: _____ Dominance Test is >50% _____ Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide Supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| <u>Herb Stratum</u> (Plot size: _____) | | | | Definitions of Vegetation Strata: Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. |
| 1. <u>Johnson grass (<i>Sorghum halepense</i>)</u> | 5 | _____ | _____ | |
| 2. <u>Dewberry (<i>Rubus spp.</i>)</u> | 5 | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| 12. _____ | _____ | _____ | _____ | |
| 10 = Total Cover | | | | |
| <u>Woody Vine Stratum</u> (Plot size: _____) | | | | Hydrophytic Vegetation Present? Yes _____ No <u>X</u> |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Remarks: (If observed, list morphological adaptations below). Vegetation is dead | | | | |

SOIL

Sampling Point: SP5

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Lot ² | | |
| 0-3 | 10YR 4/3 | 100 | | | | | Sandy loam | |
| 3-12 | 10YR 4/3 | 90 | 10YR 3/2 | 10 | C | M | Loamy clay | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) | | Indicators for Problematic Hydric Soils³: |
|--|---|---|
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) | <input type="checkbox"/> 2 CM Muck (A10) (LRR S) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) | <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B) |
| <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Muck Presence (A8) (LRR U) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) (LRR T, U) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Marl (F10) (LRR U) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) | |
| <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) | <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) | |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Reduced Vertic (F18) (MLRA, 150A, 150B) | |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) | |
| <input type="checkbox"/> Dark Surface (S8) (LRR P, S, T, U) | <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | |

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

Hydric Soil Present? Yes ___ No X

Remarks:
 Same soils as seen on SP4

WETLAND DETERMINATION DATA FORM — Atlantic and Gulf Coastal Plain Region

Project/Site: Tres Palacios City/County: El Campo / Wharton Sampling Date: 2012/07/16
 Applicant/Owner: City of El Campo State: TX Sampling Point: SP6
 Investigator(s): C. Hall Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): LRRT Lat: 29° 11'20.81" N Long: 96° 16'23.20"W Datum: NAD83
 Soil Map Unit Name: BcA – Bernard clay loam (0-1% slopes) NWI classification: hydric

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

HYDROLOGY

| | |
|--|--|
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required: |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Surface Soil Cracks |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (A9) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Moss Trim Lines (B16) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Saturation visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (S4) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Aquatic Fauna (S5) | |
| <input type="checkbox"/> Marl Deposits (B15) | |
| <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | |
| <input type="checkbox"/> Oxidized Rhizospheres (C3) | |
| <input type="checkbox"/> Presence of Reduced Iron (C4) | |
| <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | |
| <input type="checkbox"/> Thin Muck Surface (C7) | |
| <input type="checkbox"/> Other | |

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No

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

Remarks:
 NOAA indicated light drizzle / light rain in the El Campo area resulting in 0.03" of rain on July 15, 2012.

VEGETATION - Use scientific names of plants.

| Tree Stratum (Plot size: 15' _____) | | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B) |
|---|---|---------------------|----------------------|---------------------|---|
| 1. | Hackberry (<i>Celtis occidentalis</i>) | 40 | Y | FACU | |
| 2. | Retama (<i>Parkinsonia aculeate</i>) | 10 | | FAC | |
| 3. | _____ | | | | |
| 4. | _____ | | | | |
| 5. | _____ | | | | |
| 6. | _____ | | | | |
| 7. | _____ | | | | |
| | | <u>50</u> | = Total Cover | | |
| Sapling Stratum (Plot size: 15' _____) | | | | | 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 = _____ |
| 1. | Hackberry (<i>Celtis occidentalis</i>) | 5 | | FACU | |
| 2. | _____ | | | | |
| 3. | _____ | | | | |
| 4. | _____ | | | | |
| 5. | _____ | | | | |
| 6. | _____ | | | | |
| 7. | _____ | | | | |
| | | <u>5</u> | = Total Cover | | |
| Shrub Stratum (Plot size: 15' _____) | | | | | Hydrophytic Vegetation Indicators: _____ Dominance Test is >50% _____ Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide Supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) |
| 1. | None | | | | |
| 2. | _____ | | | | |
| 3. | _____ | | | | |
| 4. | _____ | | | | |
| 5. | _____ | | | | |
| 6. | _____ | | | | |
| 7. | _____ | | | | |
| | | | = Total Cover | | |
| Herb Stratum (Plot size: 10' _____) | | | | | Definitions of Vegetation Strata: Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. |
| 1. | Giant ragweed (<i>Amrosia trifida</i>) | 20 | Y | FAC | |
| 2. | Bermuda grass (<i>Cynodon dactylon</i>) | 20 | Y | FACU+ | |
| 3. | _____ | | | | |
| 4. | _____ | | | | |
| 5. | _____ | | | | |
| 6. | _____ | | | | |
| 7. | _____ | | | | |
| 8. | _____ | | | | |
| 9. | _____ | | | | |
| 10. | _____ | | | | |
| 11. | _____ | | | | |
| 12. | _____ | | | | |
| | | <u>40</u> | = Total Cover | | |
| Woody Vine Stratum (Plot size: 15' _____) | | | | | Hydrophytic Vegetation Present? Yes _____ No <u>X</u> |
| 1. | None | | | | |
| 2. | _____ | | | | |
| 3. | _____ | | | | |
| 4. | _____ | | | | |
| 5. | _____ | | | | |
| | | | = Total Cover | | |

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: SP6

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Lot ² | | |
| 0-1 | 10YR 4/6 | 100 | | | | | Sandy loam | Organic |
| 1-13 | 10YR 4/3 | 90 | 10YR 3/2 | 10 | C | M | Loamy clay | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

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

- | | | |
|---|---|--|
| <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U) <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Reduced Vertic (F18) (MLRA, 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <p>Indicators for Problematic Hydric Soils³:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 CM Muck (A10) (LRR S) <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) (LRR T, U) <input type="checkbox"/> Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
|---|---|--|

Dark Surface (S8) **(LRR P, S, T, U)**

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

1-13" same as SP5

WETLAND DETERMINATION DATA FORM — Atlantic and Gulf Coastal Plain Region

Project/Site: Tres Palacios City/County: El Campo / Wharton Sampling Date: 2012/07/16

Applicant/Owner: City of El Campo State: TX Sampling Point: SP7

Investigator(s): C. Hall Section, Township, Range: _____

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

Subregion (LRR): LRRT Lat: 29° 11'20.81" N Long: 96° 16'23.20"W Datum: NAD83

Soil Map Unit Name: BcA – Bernard clay loam (0-1% slopes) NWI classification: hydric

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Undisturbed vegetation present unlike previous sampling points.

HYDROLOGY

| | | | |
|--|---|--|--|
| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of two required: | |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> | | _____ Surface Soil Cracks | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (S4) | _____ Sparsely Vegetated Concave Surface (A9) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (S5) | _____ Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | _____ Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | _____ Dry-Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres (C3) | _____ Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | _____ Saturation visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | _____ Shallow Aquitard (D3) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other | _____ FAC-Neutral Test (D5) | |

Field Observations:

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

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

Saturation Present? Yes No Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes No

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

2010 Aerial photograph shows little vegetation present.

Remarks:

NOAA indicated light drizzle / light rain in the El Campo area resulting in 0.03" of rain on July 15, 2012.

VEGETATION - Use scientific names of plants.

| <u>Tree Stratum</u> (Plot size: <u>10'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: |
|---|------------------|-------------------|------------------|---|
| 1. <u>None</u> | | | | Number of Dominant Species That Are OBL, FACW, or FAC <u>1</u> (A) |
| 2. _____ | | | | Total Number of Dominant Species Across All Strata: <u>2</u> (B) |
| 3. _____ | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B) |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| | | = Total Cover | | |
| <u>Sapling Stratum</u> (Plot size: <u>10'</u>) | | | | Prevalence Index worksheet: |
| 1. <u>None</u> | | | | Total % Cover of: _____ Multiply by: _____ |
| 2. _____ | | | | OBL species _____ x 1 = _____ |
| 3. _____ | | | | FACW species _____ x 2 = _____ |
| 4. _____ | | | | FAC species _____ x 3 = _____ |
| 5. _____ | | | | FACU species _____ x 4 = _____ |
| 6. _____ | | | | UPL species _____ x 5 = _____ |
| 7. _____ | | | | Column Totals: _____ (A) _____ (B) |
| | | = Total Cover | | Prevalence Index = B/A = _____ |
| <u>Shrub Stratum</u> (Plot size: <u>10'</u>) | | | | Hydrophytic Vegetation Indicators: |
| 1. <u>None</u> | | | | _____ Dominance Test is >50% |
| 2. _____ | | | | _____ Prevalence Index is ≤3.0 ¹ |
| 3. _____ | | | | _____ Morphological Adaptations ¹ (Provide Supporting data in Remarks or on a separate sheet) |
| 4. _____ | | | | _____ Problematic Hydrophytic Vegetation ¹ (Explain) |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| | | = Total Cover | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| <u>Herb Stratum</u> (Plot size: <u>5'</u>) | | | | Definitions of Vegetation Strata: |
| 1. <u>Grant Ragweed (<i>Abrosia trifida</i>)</u> | <u>80</u> | <u>Y</u> | <u>FAC</u> | Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). |
| 2. <u>Dewberry (<i>Rubus spp</i>)</u> | <u>5</u> | | <u>FAC</u> | Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. |
| 3. _____ | | | | Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. |
| 4. _____ | | | | Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. |
| 5. _____ | | | | Woody vine - All woody vines, regardless of height. |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| 11. _____ | | | | |
| 12. _____ | | | | |
| | <u>85</u> | = Total Cover | | |
| <u>Woody Vine Stratum</u> (Plot size: <u>10'</u>) | | | | Hydrophytic Vegetation Present? Yes _____ No <u>X</u> |
| 1. <u>None</u> | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| | | = Total Cover | | |
| Remarks: (If observed, list morphological adaptations below). | | | | |
| Dense vegetation. | | | | |
| Reduced vegetation strata radii due to reduced visibility. | | | | |

