Executive Summary

Stantec Consulting Services (“Stantec”) completed a waters of the United States (WOUS) delineation on approximately 1,107.8 acres in Fort Bend County, Texas (the “Project Area”) near the city of Fairchilds, Texas for Cutlass Solar II LLC (the “Client”). The proposed Cutlass Solar II Project (herein referred to as the “Project”) includes the construction and operation of a solar energy facility. The Project Area discussed in this report, totaling 1,107.8 acres, will be a solar energy development, located approximately 40 miles southwest of Houston, Texas in Electric Reliability Council of Texas’s (ERCOT’s) Houston Zone, that will deliver energy to ERCOT at a new generation facility near the CenterPoint Houston Electric, LLC (“CenterPoint Energy”) transmission system.

During the July 2019 field investigation, Stantec observed the Project Area to be largely cultivated agricultural fields with limited woody vegetation. Southern live oak (*Quercus virginiana*) was the predominant vegetation within the Project Area and was largely limited to the area immediately north of the Project Area.

Stantec identified and delineated two streams within the Project Area, which totaled approximately 0.52 acres (5,400.3 linear feet). ST-01, a field verified NHD identified intermittent stream, was observed in the northern portion of the Project Area. ST-01 is an unnamed, intermittent tributary to Fairchilds Creek and is fully encompassed by tall banks with culverts which appear to drain the adjacent fields. ST-02 was identified as a small, unnamed, ephemeral stream draining towards Fairchilds Creek. Vegetation along the stream channel was not indicative of wetland vegetation. ST-02 was visibly draining cropland and was largely characterized as located in a denuded area.

The information provided by Stantec regarding potentially jurisdictional features under Section 404 of the Clean Water Act is a scientifically based analysis of the conditions of hydrologic features, wetlands, and uplands present within the Project Area at the time of the field investigation. Based upon this investigation and Stantec’s understanding of the currently regulatory guidance, it is likely that both streams delineated within the Project Area would be considered jurisdictional; however, the ultimate decision on WOUS rests with the United States Army Corp of Engineers.

1.0 PROJECT INTRODUCTION

Stantec Consulting Services ("Stantec") completed a waters of the United States (WOUS) delineation on the approximately 1,107.8 acres in Fort Bend County, Texas (the "Project Area") for Cutlass Solar II LLC (the "Client"). The Cutlass Solar II Project (herein referred to as the "Project") is located near Fairchilds, Texas. The village of Fairchilds is approximately 1.31 miles (mi) northwest of the Project and has a population of 638. The Project is outside the limits of Fairchilds and is under the jurisdiction of Fort Bend County (**Appendix A, Figures 1 and 2**).

The Project Area is primarily comprised of cultivated cropland (96.2%) and pasture or hay rangeland (2.7%) (USGS 2011). The Project Area involves the installation and operation of a ground-mounted solar energy array to deliver energy to the Houston area.

The Client seeks to install a solar array to supply energy to the expanding requirement of the City of Houston. In support of that effort, Stantec has completed a WOUS delineation consisting of two components, a desktop review of mapped resources and a field investigation conducted July 24-25, 2019. This report and associated figures, historical aerials, and Project Area photographs detail the result of the desktop review and field investigation.

2.0 METHODOLOGY

2.1 REVIEW OF EXISTING PROJECT CONDITIONS

A desktop review of the Project Area was conducted in July 2019 prior to conducting the field investigation on July 24-25, 2019. The desktop review involves the use of publicly available resources to gain an understanding of the ecology of the area and identify areas of potential wetlands or waterbodies. These data sources included the Natural Resources Conservation Service (NRCS) soil surveys and hydric soils list, aerial orthophotography, United States Geological Survey (USGS) topographic maps, the USGS National Hydrography Dataset (NHD), the United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), and the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs).

2.2 FIELD INVESTIGATION

2.2.1 Field Survey - Wetlands

If encountered, wetlands were delineated using procedures outlined in the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (USACE 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plains Region (USACE 2010). Project Area wetland determinations involve a detailed examination of plants, soils, and hydrologic indicators present (three-parameter approach). Project Area conditions allowed for observation and data collection of all three wetland parameters (plants, soils, and hydrologic indicators).

2.2.2 Field Survey- Waterbodies

Waterbodies within the proposed Project Area were delineated in accordance with the USACE Regional Guidance Letter 05-05 – Ordinary High-Water Mark Identification (RGL 05-05 Letter, USACE 2005. Waterbodies include linear water features (i.e., streams, creeks, rivers) as well as open water features (i.e., ponds, lakes). Applicable information gathered and documented for each waterbody feature, if present, include bank height, ordinary high-water mark (OHWM), bank slope, stream flow direction and type, water appearance, stream substrate, aquatic habitats, channel conditions, and disturbances.

2.2.3 Documentation and Mapping

As described in the USACE Manual and Regional Supplement, areas where all three parameters meet the wetland criteria would be delineated as wetlands. After determining the approximate extent of the wetlands based on the three criteria listed above, the wetland boundaries, if present, would have been mapped with a handheld Global Positioning System (GPS) receiver. The receiver used for this purpose provides sub-meter accuracy in geospatial data collection. Waterbodies would have been mapped along the top of the bank or at the OHWM if visible.

Maps were created using the field-collected data to illustrate the locations of all delineated features within the Project Area and are depicted on **Figure 6** in **Appendix A**. Photographs were taken of all delineated features within the Project Area and are provided in **Appendix B.** A map indicating the location of photographs is also provided in **Appendix B.**

3.0 RESULTS

3.1 PROJECT AREA DESCRIPTION

According to the USGS Gap Analysis Project (GAP)/LANDFIRE National Terrestrial Ecosystems database (USGS 2011), land cover within the Project Area is 1,066.2 acres of cultivated cropland (96.2%), 29.7 acres of hay or pasture rangeland (2.7%), 8.5 acres of high intensity developments (0.8%), 2.1 acres of Gulf and Atlantic Coastal Plain Swamp Systems (0.2%), and 0.6 acres of open freshwater (0.1%). The remaining 0.7 acres comprise less than 1% of the total Project Area (**Appendix A, Figure 3**). Land cover of the surrounding properties is similar to the Project Area.

3.1.1 USGS Topographic Map, NHD, NWI, and FEMA Regulatory Floodplain

The USGS 7.5-minute topographic map (USGS 1953) depicts Fairchilds Creek in the adjacent property to the north and east of the Project Area with an unnamed tributary flowing southeast through the northern portion of the Project Area. The terrain within the Project Area is relatively flat, gradually sloping southward towards a stream located on the adjacent property to the south of the Project Area, and northward towards an unnamed tributary to Fairchilds Creek located in the northern portion of the Project Area.

The NHD (USGS 2021) depicts the same streams mapped by the USGS topographic map, and total 9,343.5 linear feet (LF) within the Project Area. The NHD depicts approximately 4,292.9 LF of intermittent streams occurring in the northern portions of the Project, with an additional 5,050.6 LF of canals/ditches transecting the central portion of the Project Area in the northeast-southwest orientation. The NHD also indicates 0.6 acres of perennial lake/pond features within the Project Area.

According to NWI (USFWS 2021), a total of 6.0 acres of wetlands occur within the Project Area, including 5.0 acres of freshwater emergent wetlands, 0.8 acres of freshwater ponds, and 0.2 acres of riverine features (**Appendix A, Figure 4**).

The FEMA FIRMs 48157C0400M and 48157C0425M (FEMA 2021a) map Fairchilds Creek, a stream located in the adjacent property to the north and east of the Project Area, as occurring within the Special Flood Hazard Area which lists the area in Zone A, or areas of 1% potential annual chance of flood hazard (FEMA 2021b). Approximately 2.1 acres of the Project Area is located within Zone A along the unnamed intermittent tributary of Fairchilds Creek in the northern portion of the Project Area (**Appendix A, Figure 4**).

3.1.2 NRCS Soils

Soils mapped within the Project Area by the NRCS Soil Survey of Fort Bend County, Texas (NRCS 2019) are listed in **Table 1** and depicted on **Appendix A, Figure 5**. The predominant soil series is the Lake Charles clay 0 to 1 percent slopes, encompassing 98.3% (1,089.1 acres) of the total Project Area. The Lake Charles clay 0 to 1 percent slopes soil serics is classified by the NRCS as hydric due to minor components.

Results

Table 1 - Fort Bend County Soils (NRCS) mapped within the Project Area

Soils	Sum of Acreage	Percent of Total Acreage	NRCS Hydric Rating	Rangeland Productivity
Lake Charles clay (La), 0 to 1 percent slopes	1,089.1	98.3%	Hydric by minor components	Big bluestem Florida Paspalum Switchgrass Indiangrass Eastern gamagrass Sideoats grama Vine mesquite Brownseed paspalum Little bluestem Buffalograss Silver beardgrass Pan American balsamscale Longtom Marsh bristlegrass Smutgrass White tridens Longspike tridens Sedges Virginia wildrye Texas wintergrass Carolina crabgrass Scribner's panicum
Lake Charles clay (Lb), 2 to 5 percent slopes	18.3	1.7%	Non-Hydric	Rangeland Productivity is the same as Lake Charles (La) mentioned above but differs from Lake Charles clay, 0 to 1 percent slopes, in gradient and in having thinner soil layers overlying yellowish-red underlying material
Water (W)	0.4	<0.1%	--	--
TOTAL NRCS SOILS	**1,107.8**	**100%**	--	--

3.1.3 Historical Aerials

Historical aerial imagery for a larger 1,848.3-acre area, which fully encompasses the Project Area, were reviewed dating back to 1929 and are included in **Appendix C**. **Table 2** includes the results of the review.

Results

Table 2 - Historical Aerial Imagery Depicted within the Project Area

Year	Observations, Property and Adjoining Properties
1929	The Project Area is vacant. Established roadways and Deer creek are visible.
1941	The Project Area and surrounding lands are undeveloped and appear to be used for agricultural purposes. Some residences are visible along FM 361 and Boothline Road. A dirt road leading to a cleared area and a pond are visible in the northern portion of the Property, but no structures are apparent. A circular man-made pond, drainage trench, a large structure, possibly a warehouse or barn, as well as several smaller small structures are visible in a clearing southeast of the Property.
1952	In the central portion of the Project Area, a small rectangular pond and some dirt roads are visible. Additional development east of the circular pond, including dirt roads, storage yards, and several structures. North of this complex, a rectangular evaporation pond is cleared. South of this complex, the ground is disturbed and roadways are visible.
1953	The Project Area is primarily vacant. Drainage ditches and a windmill are visible within the Project Area. Residences are visible along the western boundary of the Project Area along the current Fairchilds Long Point Road. Some development associated with agriculture is visible to the south of the Project Area. Deer Creek and Fairchilds Creek are visible in the adjacent properties to the south and east of the Project Area.
1964	No material changes from the previous photograph. The coverage of the aerial does not extend to the easternmost part of the Project Area.
1972	In addition to the small rectangular pond in the central portion of the Project Area, there is a small structure, potentially a house or barn.
1977	No material changes from the previous photograph.
1980	No change was apparent from the previous aerial photo.
1983	A pond is visible in the western quadrant of the Project Area. The large warehouse structure southeast of the Project Area has been demolished, and the surrounding area has been disturbed.
1989	No material change to the Project Area from the previous photograph. A new pond is visible southeast of the Project Area where the ground was previously disturbed.
1995	No material change to the Project Area from the previous photograph. Outside the eastern boundary of the Project Area, along the bend in Deer Creek, there is a new path or man-made drainage channel. A crescent-shaped area adjacent to the creek has been landscaped or graded.
2004	No material change to the Property from the previous photograph. Southeast of the Project Area, the circular pond is no longer present, and a paved road and a small building are visible. Additionally, Deer Creek was diverted, leaving a u-shaped (oxbow) pond adjacent to the new creek channel just east of the Project Area. A second pond or basin has been built in the center of the oxbow.
2008	No material changes from the previous photograph.
2012	No material changes from the previous photograph.
2016	No material changes from the previous photograph.

3.1.4 Level IV Ecoregion

The Project Area is in the North Humid Gulf Coastal Prairies Level IV Ecoregion (United States Environmental Protection Agency 2018). This ecoregion is described as Quaternary-age deltaic sands, silts, and clays. Original vegetation was mostly grasslands with few clusters of oaks, known as oak mottes or maritime woodlands. Soils are mostly fine-textured: clay, clay loam, or sandy clay loam.

Results

Within the region, there are some differences from higher Lissie Formation to the lower Beaumont Formation, both are of Pleistocene age. The Lissie Formation has lighter colored soils, mostly Alfisols and sandy clay loam surface texture, while darker, clayey soils associated with Vertisols are more typical of the Beaumont Formation.

Historical vegetation includes little bluestem (*Schizachyrium scoparium*), yellow Indiangrass (*Sorghastrum nutans*), brownseed paspalum (*Paspalum plicatulum*), gulf muhly (*Muhlenbergia capillarus*), and switchgrass (*Pancium virgatum*). Exotic Chinese tallow tree (*Triadica sebifera*) and Chinese privet (*Ligustrum sinense*) have invaded large areas in this region, but some loblolly pine (*Pinus taeda*) occurs in the northern part of the region in the transition the South-Central Plains. Almost all of the coastal prairies have been converted to cropland, rangeland, pasture, or urban land uses. Annual precipitation varies from 37 inches in the southwest portion to 58 inches in the northeast, with a summer maximum.

3.2 FIELD INVESTIGATION

3.2.1 General Observations

Stantec conducted field investigation on July 24-25, 2019. During the field investigation, Stantec documented that the Project Area was being utilized for agricultural crop cultivation. Woody vegetation was limited along fence-lines, riparian pathways, and drainageways. Rainfall for December and January was measured at 4.0-5.0 inches and 3.0-4.0 inches respectively. December rainfall was 129% greater than normal rainfall and January rainfall was 78% of normal rainfall. Rainfall for February – May was below normal (0-23%). June was 132% higher than normal (NOAA 2021). Across the fields, rill and gully erosion was evident and pronounced.

Two streams were delineated within the Project Area. No wetlands were identified within the Project Area during the field investigation. The location of all field delineated features and the sampling point is provided in **Appendix A, Figure 6**. Wetland determination forms completed at each sampling point within the Project Area are provided in **Appendix D**. The potential jurisdictional status of features delineated within the Project Area were determined based on Stantec's understanding of the current regulatory guidance.

3.2.2 Vegetation

The majority of the Project Area was comprised of cultivated cropland consisting of corn and cotton.

Vegetation along the unnamed tributary of Fairchilds Creek (ST-01) was found to be primarily herbaceous due to its banks being completely contained within 15-foot-high vegetated banks. ST-01 was surrounded by maintained vegetated banks through most of the Project Area until it approached the northern Project Area boundary where wooded areas were observed.

Vegetation along ST-02 within the Project Area was primarily cultivated cropland that transitioned to a grassy area between the Project Area and the constructed wetland area, located on an adjacent property southeast of the Project Area.

Woody vegetation was limited to immediately outside the boundary of the Project Area along the north-northeastern boundary. This area is dominated by live oak mottes (*Quercus virginiana).*

3.2.3 Soils

Soils were found to be consistent to NRCS mapped clayey soils. In the field, the soils were seen to be highly susceptible to erosion. The majority of the soils within the Project Area are mapped as Lake Charles clay by the NRCS. The NRCS describes this soil as a very dark gray (10YR 3/1) clay which is firm when moist but crumbly when dry (NRCS 2019).

3.2.4 Hydrology

Stantec identified and delineated two streams within the Project Area, totaling approximately 0.52 acres (5,400.3 LF). ST-01, a field verified NHD intermittent stream, was found in the northern boundary of the Project Area. ST-01 is an unnamed tributary to Fairchilds Creek and is fully encompassed by tall banks with culverts which appear to drain the adjacent fields.

ST-02 was not mapped by any public resource and appeared to be an ephemeral channel. ST-02 was identified as a small, unnamed, ephemeral stream draining towards Fairchilds Creek. Vegetation of the stream channel was not indicative of wetland vegetation as ST-02 was an area draining cropland and was largely characterized as located in a denuded area. No open waterbodies or wetland hydrology indicators were observed within the Project Area. **Table 3** details the streams delineated within the Project Area.

Table 3 – Field Delineated Streams with the Project Area

	ST-01	ST-02	Total Delineated within Project Area
Length (ft)	3,766.4	1,633.9	**5,400.3**
Width (ft)	2-10	2-3	**--**
Acres (ac)	0.43	0.09	**0.52**
Jurisdictional Status[1]	Jurisdictional	Jurisdictional	--

[1]Jurisdictional status determinations are based on Stantec's understanding the current regulatory guidance; however, the ultimate decision on the jurisdictional status of features rests with the USACE.

4.0 CONCLUSIONS

Stantec completed a WOUS delineation of the Project Area in Fort Bend County, Texas. The purpose and objective of the delineation was to identify potentially jurisdictional features within the Project Area.

The information provided by Stantec regarding potentially jurisdictional features under Section 404 of the Clean Water Act is a scientifically-based analysis of the hydrologic features, wetland, and upland conditions present on the site at the time of the fieldwork and on Stantec's understanding of the current regulatory guidance for WOUS. The ultimate decision on jurisdictional WOUS rests with the USACE. As a result, there could be adjustments to boundaries based upon review by a regulatory agency. An agency determination can vary from time to time depending on various factors including, but not limited to, updates to regulatory definitions and regional considerations. In addition, the physical characteristics of the site can change over time, depending on weather, vegetation patterns, drainage activities on adjacent parcels, or other events. These factors can change the nature and extent of the features identified on the site.

Based upon the findings of this delineation and Stantec's understanding of the current regulatory guidance, impacts to the field delineated streams may require permitting under Section 404 of the Clean Water Act. However, if impacts to the field delineated streams are avoided, permitting would not likely be required under Section 404 of the Clean Water Act (Appendix E).

5.0 REFERENCES

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APPENDICES

Stantec

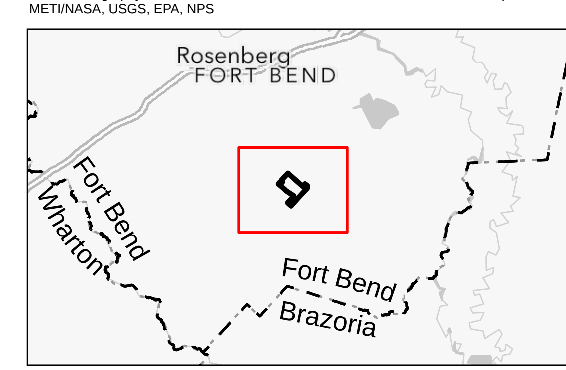
Legend

Project Area

0 0.5 1 Miles

(At original document size of 11x17)
1:

Notes
1. Coordinate System: NAD83 Texas S. Central
2. Data Sources: Cutlass Solar II LLC
3. Background: Human Geography Label: Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS
World Navigation Map: Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA
Human Geography Detail: Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS



Project Location

FORT BEND COUNTY, TX

Prepared by SKW on 2021-08-13
Reviewed by CM on 2021-08-13
Reviewed by JC on 2021-08-13

Client/Project

Cutlass Solar II LLC
Cutlass Solar II Project
Waters of the United States Delineation

Figure No.

1

Title

Project Location Map

Stantec

Legend

Project Area

0 0.25 0.5 Miles

(At original document size of 11x17)

1:

Notes
1. Coordinate System: NAD83 Texas S. Central
2. Data Sources: Cutlass Solar II LLC
3. Background: World Imagery (Firefly): Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Human Geography Label: Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS
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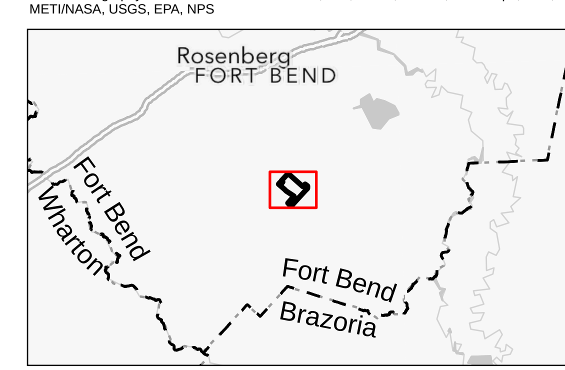


Project Location

FORT BEND COUNTY, TX

Prepared by SKW on 2021-08-13
Reviewed by CM on 2021-08-13
Reviewed by JC on 2021-08-13

Client/Project

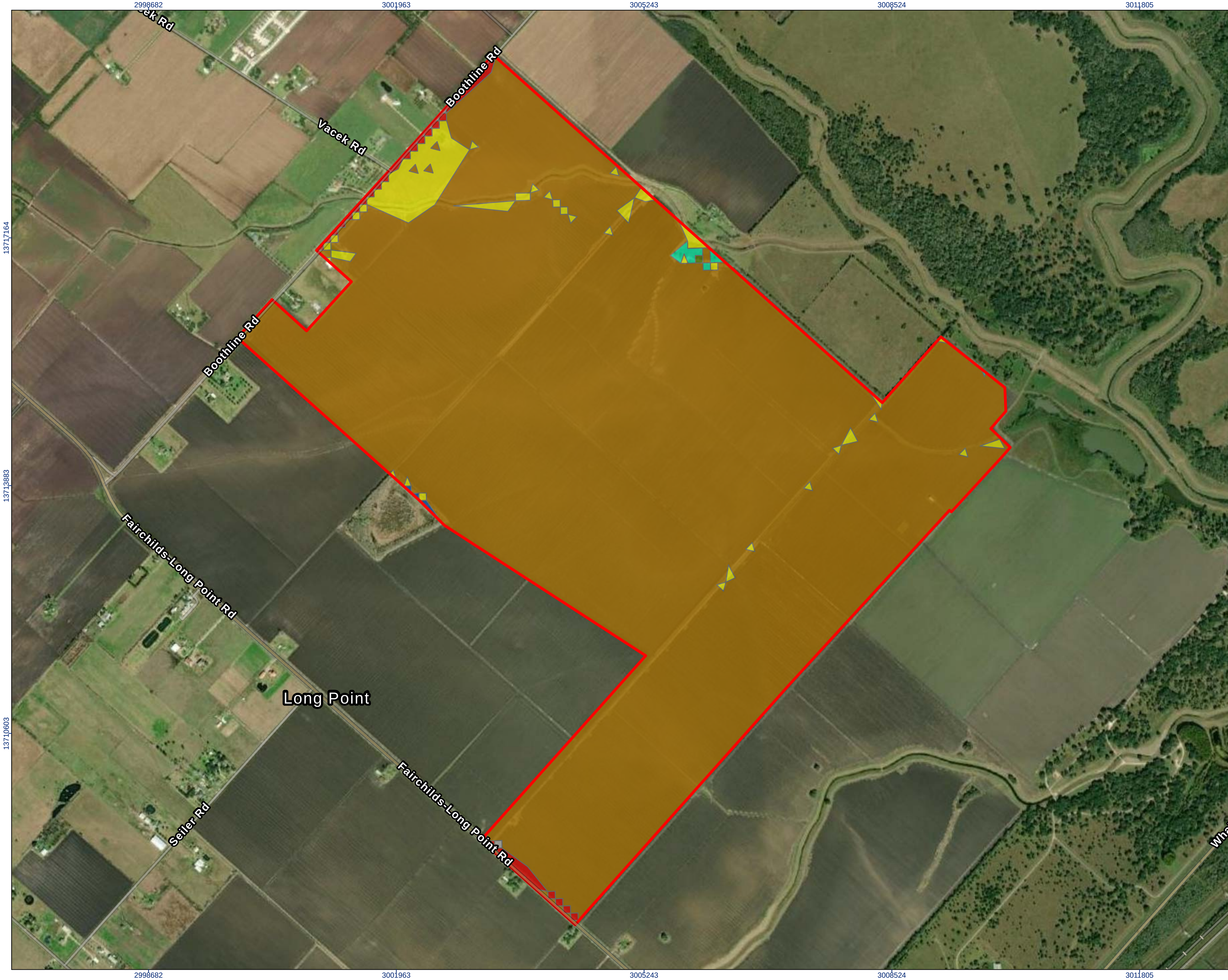
Cutlass Solar II LLC
Cutlass Solar II Project
Waters of the United States Delineation

Figure No.

2

Title

Aerial Orthophotography Map



Stantec

Legend

- Project Area
- USGS GAP/LANDFIRE National Terrestrial Ecosystems Data
- Land Cover Classification
- Cultivated Cropland
- Deciduous Plantations
- Developed, High Intensity
- Developed, Low Intensity
- Developed, Open Space
- Gulf and Atlantic Coastal Plain Swamp Systems
- Open Freshwater
- Pasture / Hay

0 0.25 0.5 Miles

(At original document size of 11x17)
1:

Notes
1. Coordinate System: NAD83 Texas S. Central
2. Data Sources: Cutlass Solar II LLC and the USGS National Land Cover Dataset
3. Background: World Imagery (Firefly): Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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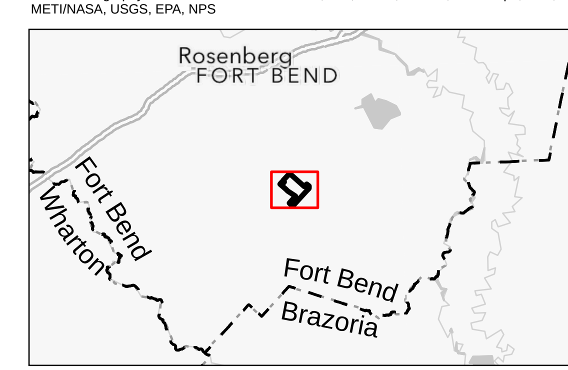


Project Location

FORT BEND COUNTY, TX

Prepared by SKW on 2021-08-13
Reviewed by CM on 2021-08-13
Reviewed by JC on 2021-08-13

Client/Project

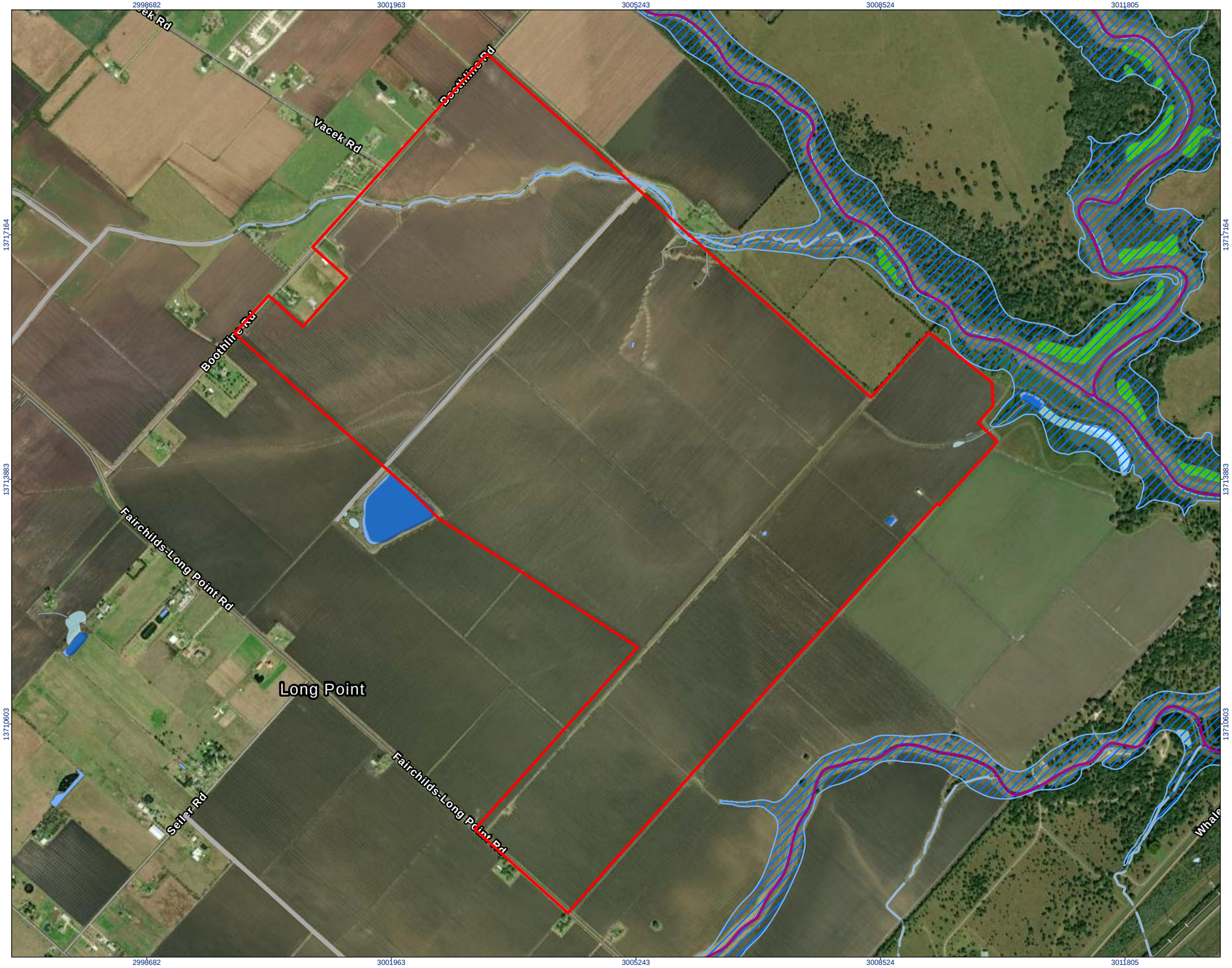
Cutlass Solar II LLC
Cutlass Solar II Project
Waters of the United States Delineation

Figure No.

3

Title

USGS GAP/LANDIRE National Terrestrial Ecosystems Data Map



Stantec

Legend

- Project Area
- FEMA Regulatory Floodplain: Zone A

NWI Wetland

Wetland Type

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

NHD Waterbody

Waterbody Type

- Lake / Pond

NHD Stream

Stream Type

- Canal / Ditch
- Intermittent
- Artificial Path

0 0.25 0.5 Miles

(At original document size of 11x17)

1:

Notes

1. Coordinate System: NAD83 Texas S. Central
2. Data Sources: Cutlass Solar II LLC, the USGS NHD, the USFWS NWI, and the FEMA FIRM
3. Background: World Imagery (Firefly): Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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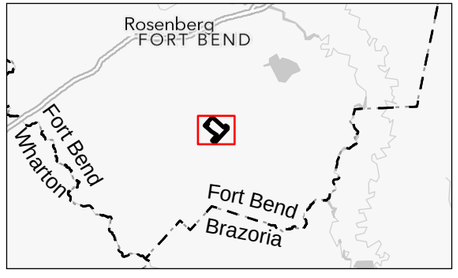
Human Geography Detail: Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS



Project Location

FORT BEND COUNTY, TX

Prepared by SKW on 2021-08-13
Reviewed by CM on 2021-08-13
Reviewed by JC on 2021-08-13

Client/Project

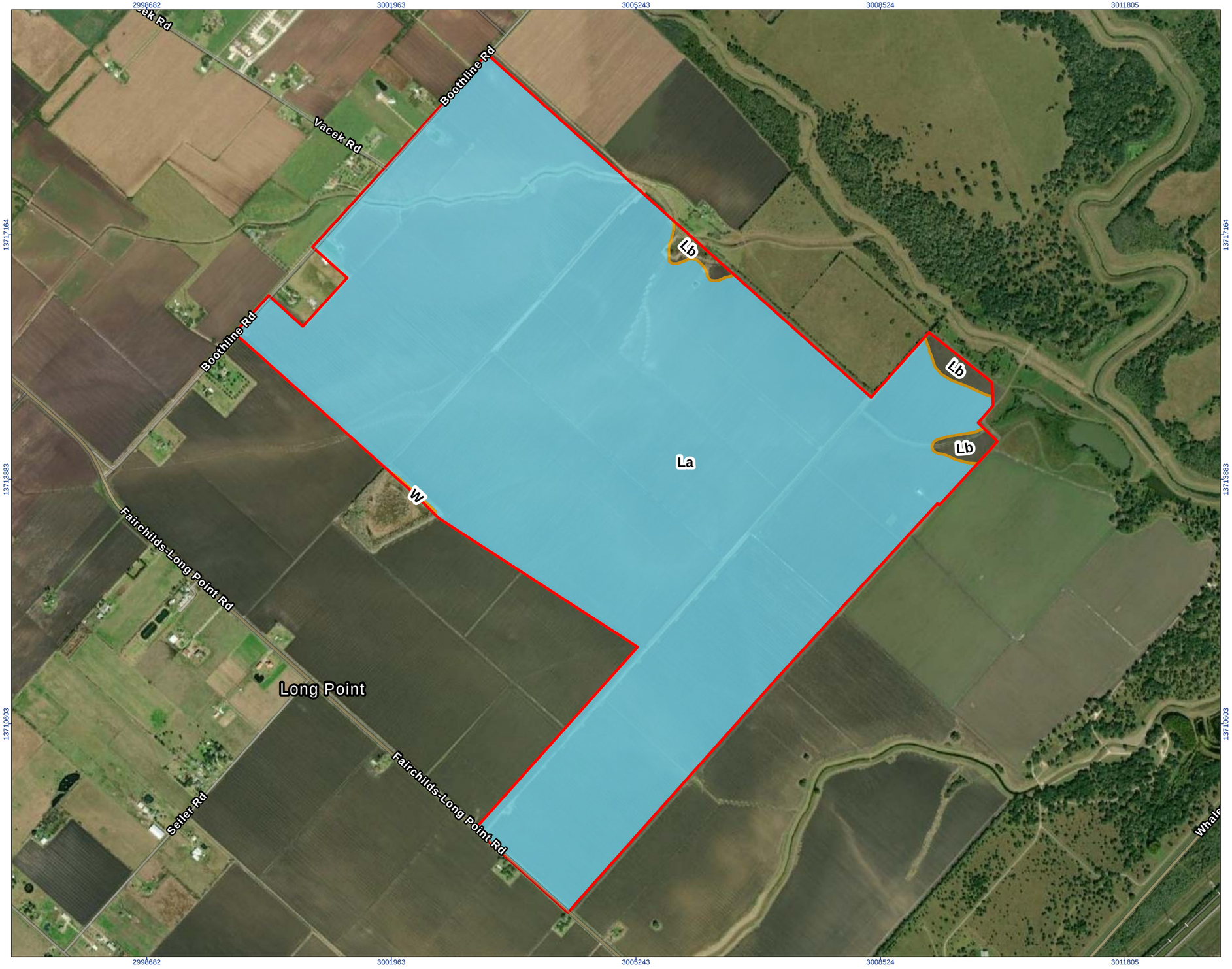
Cutlass Solar II LLC
Cutlass Solar II Project
Waters of the United States Delineation

Figure No.

4

Title

NHD, NWI, and FEMA Map



Stantec

Legend

- Project Area

NRCS Web Soil Survey Data

Hydric Soil Rating

- Hydric
- Not Hydric

0 0.25 0.5 Miles

(At original document size of 11x17)

1:

Notes

1. Coordinate System: NAD83 Texas S. Central
2. Data Sources: Cutlass Solar II LLC and the NRCS Web Soil Survey
3. Background: World Imagery (Firefly): Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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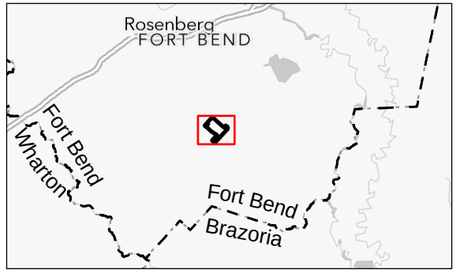

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Reviewed by JC on 2021-08-13

Client/Project

Cutlass Solar II LLC
Cutlass Solar II Project
Waters of the United States Delineation

Figure No.

5

Title

NRCS Web Soil Survey Data Map

Stantec

Legend

- Project Area
- Sampling Point

Field Delineated Stream

Stream Type

- Ephemeral
- Intermittent

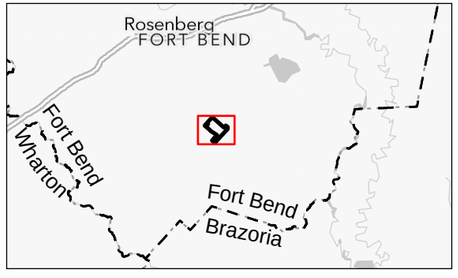
0 0.25 0.5 Miles

(At original document size of 11x17)

1:

Notes

1. Coordinate System: NAD83 Texas S. Central
2. Data Sources: Cutlass Solar II LLC and Stantec Collected Data
3. Background: World Imagery (Firefly): Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Human Geography Label: Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS
Human Geography Detail: Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS



Project Location

FORT BEND COUNTY, TX

Prepared by SKW on 2021-08-13
Reviewed by CM on 2021-08-13
Reviewed by JC on 2021-08-13

Client/Project

Cutlass Solar II LLC
Cutlass Solar II Project
Waters of the United States Delineation

Figure No.

6

Title

Field Investigation Map

Appendix A MAP FIGURES

Appendix B PHOTOGRAPHIC LOG

Stantec

Legend

- Project Area
- Photographic Log Point

$ ($

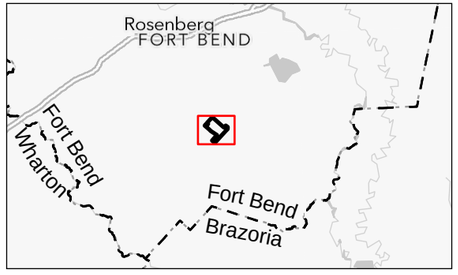
0 0.25 0.5 Miles

(At original document size of 11x17)

1:

Notes

1. Coordinate System: NAD83 Texas S. Central
2. Data Sources: Cutlass Solar II LLC
3. Background: World Imagery (Firefly): Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Human Geography Label: Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS
Human Geography Detail: Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS



Project Location

FORT BEND COUNTY, TX

Prepared by SKW on 2021-08-13
Reviewed by CM on 2021-08-13
Reviewed by JC on 2021-08-13

Client/Project

Cutlass Solar II LLC
Cutlass Solar II Project
Waters of the United States Delineation

Figure No.

Appendix B

Title

Photographic Log Map

Stantec

Photographic Log

Client:	**Cutlass Solar II LLC**	**Project:**	**Waters of the United States Delineation**
Project Name:	**Cutlass Solar II Project**	**Project Location:**	**Fort Bend County, Texas**

Photograph ID: 1

Photo Location:
Sampling Point 1

Direction:
NE

Survey Date:
7/24/2019

Comments:
Representative view of an upland herbaceous point taken within the Project Area.

Photograph ID: 2

Photo Location:
ST-01

Direction:
E

Survey Date:
7/25/2019

Comments:
Downstream view of ST-01, an intermittent stream.

Client:	**Cutlass Solar II LLC**	**Project:**	**Waters of the United States Delineation**
Project Name:	**Cutlass Solar II Project**	**Project Location:**	**Fort Bend County, Texas**

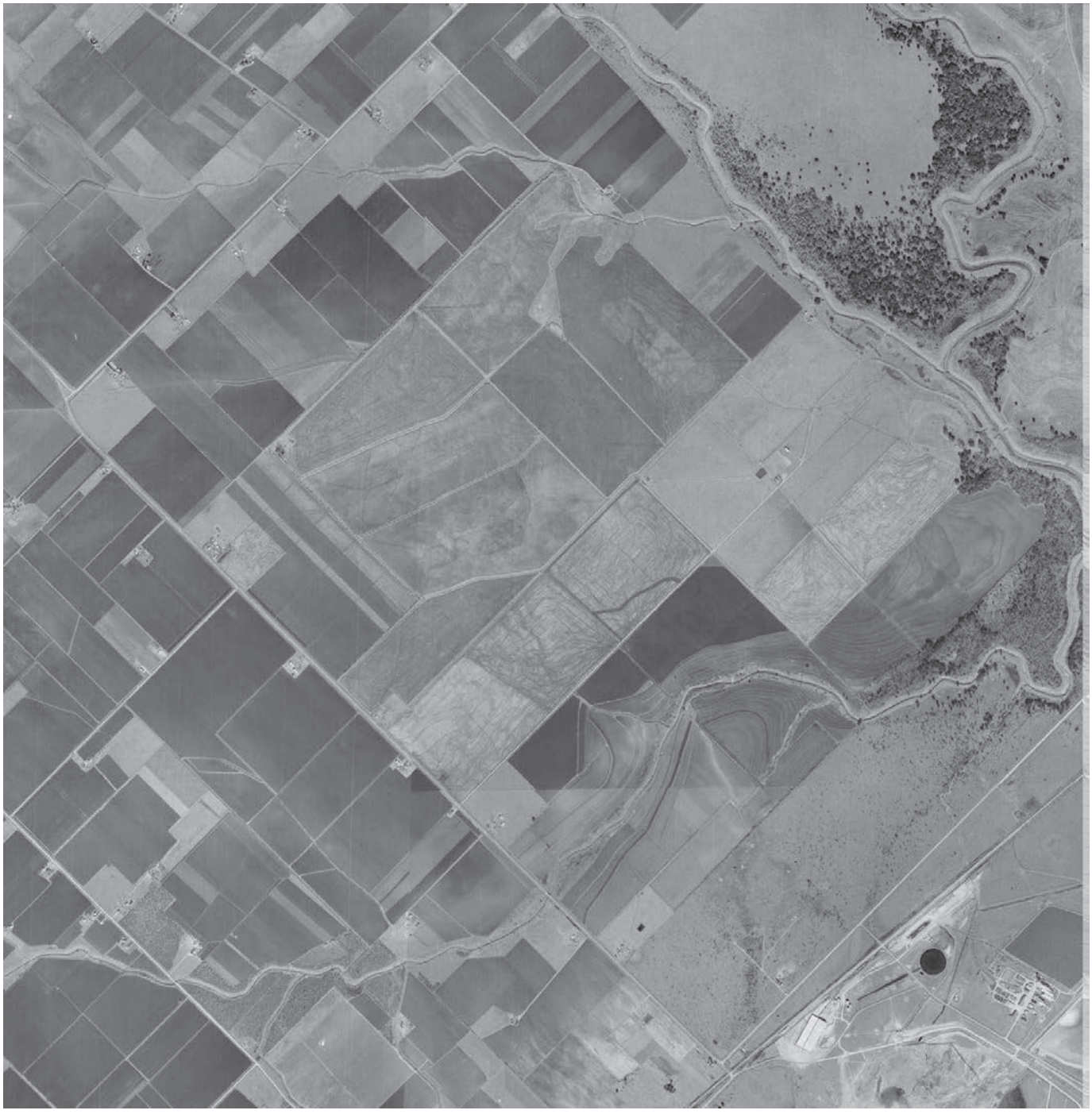
Photograph ID: 3 **Photo Location:** ST-01 **Direction:** NW **Survey Date:** 7/25/2019 **Comments:** Upstream view of ST-01, an intermittent stream.	
Photograph ID: 4 **Photo Location:** ST-01 **Direction:** SE **Survey Date:** 7/25/2019 **Comments:** Downstream view of ST-01, an intermittent stream.	

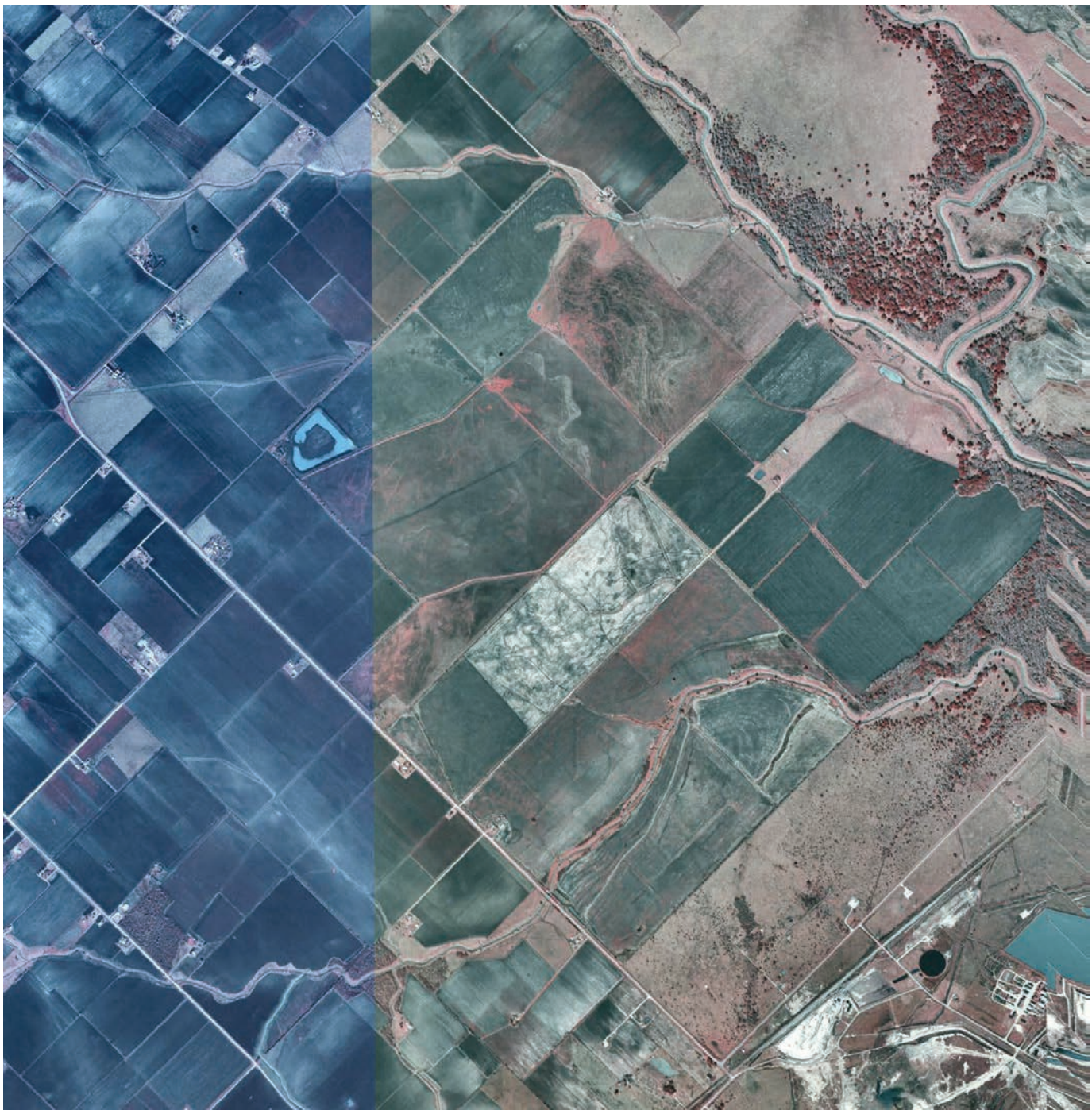
Client:	**Cutlass Solar II LLC**	**Project:**	**Waters of the United States Delineation**
Project Name:	**Cutlass Solar II Project**	**Project Location:**	**Fort Bend County, Texas**

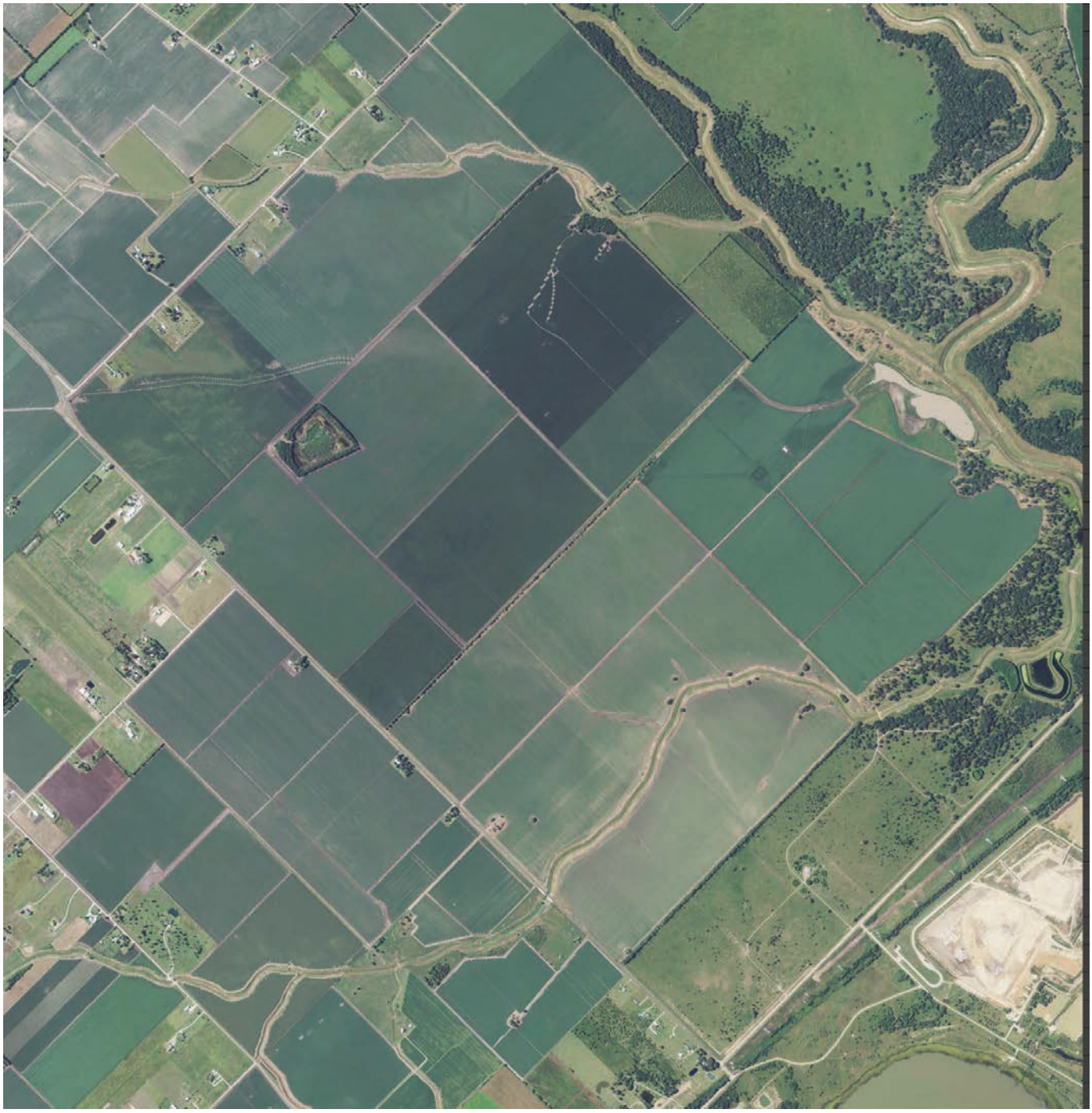
Photograph ID: 5 **Photo Location:** ST-02 **Direction:** SW **Survey Date:** 7/25/2019 **Comments:** Upstream view of ST-02, an ephemeral stream. Representative view of the stream flowing northeast. Picture was taken on the Project boundary, facing southwest into the Project Area.	
Photograph ID: 6 **Photo Location:** ST-02 **Direction:** NE **Survey Date:** 7/25/2019 **Comments:** Downstream view of ST-02, an ephemeral stream. Representative view of the stream flowing northeast, out of the Project Area. Picture was taken on the Project boundary, facing northeast outside of the Project Area.	

Appendix C HISTORICAL AERIAL IMAGERY


CLC-4







Appendix D WETLAND DETERMINATION FORMS

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Cutlass Solar II Project City/County: Fort Bend County Sampling Date: 07/25/2019

Applicant/Owner: Cutlass Solar II LLC State: TX Sampling Point: Sampling Point 1

Investigator(s): Sunico, S. Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Culvert/Ditch Local relief (concave, convex, none): Concave Slope (%): 3-5%

Subregion (LRR or MLRA): LRR P, MLRA 133A Lat: 29.4256 Long: -95.7417 Datum: NAD83

Soil Map Unit Name: Lake Charles Clay (La) NWI classification: None

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

Are Vegetation ____, 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Wetland hydrology and hydrophytic vegetation are absent. Hydric soils are present, however, this point is not considered a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

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

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: Sampling Point 1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 feet)			
1. *Cynodon dactylon*	100	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 =Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: Sampling Point 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/1	98	10YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 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 (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X 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)**
- X 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 Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ 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** X **No** ___

Remarks:

Appendix E ADDENDUM

Stantec

Addendum

Stantec Consulting Services Inc.
910 Louisiana Street Suite 2600
Houston TX 77002-4916

File:	225600145
Addendum No:	1 – Attachment E to the Waters of the United States Delineation Report for the Cutlass Solar II Project, Fort Bend County, Texas (Dated August 12, 2019, and Revised September 30, 2021)
Date:	September 30, 2021
	Revised: February 2, 2022
Owner:	Cutlass Solar II LLC
Contract No.	NA

This addendum is to be read with and constitutes part of the tender document.

Following the completion of the preceding Waters of the United States (WOUS) Delineation Report for the Cutlass Solar II Project (Project), prepared on August 12, 2019, and revised on September 30, 2021, Stantec Consulting Services (Stantec) and Cutlass Solar II LLC (Client) had several phone conversations in which strategies to reduce impacts to the potentially jurisdictional features previously identified were discussed. In these discussions, Stantec and the Client discussed several permitting options including seeking coverage under the Nationwide Permit program (NWP) and notification thresholds associated with the NWP. A minimum setback of 50 feet from potentially jurisdictional WOUS features and FEMA 100-year regulatory floodplain was discussed with the Client to avoid impacts, with the exception of two fence locations, where a minimum 10-foot setback from potentially jurisdictional WOUS features will be applied for fence post installations.

In August 2021 and February 2022, the Client provided Stantec with a digital file depicting the Project boundary and constraints existing within the boundary of the Project and a water gap swing gate detail, respectively (attached). Based upon the hatched area shown as “Developable Area”, it appears that the Client will be setting back at least 50 feet from potentially jurisdictional features (ST-01 and ST-02) and the FEMA mapped regulatory 100-year floodplain identified in the preceding report. Additionally, based upon the water gap swing gate detail, a minimum setback of 10 feet, measured from the middle of the stream bed on either side, will be implemented along ST-01 where fence post installations are proposed. Given these setbacks, no impacts to potentially jurisdictional WOUS and the 100-year floodplain are anticipated to result from the Project and coordination with USACE Galveston District under Section 404 of the Clean Water Act or with the Fort Bend County Floodplain Administrator under the National Flood Insurance Program is not required.

Stantec Consulting Services Inc.

Colleen Moss
Environmental Scientist

Phone: (832)-612-9331

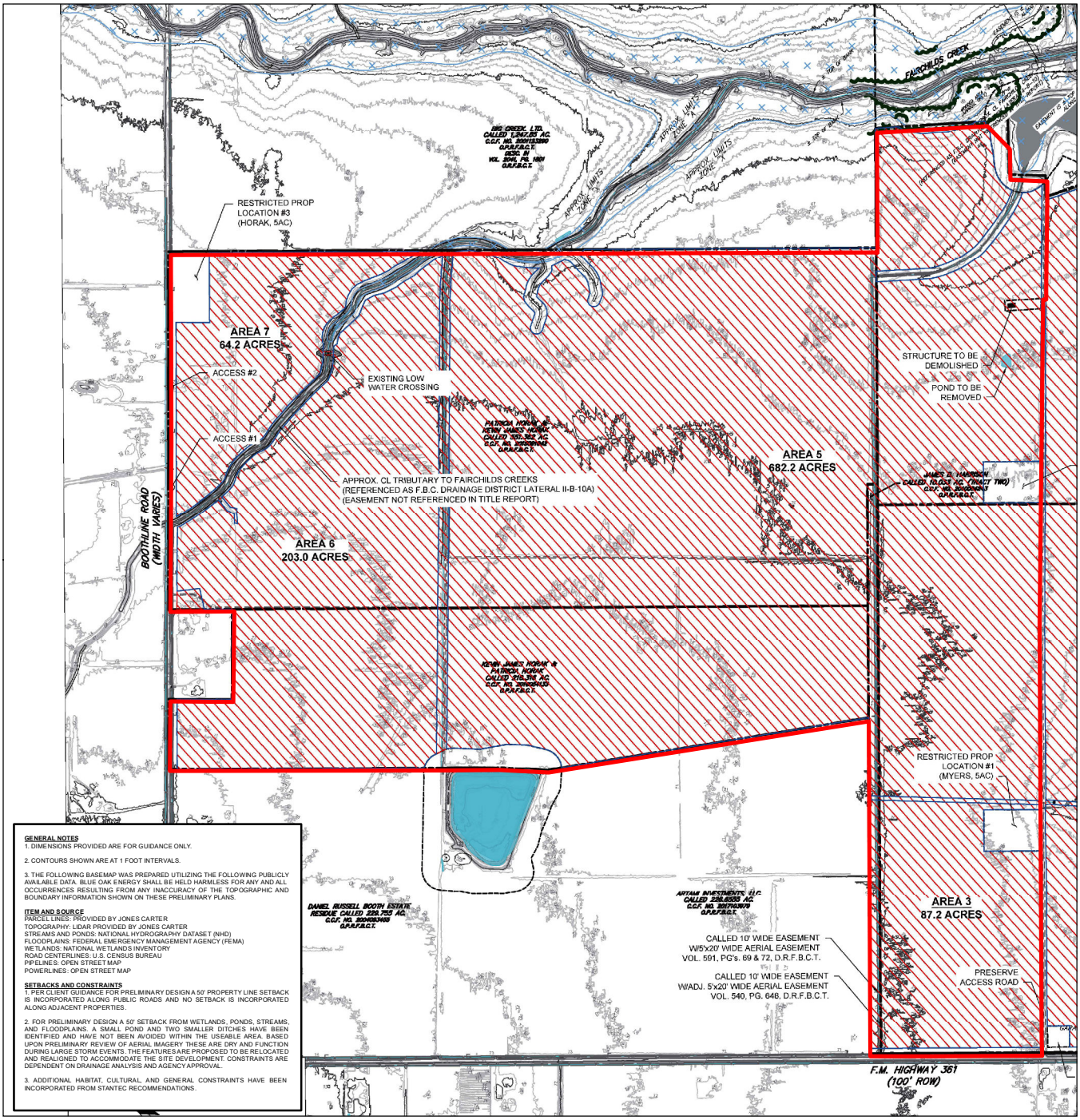
colleen.moss@stantec.com

Justin Casey
Senior Biologist

Phone: (850)-525-3755

justin.casey@stantec.com

Attachment: Existing Constraints Map and Water Gap Swing Gate Detail



GENERAL NOTES

1. DIMENSIONS PROVIDED ARE FOR GUIDANCE ONLY.

2. CONTOURS SHOWN ARE AT 1 FOOT INTERVALS.

3. THE FOLLOWING BASEMAP WAS PREPARED UTILIZING THE FOLLOWING PUBLICLY AVAILABLE DATA. BLUE OAK ENERGY SHALL BE HELD HARMLESS FOR ANY AND ALL OCCURRENCES RESULTING FROM ANY INACCURACY OF THE TOPOGRAPHIC AND BOUNDARY INFORMATION SHOWN ON THESE PRELIMINARY PLANS.

ITEM AND SOURCE

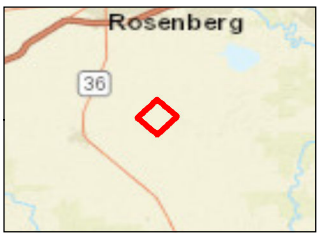
PARCEL LINES: PROVIDED BY JONES CARTER
TOPOGRAPHY: LIDAR PROVIDED BY JONES CARTER
STREAMS AND PONDS: NATIONAL HYDROGRAPHY DATASET (NHD)
FLOODPLAINS: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)
WETLANDS: NATIONAL WETLANDS INVENTORY
ROAD CENTERLINES: U.S. CENSUS BUREAU
PIPELINES: OPEN STREET MAP
POWERLINES: OPEN STREET MAP

SETBACKS AND CONSTRAINTS

1. PER CLIENT GUIDANCE FOR PRELIMINARY DESIGN A 50' PROPERTY LINE SETBACK IS INCORPORATED ALONG PUBLIC ROADS AND NO SETBACK IS INCORPORATED ALONG ADJACENT PROPERTIES.

2. FOR PRELIMINARY DESIGN A 50' SETBACK FROM WETLANDS, PONDS, STREAMS, AND FLOODPLAINS. A SMALL POND AND TWO SMALLER DITCHES HAVE BEEN IDENTIFIED AND HAVE NOT BEEN AVOIDED WITHIN THE USEABLE AREA. BASED UPON PRELIMINARY REVIEW OF AERIAL IMAGERY THESE ARE DRY AND FUNCTION DURING LARGE STORM EVENTS. THE FEATURES ARE PROPOSED TO BE RELOCATED AND REALIGNED TO ACCOMMODATE THE SITE DEVELOPMENT. CONSTRAINTS ARE DEPENDENT ON DRAINAGE ANALYSIS AND AGENCY APPROVAL.

3. ADDITIONAL HABITAT, CULTURAL, AND GENERAL CONSTRAINTS HAVE BEEN INCORPORATED FROM STANTEC RECOMMENDATIONS.



LEGEND

- PARCEL LINE
- STREAM
- WATER FEATURE
- FEMA ZONE A
- WETLAND
- STREET
- MAJOR CONTOUR (5FT)
- MINOR CONTOUR (1FT)
- OVERHEAD POWER LINE
- GAS PIPE LINE
- (E) TREELINE
- HABITAT SETBACK
- DEVELOPABLE AREA
- PREFERRED USABLE AREA
- CUTLASS SOLAR II PROJECT BOUNDARY

0 1,000 2,000 Feet

(At original document size of 8.5x11)
1:18,000

N

Stantec

Project Location	Prepared by JPA on 2021-09-21
Fort Bend County	TR by ABC on 2019-01-01
Texas	IR Review by ABC on 2019-01-01
Client/Project	225600145

Cutlass Solar II LLC
Cutlass Solar II

Figure No.
1

DRAFT

Title
Existing Constraints Map

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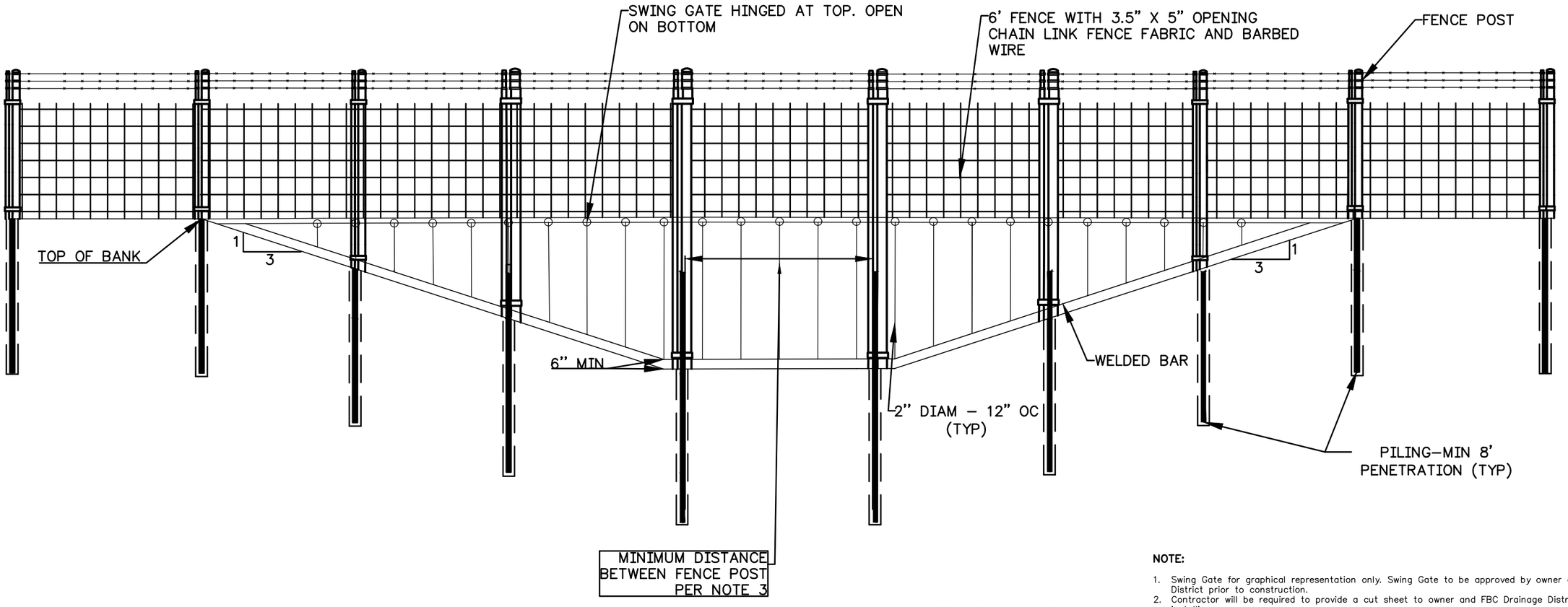

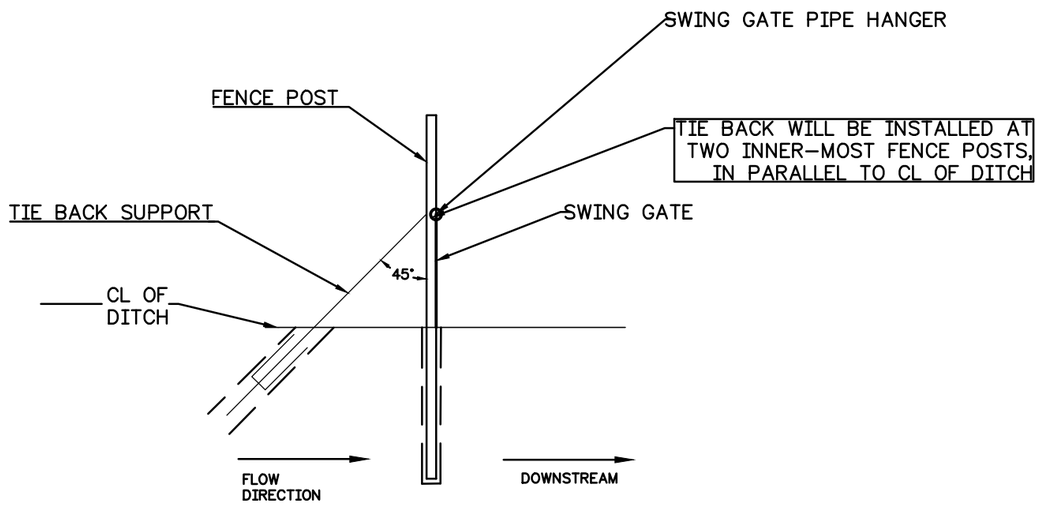

NOTE:

1. Swing Gate for graphical representation only. Swing Gate to be approved by owner and Drainage District prior to construction.
2. Contractor will be required to provide a cut sheet to owner and FBC Drainage District prior to installing.
3. Two inner–most fence posts and associated tie back supports to be installed no less than 10 feet from the outer edges of the stream (ST–01) identified wetlands report. ST–01 position/width to be field verified at fence crossing locations.

WATER GAP SWING GATE DETAIL

N.T.S.

CUTLASS SOLAR II PROJECT

WATER GAP SWING GATE AT FAIRCHILDS LATERAL

NTS

JONES | CARTER
Texas Board of Professional Engineers Registration No. F-439
2322 W Grand Parkway North, Suite 150, Katy, TX 77449-7821 (832) 913-4000