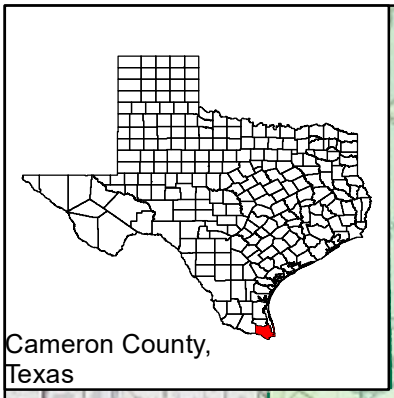
Recd 15 June 2022

SWG-2022-00420



Lower Laguna Madre

Laguna Atascosa National Wildlife Refuge

Project Area

Laguna Larga

Laguna Madre

Bahia Grande

FNI PROJECT NUMBER	DKS19606
DATE CREATED	Date: 7/9/2021
DATUM & COORDINATE SYSTEM	NAD 1983 2011 StatePlane Texas South FIPS 4205 Ft US
FILE NAME	1_Vicinity
PREPARED BY	02588

FREESE AND NICHOLS, INC.
10431 MORADO CIRCLE
SUITE 300
AUSTIN, TEXAS 78759
PHONE: 512-617-3100
FAX: 512-617-3101

Ducks Unlimited, Inc.
Bahia Grande Wetland System Restoration Project

Vicinity Map

N W E S

FIGURE 1

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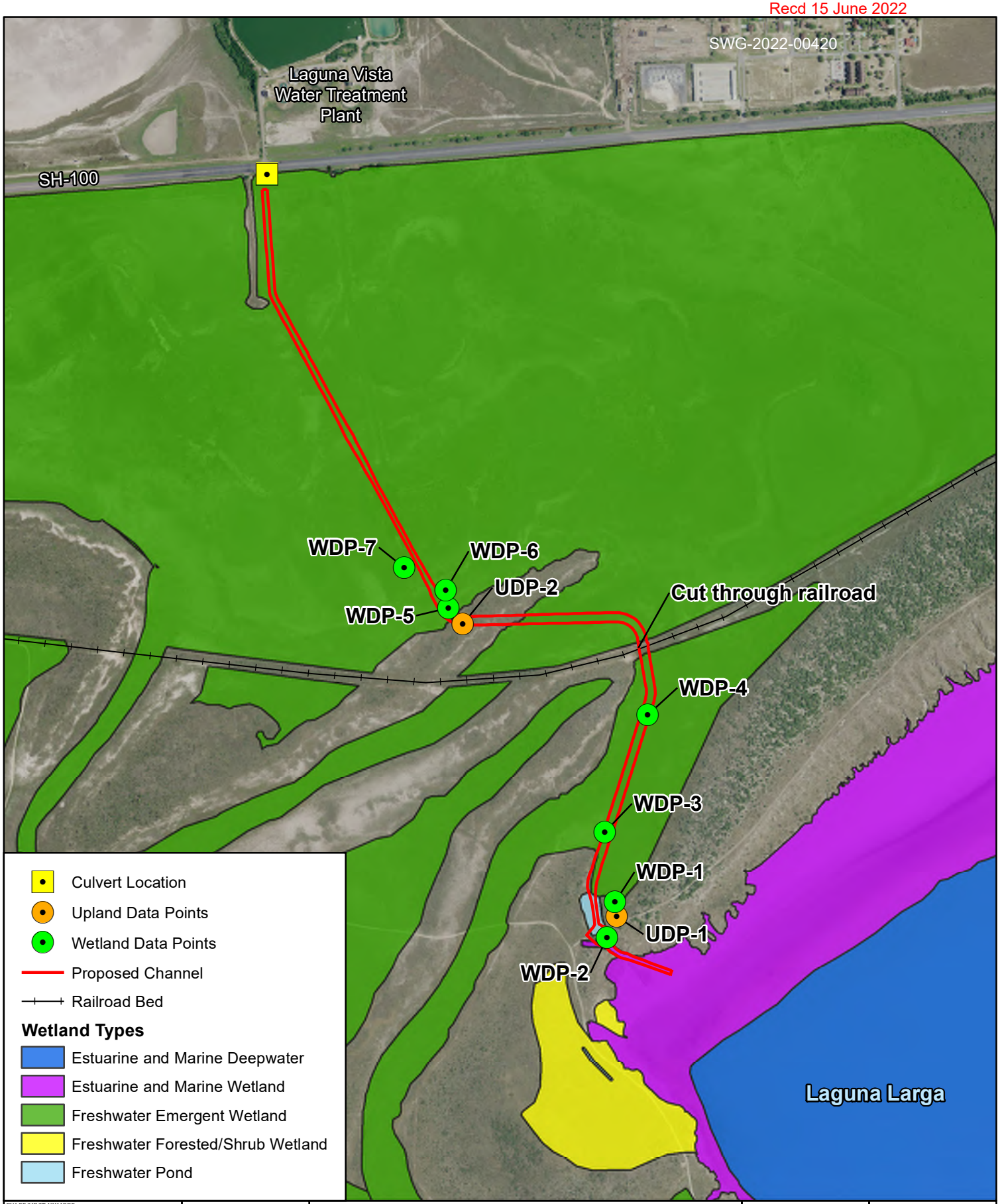
Recd 15 June 2022



FNI PROJECT NUMBER	DKS19606
DATE CREATED	Date: 4/14/2022
DATUM & COORDINATE SYSTEM	NAD 1983 2011 StatePlane Texas South FIPS 4205 Ft US
FILE NAME	2_Project Components and WOTUS
PREPARED BY	02588

FREESE NICHOLS
FREESE AND NICHOLS, INC.
10431 MORADO CIRCLE
SUITE 300
AUSTIN, TEXAS 78759
PHONE: 512-617-3100
FAX: 512-617-3101

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Bahia Grande Wetland System Restoration Project

Project Components & WOTUS

N W E S

FIGURE 2

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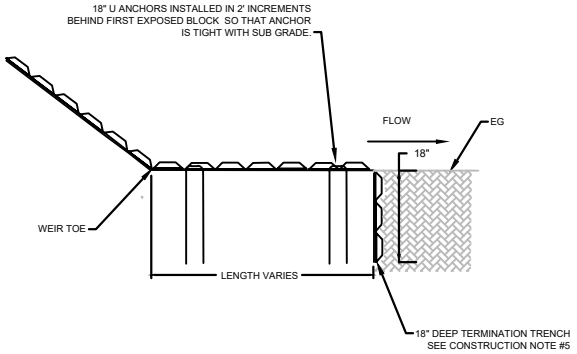
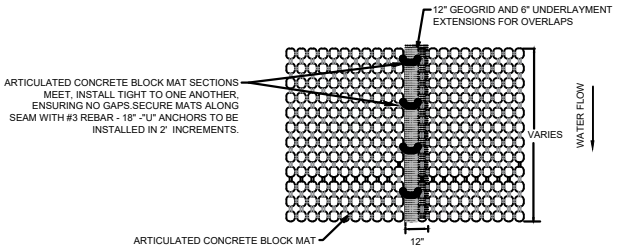
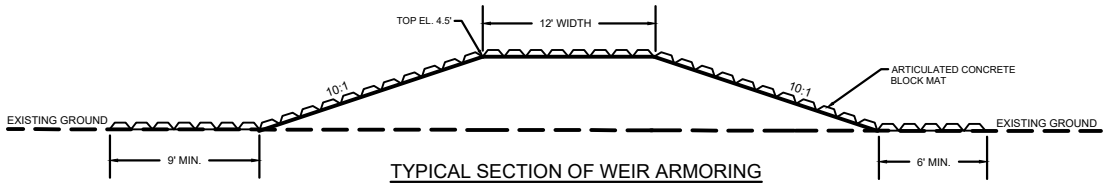
SWG-2022-00420



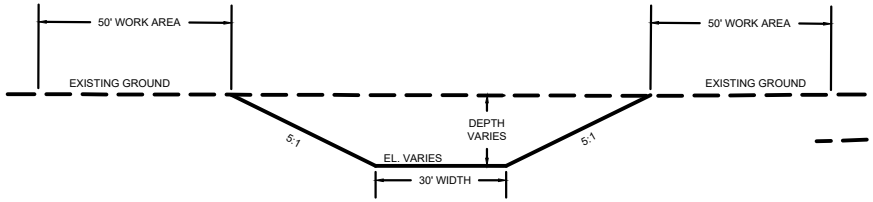
ARTICULATED CONCRETE BLOCK MAT WEIR TERMINATION TRENCH DETAIL



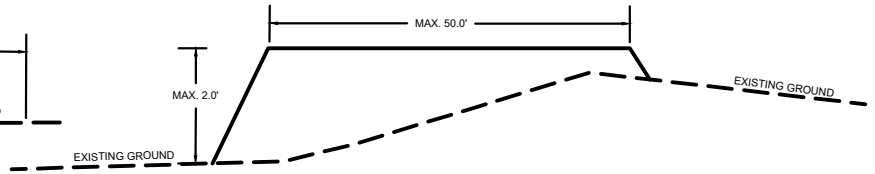
PLAN VIEW - LONGITUDINAL SEAMS FOR MAT LAYOUT PARALLEL TO FLOW



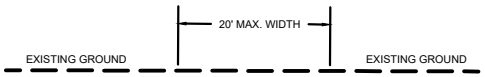
TYPICAL SECTION OF WEIR ARMORING
NOT TO SCALE



TYPICAL SECTION OF DITCH
NOT TO SCALE



TYPICAL SECTION OF SPOIL DEPOSITION AREA
NOT TO SCALE



TYPICAL SECTION OF ACCESS ROUTE
NOT TO SCALE

CONSTRUCTION NOTES

1. ALL SUBGRADE SURFACES PREPARED FOR PLACEMENT OF MATS SHALL BE SMOOTH AND FREE OF ALL ROCKS, STICKS, ROOTS, OTHER PROTRUSIONS, OR DEBRIS OF ANY KIND. THE PREPARED SURFACE SHALL PROVIDE A FIRM UNYIELDING SUBGRADE FOR THE MATS WITH NO SHARP OR ABRUPT BREAKS IN THE GRADE.
2. ENGINEER RECOMMENDS INSTALLING THE WIDEST MATS POSSIBLE FOR SPILLWAY APPLICATIONS.
3. MAT SHALL EXTEND 4' PAST UPSTREAM AND DOWNSTREAM WEIR TOE.

3.1. FOR WIDTHS WIDER THAN 16', INSTALL MATS WITH THE GEOGRID AND UNDERLAYMENT EXTENSION ADJACENT TO ONE ANOTHER.

3.2. SECURE OVERLAP SEAM BY INSTALLING 18" U-ANCHORS IN 2' INCREMENTS THE LENGTH OF THE SEAM. U-ANCHORS CONSIST OF #3 REBAR, SHAPED INTO A U WITH 18" LEGS.

4. AT THE END OF THE ARMORED CHANNEL, EMBED THE MAT 18" IN A TERMINATION TRENCH. FILL AND COMPACT TERMINATION TRENCH WITH SUITABLE FILL.
5. CRUSHED STONE BASE SHALL BE WELL GRADED STONE WITH A D50 OF 6" WITH NO ROCKS BEING LARGER THAN 8"
6. GEOTEXTILE SEAMS SHALL OVERLAP A MINIMUM OF 18"
7. GEOTEXTILE SHALL BE CLASS I NON-WOVEN GEOTEXTILE FABRIC WITH A MINIMUM WEIGHT OF 10 OZ/SQ. YD.
8. GEOGRID AND UNDERLAYMENT FUSED INTO TIED CONCRETE BLOCK MAT

WETLAND TEMPORARY IMPACTS		
ITEM/TYPE	QUANTITY	UNIT
WORK AREA		
FRESHWATER EMERGENT WETLAND	657,023	S.F.
FRESHWATER POND	2,101	S.F.
ESTUARINE AND MARINE WETLAND	9,378	S.F.
ACCESS ROUTES		
FRESHWATER EMERGENT WETLAND	102,237	S.F.

WETLAND PERMANENT IMPACTS		
ITEM/TYPE	QUANTITY	UNIT
DITCH FOOTPRINT		
FRESHWATER EMERGENT WETLAND	364,394	S.F.
FRESHWATER POND	15,757	S.F.
ESTUARINE AND MARINE WETLAND	26,763	S.F.
NON-WETLAND	61,401	S.F.
DITCH VOLUME	35,818	C.Y.
MODIFIED HYDROLOGY	3,949,646	S.F.

PROJECT NUMBER: DU-TX-20-9

LAGUNA ATASCOSA - CHANNEL F

DETAILS & WETLAND IMPACTS

DATE: 2/22

DUCKS UNLIMITED INC.
SOUTHERN REGIONAL OFFICE
193 Business Park Drive; Suite E
Ridgeland, MS 39157
C.O.A. F-001112 EXPIRES: 9/30/22

SHEET NUMBER
11 OF 11