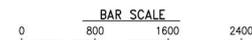
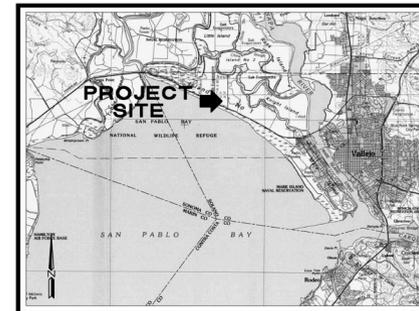


Figure 5 Vicinity Map

# CA-0119-010

## SAN PABLO BAY NWR, CULLINAN RANCH WETLANDS RESTORATION

### LONG TERM HABITAT MAP



HABITAT	MIN ELEVATION (NAVD)	MAX ELEVATION (NAVD)	COLOR
OPEN WATER	-8.52	-2.32 (MLLW)	■
MUD FLAT	-2.32 (MLLW)	-0.27*	■
SALT MARSH	-0.27*	3.54 (MHHW)	■
UPLAND	3.54 (MHHW)	10.00	■

\* HALFWAY BETWEEN MLW AND MTL

# CA-0119-010

## SAN PABLO BAY NWR, CULLINAN RANCH WETLANDS RESTORATION

### LONG TERM HABITAT MAP

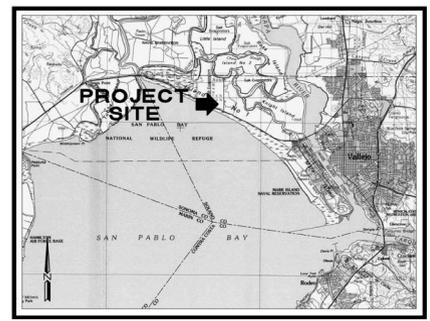
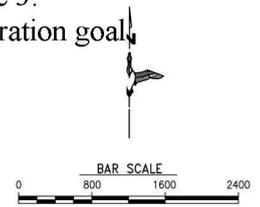


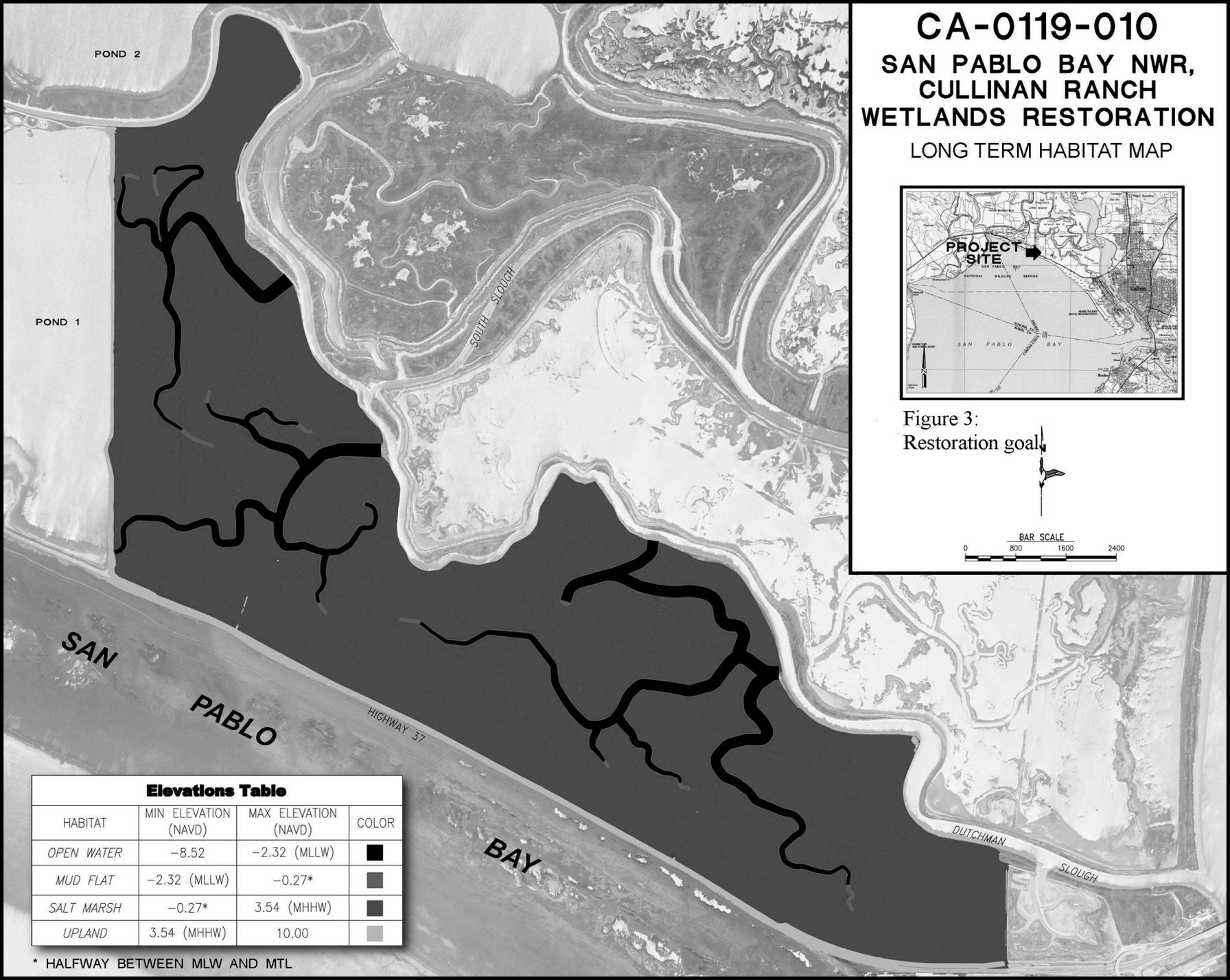
Figure 3:

Restoration goal



<b>Elevations Table</b>			
HABITAT	MIN ELEVATION (NAVD)	MAX ELEVATION (NAVD)	COLOR
OPEN WATER	-8.52	-2.32 (MLLW)	■
MUD FLAT	-2.32 (MLLW)	-0.27*	■
SALT MARSH	-0.27*	3.54 (MHHW)	■
UPLAND	3.54 (MHHW)	10.00	■

\* HALFWAY BETWEEN MLW AND MTL



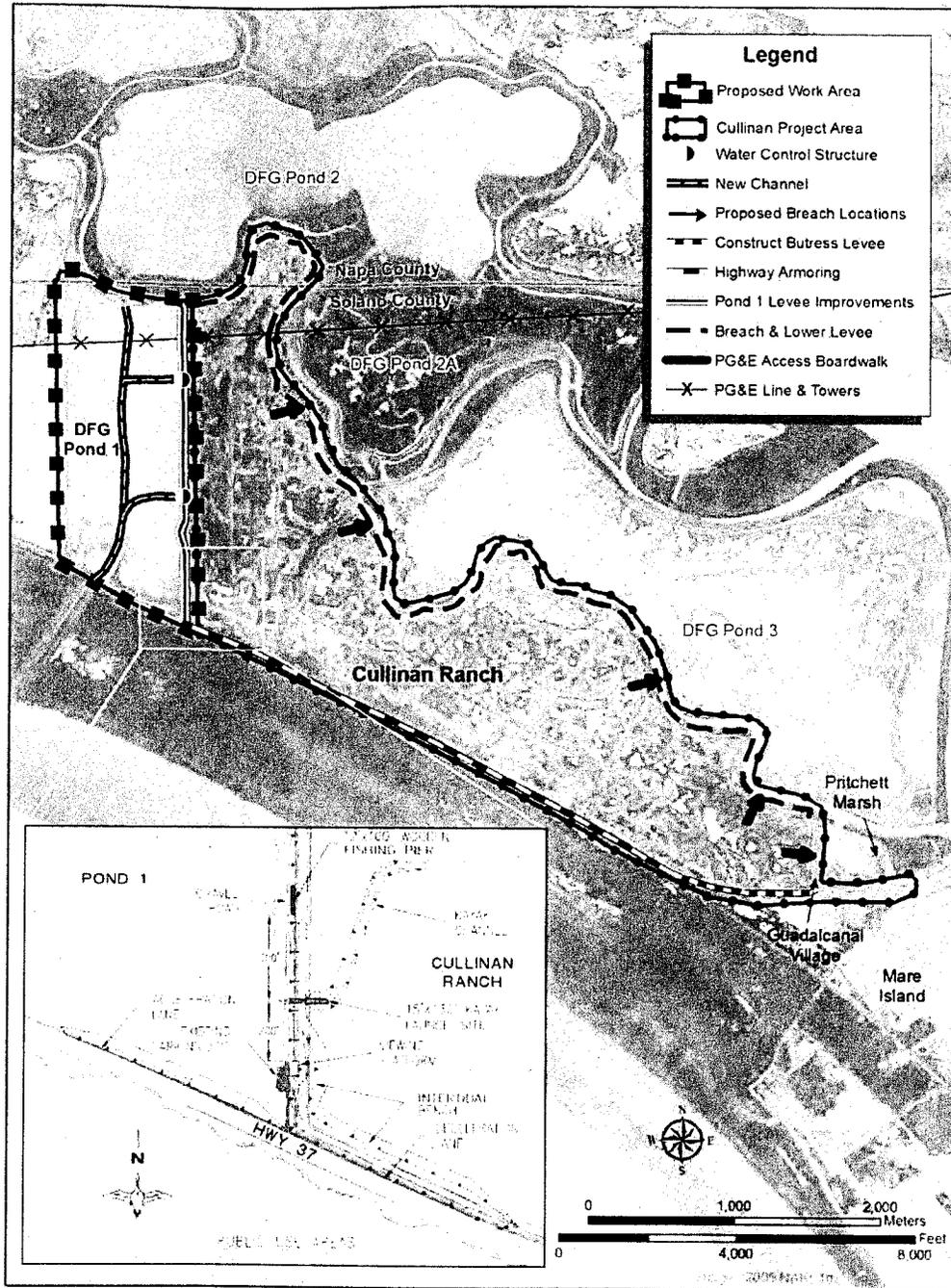
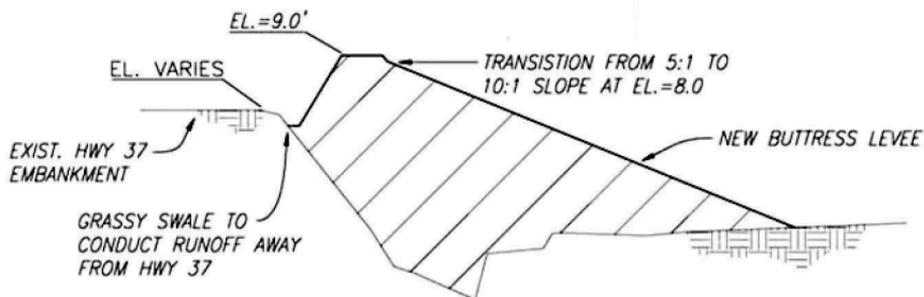


Figure 4: Location of levee breach (arrows)  
 Inset: Complete deceleration lane



**TYPICAL HIGHWAY 37 BUTTRESS LEVEE CROSS-SECTION**

APPLIED WHERE EDGE OF EXIST. HWY EMBANKMENT IS BELOW EL. 8.0' NGVD 29

NOT TO SCALE

\* Actual size and configuration of the drainage swale along Highway 37 will be determined in collaboration with Caltrans.

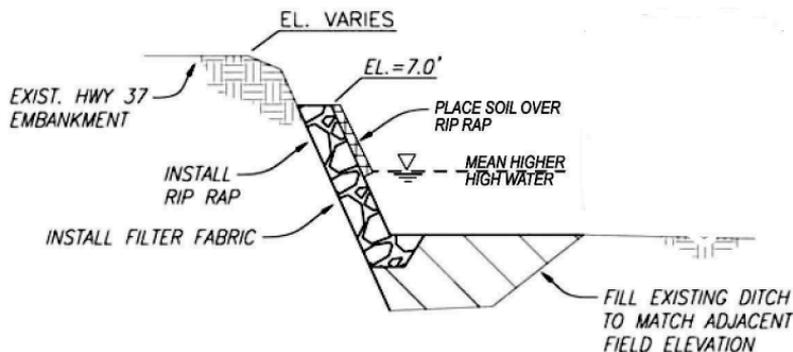


FIGURE 5:

**TYPICAL HIGHWAY 37 ARMORING CROSS-SECTION**

APPLIED WHERE EDGE OF EXIST. HWY EMBANKMENT IS AT EL. 8.0' NGVD 29 OR ABOVE

NOT TO SCALE

NOTE: Highway 37 Armoring will take place on FWS property, beyond Caltrans ROW.

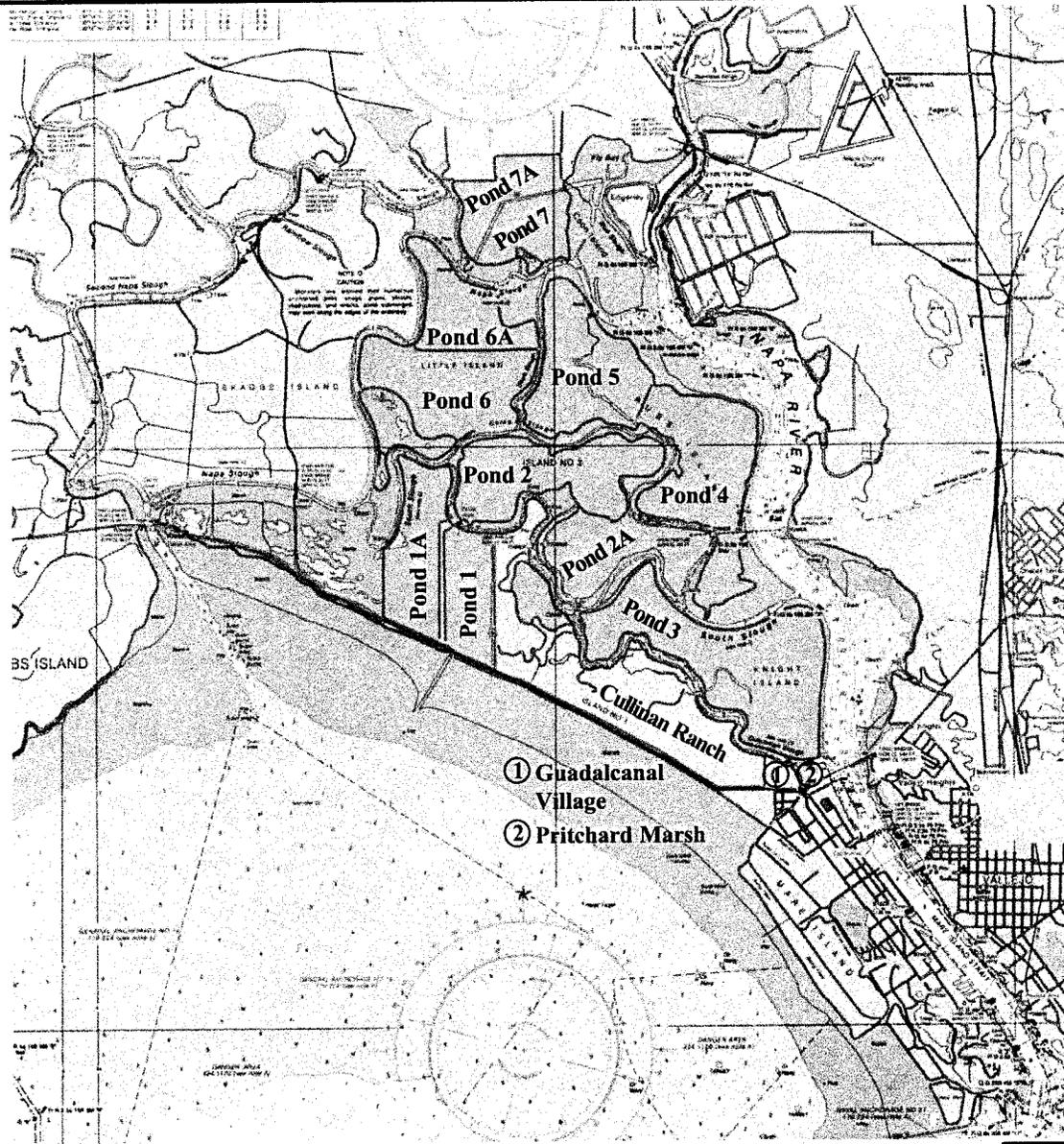


Figure 6 Map



Figure 7: Verified Section 10 Waters

Verified by USACE November 2008

JOB NAME: Cullinan Ranch - WD  
 SCALE: 1"=1000'  
 DATE: 21 JULY 2000  
 DRAWN BY: ASM/JT  
 FILE NAME: CH-102-REV.DWG

WATERS OF THE U.S. ACREAGE <sup>1</sup>

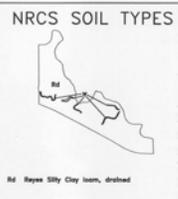
CLASSIFICATION	EXISTING ACREAGE
Historic Section 10	159.37
Total:	159.37

----- Mean High Water (2.84 ft (1929 NGVD))  
 - - - - - Project Boundary

NOTES

Draw project acreage as 1574

This exhibit depicts information and data produced in strict accord with the U.S. Army Corps of Engineers wetland delineation methods described in the 1987 Corps of Engineers Wetland Delineation Manual and conforms to specifications per the San Francisco Corps District. However, wetland boundaries have not been legally surveyed and may be subject to further adjustments if exact boundaries are required.



CULLINAN RANCH

WETLAND DELINEATION <sup>1</sup>

<sup>1</sup> Subject to U.S. Army Corps of Engineers verification

DATE: 21 JULY 2000	REVISION: 01/10/01	FILE NAME: CH-102-REV.DWG
DRAWN BY: ASM/JT	SCALE: 1"=1000'	PROJECT NO: 2000-054
CHECKED BY:	MSL: A-H	

WETLAND VERIFICATION LETTER DATE:

**ECORP Consulting, Inc.**  
 ENVIRONMENTAL CONSULTANTS

2260 Douglas Blvd., Suite 100  
 Roseville, CA 95661  
 Ph: (916) 782-0100

2100 Embarcadero, Suite 105  
 Oakland, CA 94606  
 Ph: (510) 434-0150

SHEET 1  
 OF 1

Cullinan Ranch - Wetland Delineation

Cullinan Ranch - Wetland Delineation



Figure 8: USACE verification of Section 404 CWA waters (November 2008)

JOB NAME: Cullinan Ranch - WD SCALE: 1"=1000' DATE: 21 JULY 2000 DRAWN BY: ASM/dj CHECKED BY: FILE NAME: CR-WD-REV.DWG	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">WATERS OF THE U.S. ACREAGE<sup>1</sup></th> <th style="text-align: right;">EXISTING ACREAGE</th> </tr> </thead> <tbody> <tr> <td>Other Waters:</td> <td></td> </tr> <tr> <td>Open Water Ditches/Sloughs</td> <td style="text-align: right;">72.71</td> </tr> <tr> <td>Wetlands:</td> <td></td> </tr> <tr> <td>Coastal Salt Marsh</td> <td style="text-align: right;">33.24</td> </tr> <tr> <td>Freshwater Marsh</td> <td style="text-align: right;">1264.36</td> </tr> <tr> <td><b>TOTAL:</b></td> <td style="text-align: right;"><b>1370.31</b></td> </tr> <tr> <td>Upland</td> <td style="text-align: right;">204.61</td> </tr> <tr> <td><b>GRAND TOTAL:</b></td> <td style="text-align: right;"><b>1574.92</b></td> </tr> </tbody> </table>	WATERS OF THE U.S. ACREAGE <sup>1</sup>	EXISTING ACREAGE	Other Waters:		Open Water Ditches/Sloughs	72.71	Wetlands:		Coastal Salt Marsh	33.24	Freshwater Marsh	1264.36	<b>TOTAL:</b>	<b>1370.31</b>	Upland	204.61	<b>GRAND TOTAL:</b>	<b>1574.92</b>	<p style="text-align: center;"><b>NOTES</b></p> <p>--- Project Boundary</p> <p>Gross project acreage is 1374.</p> <p><small>This exhibit depicts information and data produced in whole or in part with the U.S. Army Corps of Engineers wetland delineation methods described in the 1987 Corps of Engineers Wetland Delineation Manual and conforms to specifications per the San Francisco Corps District. However, wetland boundaries have not been legally surveyed and may be subject to minor adjustments if soil locations are required.</small></p>	 SCALE IN FEET  SCALE: 1"=1000'	<p style="text-align: center;"><b>VICINITY MAP</b></p>  <p style="font-size: 8px; text-align: center;"><small>SHOWN: CORTADO WHARF and MARSH ISLAND, CA 7.5 Min. Scale</small></p>	<p style="text-align: center;"><b>NRCS SOIL TYPES</b></p>  <p style="font-size: 8px;"><small>Rd Reyes Silty Clay loam, drained</small></p>	<p style="text-align: center;"><b>CULLINAN RANCH</b></p> <p style="text-align: center;"><b>WETLAND DELINEATION<sup>1</sup></b></p> <p style="font-size: 8px;"><small><sup>1</sup> Subject to U.S. Army Corps of Engineers verification</small></p> <table border="1" style="width:100%; border-collapse: collapse; font-size: 8px;"> <tr> <td>DATE: 21 JULY 2000</td> <td>REVISION: 01/10/01</td> <td>FILE NAME: CR-WD-REV.DWG</td> </tr> <tr> <td>DRAWN BY: ASM/dj</td> <td>SCALE: 1"=1000'</td> <td>PROJECT NO: 2002-254</td> </tr> <tr> <td>CHECKED BY:</td> <td>MSL: A-H</td> <td></td> </tr> <tr> <td colspan="3">WETLAND VERIFICATION LETTER DATE:</td> </tr> </table> <p style="text-align: center; font-weight: bold; font-size: 10px;"><b>ECORP Consulting, Inc.</b></p> <p style="text-align: center; font-weight: bold; font-size: 10px;"><b>ENVIRONMENTAL CONSULTANTS</b></p> <table style="width:100%; font-size: 8px;"> <tr> <td style="width:50%;">2260 Douglas Blvd, Suite 160 Roseville, CA 95661 Ph: (916) 753-9100</td> <td style="width:50%;">2100 Embarcadero, Suite 105 Oakland, CA 94606 Ph: (810) 434-0150</td> </tr> </table>	DATE: 21 JULY 2000	REVISION: 01/10/01	FILE NAME: CR-WD-REV.DWG	DRAWN BY: ASM/dj	SCALE: 1"=1000'	PROJECT NO: 2002-254	CHECKED BY:	MSL: A-H		WETLAND VERIFICATION LETTER DATE:			2260 Douglas Blvd, Suite 160 Roseville, CA 95661 Ph: (916) 753-9100	2100 Embarcadero, Suite 105 Oakland, CA 94606 Ph: (810) 434-0150
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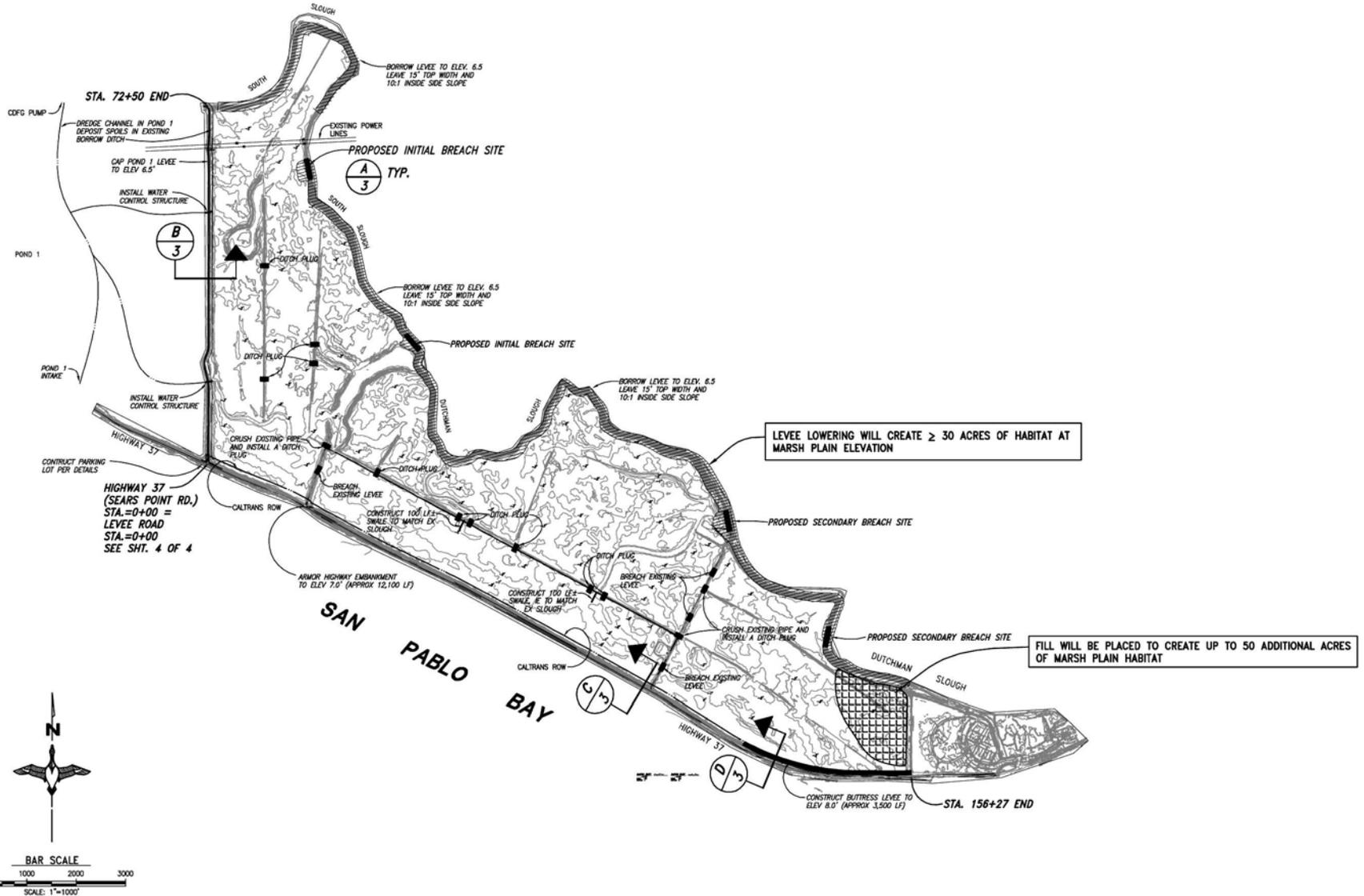


Figure 9: Ditch "blocks" and Transitional Habitat and created Marsh Plain Habitat.

UNAUTHORIZED CHANGES & USES  
 THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

SURVEY DATUM		REV. NO.	DESCRIPTION	REVISIONS	DATE	APPROVED
HORIZONTAL DATUM:		1				
VERTICAL DATUM:	NGVD29	2				
GEOD. MODEL:		3				
CONTOUR INTERVAL:		4				
AERIAL PHOTO:	NONE					

**PRELIMINARY**



PROJECT NO. US-CA-0119-002  
**CULLINAN RANCH  
 PLAN SHEET**

DESIGNED BY: SC  
 DRAWN BY: LKH  
 SURVEYED BY: OLUPG  
 CHECKED BY:

DATE: 05-13-04

SHEET NO. 2 OF 4

APPROVED BY: