LOG OF BORING AND TEST RESULTS

EUSTIS ENGINEERING SINCE 1946

Ducks Unlimited, Inc.
Pierce Marsh Beneficial Use
Marsh Creation
Phase 1
North of West Bay Near Galveston Island
Galveston County, Texas

Boring: B-6

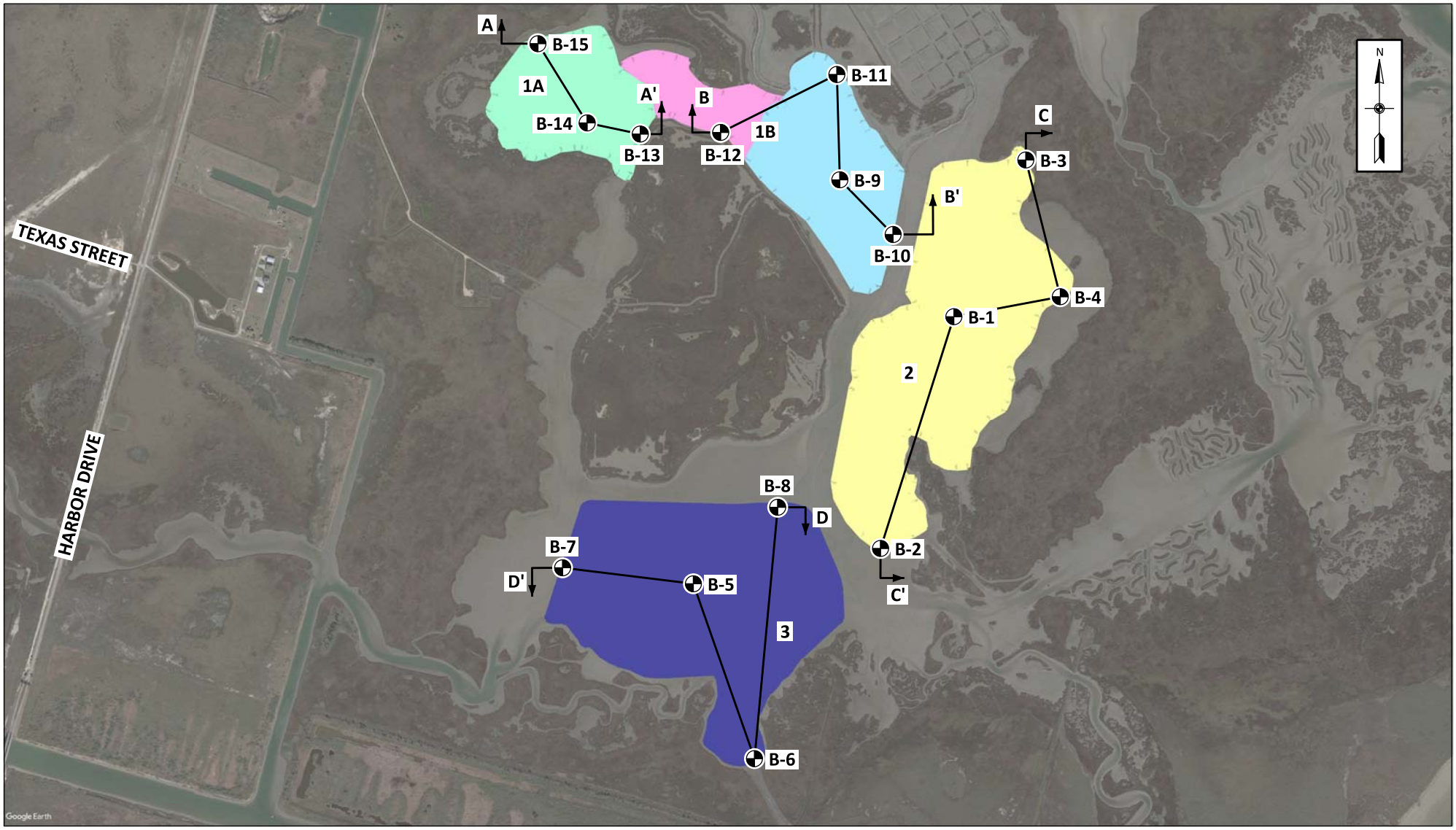
Project No: H0048
Date: 07/17/2022
Latitude: 29.30320°
Longitude: -94.96623°

Water Depth: See Text
Total Depth: 40.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content %	Density Dry pcf	Density Wet pcf	Shear Tests Type	Shear Tests ϕ	Shear Tests C psf	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					Moist, soft gray FAT CLAY w/trace of organic matter & roots	CH	1A	0	35										
	0.25					CH	1B	1	31	92	120	OB	0	619					
					Moist, medium stiff gray FAT CLAY w/trace of fine sand pockets & roots	CH	2A	2	26										
	0.50						2B	3	26						52	18	34		
					Moist, stiff gray FAT CLAY	CH	3A	4	27	99	125	OB	0	510					
5	0.50				Moist, medium stiff gray & tan FAT CLAY w/few fine sand pockets & concretions		NS	5											
						CH	4A	6	27										
	1.00				Moist, stiff gray & tan FAT CLAY w/trace of fine sand pockets & concretions		4B	7	27										
						CH	5A	8	32										
	1.00				Moist, stiff reddish-tan & gray FAT CLAY w/trace of concretions		5B	9	33										
10							6A	10	31										
	1.00						6B	11	33	89	118	OB	0	668					
					Moist, medium stiff gray & reddish-brown FAT CLAY w/trace of fine sand pockets & concretions	CH	7A	12	29										
	1.00					CH	7B	13	29						84	19	65		
					Moist, stiff reddish-tan & gray FAT CLAY w/trace of concretions w/few fine sand layers & trace of concretions		8A	14	31										
15	1.00						8B	15	31										
							9A	16	33										
	1.00						9B	17	35										
							10A	18	37										
	1.00				Moist, medium stiff to stiff reddish-tan & reddish-brown FAT CLAY w/trace of concretions & fine sand pockets	CH	10B	19	30	94	122	OB	0	967					
20																			
							11A	23	28										
	1.00						11B	24	28										
25																			
							12A	28	36										
	1.00						12B	29	27	97	123	OB	0	696					
30					Moist, medium stiff gray LEAN CLAY w/few fine sand	CL													
							13A	33	34										
	0.50				Moist, medium stiff to stiff gray & reddish-tan LEAN CLAY w/trace of concretions	CL	13B	34	32	87	115	OB	0	541					
35																			
							14A	38	30										
	0.50						14B	39	30										
40																			
45																			
50																			

EUSTIS_GINT_LIBRARY_4-18-2022.GLB EE STANDARD BORING LOG H0048.GPJ 8/18/22

NOTES: Boring B-6 was drilled in 6 in. of water.



SATELLITE IMAGERY DATED: JANUARY 2022

NOT TO SCALE

◓ DENOTES APPROXIMATE LOCATIONS OF SOIL BORINGS DRILLED BETWEEN 11 AND 18 JULY 2022

BORING LOCATION PLAN

PHASE 1
DUCKS UNLIMITED, INC.
PIERCE MARSH BENEFICIAL USE MARSH CREATION
NORTH OF WEST BAY NEAR GALVESTON ISLAND
GALVESTON COUNTY, TEXAS
DU CONTRACT NO. TX-0-2
DU PROJECT NO. TX-194-4
DU TASK ORDER NO. 1

EUSTIS ENGINEERING L.L.C. SINCE 1946

DRAWN BY: S.T.S.	JOB NO.: H0048
CHECKED BY: H.C.W.	DATE: 15 AUG 2022
CADD FILE: LOCATION PLAN.DGN	FIGURE 2

D

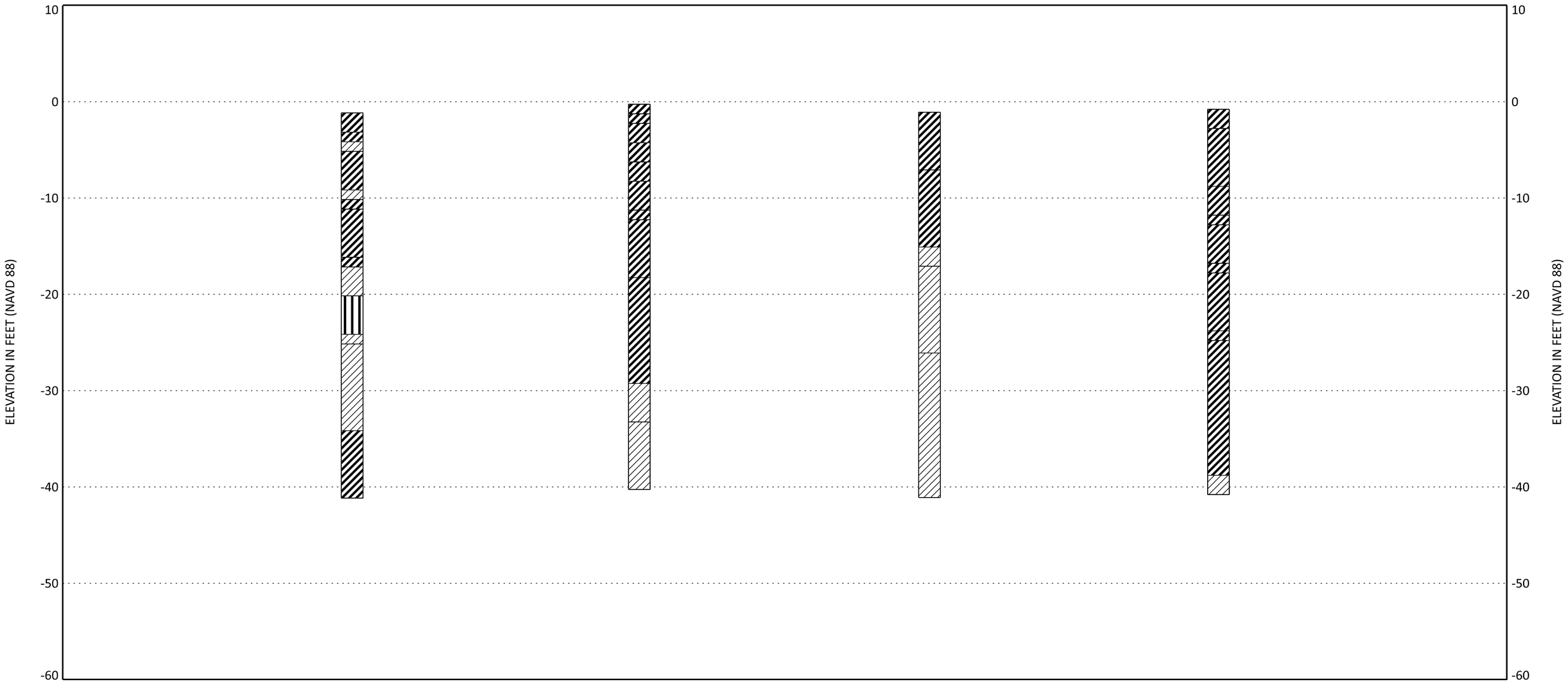
B-8
G.S.E. -1.16
17 JUL 2022

B-6
G.S.E. -0.26
17 JUL 2022

B-5
G.S.E. -1.09
18 JUL 2022

B-7
G.S.E. -0.79
18 JUL 2022

D'



BORING MATERIAL GRAPHICS

- FAT CLAY
- SILT
- LEAN CLAY

NOTE:

1. G.S.E. = GROUND SURFACE ELEVATION

SUBSURFACE SOIL PROFILE
MCA-3
PHASE 1
DUCKS UNLIMITED, INC.
PIERCE MARSH BENEFICIAL USE MARSH CREATION
NORTH OF WEST BAY NEAR GALVESTON ISLAND
GALVESTON COUNTY, TEXAS
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EUSTIS ENGINEERING L.L.C. SINCE 1946

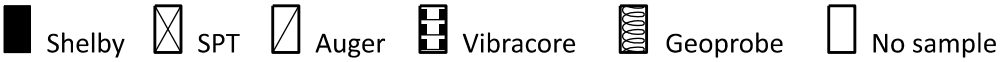
DRAWN BY: S.T.S.	JOB NO.: H0048
CHECKED BY: H.C.W.	DATE: 23 AUG 2022
CADD FILE: PROFILE.DGN	FIGURE 3 (SHEET 4 OF 4)

EUSTIS ENGINEERING SINCE 1946

LEGEND AND NOTES FOR LOG OF BORING AND TEST RESULTS

PP Pocket penetrometer: Resistance in tons per square foot

SPT Standard Penetration Test: Number of blows of a 140-lb hammer dropped 30 inches required to drive 2-in. O.D., 1.4-in. I.D. sampler a distance of 1 foot into the soil after first seating it 6 inches. Values shown have not been corrected.

SPLR Type of Sampling  Shelby, SPT, Auger, Vibracore, Geoprobe, No sample

SYMBOL Clay, Silt, Sand, Peat/Humus, Shells, Stone/Gravel

Predominant type shown heavy; modifying type shown light

USC Unified Soil Classification

DENSITY Unit weight in pounds per cubic foot

SHEAR TESTS

TYPE

- UC Unconfined compression shear
- OB Unconsolidated undrained triaxial compression shear on one specimen confined at the approximate overburden pressure
- UU Unconsolidated undrained triaxial compression shear
- ϕ Angle of internal friction in degrees
- c Cohesion in pounds per square foot

ATTERBERG LIMITS

- LL Liquid Limit
- PL Plastic Limit
- PI Plasticity Index

OTHER TESTS

- CON Consolidation
- -#200 Percent passing a U.S. No. 200 sieve
- SV Particle size distribution (sieve only)
- PD Particle size distribution (sieve and hydrometer)
- k Coefficient of permeability in centimeters per second
- SP Swelling pressure in pounds per square foot

Other laboratory test results reported on separate figures

GENERAL NOTES

(1) If a ground water depth is shown on the boring log, these observations were made at the time of drilling and were measured below the existing ground surface. These observations are shown on the boring logs. However, ground water levels may vary due to seasonal fluctuations and other factors. If important to construction, the depth to ground water should be determined by those persons responsible for construction immediately prior to beginning work.

(2) While the individual logs of borings are considered to be representative of subsurface conditions at their respective locations on the dates shown, it is not warranted that they are representative of subsurface conditions at other locations and times.