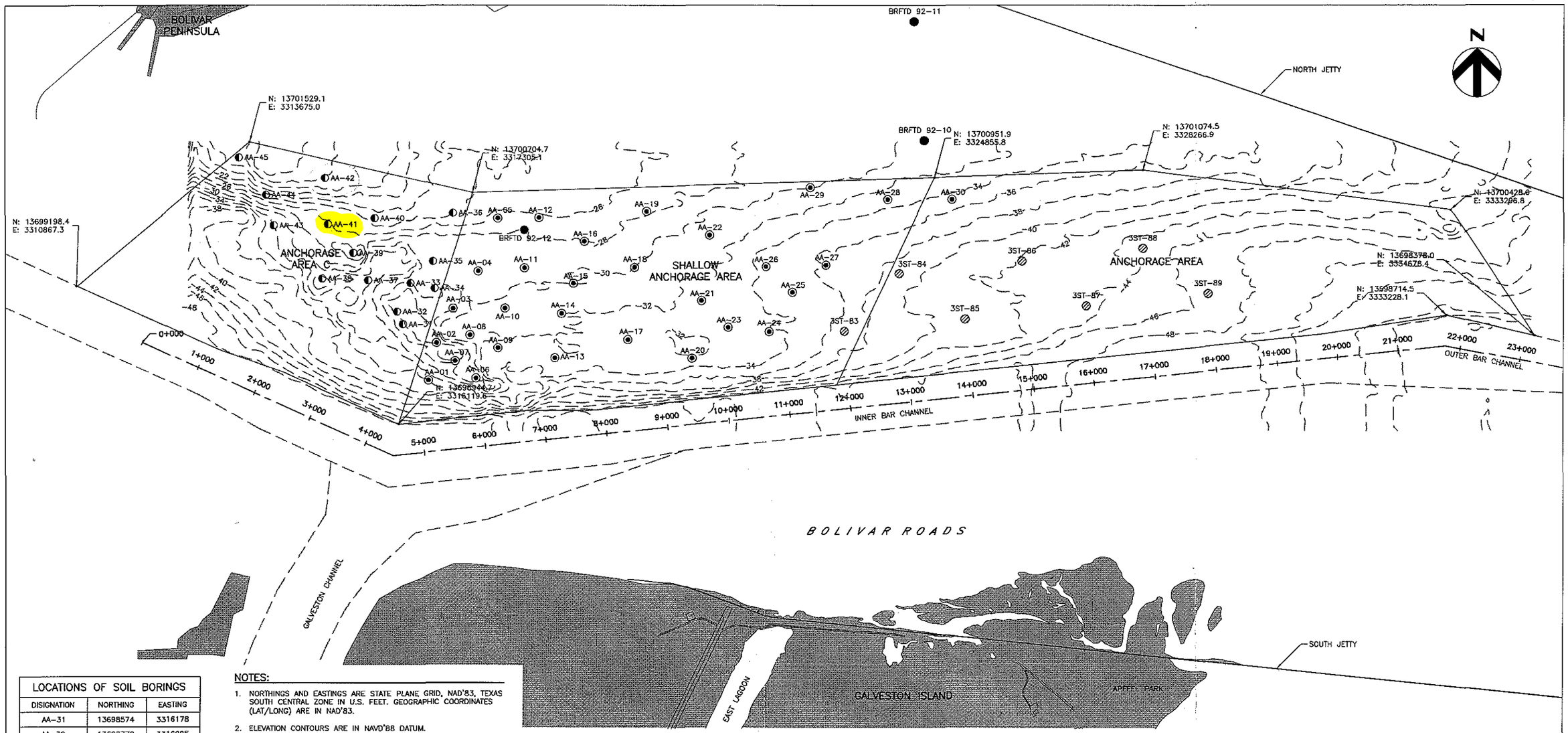
1391 Tech Documents



LOCATIONS OF SOIL BORINGS		
DISIGNATION	NORTHING	EASTING
AA-31	13698574	3316178
AA-32	13698778	3316085
AA-33	13699244	3316297
AA-34	13699156	3316692
AA-35	13699595	3316661
AA-36	13700379	3316989
AA-37	13699288	3315613
AA-38	13699316	3314867
AA-39	13699731	3315371
AA-40	13700296	3315711
AA-41	13700196	3314956
AA-42	13700944	3314910
AA-43	13700178	3314070
AA-44	13700672	3313951
AA-45	13701278	3313502

NOTES:

1. NORTHINGS AND EASTINGS ARE STATE PLANE GRID, NAD'83, TEXAS SOUTH CENTRAL ZONE IN U.S. FEET. GEOGRAPHIC COORDINATES (LAT/LONG) ARE IN NAD'83.
2. ELEVATION CONTOURS ARE IN NAVD'88 DATUM.
3. ELEVATION CONTOURS BASED ON INFORMATION PROVIDED BY THE U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT. SURVEY DATE WAS JUNE 2009. ELEVATIONS WERE CONVERTED FROM USACE MLT TO NAVD '88 USING THE FOLLOWING CORRELATION:
   0 NAVD '88 = 1.42' MLT.
4. VIBRACORES WERE PERFORMED BY ROCK ENGINEERING AND TESTING LABORATORY, INC (RETL) AND OCEAN SURVEYS, INC DURING MARCH 2009.
5. SOIL BORINGS WERE PERFORMED BY RETL DURING OCTOBER 2009.

LEGEND:

- HISTORICAL BORING LOCATIONS FROM USACE (1966)
- VIBRACORE LOCATIONS (SEE NOTE 4)
- VIBRACORE LOCATION FROM RICE UNIVERSITY
- BORING LOCATIONS (SEET NOTE 5)

BORING LOCATION

SCALE 0 800' 1600'

1 inch

HDR

HDR Engineering, Inc.
TEXAS FIRM REGISTRATION NUMBER 754

TEXAS GENERAL LAND OFFICE
ANCHORAGE AREA C
SAND SOURCE INVESTIGATION

BORING LOCATION PLAN – GALVESTON ANCHORAGE AREA

DATE 11/30/09

FIGURE EX A

· Geotechnical Engineering
· Construction Materials Testing

PROJECT NAME: Galveston Anchorage Area C Sand Source Investigation
CLIENT: HDR Engineering, Inc.
BORING ID.: AA-41
DESCRIPTION: Anchorage Area C Borrow Source Area

PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)				
-24.92' to -26.92' NAVD	-26.92' to -28.92' NAVD	-28.92' to -30.92' NAVD	-32.92' to -34.92' NAVD	-36.92' to -38.92' NAVD
19.68	2.53	5.26	2.32	0.16

ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL				
	-24.92' to -26.92' NAVD	-26.92' to -28.92' NAVD	-28.92' to -30.92' NAVD	-32.92' to -34.92' NAVD	-36.92' to -38.92' NAVD
#10	100.00	100.00	100.00	100.00	100.00
#18	67.35	96.18	88.36	95.96	99.50
#35	57.98	95.43	82.98	94.41	99.30
#60	47.00	94.62	76.54	93.34	98.80
#70	39.79	94.16	72.31	91.56	97.80
#100	17.91	91.25	46.72	37.33	51.00
#120	10.10	83.50	26.85	20.66	25.70
#170	6.74	70.09	13.40	10.03	14.20
#200	6.22	57.71	10.45	7.99	11.90
STATISTICS (EXCLUDING SHELL)					
MEDIAN GRAIN SIZE (mm)	0.28	N/A	0.17	0.17	0.14
MEAN GRAIN SIZE (mm)	0.36	N/A	0.22	0.16	0.15
SORTING (σ)	N/A	N/A	N/A	N/A	N/A

*The -#10 material was utilized as the total sample for Grain Size Distribution Curve calculations.

BORING LOG

Date:
Project Location:
Type: HSA
Boring No.: 1A-41
Location:

Depth Feet	Symbol	Sample	N-Blows Per Foot	MATERIAL DESCRIPTION	H^2O on Rod H^2O Upon Comp. Cave Upon Comp.
1.0 27					
2.5 29		1	2/1/60/1	Shell Frag (Some sand)	GPS. 29.35291 94.77219
3.5 30					
5.0 31		2	1/0/0/0	Grey sandy Silt	DOW = 27'
6.0 31					
7.5 33		3	2/1/2/2	Shell frag / Grey sand	
8.5 33					
10.0 35		4	1/5/1/2	grey silty sand	
11.0 33					
12.5 37		5	2/2/2/3	Same	
13.5 37					
15.0 39		6	3/3/5	Same	
18.5 39					
20.0 41		7	2/5/2/4	Same (no pic)	
23.5					
25.0		8			
28.5					
30.0		9			
33.5					
35.0		10			
38.5					
40.0		11			
43.5					
45.0		12			
48.5					
50.0		13			

LOG OF BORING AA-41

Rock Engineering & Testing Lab., Inc.
6817 Leopard St.
Corpus Christi, TX 78409
Telephone: (361) 883-4555
Fax: (361) 883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Galveston Anchorage Area C Sand Source Inv.
LOCATION: Anchorage Area C, Galveston, Texas
NUMBER: G109233
DATE(S) DRILLED: 10/16/09 - 10/16/09

DRILLING METHOD(S):
Hollow Stem Auger

GROUNDWATER INFORMATION:

SURFACE ELEVATION: -24.92' NAVD

SOIL SYMBOL	Elevation, Ft. [NAVD]	SAMPLE NUMBER	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: TONS/SQ FT PERCENT RECOVERY/ ROCK QUALITY DESIGNATION	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT LL	ATTERBERG LIMITS: PLASTIC LIMIT PL	ATTERBERG LIMITS: PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ.FT)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
												12' sand 2' layer fines
	25	SS S-1		N= 1							6	**POORLY GRADED SAND**, with clay and shell fragments, gray, very loose.
		SS S-2		N= 0							58	**SANDY CLAY**, with shell fragments, dark gray, very soft.
	30	SS S-3		N= 4							11	**POORLY GRADED SAND**, with clay and shell fragments, gray, loose.
		SS S-4		N= 3								Same as above, very loose.
		SS S-5		N= 5							8	Same as above, loose.
	35	SS S-6		N= 8								**POORLY GRADED SAND**, with clay and shell fragments, gray, loose.
		SS S-7		N= 6							12	Same as above.
												Boring was extended to an elevation of -38.9-feet NAVD during the drilling operations.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - POCKET TORVANE SHEAR STRENGTH

REMARKS:
Boring depth and location was determined by HDR Engineering, Inc. Boring operations were performed by RETL at GPS Coord. N. 29.35291 W. 94.77219.

LOG_OF_BORING G109233 ANCHORAGE BASIN C.GPJ ROCK_ETL.GDT 11/30/09