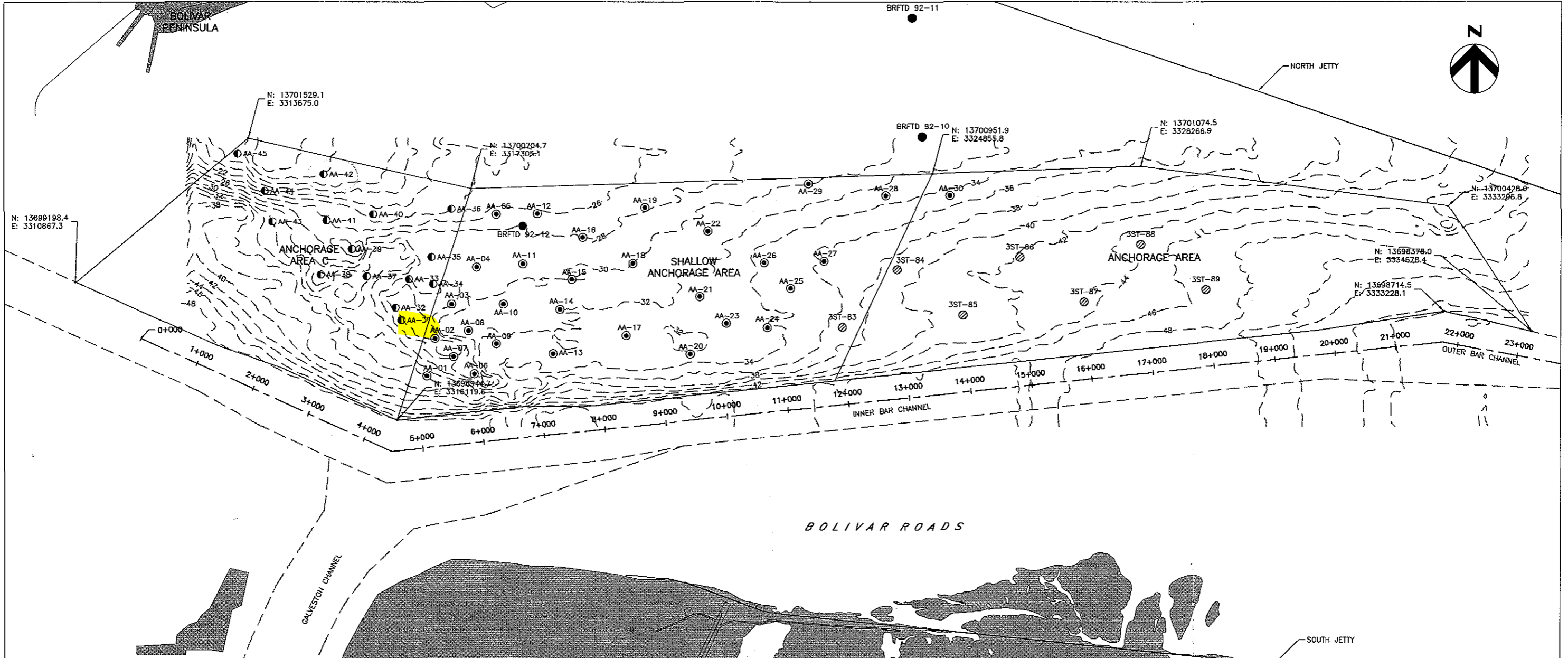


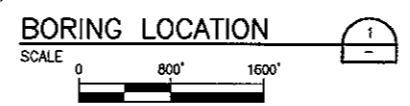
1391 Tech
Downsets



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

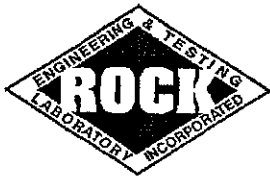
- NOTES:**
- NORTHINGS AND EASTINGS ARE STATE PLANE GRID, NAD'83, TEXAS SOUTH CENTRAL ZONE IN U.S. FEET. GEOGRAPHIC COORDINATES (LAT/LONG) ARE IN NAD'83.
 - ELEVATION CONTOURS ARE IN NAVD'88 DATUM.
 - ELEVATION CONTOURS BASED ON INFORMATION PROVIDED BY THE U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT.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



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.

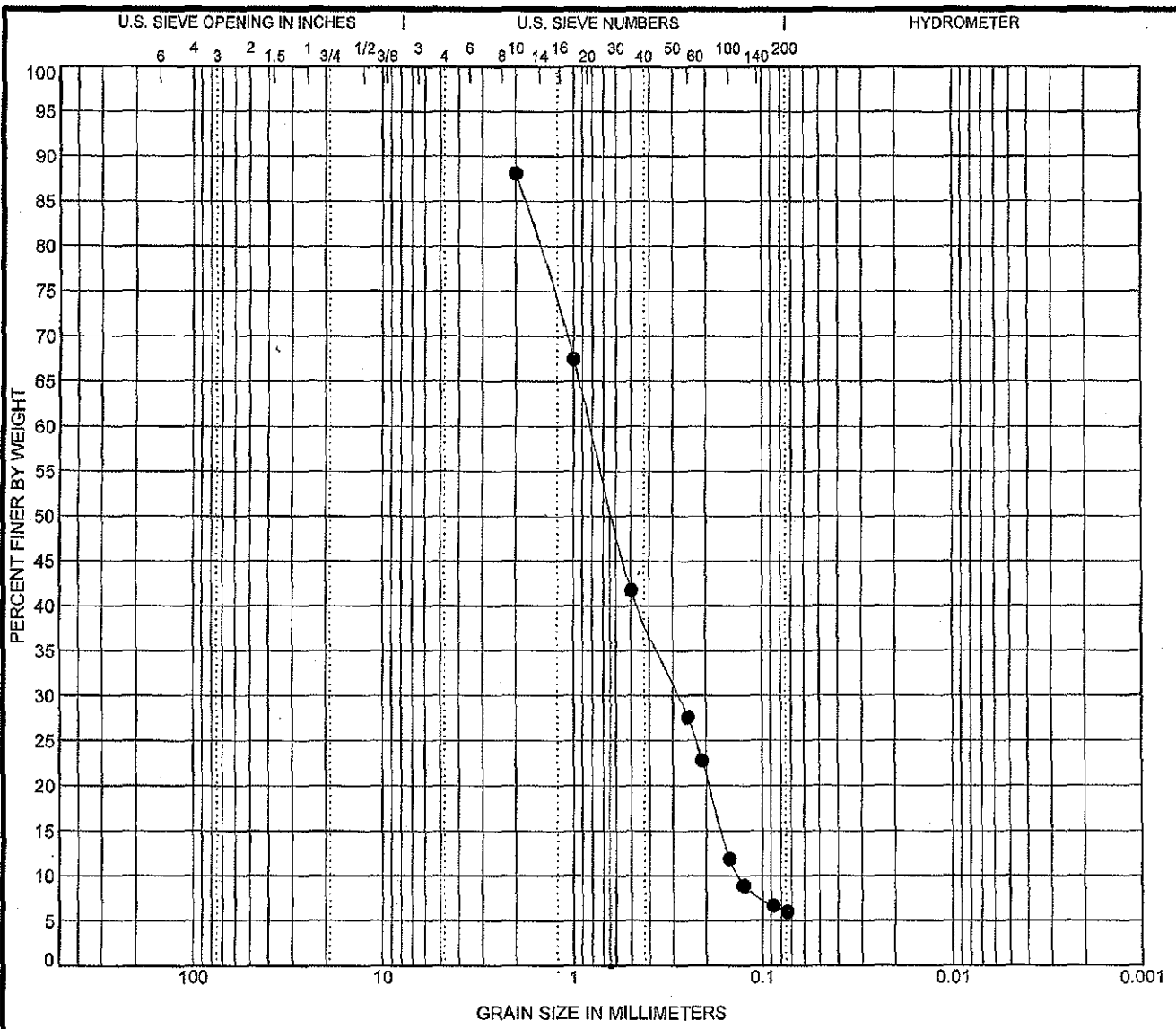
BORING ID.: AA-31

DESCRIPTION: Anchorage Area C Borrow Source Area

PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)			
-25.72' to -27.72' NAVD	-29.72' to -31.72' NAVD	-33.72' to -35.72' NAVD	-37.72' to -39.72' NAVD
11.90	0.80	13.50	5.78

ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL			
	-25.72' to -27.72' NAVD	-29.72' to -31.72' NAVD	-33.72' to -35.72' NAVD	-37.72' to -39.72' NAVD
#10	100.00	100.00	100.00	100.00
#18	67.50	98.40	73.50	87.00
#35	41.80	97.60	58.20	80.60
#60	27.60	96.50	44.30	75.10
#70	22.80	95.60	40.20	69.90
#100	11.90	50.00	27.90	27.00
#120	8.90	30.00	22.50	13.90
#170	6.70	21.90	18.60	8.50
#200	6.00	18.30	17.60	7.70
STATISTICS (EXCLUDING SHELL)				
MEDIAN GRAIN SIZE (mm)	0.65	0.15	0.31	0.16
MEAN GRAIN SIZE (mm)	0.57	N/A	N/A	0.13
SORTING (σ)	N/A	N/A	N/A	N/A

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



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● AA-31	25.7'	AA-31 (-25.7' to -27.7' NAVD)				0.73	6.13

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● AA-31	25.7'	2	0.817	0.281	0.133	0.0			

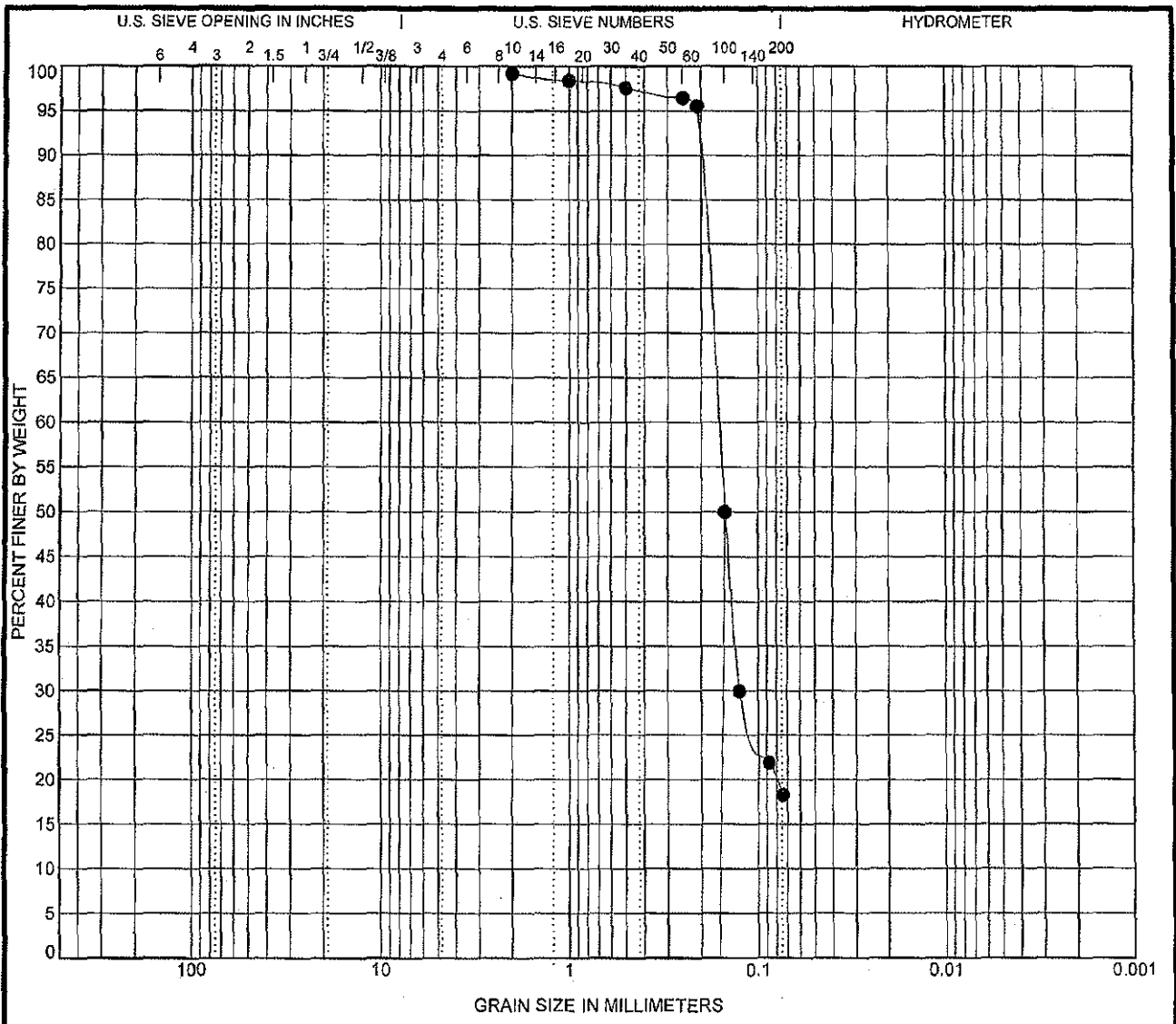


Rock Engineering & Testing Lab., Inc.
 6817 Leopard St.
 Corpus Christi, TX 78409
 Telephone: (361) 883-4555
 Fax: (361) 883-4711

GRAIN SIZE DISTRIBUTION

Project: Prop. Anchorage Area "C" Sand Source Inv.
 Location: Galveston Island, Texas
 Number: G109233

U.S. GRAIN SIZE G109233 ANCHORAGE BASIN C.G.P.J. US. LAB.GDT. 11/17/09



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● AA-31	29.7'	AA-31 (-29.7' to -31.7' NAVD)					

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● AA-31	29.7'	2	0.161	0.125		0.0			

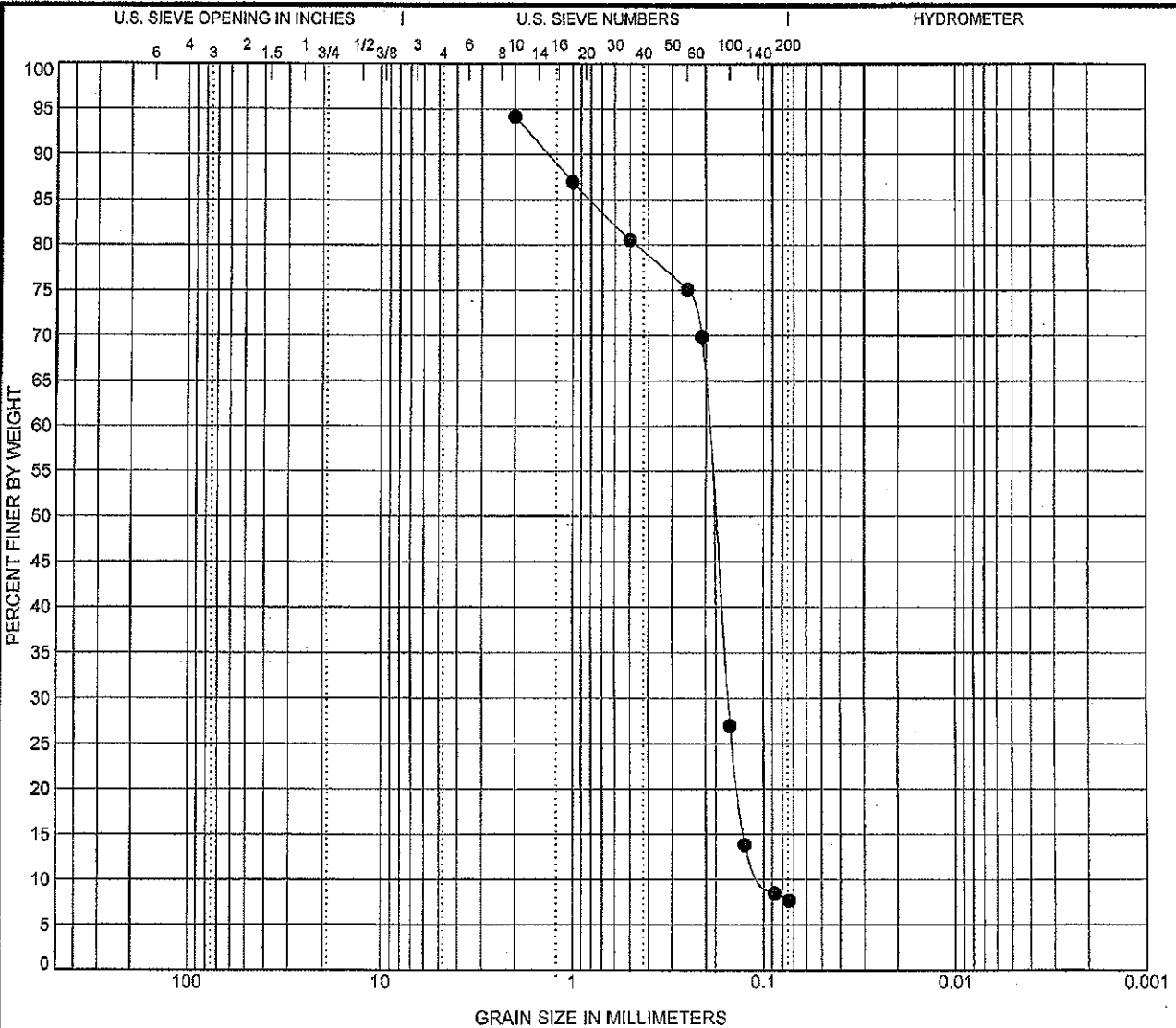


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GRAIN SIZE DISTRIBUTION

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 Location: Galveston Island, Texas
 Number: G109233

U.S. GRAIN SIZE G-109233 ANCHORAGE BASIN C.G.P.J. U.S. LAB. GDT 11/17/08



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
AA-31	37.7'	AA-31 (-37.7' to -39.7' NAVD)				1.24	2.00

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
AA-31	37.7'	2	0.194	0.153	0.097	0.0			



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 Location: Galveston Island, Texas
 Number: G109233

U.S. GRAIN SIZE G109233 ANCHORAGE BASIN C.G.P. US LAB.GDT. 11/17/09

BORING LOG

Date: 10-15-09
 Project Location: GALVESTON

Type: HSA

Boring No.: AA-31
 Location:

Depth Feet	Symbol	Sample	N-Blows Per Foot	MATERIAL DESCRIPTION	H ² O on Red H ₂ O H ² O Upon Comp. Cave Upon Comp.
27 29		1	10/10	Shell frag.	GPS 29.34833 94.76854
29 31		2	10/10	same	Don = 27'
31 33		3	5/4 1/2	same some sand	
33 35		4	1/1 1/7	same	
35 37		5	2 1/2 1/1	same (silt on bottom layer?)	
37 39		6	5/2 1/3 1/4	shell frag (no change)	
39 40		7	1 1/2 1/7	same more sand	
40 43.5		8			
43.5 45.0		9			
45.0 48.5		10			
48.5 50.0		11			
		12			
		13			