

<b>DRILLING LOG</b>		<b>DIVISION:</b> South Atlantic	<b>INSTALLATION:</b> Jacksonville District	<b>SHEET</b> 1 of 1
1. PROJECT CAPTIVA ISLAND SAND STUDY		10. SIZE AND TYPE OF BIT 3 5/8"		
2. LOCATION (Coordinates or Station) X=531209.04 Y=749610.40		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NGVD		
3. DRILLING AGENCY: Alpine Ocean Seismic Survey Inc.		12. MANUFACTURER'S DESIGNATION OF DRILL ALPINE PNEUMATIC VIBRACORE		
4. HOLE NO. (As shown on drawing title and file number) CIVC-00-40		13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0		
5. NAME OF DRILLER MAURIZIO ROSSI		14. TOTAL NO. OF CORE BOXES		
6. DIRECTION OF HOLE VERTICAL		15. ELEVATION GROUND WATER		
7. THICKNESS OF BURDEN 0.0 FT		16. DATE HOLE Started 8/18/00 Completed 12:37		
8. DEPTH DRILLED INTO ROCK N/A		17. ELEVATION TOP OF HOLE -34.8 ft		
9. TOTAL DEPTH OF HOLE 17.4 FT		18. TOTAL CORE RECOVERY FOR BORING 89.7%		
		19. SIGNATURE OF GEOLOGIST ID		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-34.8	0					
	1				1	Sample #1, Depth = 1.0' Mean (mm): 0.36, Phi Sorting: 0.75 Silt: 0.72% (SP)
	2					
	3					
	4				2	Sample #2, Depth = 4.0' Mean (mm): 0.34, Phi Sorting: 0.75 Silt: 0.53% (SP)
	5					
	6					
	7					
	8		SAND, fine grained, trace shell hash/shell fragments, light gray (5Y-7/1), (SP).		3	Sample #3, Depth = 8.0' Mean (mm): 0.31, Phi Sorting: 0.70 Silt: 0.95% (SP)
	9					
	10					
	11				4	Sample #4, Depth = 11.0' Mean (mm): 0.33, Phi Sorting: 0.80 Silt: 0.77% (SP)
	12					
	13					
	14				5	Sample #5, Depth = 13.5' Mean (mm): 0.33, Phi Sorting: 0.84 Silt: 2.79% (SP)
-50.4	15					
	16		No Recovery			
-52.2	17					
	18		End of Boring			
	19					
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			Note: This column contains laboratory data.
	22					
	23					
	24					

# Gradation Analysis Report

Proj Name: Captiva Island  
 Sample: CIVC-00-40#1  
 Date: 1/1/2001  
 By: ID



2841 N. W. Boca Raton Blvd. Boca Raton FL 33428

Elevation:	-39.4	Feet	Easting:	531209.04	State Plane	1983
Reference:	NGVD 29		Northing:	749610.40	FLA West	Feet

USCS:	SP	Munsel Dry:	5Y-6/1	Munsel Wet:	5Y-6/1
Comments:	0				

Dry Wt.	83.40	Percent Silt:	0.72
Wash Wt.	82.80		

Sieve Size	PHI Size	mm Size	Grams Retained	% Weight Retained	Cum. Grams Retained	C % Weight Retained
5/8	-4.000	16.000	0.000	0.000	0.000	0.000
5/16	-3.000	8.000	0.000	0.000	0.000	0.000
5	-2.000	4.000	0.000	0.000	0.000	0.000
7	-1.500	2.828	0.100	0.120	0.100	0.120
10	-1.000	2.000	0.350	0.420	0.450	0.540
14	-0.500	1.414	0.760	0.911	1.210	1.451
18	0.000	1.000	1.380	1.655	2.590	3.106
25	0.500	0.707	3.170	3.801	5.760	6.906
35	1.000	0.500	8.060	9.664	13.820	16.571
45	1.500	0.354	21.790	26.127	35.610	42.698
60	2.000	0.250	31.480	37.746	67.090	80.444
80	2.500	0.177	14.220	17.050	81.310	97.494
120	3.000	0.125	1.390	1.667	82.700	99.161
170	3.500	0.088	0.070	0.084	82.770	99.245
200	3.750	0.074	0.010	0.012	82.780	99.257
230	4.000	0.063	0.000	0.000	82.780	99.257
Pan	Pan	0.053	0.600	0.719	83.380	99.976

PHI 5	PHI 16	PHI 25	PHI 50	PHI 75	PHI 84	PHI 95
0.25	0.97	1.16	1.60	1.93	2.10	2.43

Median phi:	1.60	Median mm:	0.33
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	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	1.47	0.36	0.61	-0.33	1.16
Moment	1.49	0.36	0.75	-0.38	1.79

# Gradation Analysis Report

Proj Name: Captiva Island  
 Sample: CIVC-00-40#2  
 Date: 1/1/2001  
 By: ID



2841 N. W. Boca Raton Blvd. Boca Raton FL 33428

Elevation:	-42.4	Feet	Easting:	531209.04	State Plane	1983
Reference:	NGVD 29		Northing:	749610.40	FLA West	Feet

USCS:	SP	Munsel Dry:	5Y-6/1	Munsel Wet:	5Y-6/1
Comments:	0				

Dry Wt.	82.64	Percent Silt:	0.53
Wash Wt.	82.20		

Sieve Size	PHI Size	mm Size	Grams Retained	% Weight Retained	Cum. Grams Retained	C % Weight Retained
5/8	-4.000	16.000	0.000	0.000	0.000	0.000
5/16	-3.000	8.000	0.000	0.000	0.000	0.000
5	-2.000	4.000	0.000	0.000	0.000	0.000
7	-1.500	2.828	0.110	0.133	0.110	0.133
10	-1.000	2.000	0.350	0.424	0.460	0.557
14	-0.500	1.414	0.720	0.871	1.180	1.428
18	0.000	1.000	1.320	1.597	2.500	3.025
25	0.500	0.707	2.960	3.582	5.460	6.607
35	1.000	0.500	7.160	8.664	12.620	15.271
45	1.500	0.354	17.280	20.910	29.900	36.181
60	2.000	0.250	34.480	41.723	64.380	77.904
80	2.500	0.177	15.600	18.877	79.980	96.781
120	3.000	0.125	2.080	2.517	82.060	99.298
170	3.500	0.088	0.070	0.085	82.130	99.383
200	3.750	0.074	0.040	0.048	82.170	99.431
230	4.000	0.063	0.010	0.012	82.180	99.443
Pan	Pan	0.053	0.440	0.532	82.620	99.976

PHI 5	PHI 16	PHI 25	PHI 50	PHI 75	PHI 84	PHI 95
0.28	1.02	1.23	1.67	1.96	2.16	2.45

Median phi:	1.67	Median mm:	0.32
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	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	1.51	0.35	0.62	-0.40	1.22
Moment	1.54	0.34	0.75	-0.43	1.84

# Gradation Analysis Report

Proj Name: Captiva Island  
 Sample: CIVC-00-40#3  
 Date: 1/1/2001  
 By: ID



2841 N. W. Boca Raton Blvd. Boca Raton FL 33428

Elevation:	-46.4	Feet	Easting:	531209.04	State Plane	1983
Reference:	NGVD 29		Northing:	749610.40	FLA West	Feet

USCS:	SP	Munsel Dry:	5Y-6/1	Munsel Wet:	5Y-6/1
Comments:	0				

Dry Wt.	97.77	Percent Silt:	0.95
Wash Wt.	96.84		

Sieve Size	PHI Size	mm Size	Grams Retained	% Weight Retained	Cum. Grams Retained	C % Weight Retained
5/8	-4.000	16.000	0.000	0.000	0.000	0.000
5/16	-3.000	8.000	0.000	0.000	0.000	0.000
5	-2.000	4.000	0.000	0.000	0.000	0.000
7	-1.500	2.828	0.190	0.194	0.190	0.194
10	-1.000	2.000	0.230	0.235	0.420	0.430
14	-0.500	1.414	0.620	0.634	1.040	1.064
18	0.000	1.000	1.030	1.053	2.070	2.117
25	0.500	0.707	2.300	2.352	4.370	4.470
35	1.000	0.500	5.950	6.086	10.320	10.555
45	1.500	0.354	18.480	18.902	28.800	29.457
60	2.000	0.250	37.610	38.468	66.410	67.925
80	2.500	0.177	27.020	27.636	93.430	95.561
120	3.000	0.125	3.190	3.263	96.620	98.824
170	3.500	0.088	0.170	0.174	96.790	98.998
200	3.750	0.074	0.030	0.031	96.820	99.028
230	4.000	0.063	0.010	0.010	96.830	99.039
Pan	Pan	0.053	0.930	0.951	97.760	99.990

PHI 5	PHI 16	PHI 25	PHI 50	PHI 75	PHI 84	PHI 95
0.54	1.14	1.38	1.77	2.13	2.29	2.49

Median phi:	1.77	Median mm:	0.29
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	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	1.65	0.32	0.58	-0.32	1.07
Moment	1.68	0.31	0.70	-0.39	1.68

# Gradation Analysis Report

Proj Name: Captiva Island  
 Sample: CIVC-00-40#4  
 Date: 1/1/2001  
 By: ID



2841 N. W. Boca Raton Blvd. Boca Raton FL 33428

Elevation:	-49.4	Feet	Easting:	531209.04	State Plane	1983
Reference:	NGVD 29		Northing:	749610.40	FLA West	Feet

USCS:	SP	Munsel Dry:	5Y-6/1	Munsel Wet:	5Y-6/1
Comments:	0				

Dry Wt.	87.25	Percent Silt:	0.77
Wash Wt.	86.58		

Sieve Size	PHI Size	mm Size	Grams Retained	% Weight Retained	Cum. Grams Retained	C % Weight Retained
5/8	-4.000	16.000	0.000	0.000	0.000	0.000
5/16	-3.000	8.000	0.000	0.000	0.000	0.000
5	-2.000	4.000	0.070	0.080	0.070	0.080
7	-1.500	2.828	0.120	0.138	0.190	0.218
10	-1.000	2.000	0.320	0.367	0.510	0.585
14	-0.500	1.414	0.610	0.699	1.120	1.284
18	0.000	1.000	1.080	1.238	2.200	2.521
25	0.500	0.707	3.360	3.851	5.560	6.372
35	1.000	0.500	8.320	9.536	13.880	15.908
45	1.500	0.354	16.060	18.407	29.940	34.315
60	2.000	0.250	29.720	34.063	59.660	68.378
80	2.500	0.177	22.670	25.983	82.330	94.361
120	3.000	0.125	3.970	4.550	86.300	98.911
170	3.500	0.088	0.200	0.229	86.500	99.140
200	3.750	0.074	0.050	0.057	86.550	99.198
230	4.000	0.063	0.020	0.023	86.570	99.221
Pan	Pan	0.053	0.670	0.768	87.240	99.989

PHI 5	PHI 16	PHI 25	PHI 50	PHI 75	PHI 84	PHI 95
0.32	1.00	1.25	1.73	2.13	2.30	2.57

Median phi:	1.73	Median mm:	0.30
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	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	1.58	0.33	0.66	-0.33	1.05
Moment	1.61	0.33	0.80	-0.36	1.66

# Gradation Analysis Report

Proj Name: Captiva Island  
 Sample: CIVC-00-40#5  
 Date: 1/1/2001  
 By: ID



2841 N. W. Boca Raton Blvd. Boca Raton FL 33428

Elevation:	-51.9	Feet	Easting:	531209.04	State Plane	1983
Reference:	NGVD 29		Northing:	749610.40	FLA West	Feet

USCS:	SP	Munsel Dry:	5Y-6/1	Munsel Wet:	5Y-6/1
Comments:	0				

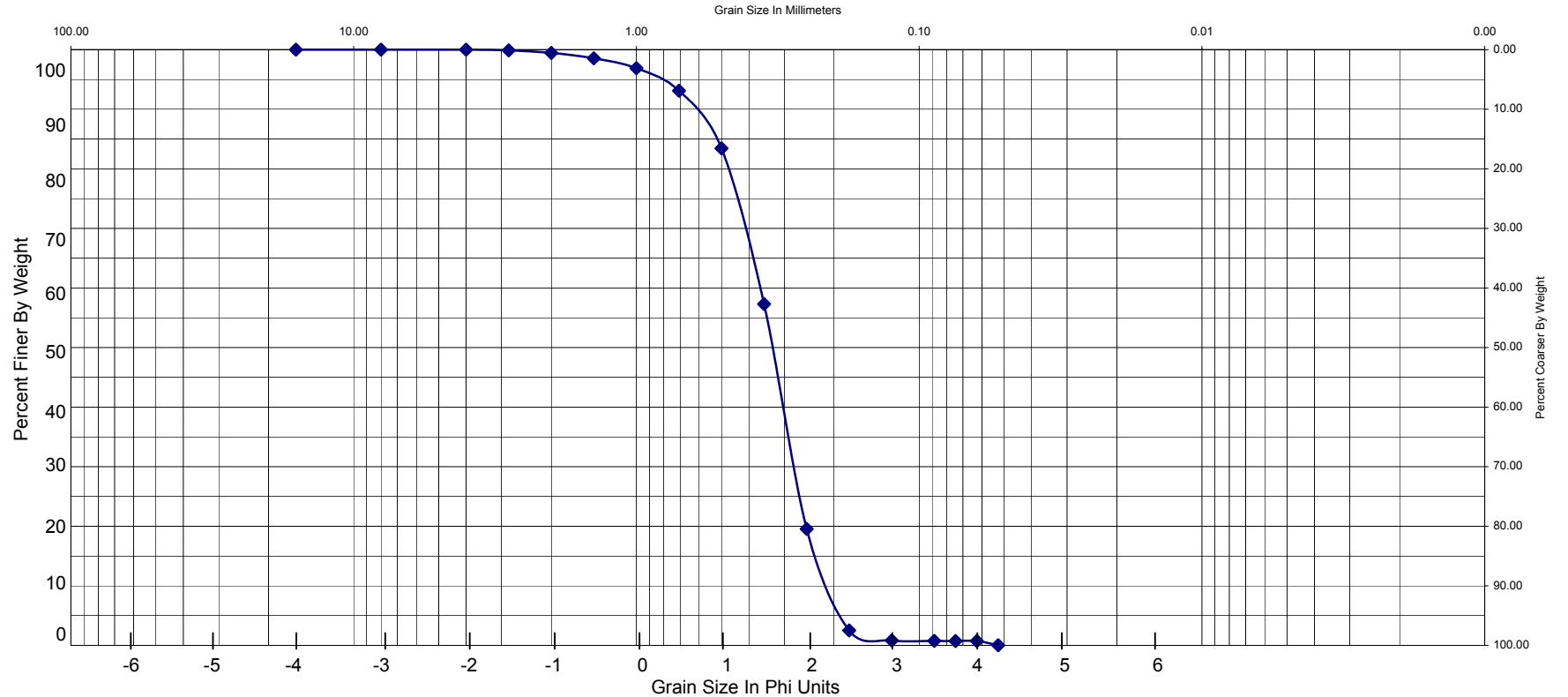
Dry Wt.	93.28	Percent Silt:	2.79
Wash Wt.	90.68		

Sieve Size	PHI Size	mm Size	Grams Retained	% Weight Retained	Cum. Grams Retained	C % Weight Retained
5/8	-4.000	16.000	0.000	0.000	0.000	0.000
5/16	-3.000	8.000	0.000	0.000	0.000	0.000
5	-2.000	4.000	0.000	0.000	0.000	0.000
7	-1.500	2.828	0.170	0.182	0.170	0.182
10	-1.000	2.000	0.160	0.172	0.330	0.354
14	-0.500	1.414	0.840	0.901	1.170	1.254
18	0.000	1.000	1.380	1.479	2.550	2.734
25	0.500	0.707	3.380	3.623	5.930	6.357
35	1.000	0.500	9.630	10.324	15.560	16.681
45	1.500	0.354	21.100	22.620	36.660	39.301
60	2.000	0.250	28.840	30.918	65.500	70.219
80	2.500	0.177	21.710	23.274	87.210	93.493
120	3.000	0.125	3.220	3.452	90.430	96.945
170	3.500	0.088	0.190	0.204	90.620	97.148
200	3.750	0.074	0.020	0.021	90.640	97.170
230	4.000	0.063	0.010	0.011	90.650	97.181
Pan	Pan	0.053	2.600	2.787	93.250	99.968

PHI 5	PHI 16	PHI 25	PHI 50	PHI 75	PHI 84	PHI 95
0.31	0.97	1.18	1.67	2.10	2.30	2.71

Median phi:	1.67	Median mm:	0.31
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	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	1.59	0.33	0.70	-0.17	1.07
Moment	1.61	0.33	0.84	-0.20	1.62



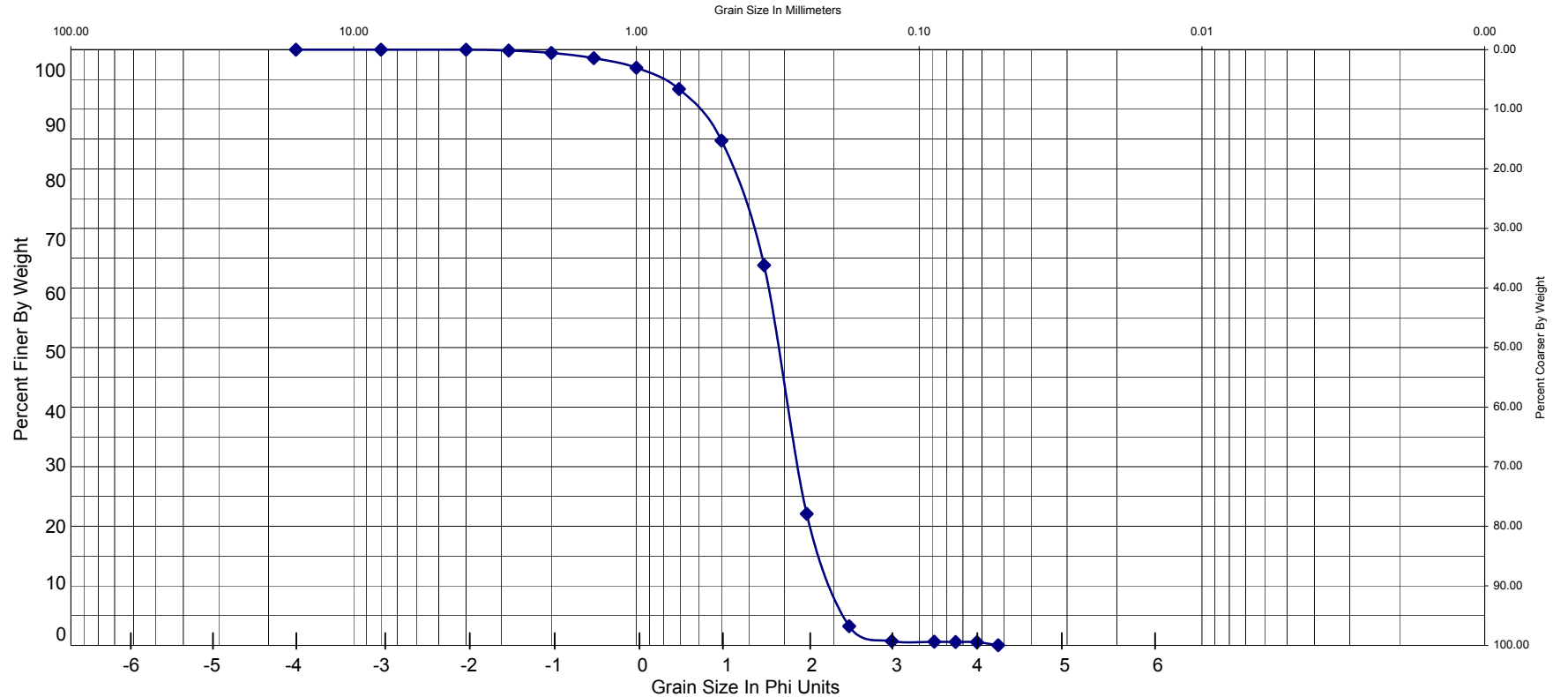
Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample No.	Depth	Description	USCS	% Silt	Median	Mean	Skew	Kurt	Sort	PL	LL	PI	Sample Information
◆ CIVC-00-40#1	1.0		SP	0.72	0.33	0.36	-0.38	1.79	0.75	NA	NA	NA	Project Name: Captiva Island
													Sample Type: Vibracores
													Collection Date: 1/1/2001
													Analysis By: ID



**COASTAL PLANNING & ENGINEERING, INC.**  
**2481 N. W. BOCA RATON BLVD.**  
**BOCA RATON, FLORIDA 33431**

Easting (X):	531209.04 Feet
Northing (Y):	749610.40 Feet
Sample Elevation:	-39.4 NGVD 29
Coord. System:	State Plane 1983 FLA West



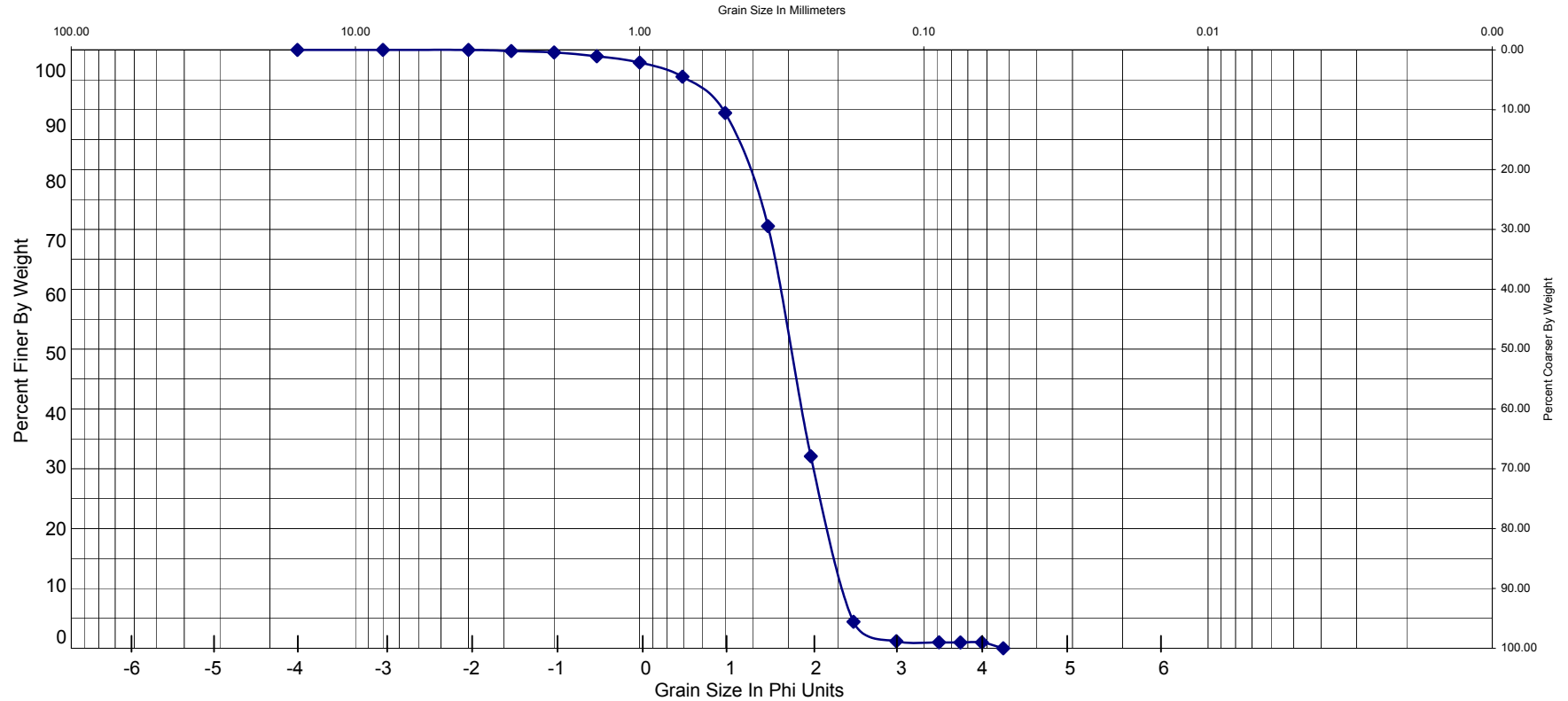
Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample No.	Depth	Description	USCS	% Silt	Median	Mean	Skew	Kurt	Sort	PL	LL	PI	Sample Information
◆ CIVC-00-40#2	4.0		SP	0.53	0.31	0.34	-0.43	1.84	0.75	NA	NA	NA	Project Name: Captiva Island
													Sample Type: Vibracores
													Collection Date: 1/1/2001
													Analysis By: ID
													Easting (X): 531209.04 Feet
													Northing (Y): 749610.40 Feet
													Sample Elevation: -42.4 NGVD 29
													Coord. System: State Plane 1983 FLA West



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**BOCA RATON, FLORIDA 33431**



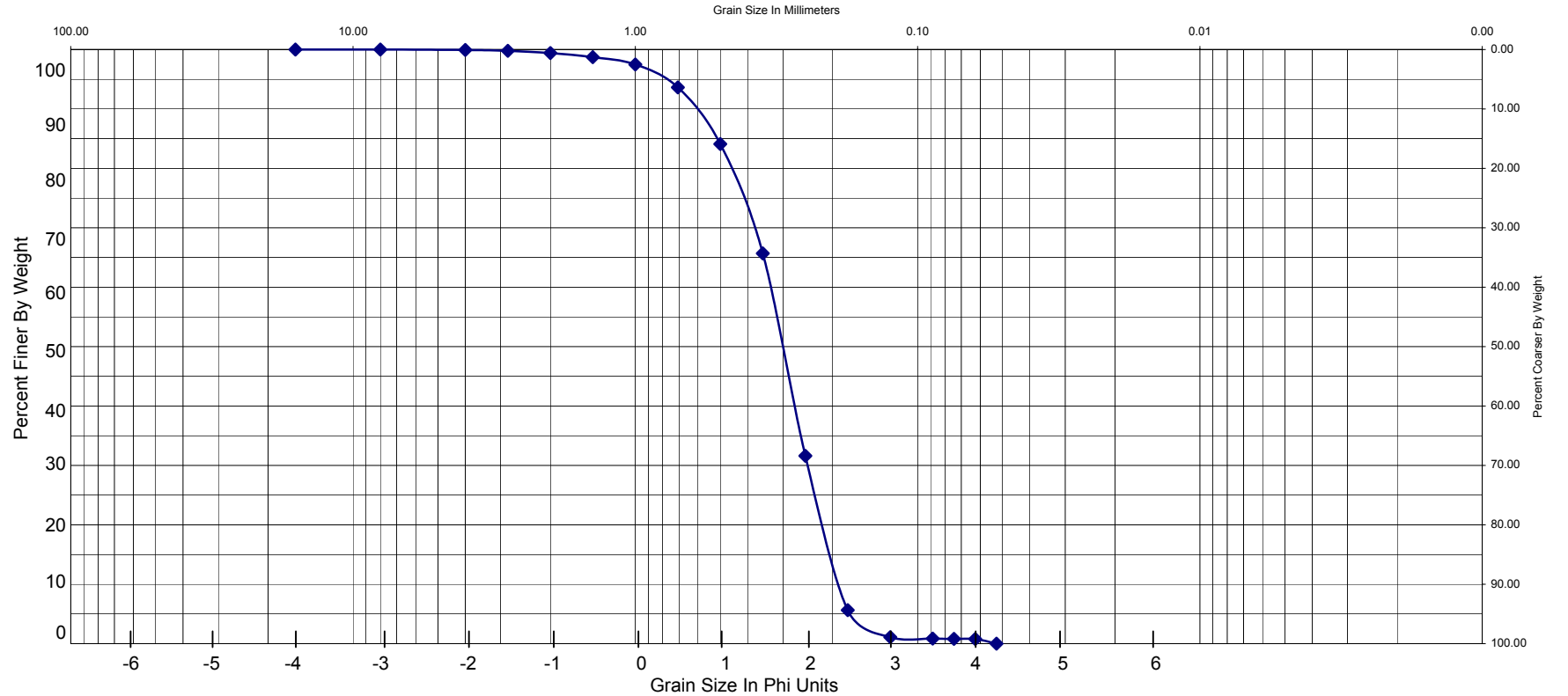


Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample No.	Depth	Description	USCS	% Silt	Median	Mean	Skew	Kurt	Sort	PL	LL	PI	Sample Information
◆ CIVC-00-40#3	8.0		SP	0.95	0.29	0.31	-0.39	1.68	0.7	NA	NA	NA	Project Name: Captiva Island
													Sample Type: Vibracores
													Collection Date: 1/1/2001
													Analysis By: ID
													Easting (X): 531209.04 Feet
													Northing (Y): 749610.40 Feet
													Sample Elevation: -46.4 NGVD 29
													Coord. System: State Plane 1983 FLA West



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**2481 N. W. BOCA RATON BLVD.**  
**BOCA RATON, FLORIDA 33431**

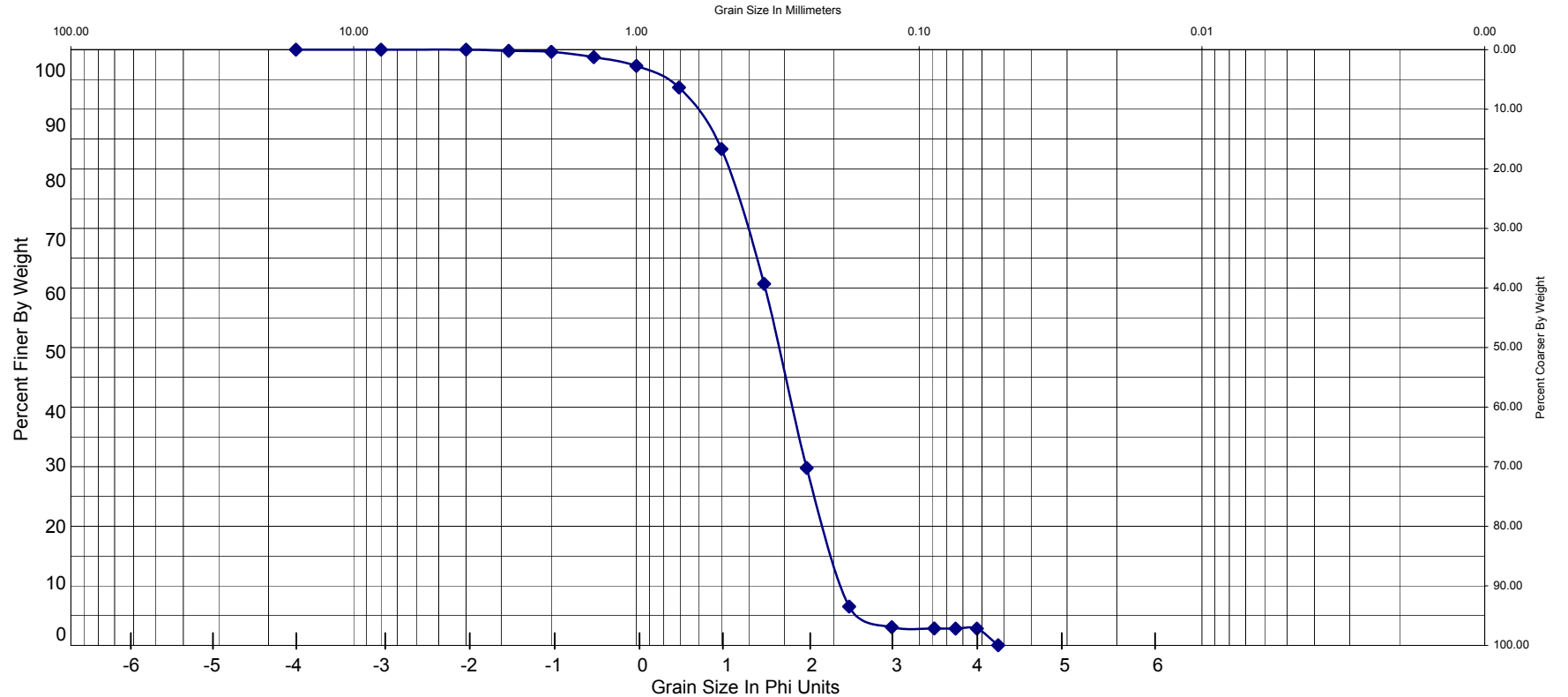


Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample No.	Depth	Description	USCS	% Silt	Median	Mean	Skew	Kurt	Sort	PL	LL	PI	Sample Information
◆ CIVC-00-40#4	11.0		SP	0.77	0.3	0.33	-0.36	1.66	0.8	NA	NA	NA	Project Name: Captiva Island
													Sample Type: Vibracores
													Collection Date: 1/1/2001
													Analysis By: ID
													Easting (X): 531209.04 Feet
													Northing (Y): 749610.40 Feet
													Sample Elevation: -49.4 NGVD 29
													Coord. System: State Plane 1983 FLA West



**COASTAL PLANNING & ENGINEERING, INC.**  
**2481 N. W. BOCA RATON BLVD.**  
**BOCA RATON, FLORIDA 33431**



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample No.	Depth	Description	USCS	% Silt	Median	Mean	Skew	Kurt	Sort	PL	LL	PI	Sample Information
◆ CIVC-00-40#5	13.5		SP	2.79	0.31	0.33	-0.2	1.62	0.84	NA	NA	NA	Project Name: Captiva Island
													Sample Type: Vibracores
													Collection Date: 1/1/2001
													Analysis By: ID

	<b>COASTAL PLANNING &amp; ENGINEERING, INC.</b> <b>2481 N. W. BOCA RATON BLVD.</b> <b>BOCA RATON, FLORIDA 33431</b>		Easting (X): 531209.04 Feet
			Northing (Y): 749610.40 Feet
			Sample Elevation: -51.9 NGVD 29
			Coord. System: State Plane 1983 FLA West



