

DRILLING LOG		DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 of 1
1. PROJECT		CENTRAL BOCA SAND STUDY		
2. LOCATION		(Coordinates or Station) X=963106.90 Y=732423.24		
3. DRILLING AGENCY: Alpine Ocean Seismic Survey Inc.		10. SIZE AND TYPE OF BIT 3 5/8"		
4. HOLE NO. (As shown on drawing title and file number)		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW		
5. NAME OF DRILLER JAMES COLE		12. MANUFACTURER'S DESIGNATION OF DRILL ALPINE PNEUMATIC VIBRACORE		
6. DIRECTION OF HOLE VERTICAL		13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0		
7. THICKNESS OF BURDEN 0.0 FT		14. TOTAL NO. OF CORE BOXES		
8. DEPTH DRILLED INTO ROCK N/A		15. ELEVATION GROUND WATER		
9. TOTAL DEPTH OF HOLE 14.9 FT		16. DATE HOLE Started Completed 3/21/01 12:18		
		17. ELEVATION TOP OF HOLE -41.5 ft		
		18. TOTAL CORE RECOVERY FOR BORING 100%		
		19. SIGNATURE OF GEOLOGIST MW/ID		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-41.5	0		SAND, fine to medium grained, trace shell hash, gray (5Y-6/1), (SP).		4	Sample #4, Depth = 0.7' Mean (mm): 0.26, Phi Sorting: 0.76 Silt: 1.21% (SP)
-42.6	1					
	2					
	3					
	4		SAND, fine to medium grained, trace shell hash, gray (5Y-5/1), (SP). 1" shell @ 4.5'.		1	Sample #1, Depth = 4.0' Mean (mm): 0.37, Phi Sorting: 1.18 Silt: 1.24% (SW)
	5					
	6					
-48.5	7					
	8		SAND, fine to medium grained, trace shell hash, gray (5Y-5/1), (SP).		5	Sample #5, Depth = 8.0' Mean (mm): 0.25, Phi Sorting: 0.71 Silt: 1.24% (SP)
-50.6	9					
	10					
	11					
	12		fine to medium grained, trace shell hash, gray (5Y-5/1) to (5Y-6/1) (SP). 0.5" shell @ 10.9', 2" coral @ 14.7'.		2	Sample #2, Depth = 12.0' Mean (mm): 0.31, Phi Sorting: 0.87 Silt: 1.63% (SP)
	13					
	14					
-56.2	15					
	16		SAND, medium to fine grained, little shell hash, gray (5Y-6/1), (SP) from 14.7' to 16.5'. 1" shell @ 15.3', one 1.5" and two 1" coral fragments @ 15.5', 1.5" coral @ 15.9'.		3	Sample #3, Depth = 15.0' Mean (mm): 0.32, Phi Sorting: 1.13 Silt: 2.29% (SW)
-58	17					
	18		SAND, medium to fine grained, some carbonate clasts ranging from coarse sand size to 3", gray (5Y-6/1), (GP) from 16.5' to 18.3'.			
-59.8	19		End of Boring			
	20		Expansion from 14.8' to 18.3'.			
	21		Note:			Note:
	22		1) Soils are field visually classified in accordance with the Unified Soil Classification System.			1) This column contains laboratory data.
	23					2) Samples are taken from a 3" section of the core, centered on the sample depth.
	24					

PROJECT: Central Boca Sand Study

HOLE NUMBER:

Gradation Analysis Report

Proj Name: Central Boca
 Sample: CVBC-01-12#1
 Date: 4/6/01
 By: ID

COASTAL PLANNING & ENGINEERING, INC.

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

Elevation: -45.50 Feet Easting: 963106.90 State Plane 1983
 Reference: NGVD Northing: 732423.24 FLA East Feet

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

Dry Wt. 74.57 Percent Silt: 1.24
 Wash Wt. 73.65

Sieve Size	PHI Size	mm Size	Grams Retained	% Weight Retained	Cum. Grams Retained	C % Weight Retained
3/4	-4.250	19.027	0.000	0.000	0.000	0.000
5/8	-4.000	16.000	0.000	0.000	0.000	0.000
5/16	-3.250	9.514	0.000	0.000	0.000	0.000
4	-3.000	8.000	0.010	0.013	0.010	0.013
5	-2.000	4.000	0.120	0.161	0.130	0.174
7	-1.500	2.828	1.020	1.368	1.150	1.542
10	-1.000	2.000	1.290	1.730	2.440	3.272
14	-0.500	1.414	1.610	2.159	4.050	5.431
18	0.000	1.000	2.220	2.977	6.270	8.408
25	0.500	0.707	3.980	5.337	10.250	13.745
35	1.000	0.500	8.970	12.029	19.220	25.774
45	1.500	0.354	12.910	17.313	32.130	43.087
60	2.000	0.250	17.950	24.071	50.080	67.158
80	2.500	0.177	17.410	23.347	67.490	90.506
120	3.000	0.125	5.660	7.590	73.150	98.096
170	3.500	0.088	0.360	0.483	73.510	98.579
200	3.750	0.074	0.020	0.027	73.530	98.605
230	4.000	0.063	0.000	0.000	73.530	98.605
Pan	Pan	0.053	0.920	1.234	74.450	99.839

PHI 5 -0.60 PHI 16 0.59 PHI 25 0.97 PHI 50 1.64 PHI 75 2.17 PHI 84 2.36 PHI 95 2.79

Median phi: 1.64 Median mm: 0.32

	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	1.36	0.39	0.95	-0.47	1.16
Moment	1.42	0.37	1.18	-0.51	1.88

Gradation Analysis Report

Proj Name: Central Boca
Sample: CVBC-01-12#2
Date: 4/6/01
By: ID

COASTAL PLANNING & ENGINEERING, INC.

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

Elevation: -53.50 Feet Easting: 963106.90 State Plane 1983
Reference: NGVD Northing: 732423.24 FLA East Feet

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

Dry Wt. 68.06 Percent Silt: 1.63
Wash Wt. 66.95

Sieve Size	PHI Size	mm Size	Grams Retained	% Weight Retained	Cum. Grams Retained	C % Weight Retained
3/4	-4.250	19.027	0.000	0.000	0.000	0.000
5/8	-4.000	16.000	0.000	0.000	0.000	0.000
5/16	-3.250	9.514	0.000	0.000	0.000	0.000
4	-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	0.200	0.294	0.200	0.294
10	-1.000	2.000	0.310	0.455	0.510	0.749
14	-0.500	1.414	0.430	0.632	0.940	1.381
18	0.000	1.000	0.770	1.131	1.710	2.512
25	0.500	0.707	2.430	3.570	4.140	6.083
35	1.000	0.500	6.600	9.697	10.740	15.780
45	1.500	0.354	10.120	14.869	20.860	30.649
60	2.000	0.250	20.910	30.723	41.770	61.372
80	2.500	0.177	19.540	28.710	61.310	90.082
120	3.000	0.125	5.110	7.508	66.420	97.590
170	3.500	0.088	0.470	0.691	66.890	98.281
200	3.750	0.074	0.040	0.059	66.930	98.340
230	4.000	0.063	0.000	0.000	66.930	98.340
Pan	Pan	0.053	1.110	1.631	68.040	99.971

PHI 5 0.35 PHI 16 1.01 PHI 25 1.31 PHI 50 1.81 PHI 75 2.24 PHI 84 2.39 PHI 95 2.83

Median phi: 1.81 Median mm: 0.28

	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	1.68	0.31	0.72	-0.28	1.10
Moment	1.71	0.31	0.87	-0.26	1.63

Size Size Size Retained Retained Retained Retained

Gradation Analysis Report

Proj Name: Central Boca
 Sample: CVBC-01-12#3
 Date: 4/6/01
 By: ID

COASTAL PLANNING & ENGINEERING, INC.

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

Elevation: -56.50 Feet Easting: 963106.90 State Plane 1983
 Reference: NGVD Northing: 732423.24 FLA East Feet

USCS: SW Munsel Dry: 5Y 5/1 Munsel Wet: 5Y 4/1
 Comments: 0

Dry Wt. 58.61 Percent Silt: 2.29
 Wash Wt. 57.29

Sieve Size	PHI Size	mm Size	Grams Retained	% Weight Retained	Cum. Grams Retained	C % Weight Retained
3/4	-4.250	19.027	0.000	0.000	0.000	0.000
5/8	-4.000	16.000	0.000	0.000	0.000	0.000
5/16	-3.250	9.514	0.000	0.000	0.000	0.000
4	-3.000	8.000	0.590	1.007	0.590	1.007
5	-2.000	4.000	0.250	0.427	0.840	1.433
7	-1.500	2.828	0.560	0.955	1.400	2.389
10	-1.000	2.000	0.520	0.887	1.920	3.276
14	-0.500	1.414	0.850	1.450	2.770	4.726
18	0.000	1.000	0.940	1.604	3.710	6.330
25	0.500	0.707	1.890	3.225	5.600	9.555
35	1.000	0.500	3.880	6.620	9.480	16.175
45	1.500	0.354	6.410	10.937	15.890	27.111
60	2.000	0.250	16.290	27.794	32.180	54.905
80	2.500	0.177	18.050	30.797	50.230	85.702
120	3.000	0.125	6.290	10.732	56.520	96.434
170	3.500	0.088	0.670	1.143	57.190	97.577
200	3.750	0.074	0.080	0.136	57.270	97.714
230	4.000	0.063	0.010	0.017	57.280	97.731
Pan	Pan	0.053	1.330	2.269	58.610	100.000

PHI 5 -0.41 PHI 16 0.99 PHI 25 1.40 PHI 50 1.91 PHI 75 2.33 PHI 84 2.47 PHI 95 2.93

Median phi: 1.91 Median mm: 0.27

	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	1.58	0.33	0.58	-0.70	1.49
Moment	1.66	0.32	1.13	-0.74	2.28

Gradation Analysis Report

Proj Name: Central Boca
 Sample: CVBC-01-12#4
 Date: 5/17/01
 By: ID

COASTAL PLANNING & ENGINEERING, INC.

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

Elevation: -42.20 Feet Easting: 963106.90 State Plane 1983
 Reference: NGVD Northing: 732423.24 FLA East Feet

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

Dry Wt. 65.98 Percent Silt: 1.21
 Wash Wt. 65.20

Sieve Size	Phi Size	mm Size	Grams Retained	% Weight Retained	Cum. Grams Retained	C % Weight Retained
3/4	-4.250	19.027	0.000	0.000	0.000	0.000
5/8	-4.000	16.000	0.000	0.000	0.000	0.000
5/16	-3.250	9.514	0.000	0.000	0.000	0.000
4	-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	0.060	0.091	0.060	0.091
10	-1.000	2.000	0.090	0.136	0.150	0.227
14	-0.500	1.414	0.230	0.349	0.380	0.576
18	0.000	1.000	0.460	0.697	0.840	1.273
25	0.500	0.707	1.410	2.137	2.250	3.410
35	1.000	0.500	3.560	5.396	5.810	8.806
45	1.500	0.354	5.510	8.351	11.320	17.157
60	2.000	0.250	17.190	26.053	28.510	43.210
80	2.500	0.177	27.020	40.952	55.530	84.162
120	3.000	0.125	8.490	12.868	64.020	97.029
170	3.500	0.088	1.130	1.713	65.150	98.742
200	3.750	0.074	0.020	0.030	65.170	98.772
230	4.000	0.063	0.010	0.015	65.180	98.788
Pan	Pan	0.053	0.790	1.197	65.970	99.985

Phi 5 0.65 Phi 16 1.43 Phi 25 1.65 Phi 50 2.08 Phi 75 2.39 Phi 84 2.50 Phi 95 2.92

Median phi: 2.08 Median mm: 0.24

	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	1.92	0.27	0.61	-0.44	1.26
Moment	1.95	0.26	0.76	-0.43	1.93

Gradation Analysis Report

Proj Name: Central Boca
 Sample: CVBC-01-12#5
 Date: 5/17/01
 By: ID

COASTAL PLANNING & ENGINEERING, INC.

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

Elevation: -49.50 Feet Easting: 963106.90 State Plane 1983
 Reference: NGVD Northing: 732423.24 FLA East Feet

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

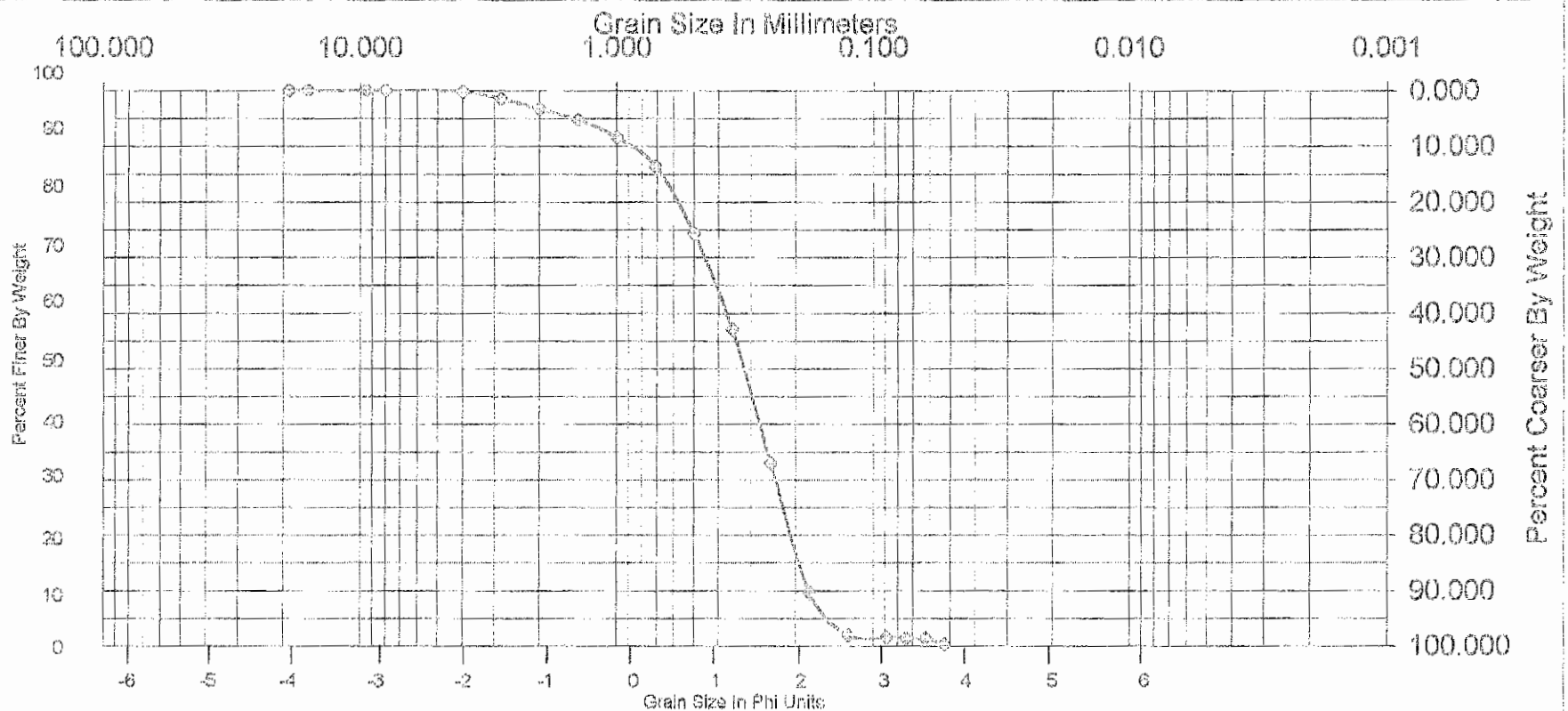
Dry Wt. 79.29 Percent Silt: 1.24
 Wash Wt. 78.31

Sieve Size	PHI Size	mm Size	Grams Retained	% Weight Retained	Cum. Grams Retained	C % Weight Retained
3/4	-4.250	19.027	0.000	0.000	0.000	0.000
5/8	-4.000	16.000	0.000	0.000	0.000	0.000
5/16	-3.250	9.514	0.000	0.000	0.000	0.000
4	-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	0.000	0.000	0.000	0.000
10	-1.000	2.000	0.040	0.050	0.040	0.050
14	-0.500	1.414	0.120	0.151	0.160	0.202
18	0.000	1.000	0.260	0.328	0.420	0.530
25	0.500	0.707	0.850	1.072	1.270	1.602
35	1.000	0.500	3.140	3.960	4.410	5.562
45	1.500	0.354	8.490	11.969	13.900	17.531
60	2.000	0.250	22.750	28.692	36.650	46.223
80	2.500	0.177	27.530	34.721	64.180	80.943
120	3.000	0.125	13.030	16.433	77.210	97.377
170	3.500	0.088	1.070	1.349	78.280	98.726
200	3.750	0.074	0.020	0.025	78.300	98.751
230	4.000	0.063	0.000	0.000	78.300	98.751
Pan	Pan	0.053	0.980	1.236	79.280	99.987


PHI 5 PHI 16 PHI 25 PHI 50 PHI 75 PHI 84 PHI 95
 0.93 1.44 1.63 2.05 2.41 2.59 2.93

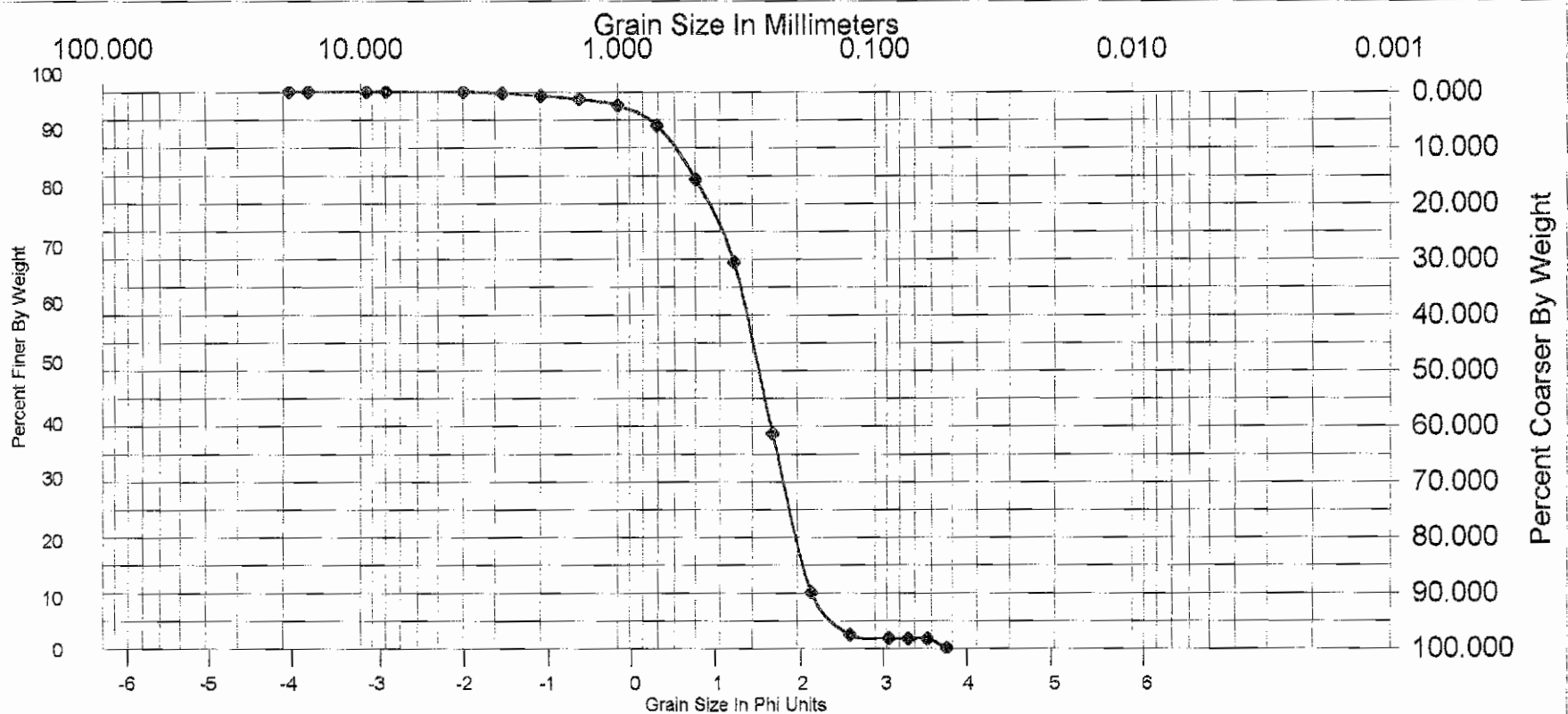
Median phi: 2.05 Median mm: 0.24

	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	1.99	0.25	0.59	-0.17	1.04
Moment	2.00	0.25	0.71	-0.17	1.56



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
CVBC-01-12/M	4.0		GW	1.24	0.32	0.37	-0.51	1.88	1.18	NA	NA	NA	Project Name: Central Boca
													Sample Type: VibraCores
													Collection Date: 4/6/01
													Analysis By: ID
<div>  <div> COASTAL PLANNING & ENGINEERING, INC. 2481 N. W. BOCA RATON BLVD. BOCA RATON, FLORIDA 33431 </div> </div>													Easting (X): 963106.50 Feet
													Northing (Y): 732423.24 Feet
													Sample Elevation: -45.5 NGVD
													Coord. System: State Plane 1983 FLA East

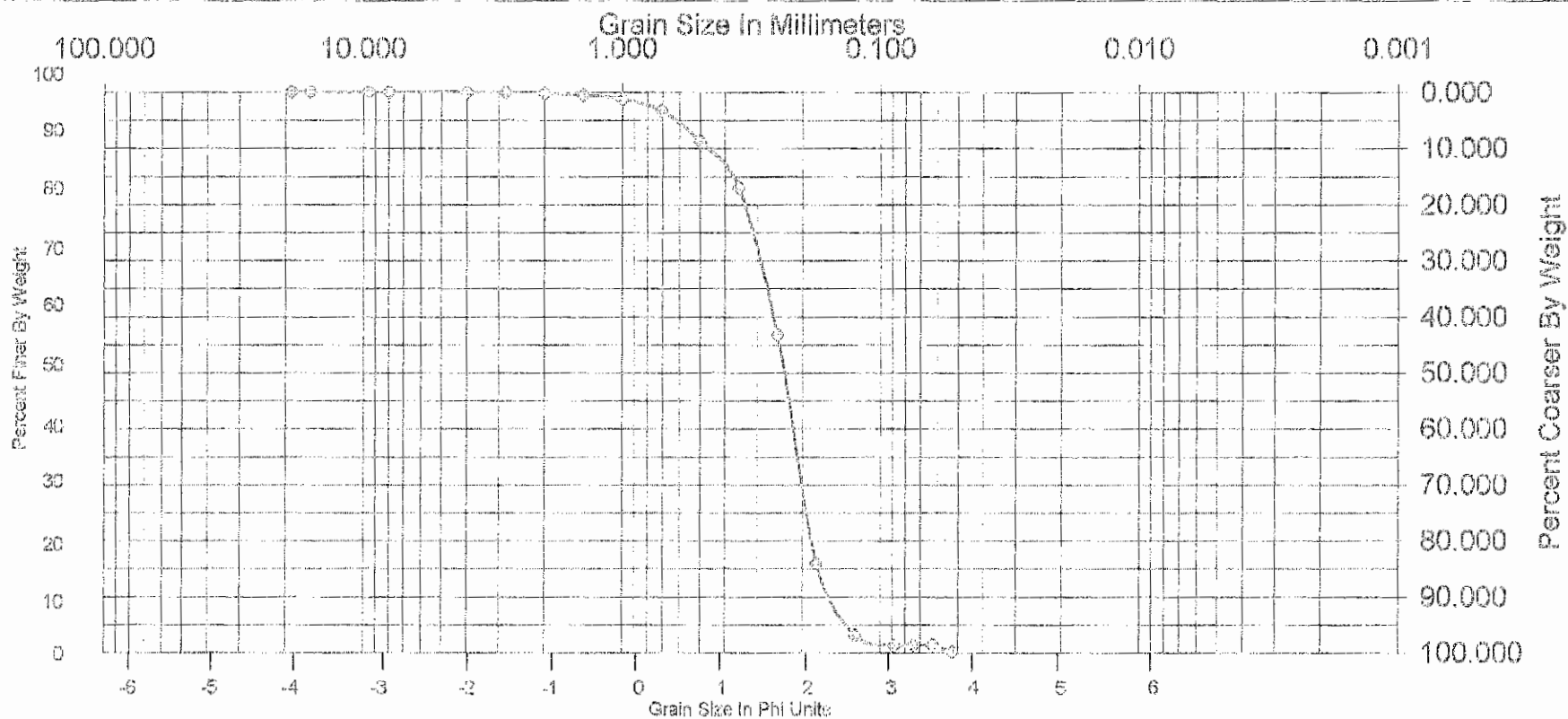


Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

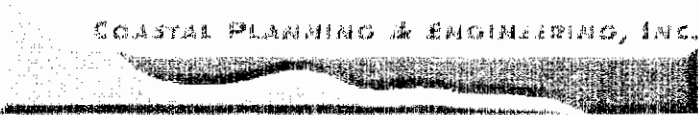
Sample No.	Depth	Description	USCS	% Silt	Median	Mean	Skew	Kurt	Sort	PL	LL	PI	Sample Information
CVBC-01-12#2	12.0		SP	1.63	0.29	0.31	-0.26	1.63	0.87	NA	NA	NA	Project Name: Central Boca
													Sample Type: VibraCores
													Collection Date: 4/6/01
													Analysis By: ID
													Easting (X): 963106.90 Feet
													Northing (Y): 732423.24 Feet
													Sample Elevation: -53.5 NGVD
													Coord. System: State Plane 1983 FLA East

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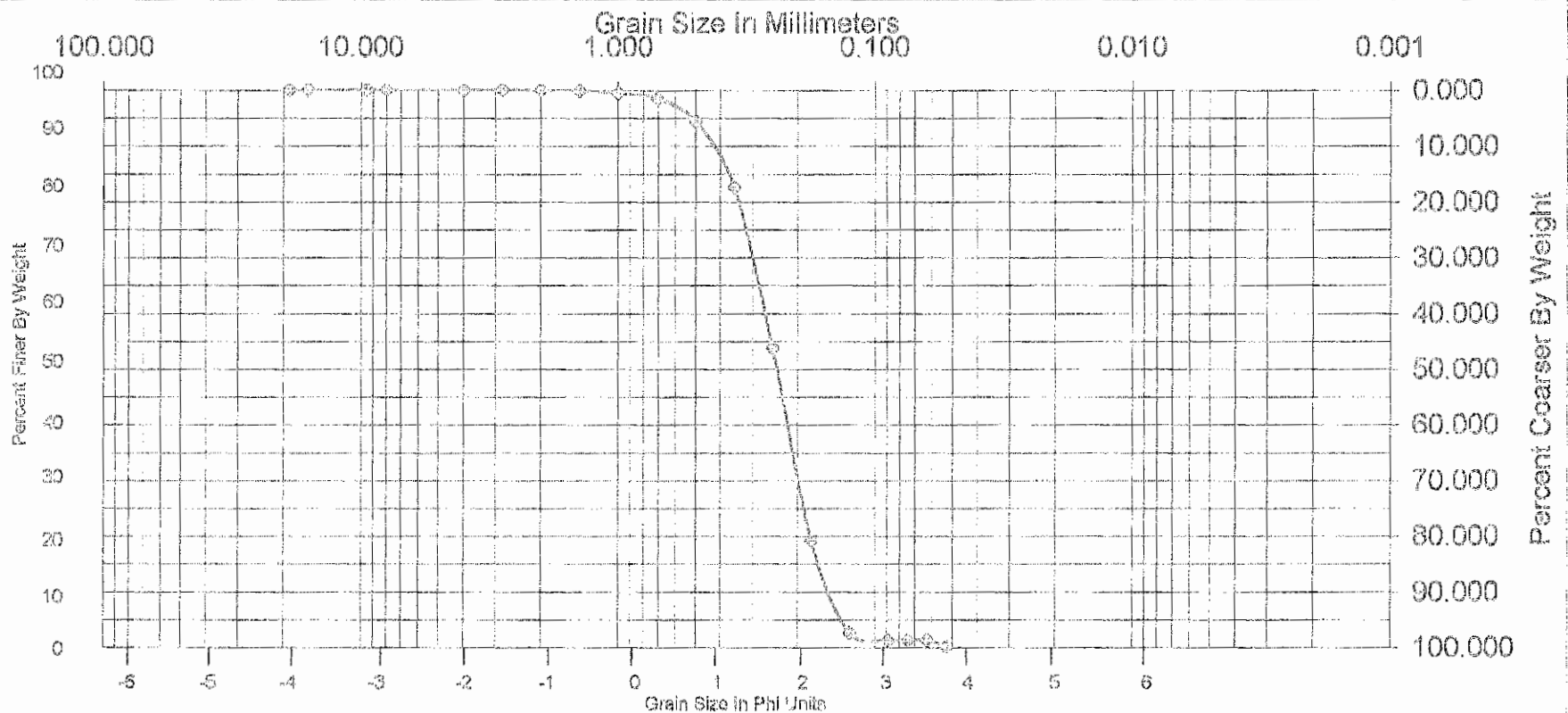
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BOCA RATON, FLORIDA 33431



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	
CVBC-01-12/4	0.7		SP	1.21	0.24	0.26	-0.43	1.93	0.76	NA	NA	NA	Project Name:	Central Boca
													Sample Type:	VibraCoras
													Collection Date:	5/17/01
													Analysis By:	ID
													Easting (X):	963106.90 Feet
													Northing (Y):	732423.24 Feet
													Sample Elevation:	-42.2 NGVD
													Coord. System:	State Plane 1983 FLA East

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	
CVBC-01-12#5	8.0		SP	1.24	0.24	0.25	-0.17	1.56	0.71	NA	NA	NA	Project Name:	Central Boca
													Sample Type:	VibraCores
													Collection Date:	5/17/01
													Analysis By:	ID
													Easting (X):	963106.90 Feet
													Northing (Y):	732423.24 Feet
													Sample Elevation:	-49.5 NGVD
													Coord. System:	State Plans 1983 FLA East

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