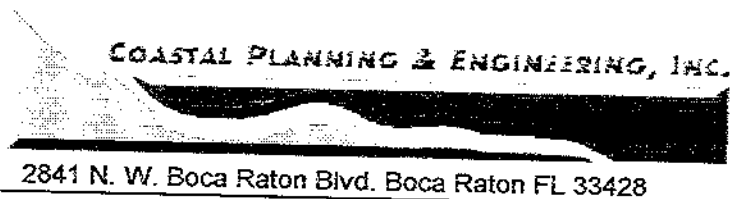


DRILLING LOG		DIVISION: South Atlantic		INSTALLATION: Jacksonville District		SHEET 1 of 1	
1. PROJECT		CENTRAL BOCA SAND STUDY		10. SIZE AND TYPE OF BIT 3 5/8"			
(Coordinates or Station)				11. DATUM FOR ELEVATION SHOWN (TBM or MSL)			
2. LOCATION		X=963896.76 Y=736434.28		MLW			
3. DRILLING AGENCY: 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-00-08		13. TOT NO. OF OVERBURDEN SAMPLES TAKEN		Disturbed: 0 Undisturbed: 0	
5. NAME OF DRILLER		JAMES COLE		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 Completed		3/21/01 14:40	
8. DEPTH DRILLED INTO ROCK N/A				17. ELEVATION TOP OF HOLE -53.8 ft			
9. TOTAL DEPTH OF HOLE 20.0 FT				18. TOTAL CORE RECOVERY FOR BORING 87%			
				19. SIGNATURE OF GEOLOGIST MW/ID			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-53.8	0					
	1		SAND, fine to medium grained, trace shell hash, gray (5Y-5/1), (SP). 0.5" shell @ 0.5'.		2	
-56	2					
-56.9	3		medium to fine grained, little shell hash, trace shell fragments, gray (5Y-5/1), (SP) from 2.2' to 3.1'. 0.5" sand dollar at 2.9'.		1	Sample #1, Depth = 2.5' Mean (mm): 0.24, Phi Sorting: 0.94 Silt: 2.12% (SP)
	4					
	5					
	6					
	7		fine to medium grained, trace shell hash, gray (5Y-5/1) (SP) from 3.1' to 10.2'. 0.5" coral @ 7.4'. Coral fragments from 10.2' to 11.0', ranging in size from 0.5" to 3.0".		2	Sample #2, Depth = 7.0' Mean (mm): 0.32, Phi Sorting: 0.79 Silt: 2.18% (SP)
	8					
	9					
-65.8	10					
	11					
-65.8	12					
-66.8	13		medium to fine grained, little shell hash, gray (5Y-5/1), (SP) from 12.0' to 12.4'. 2.5" coral @ 12.3'.		1	
	14		fine to medium grained, trace shell hash, gray (5Y-5/1), (SP) from 12.4' to 13.0'.		2	
-68.8	15		SAND medium to fine grained, trace shell hash, some shell fragments, gray (5Y-6/1), (SP). 0.5" coral @ 13.7', 1" coral @ 13.9', 2" coral @ 14.2'.		3	Sample #3, Depth = 13.4' Mean (mm): 0.48, Phi Sorting: 2.09 Silt: 3.13% (SW)
	16		fine to medium grained, trace shell hash, gray (5Y-6/1), (SP) from 15.0' to 16.7'. 0.5" coral @ 15.9', 1.5" shell @ 16.6'.		4	Sample #4, Depth = 15.5' Mean (mm): 0.31, Phi Sorting: 1.25 Silt: 2.97% (SW)
-70.5	17		medium to fine grained, little shell hash, trace shell fragments, gray (5Y-5/1), (SP) from 16.7' to 17.3'.		3	
-71.1	18					
	19		No Recovery			
-73.8	20					
	21		End of Boring			
	22		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			Note: 1) This column contains laboratory data. 2) Samples are taken from a 3" section of the core, centered on the sample depth.
	23					
	24					

Gradation Analysis Report

Proj Name: Central Boca
Sample: CBVC-01-08#1
Date: 4/13/01
By: ID



Elevation:	-56.30	Feet	Easting:	963806.76	State Plane	1983
Reference:	NGVD		Northing:	736434.28	FLA East	Feet

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

Dry Wt.	57.10	Percent Silt:	2.12
Wash Wt.	55.91		

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	0.100	0.175	0.100	0.175
7	-1.500	2.828	0.480	0.841	0.580	1.016
10	-1.000	2.000	0.350	0.613	0.930	1.629
14	-0.500	1.414	0.440	0.771	1.370	2.399
18	0.000	1.000	0.570	0.998	1.940	3.398
25	0.500	0.707	1.080	1.891	3.020	5.289
35	1.000	0.500	2.340	4.098	5.360	9.387
45	1.500	0.354	3.920	6.865	9.280	16.252
60	2.000	0.250	9.810	17.180	19.090	33.433
80	2.500	0.177	19.250	33.713	38.340	67.145
120	3.000	0.125	15.100	26.445	53.440	93.590
170	3.500	0.088	2.410	4.221	55.850	97.811
200	3.750	0.074	0.040	0.070	55.890	97.881
230	4.000	0.063	0.010	0.018	55.900	97.898
Pan	Pan	0.053	1.200	2.102	57.100	100.000

PHI 5	PHI 16	PHI 25	PHI 50	PHI 75	PHI 84	PHI 95
0.42	1.48	1.75	2.25	2.65	2.82	3.17

Median phi: 2.25 Median mm: 0.21

	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.03	0.25	0.75	-0.48	1.26
Moment	2.08	0.24	0.94	-0.58	2.03

Gradation Analysis Report

Proj Name: Central Boca
Sample: CBVC-01-08#2
Date: 4/13/01
By: ID

COASTAL PLANNING & ENGINEERING, INC.

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

Elevation: -60.80 Feet Easting: 963806.76 State Plane 1983
Reference: NGVD Northing: 736434.28 FLA East Feet

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

Dry Wt. 70.77 Percent Silt: 2.18
Wash Wt. 69.24

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	0.100	0.141	0.100	0.141
7	-1.500	2.828	0.070	0.099	0.170	0.240
10	-1.000	2.000	0.350	0.495	0.520	0.735
14	-0.500	1.414	0.440	0.622	0.960	1.357
18	0.000	1.000	0.890	1.258	1.850	2.614
25	0.500	0.707	2.300	3.250	4.150	5.864
35	1.000	0.500	5.140	7.263	9.290	13.127
45	1.500	0.354	13.540	19.132	22.830	32.259
60	2.000	0.250	23.980	33.884	46.810	66.144
80	2.500	0.177	19.920	28.148	66.730	94.291
120	3.000	0.125	2.380	3.363	69.110	97.654
170	3.500	0.088	0.050	0.071	69.160	97.725
200	3.750	0.074	0.050	0.071	69.210	97.796
230	4.000	0.063	0.010	0.014	69.220	97.810
Pan	Pan	0.053	1.530	2.162	70.750	99.972

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
0.37	1.07	1.31	1.76	2.16	2.32	2.60

Median phi: 1.76 Median mm: 0.29

	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	1.62	0.32	0.65	-0.32	1.08
Moment	1.66	0.32	0.79	-0.38	1.72

Gradation Analysis Report

Proj Name: Central Boca
Sample: CBVC-01-08#3
Date: 4/13/01
By: ID

COASTAL PLANNING & ENGINEERING, INC.

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

Elevation: -67.20 Feet Easting: 963806.76 State Plane 1983
Reference: NGVD Northing: 736434.28 FLA East Feet

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

Dry Wt. 49.59 Percent Silt: 3.13
Wash Wt. 48.09

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	0.750	1.512	0.750	1.512
4	-3.000	8.000	0.620	1.250	1.370	2.763
5	-2.000	4.000	1.380	2.783	2.750	5.545
7	-1.500	2.828	2.300	4.638	5.050	10.184
10	-1.000	2.000	2.760	5.566	7.810	15.749
14	-0.500	1.414	2.200	4.436	10.010	20.186
18	0.000	1.000	1.410	2.843	11.420	23.029
25	0.500	0.707	2.000	4.033	13.420	27.062
35	1.000	0.500	2.360	4.759	15.780	31.821
45	1.500	0.354	3.230	6.513	19.010	38.334
60	2.000	0.250	8.620	17.383	27.630	55.717
80	2.500	0.177	12.810	25.832	40.440	81.549
120	3.000	0.125	6.470	13.047	46.910	94.596
170	3.500	0.088	0.070	0.141	46.980	94.737
200	3.750	0.074	1.040	2.097	48.020	96.834
230	4.000	0.063	0.030	0.060	48.050	96.895
Pan	Pan	0.053	1.520	3.065	49.570	99.960

PHI 5 PHI 16 PHI 25 PHI 50 PHI 75 PHI 84 PHI 95
-2.20 -0.97 0.24 1.83 2.37 2.59 3.53

Median phi: 1.83 Median mm: 0.28

	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	0.96	0.52	1.76	-0.74	1.10
Moment	1.06	0.48	2.09	-0.40	1.54

Gradation Analysis Report

Proj Name: Central Boca
Sample: CBVC-01-08#4
Date: 4/13/01
By: ID

COASTAL PLANNING & ENGINEERING, INC.

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

Elevation: -69.30 Feet Easting: 963806.76 State Plane 1983
Reference: NGVD Northing: 736434.28 FLA East Feet

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

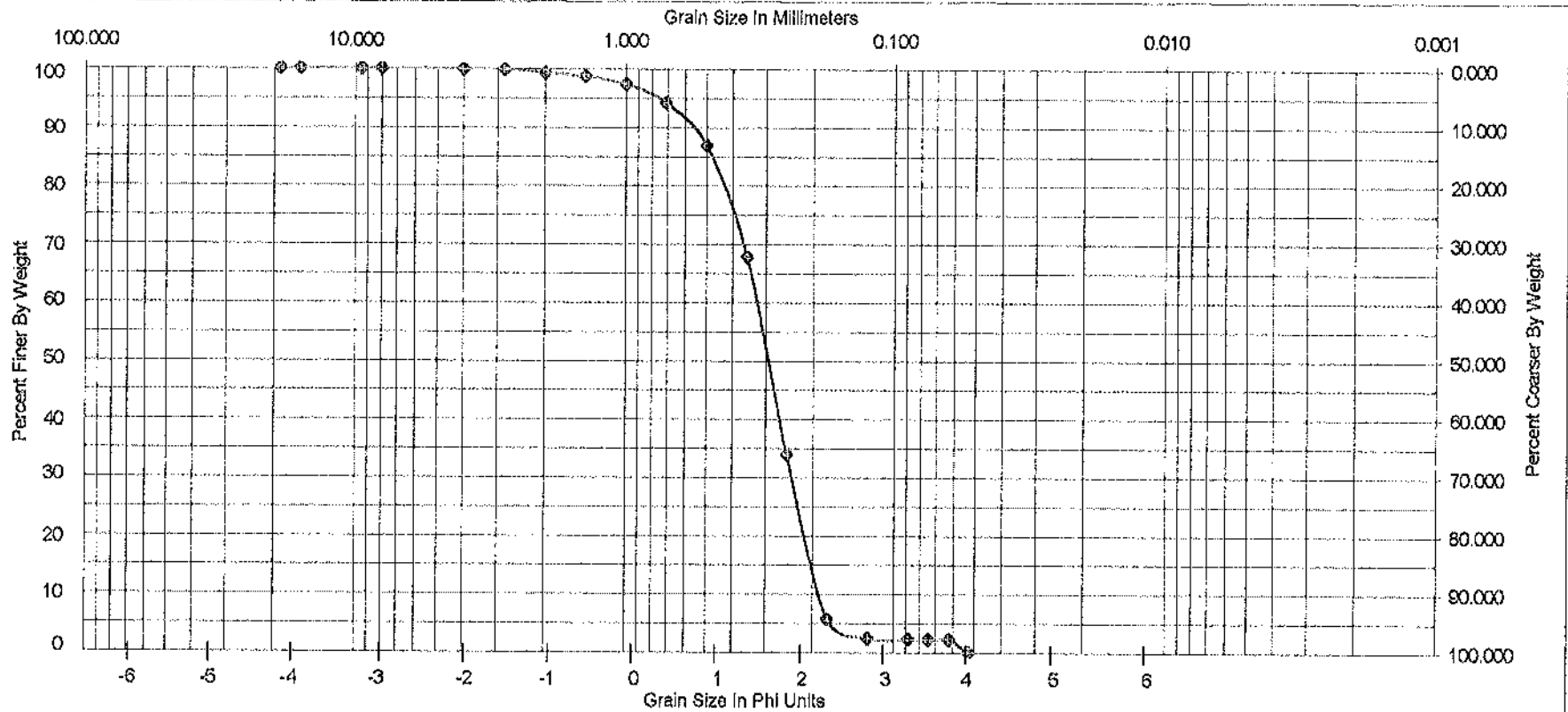
Dry Wt. 66.38 Percent Silt: 2.97
Wash Wt. 64.44

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	0.140	0.211	0.140	0.211
5	-2.000	4.000	0.320	0.482	0.460	0.693
7	-1.500	2.828	0.650	0.979	1.110	1.672
10	-1.000	2.000	1.040	1.567	2.150	3.239
14	-0.500	1.414	1.410	2.124	3.560	5.363
18	0.000	1.000	1.960	2.953	5.520	8.316
25	0.500	0.707	2.670	4.022	8.190	12.338
35	1.000	0.500	4.050	6.101	12.240	18.439
45	1.500	0.354	6.160	9.280	18.400	27.719
60	2.000	0.250	13.600	20.488	32.000	48.207
80	2.500	0.177	20.690	31.169	52.690	79.376
120	3.000	0.125	10.370	15.622	63.060	94.998
170	3.500	0.088	1.230	1.853	64.290	96.851
200	3.750	0.074	0.120	0.181	64.410	97.032
230	4.000	0.063	0.020	0.030	64.430	97.062
Pan	Pan	0.053	1.950	2.938	66.380	100.000

PHI 5 PHI 16 PHI 25 PHI 50 PHI 75 PHI 84 PHI 95
-0.59 0.80 1.35 2.03 2.43 2.65 3.00

Median phi: 2.03 Median mm: 0.25

	Mean phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	1.58	0.33	1.01	-0.79	1.37
Moment	1.67	0.31	1.25	-0.71	2.10

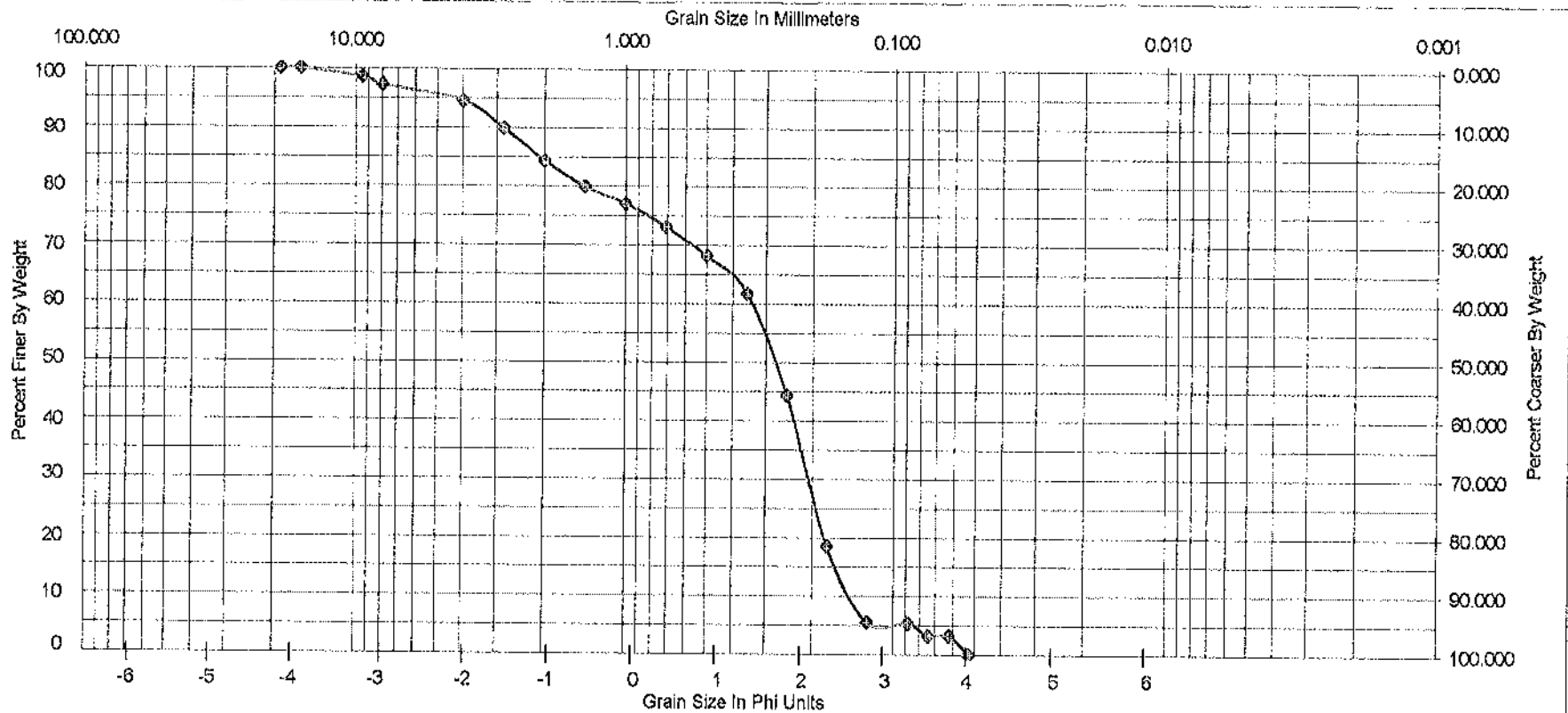


Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample No.	Depth	Description	USCS	% Silt	Median	Mean	Skew	Kurt	Sort	PL	LL	PI	Sample Information	
CBVC-01-03#2	7.0		SP	2.18	0.3	0.32	-0.38	1.72	0.79	NA	NA	NA	Project Name:	Central Boca
													Sample Type:	VibraCores
													Collection Date:	4/13/01
													Analysis By:	ID
													Easting (X):	963806.76 Feet
													Northing (Y):	738434.28 Feet
													Sample Elevation:	-60.8 NGVD
													Coord. System:	State Plane 1983 FLA East

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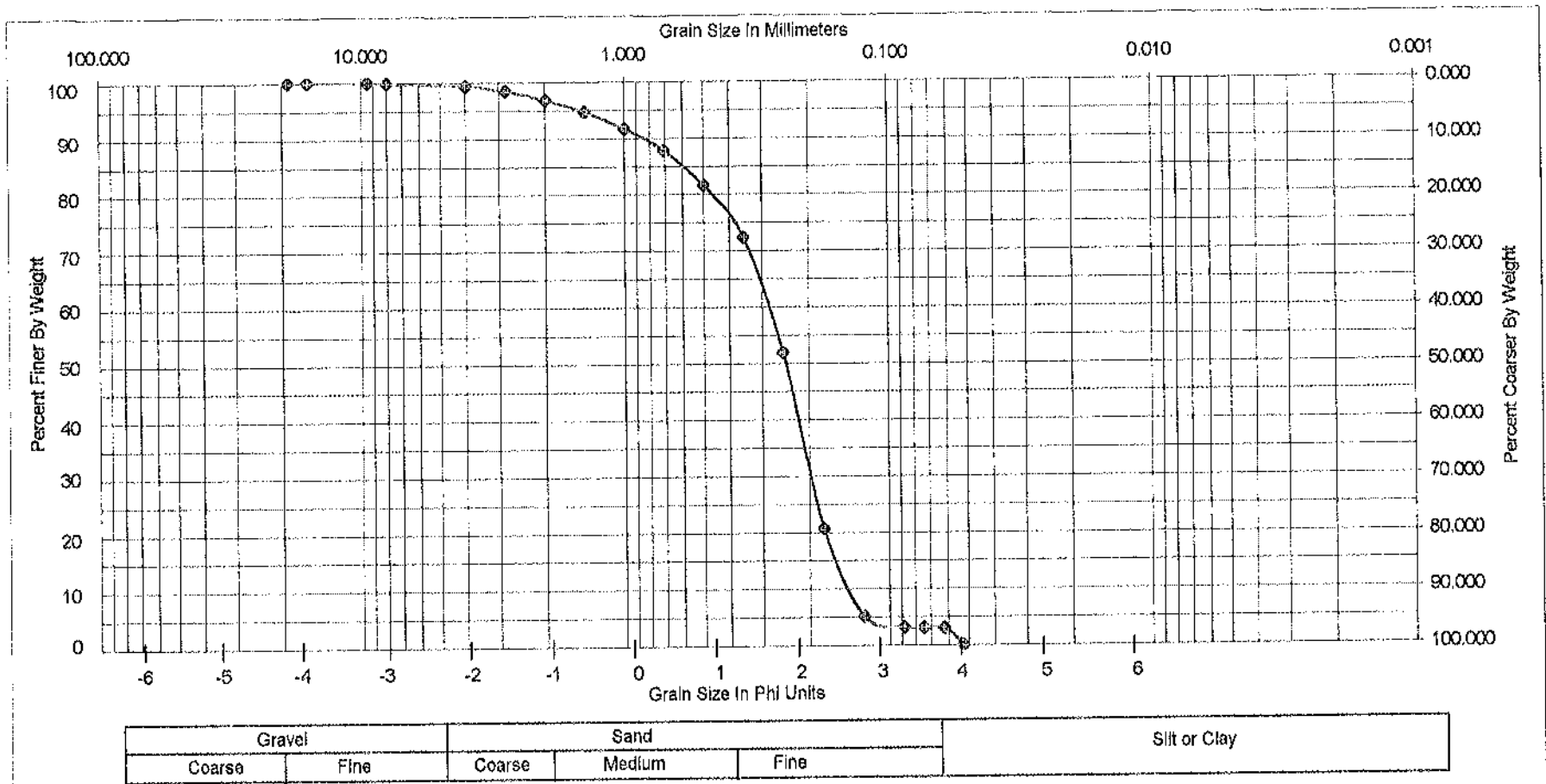


Gravel		Sand ^P			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample No.	Depth	Description	USCS	% Silt	Median	Mean	Skew	Kurt	Sort	PL	LL	PI	Sample Information	
CBVC-01-08#3	13.4		SW	3.13	0.28	0.48	-0.4	1.54	2.09	NA	NA	NA	Project Name:	Central Boca
													Sample Type:	VibraCores
													Collection Date:	4/13/01
													Analysis By:	ID
													Easting (X):	963806.76 Feet
													Northing (Y):	736434.28 Feet
													Sample Elevation:	-67.2 NGVD
													Coord. System:	State Plane 1983 FLA East

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Sample No.	Depth	Description	USCS	% Silt	Median	Mean	Skew	Kurt	Sort	PL	LL	PI	Sample Information	
CBVC-01-08#4	15.5		SW	2.97	0.24	0.31	-0.71	2.1	1.25	NA	NA	NA	Project Name:	Central Boca
													Sample Type:	VibraCores
													Collection Date:	4/13/01
													Analysis By:	ID
													Easting (X):	963806.76 Feet
													Northing (Y):	738434.28 Feet
													Sample Elevation:	-69.3 NGVD
													Coord. System:	State Plane 1983 FLA East

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