APPENDIX B

Fox Island Shoreline
Beach Sediment Grain Size Analysis
From preliminary report HWA GeoScience Inc.

Notes:

Attached results are preliminary. Final report to follow.

The ten transects are numbered as follows :

Northern Transects are P1-N, P2-N, P3-N, P4-N

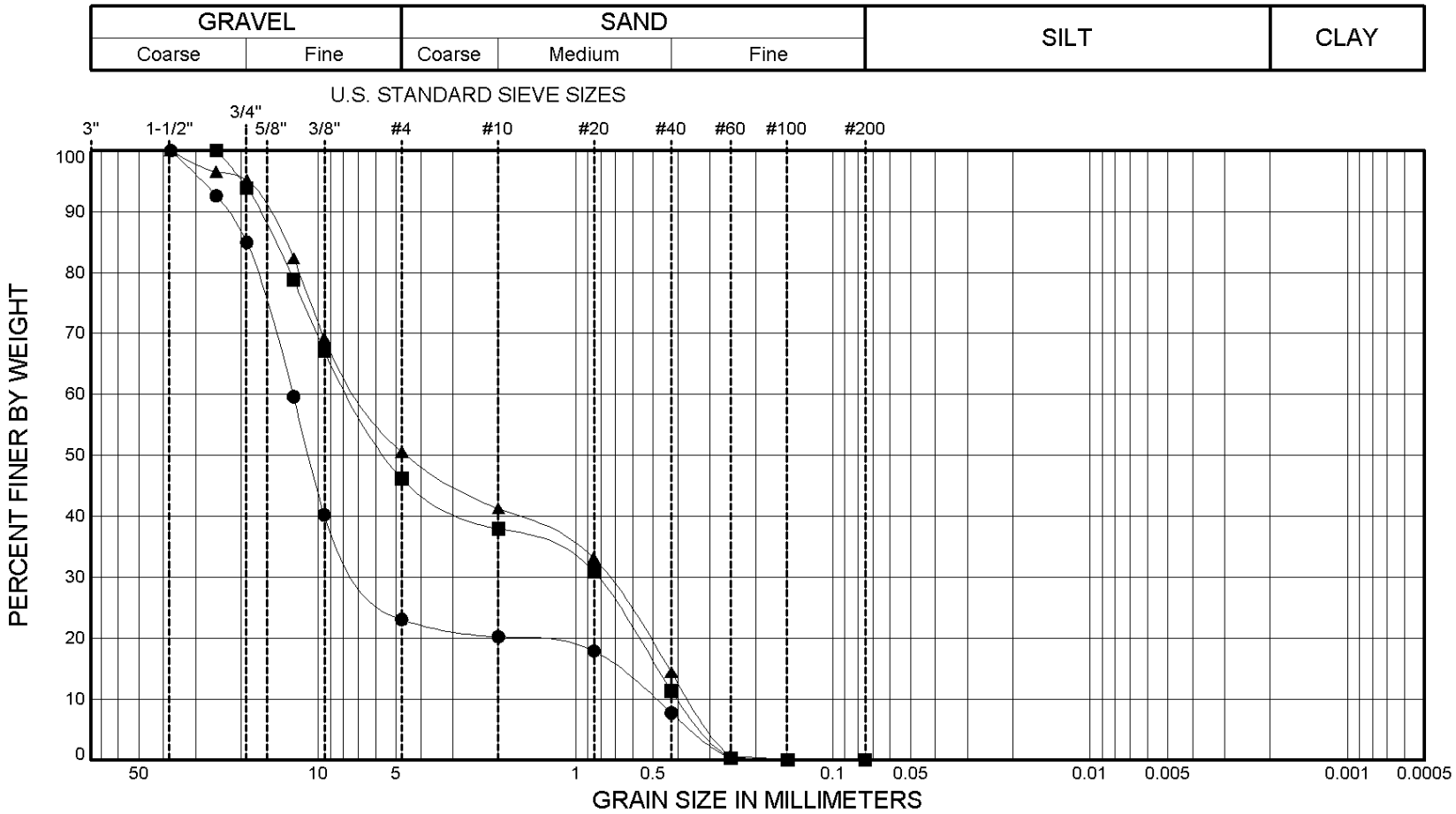
Southern Transects are P1-S, P2-S, P3-S, P4-S

Center Transect is PCL

Salient Transect is SAL

Each transect has 6 samples, A through F. Sample A is at the high mean tide elevation. Sample F is at the low mean tide elevation. Samples B, C, D, and E are evenly spaced along the transect at the 1/5, 2/5, 3/5, and 4/5 locations.

Samples on Figure 9 (P3-N-A,B,& C) have a portion of the underlying clay sediments mixed with the sample, and are a combination of the two layers…poorly graded SAND with gravel, overlying clay. The clay likely underlies other areas, but was not encountered within the 4" depth of sampling.



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P1-N-A		(GP) olive-gray, poorly graded GRAVEL with sand	2				76.9	23.0	0.1
■	P1-N-B		(GP) olive-gray, poorly graded GRAVEL with sand	2				53.8	46.2	0.0
▲	P1-N-C		(SP) olive-gray, poorly graded SAND with gravel	2				49.4	50.6	0.0

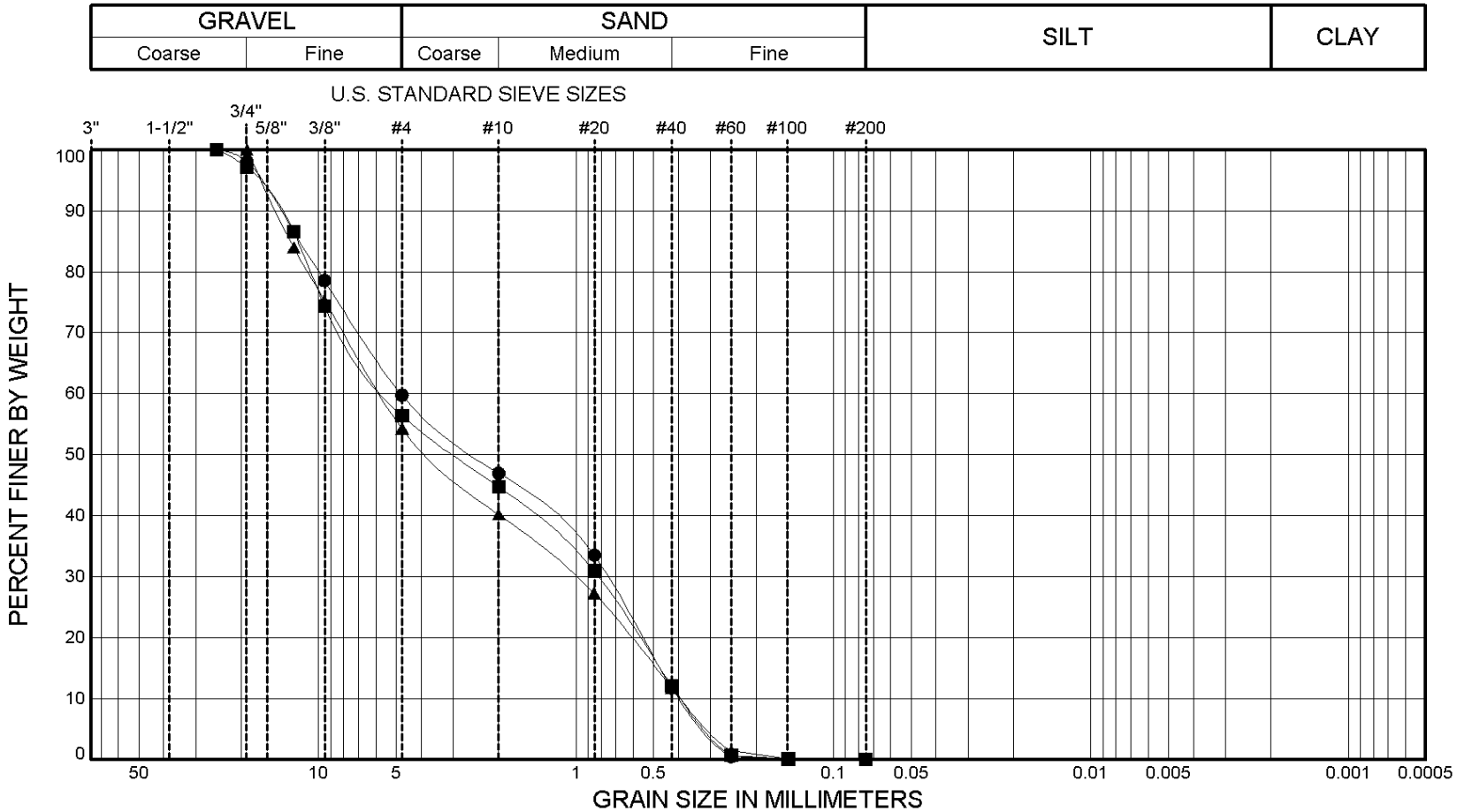
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 1

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P1-N-D		(SP) olive-gray, poorly graded SAND with gravel	3				40.2	59.7	0.0
■	P1-N-E		(SP) olive-gray, poorly graded SAND with gravel	11				43.6	56.3	0.1
▲	P1-N-F		(SP) olive-gray, poorly graded SAND with gravel	10				45.7	54.2	0.1

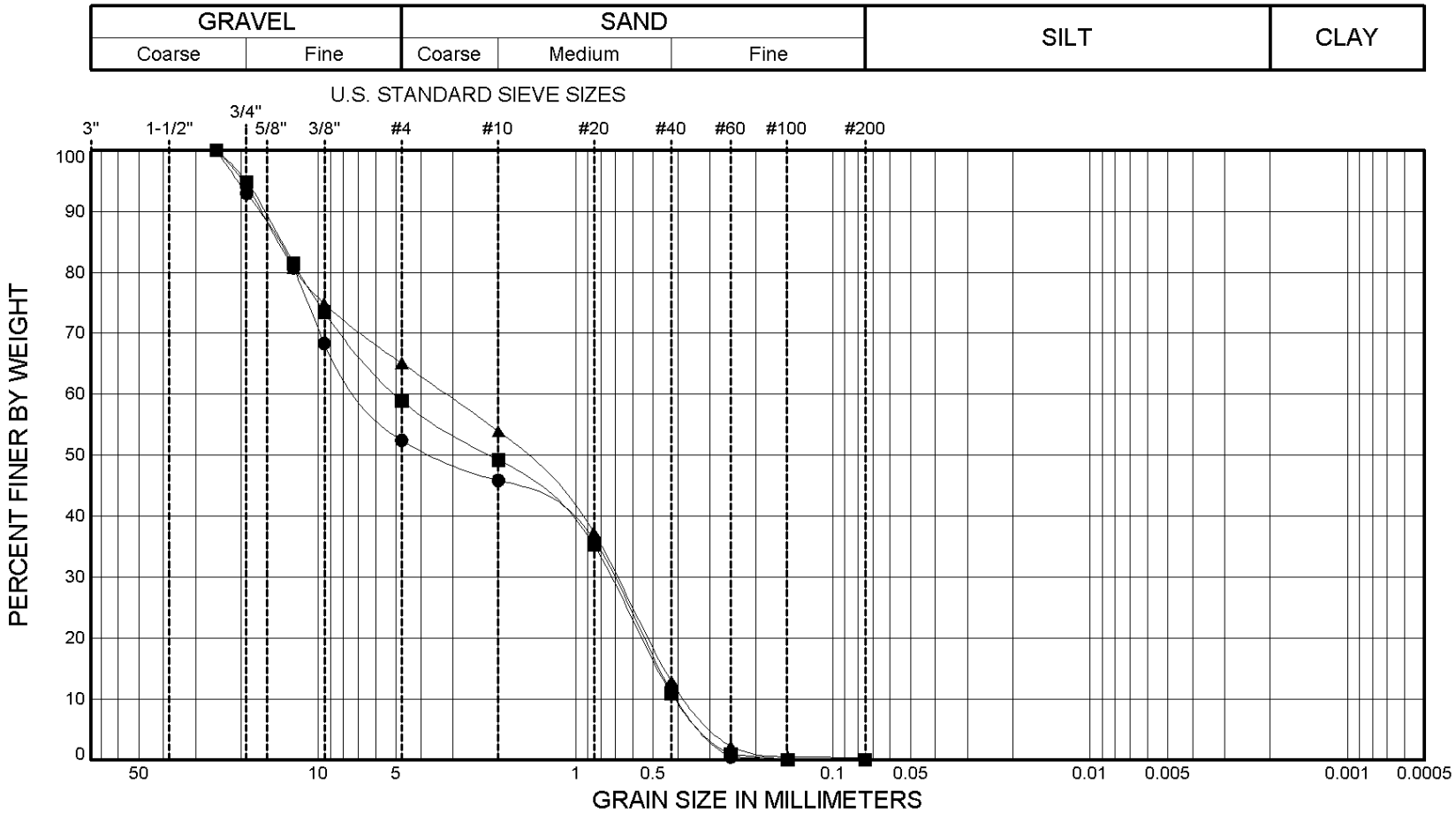
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 2

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P1-S-A		(SP) olive-gray, poorly graded SAND with gravel	2				47.6	52.4	0.0
■	P1-S-B		(SP) olive-gray, poorly graded SAND with gravel	2				41.1	58.9	0.0
▲	P1-S-C		(SP) olive-gray, poorly graded SAND with gravel	3				34.9	64.8	0.4

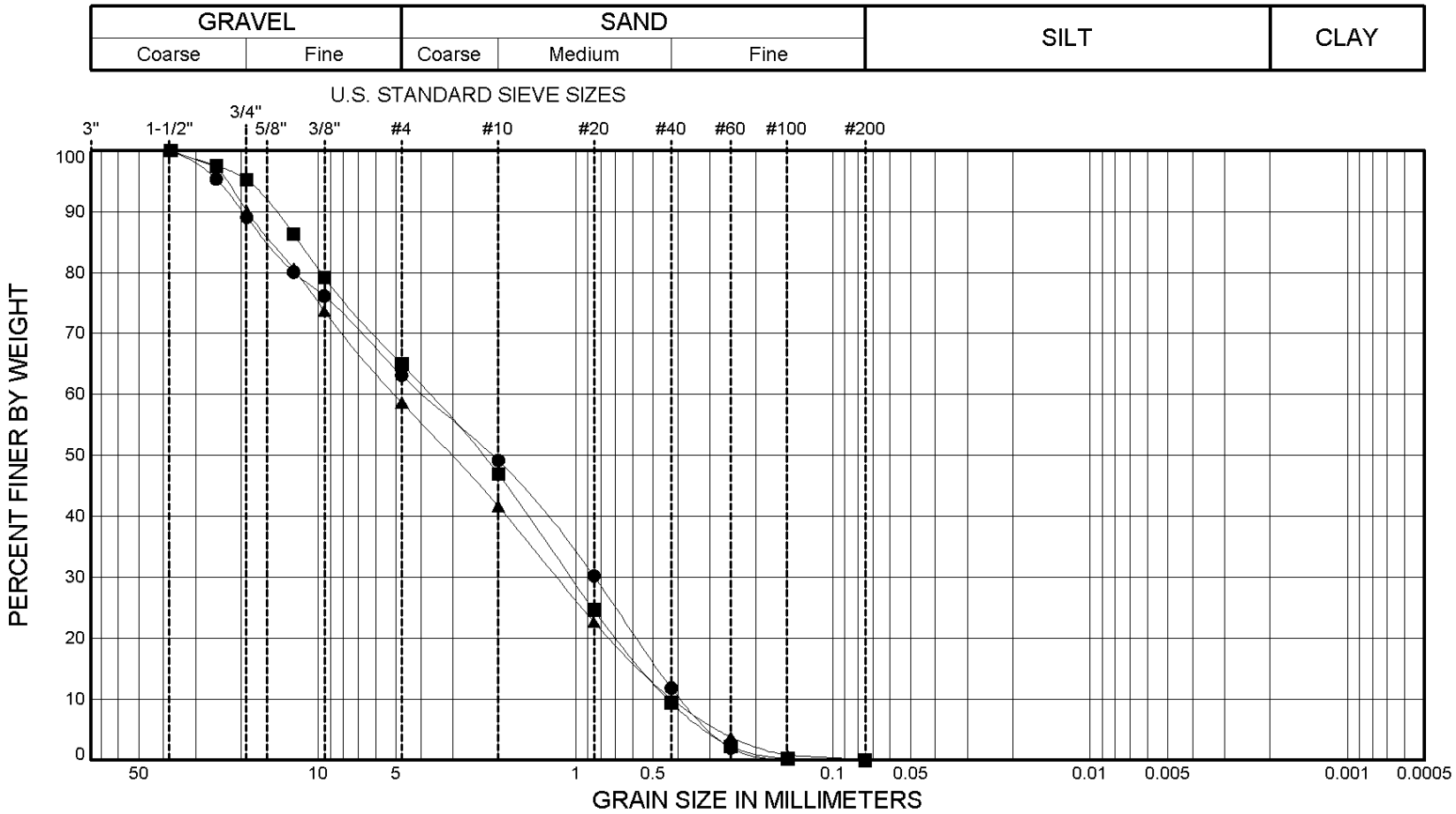
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 3

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P1-S-D		(SP) olive-gray, poorly graded SAND with gravel	3				36.9	63.1	0.0
■	P1-S-E		(SP) olive-gray, poorly graded SAND with gravel	4				35.0	65.0	0.0
▲	P1-S-F		(SP) olive-gray, poorly graded SAND with gravel	10				41.3	58.5	0.2

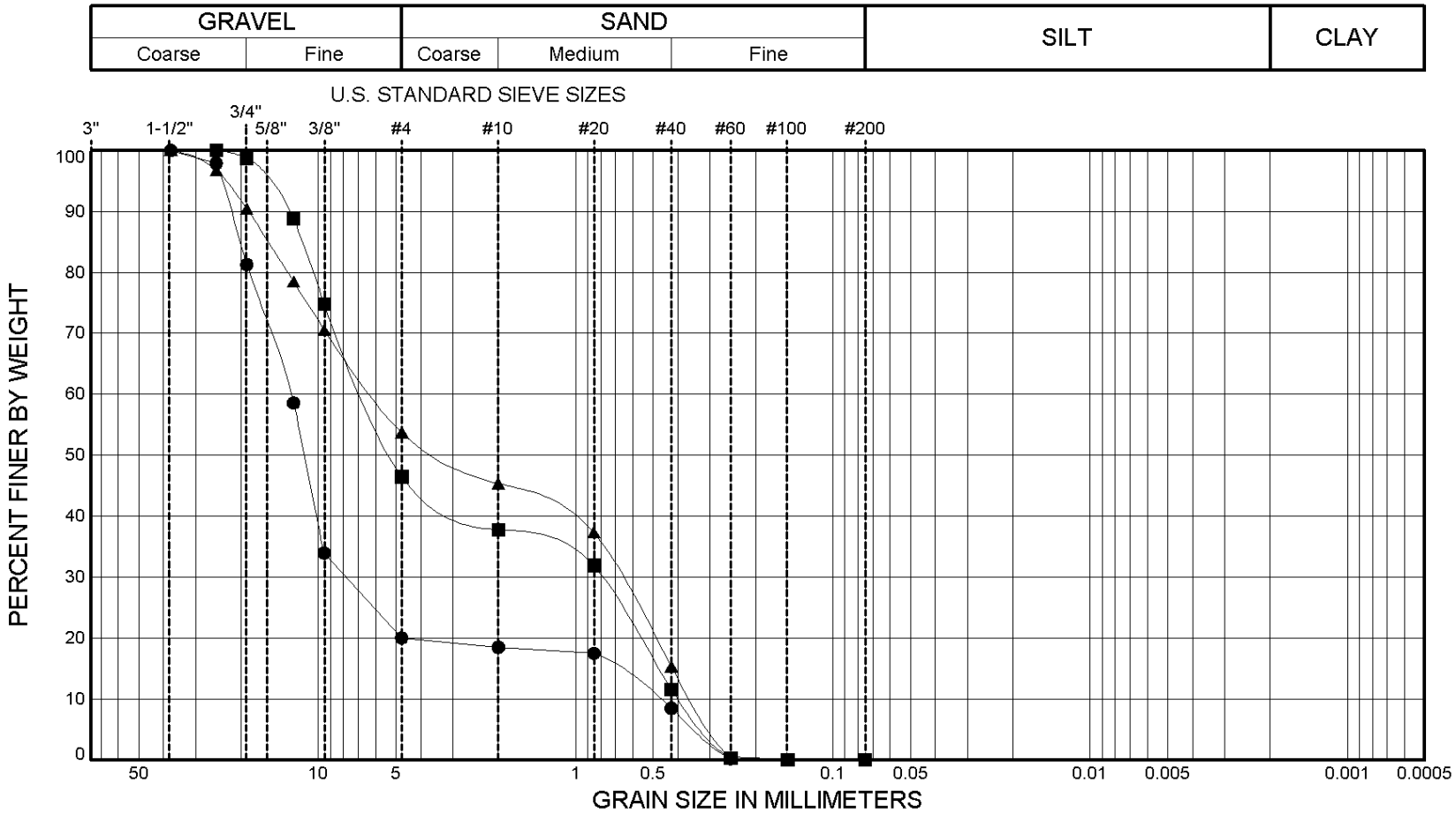
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 4

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P2-N-A		(GP) olive-gray, poorly graded GRAVEL with sand	2				80.0	20.0	0.0
■	P2-N-B		(GP) olive-gray, poorly graded GRAVEL with sand	2				53.5	46.4	0.0
▲	P2-N-C		(SP) olive-gray, poorly graded SAND with gravel	2				46.3	53.6	0.2

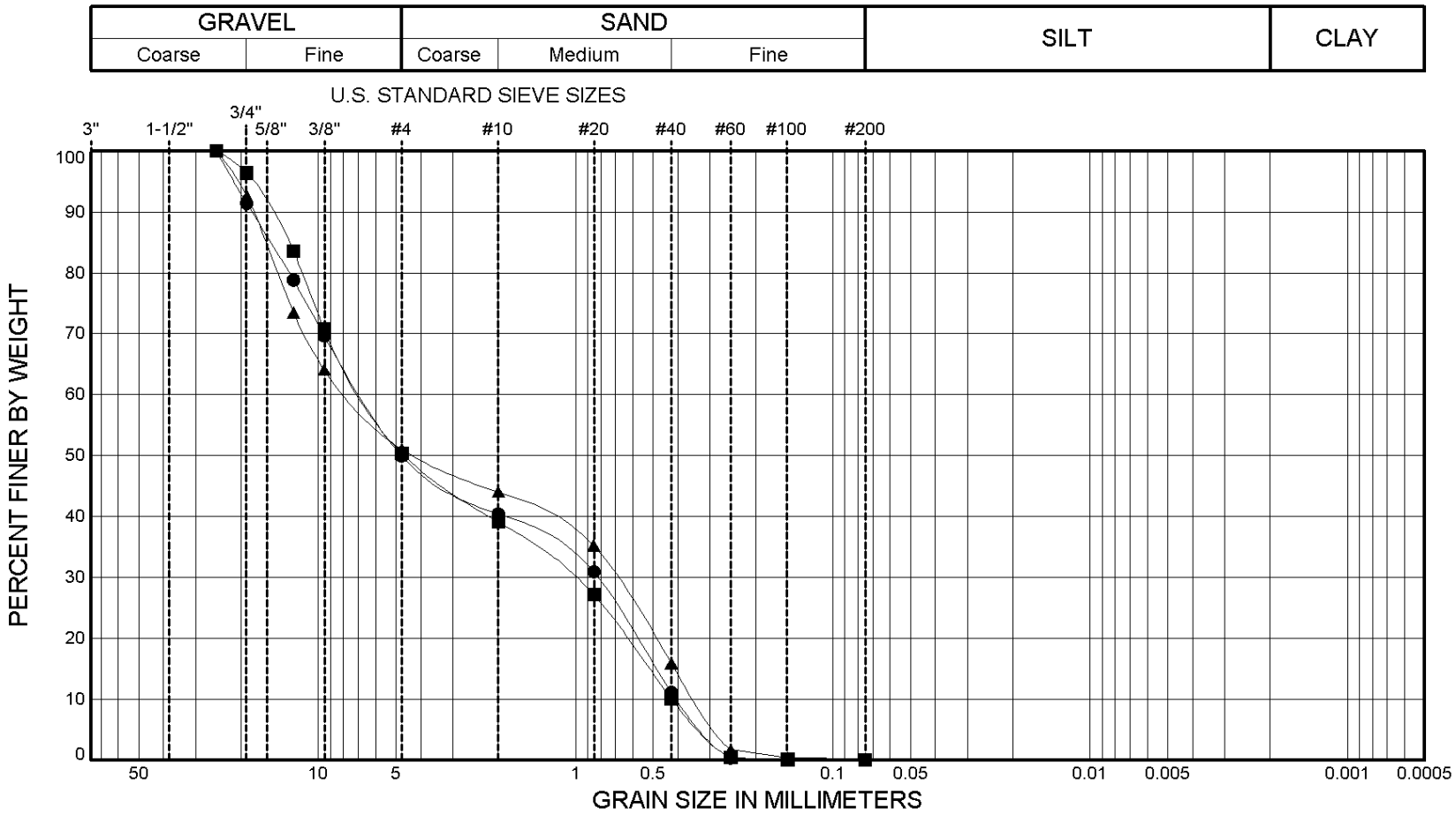
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 5

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P2-N-D		(GP) olive-gray, poorly graded GRAVEL with sand	3				50.1	49.9	0.0
■	P2-N-E		(SP) olive-gray, poorly graded SAND with gravel	9				49.6	50.3	0.1
▲	P2-N-F		(SP) olive-gray, poorly graded SAND with gravel	9				49.0	50.8	0.3

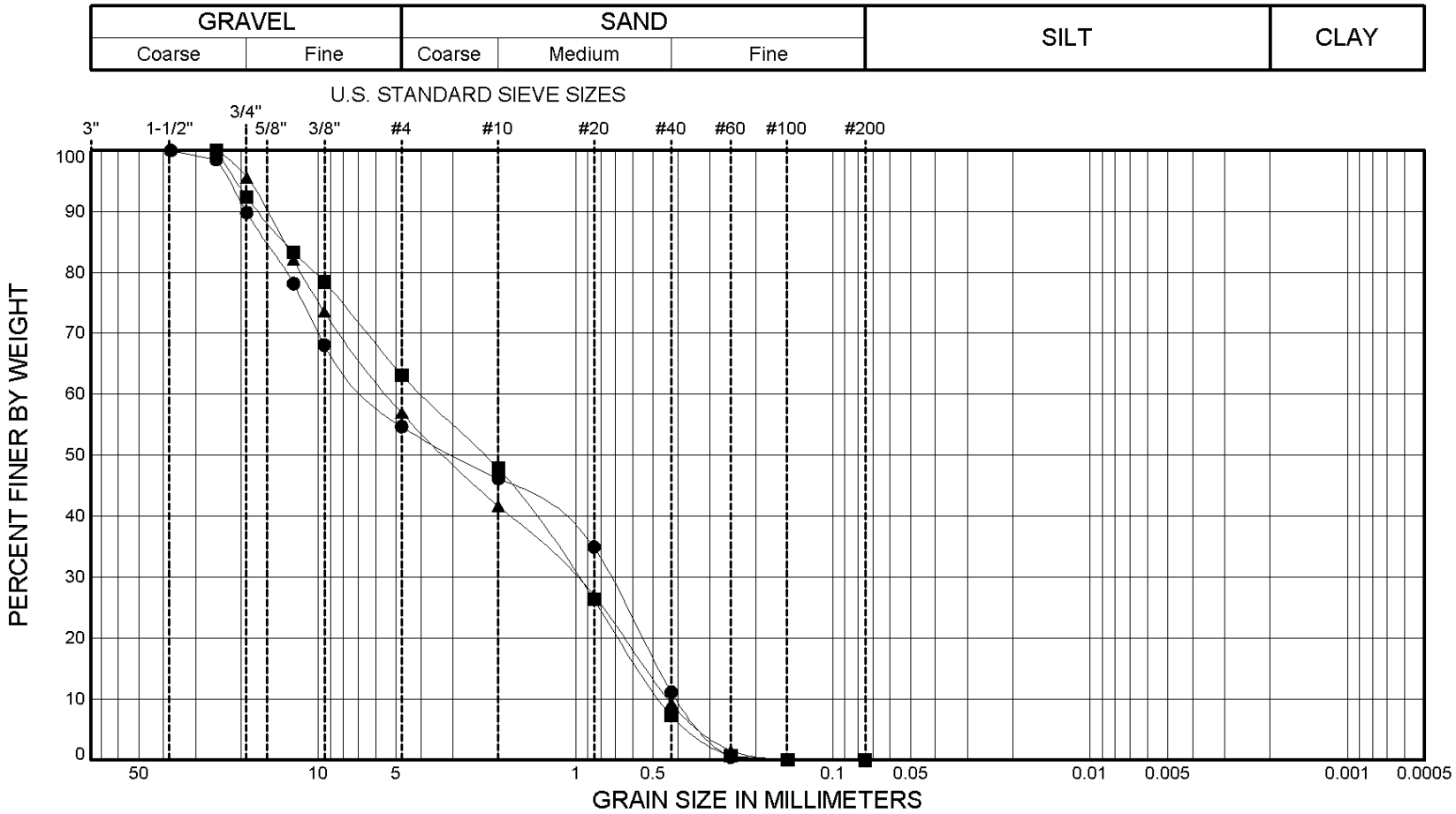
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 6

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P2-S-A		(SP) olive-gray, poorly graded SAND with gravel	2				45.3	54.7	0.0
■	P2-S-B		(SP) olive-gray, poorly graded SAND with gravel	2				36.8	63.2	0.0
▲	P2-S-C		(SP) olive-gray, poorly graded SAND with gravel	3				43.1	56.9	0.0

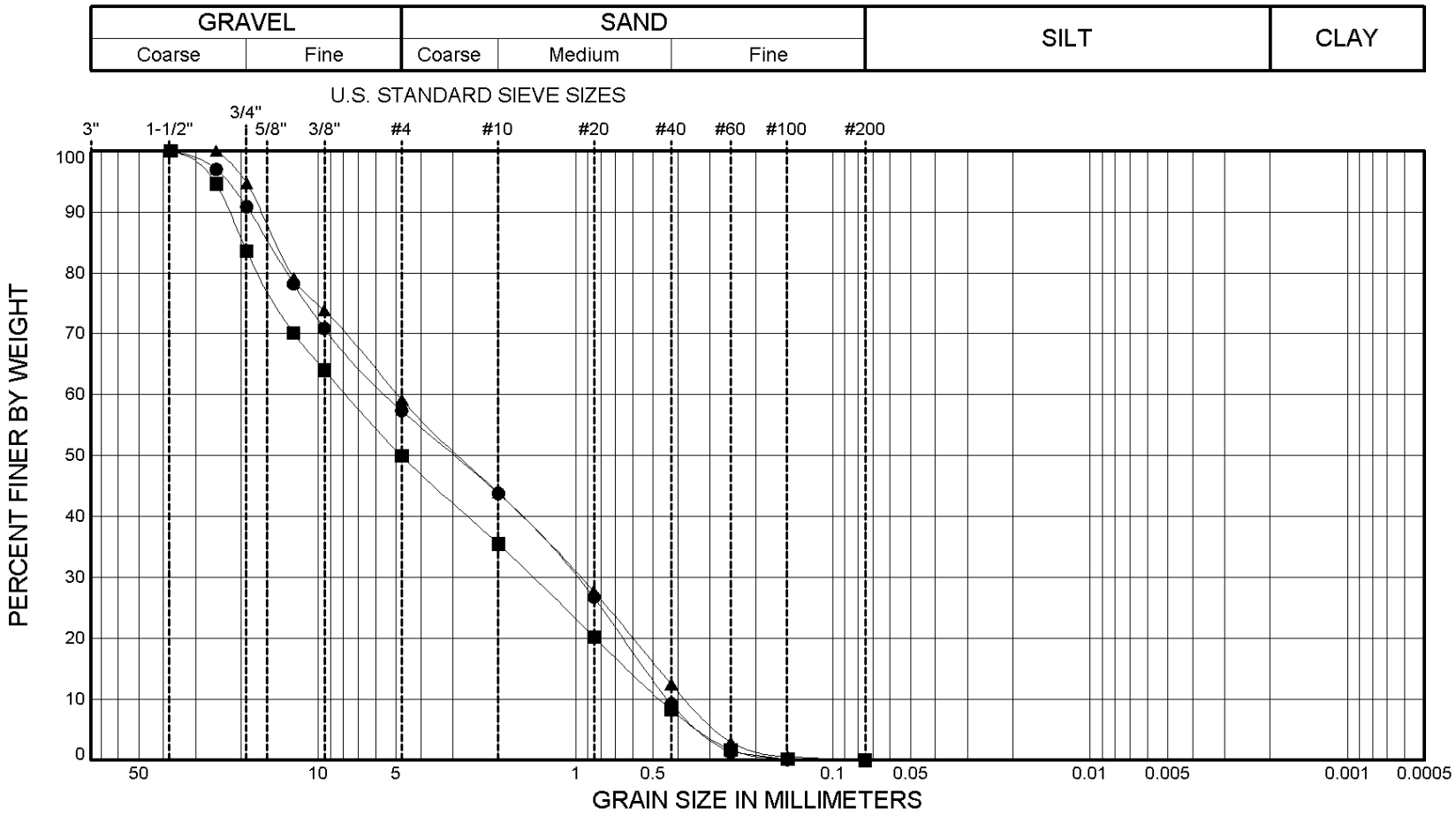
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 7

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P2-S-D		(SP) olive-gray, poorly graded SAND with gravel	2				42.6	57.3	0.0
■	P2-S-E		(SP) olive-gray, poorly graded SAND with gravel	3				50.0	50.0	0.0
▲	P2-S-F		(SP) olive-gray, poorly graded SAND with gravel	10				40.8	59.1	0.1

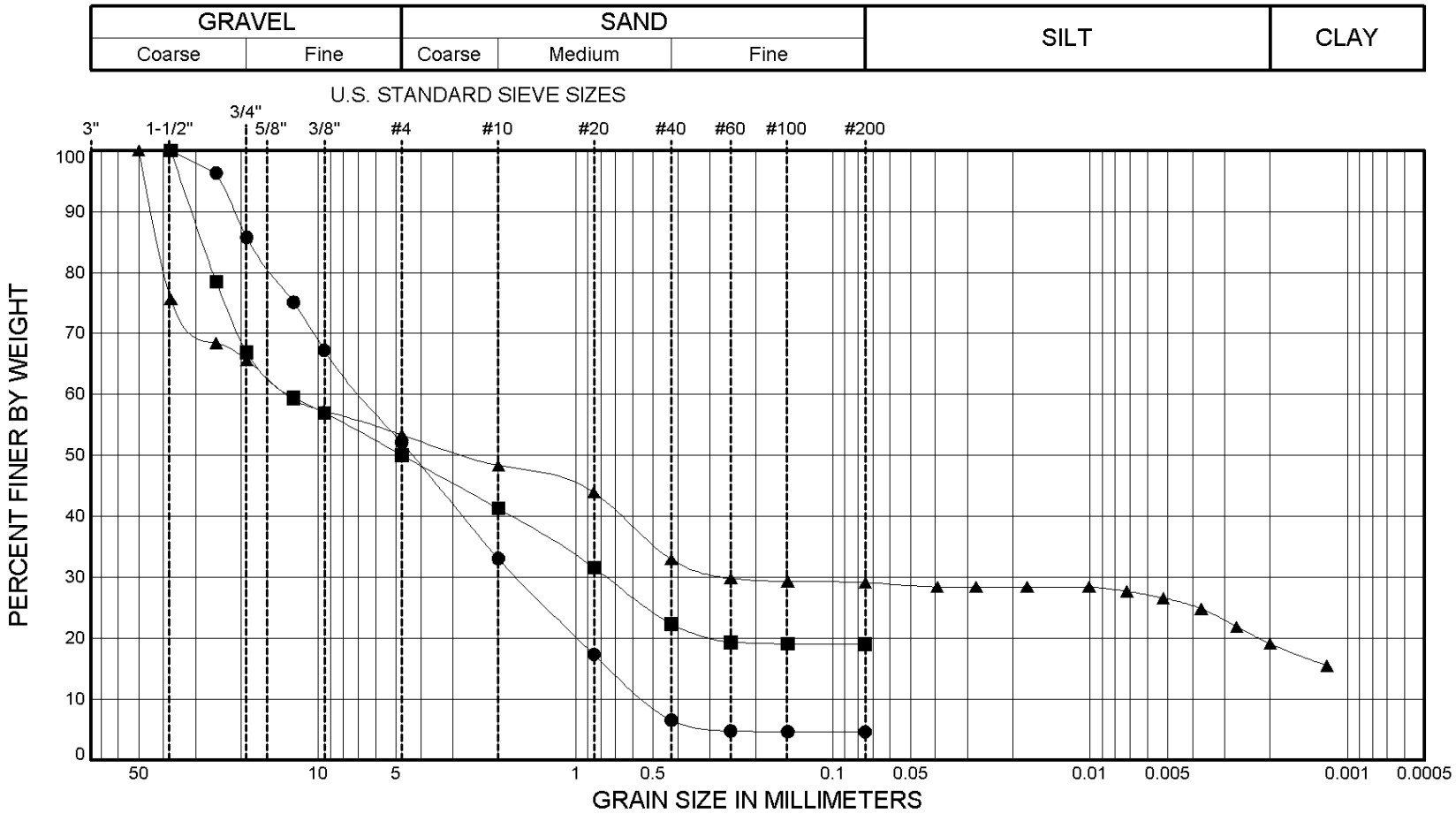
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 8

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P3-N-A		(SW) olive-gray, poorly graded SAND with gravel	6				47.9	47.5	4.6
■	P3-N-B		(SP) dark olive-gray, poorly graded SAND with gravel, over clay	11				49.9	31.0	19.0
▲	P3-N-C		(SP) gray, poorly graded SAND with gravel, over clay	21				46.6	24.2	29.1

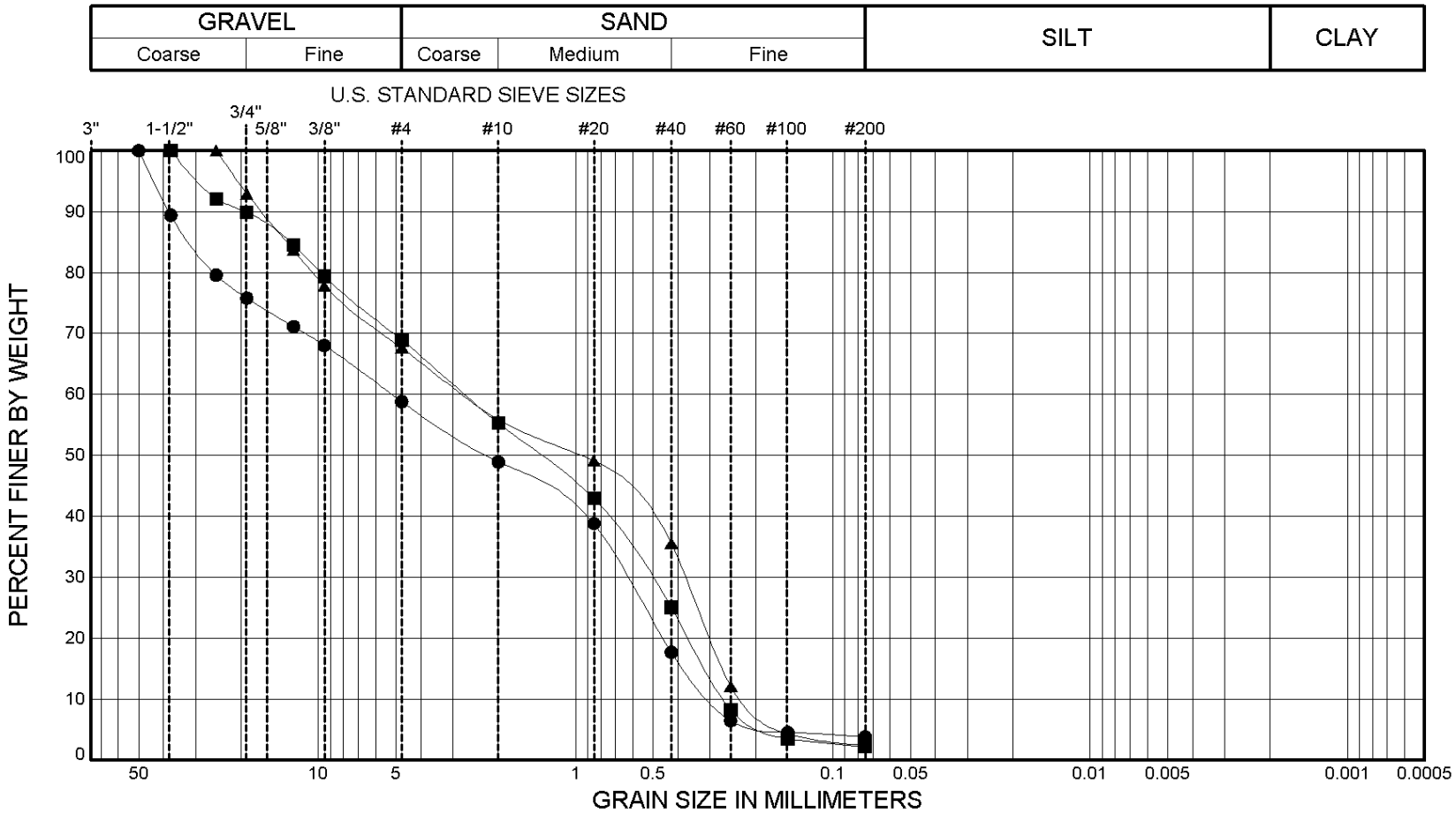
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 9

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P3-N-D		(SP) dark gray, poorly graded SAND with gravel	9				41.2	55.0	3.8
■	P3-N-E		(SP) dark gray, poorly graded SAND with gravel	15				31.0	66.7	2.2
▲	P3-N-F		(SP) gray, poorly graded SAND with gravel	17				32.4	65.2	2.4

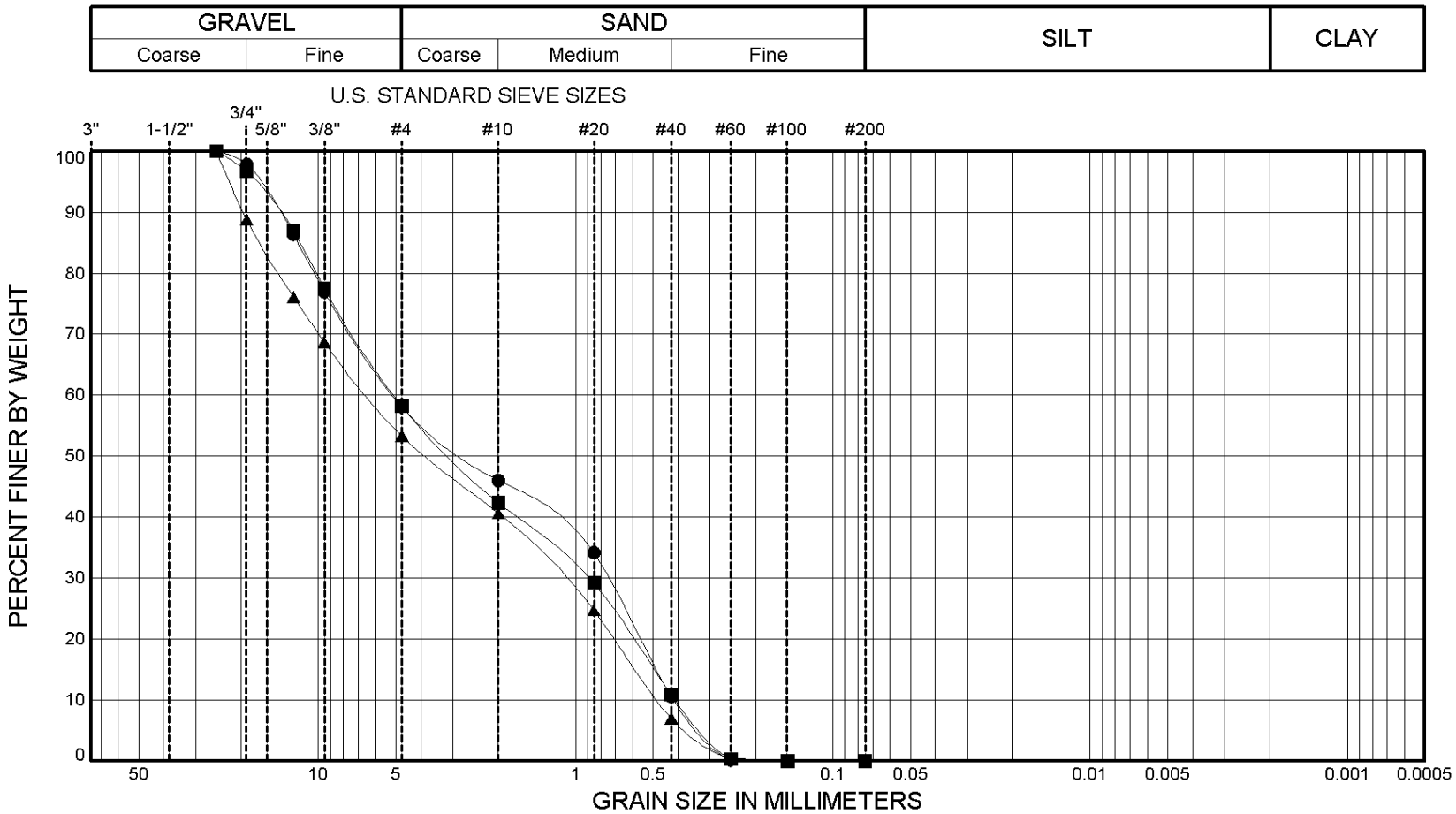
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 10

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P3-S-A		(SP) olive-gray, poorly graded SAND with gravel	2				41.9	58.1	0.0
■	P3-S-B		(SP) olive-gray, poorly graded SAND with gravel	2				41.7	58.3	0.0
▲	P3-S-C		(SP) olive-gray, poorly graded SAND with gravel	2				46.7	53.3	0.1

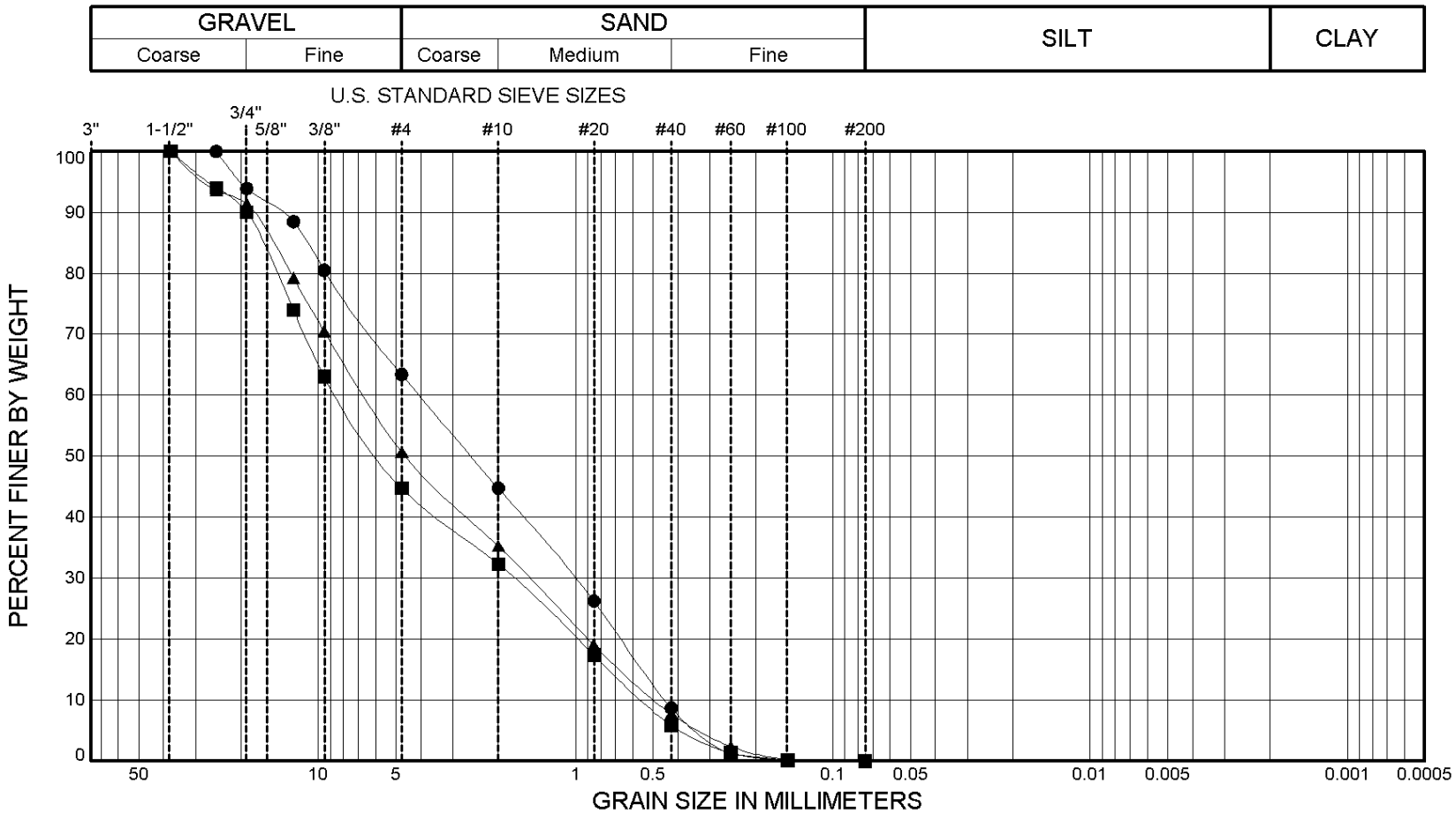
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 11

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P3-S-D		(SP) olive-gray, poorly graded SAND with gravel	2				36.6	63.4	0.0
■	P3-S-E		(GP) olive-gray, poorly graded GRAVEL with sand	2				55.3	44.7	0.0
▲	P3-S-F		(SP) olive-gray, poorly graded SAND with gravel	8				49.4	50.6	0.0

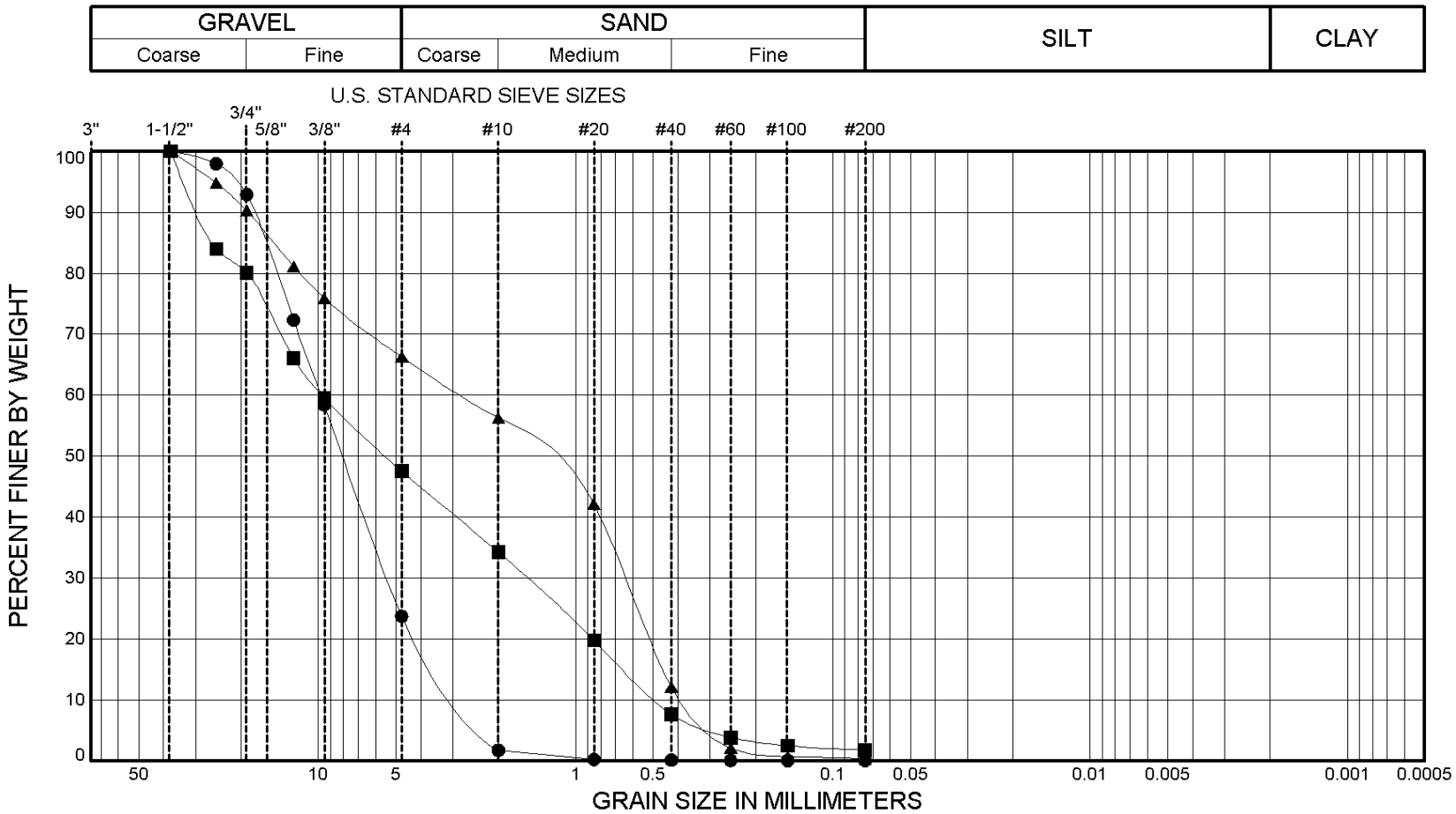
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 12

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P4-N-A		(GP) gray, poorly graded GRAVEL with sand	3				76.3	23.7	0.1
■	P4-N-B		(GP) olive-gray, poorly graded GRAVEL with sand	7				52.4	45.8	1.8
▲	P4-N-C		(SP) olive-gray, poorly graded SAND with gravel	6				33.7	65.9	0.4

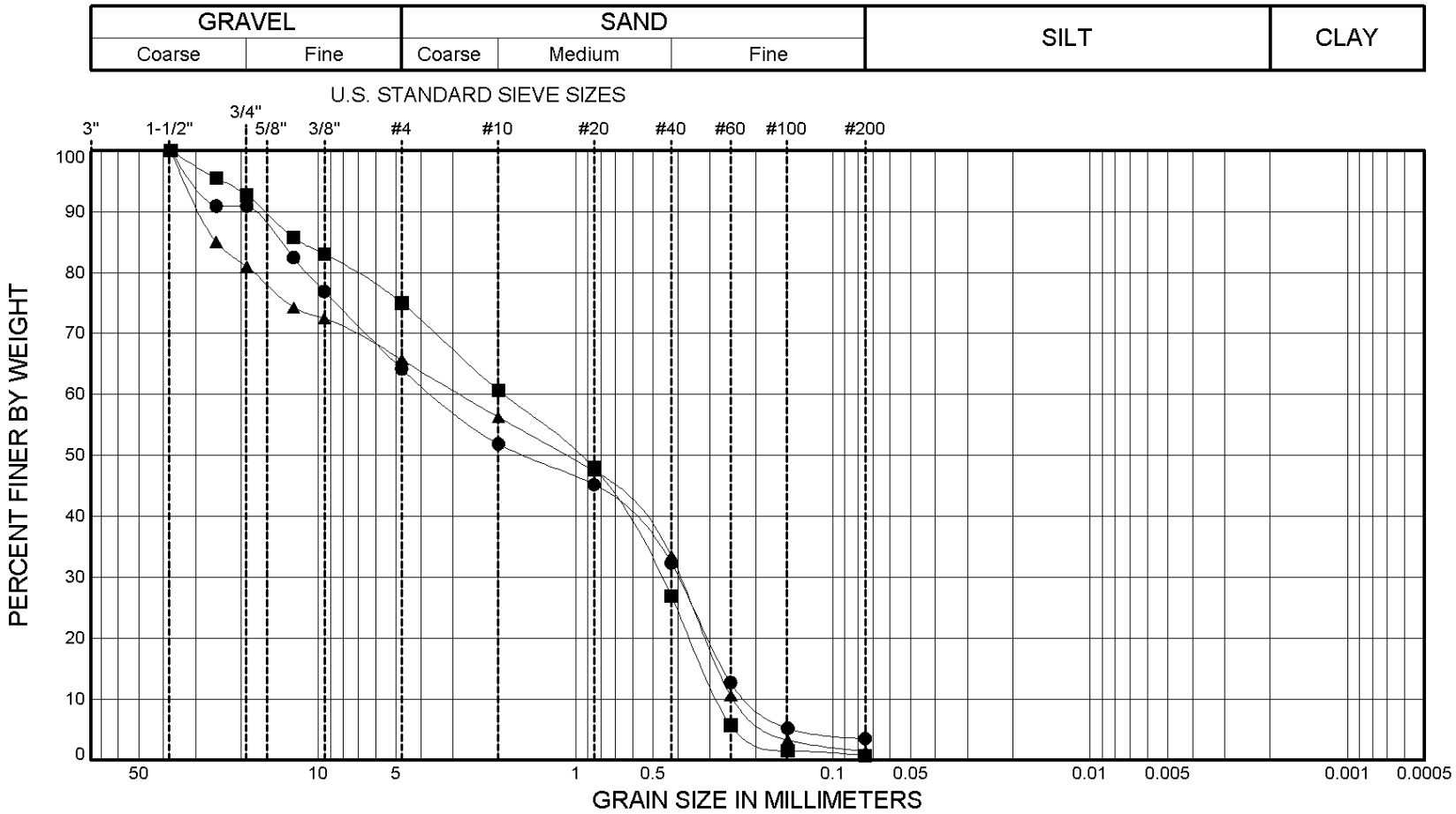
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 13

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P4-N-D		(SP) dark gray, poorly graded SAND with gravel	16				35.8	60.6	3.5
■	P4-N-E		(SP) dark gray-black, poorly graded SAND with gravel	18				25.0	74.2	0.8
▲	P4-N-F		(SP) olive-gray, poorly graded SAND with gravel	13				34.3	64.2	1.5

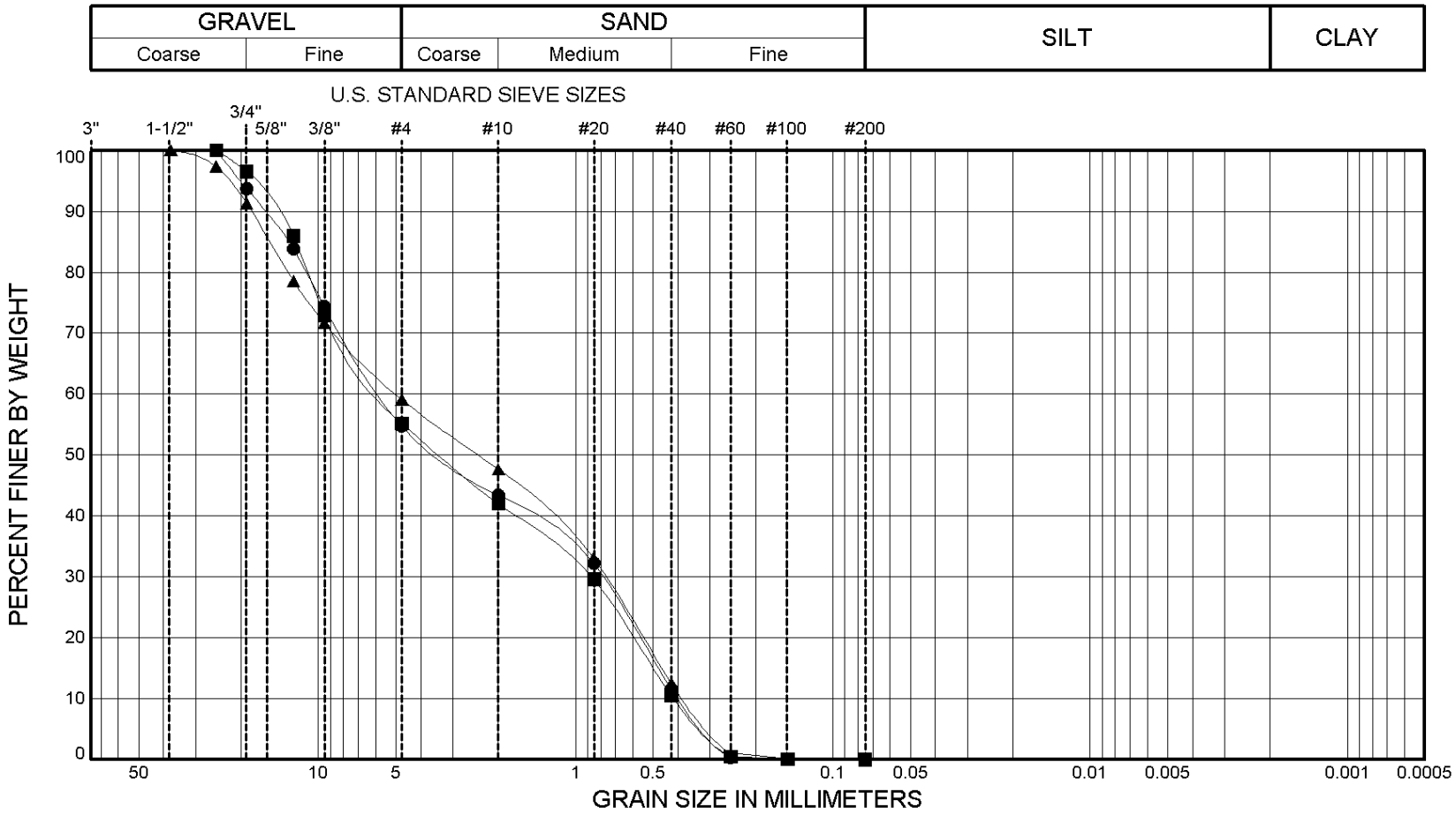
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 14

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P4-S-A		(SP) olive-gray, poorly graded SAND with gravel	2				45.2	54.8	0.0
■	P4-S-B		(SP) olive-gray, poorly graded SAND with gravel	2				44.8	55.2	0.0
▲	P4-S-C		(SP) olive-gray, poorly graded SAND with gravel	3				40.9	59.0	0.1

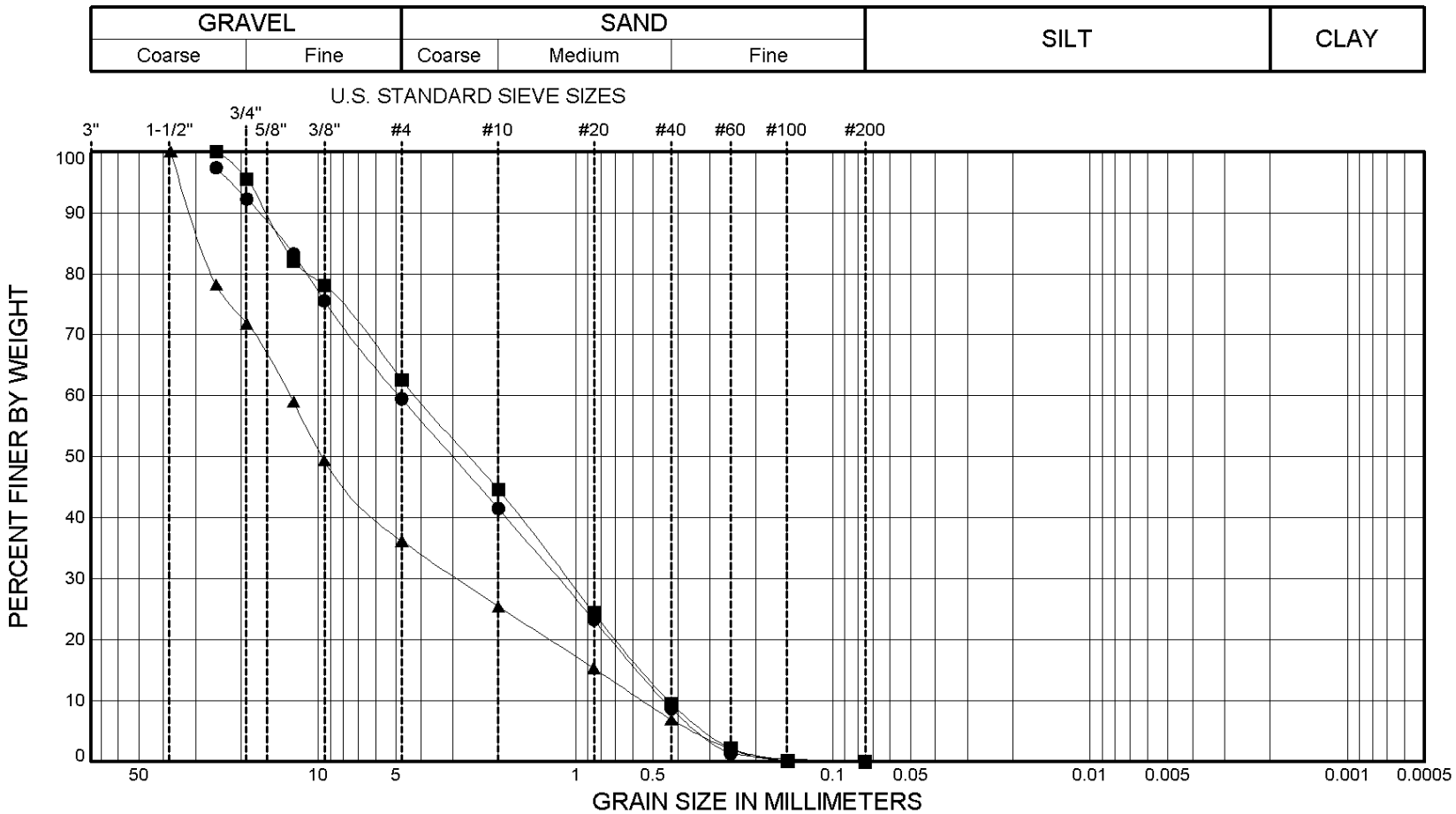
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 15

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	P4-S-D		(SP) olive-gray, poorly graded SAND with gravel	2				37.9	59.5	0.0
■	P4-S-E		(SP) olive-gray, poorly graded SAND with gravel	4				37.4	62.6	0.0
▲	P4-S-F		(GW) olive-gray, well graded GRAVEL with sand	5				63.8	36.0	0.2

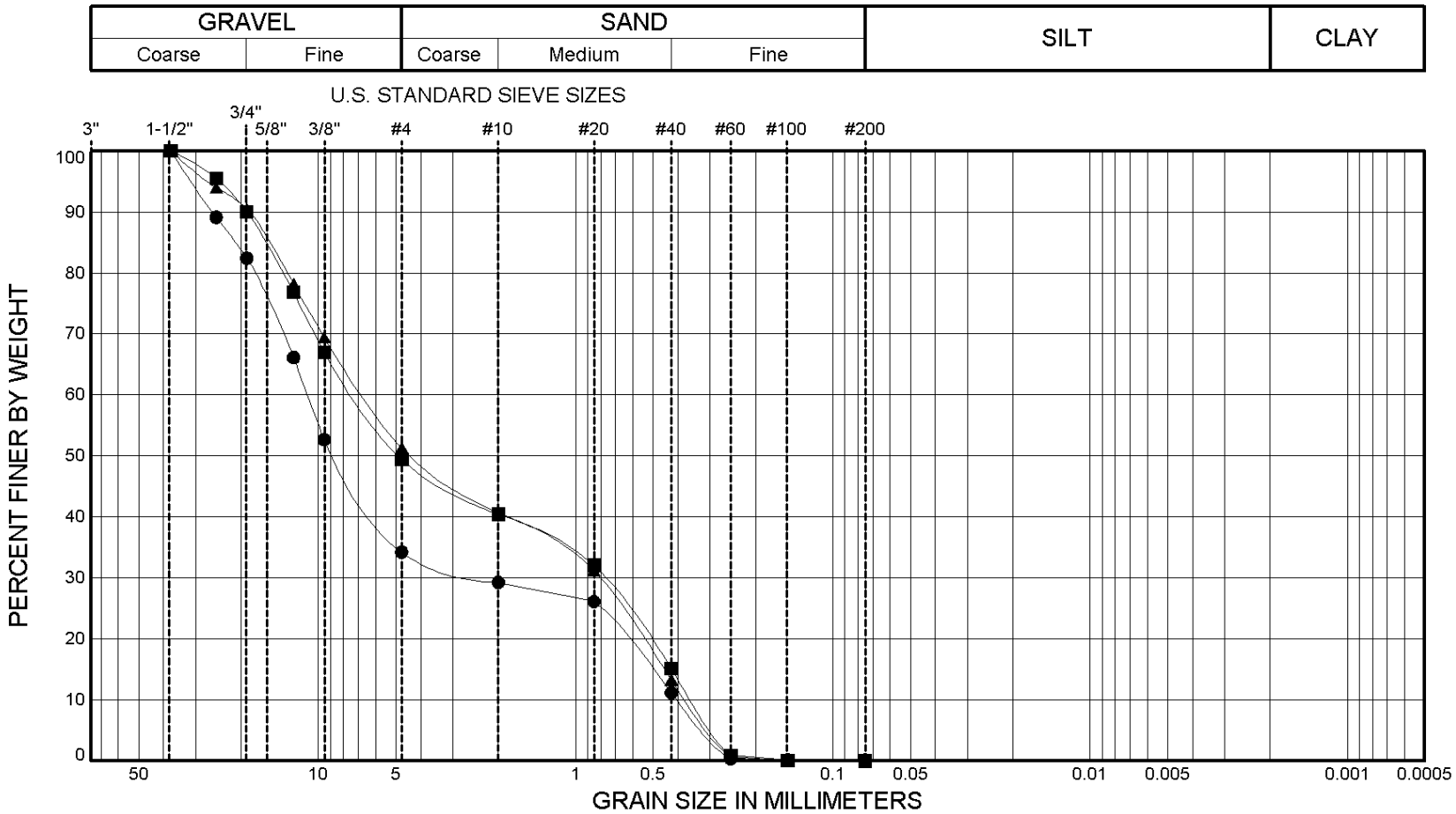
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 16

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	PCL-A		(GW) olive-gray, well graded GRAVEL with sand	2				65.8	34.1	0.1
■	PCL-B		(GP) olive-gray, poorly graded GRAVEL with sand	2				50.6	49.4	0.0
▲	PCL-C		(SP) olive-gray, poorly graded SAND with gravel	3				48.7	51.3	0.0

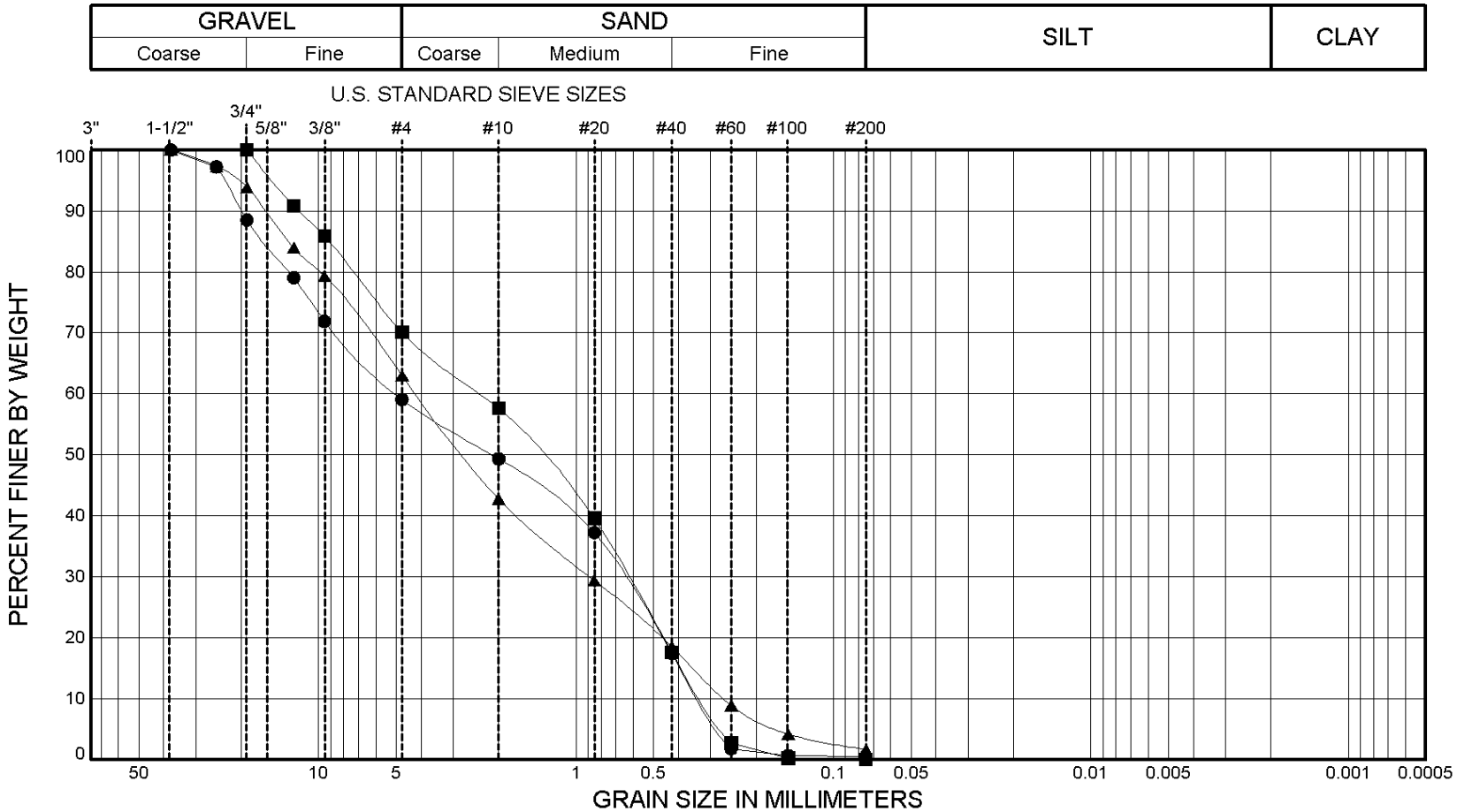
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 17

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	PCL-D		(SP) gray, poorly graded SAND with gravel	3				40.9	58.5	0.6
■	PCL-E		(SP) gray, poorly graded SAND with gravel	7				29.9	70.1	0.1
▲	PCL-F		(SP) dark gray, poorly graded SAND with gravel	14				37.0	61.3	1.7

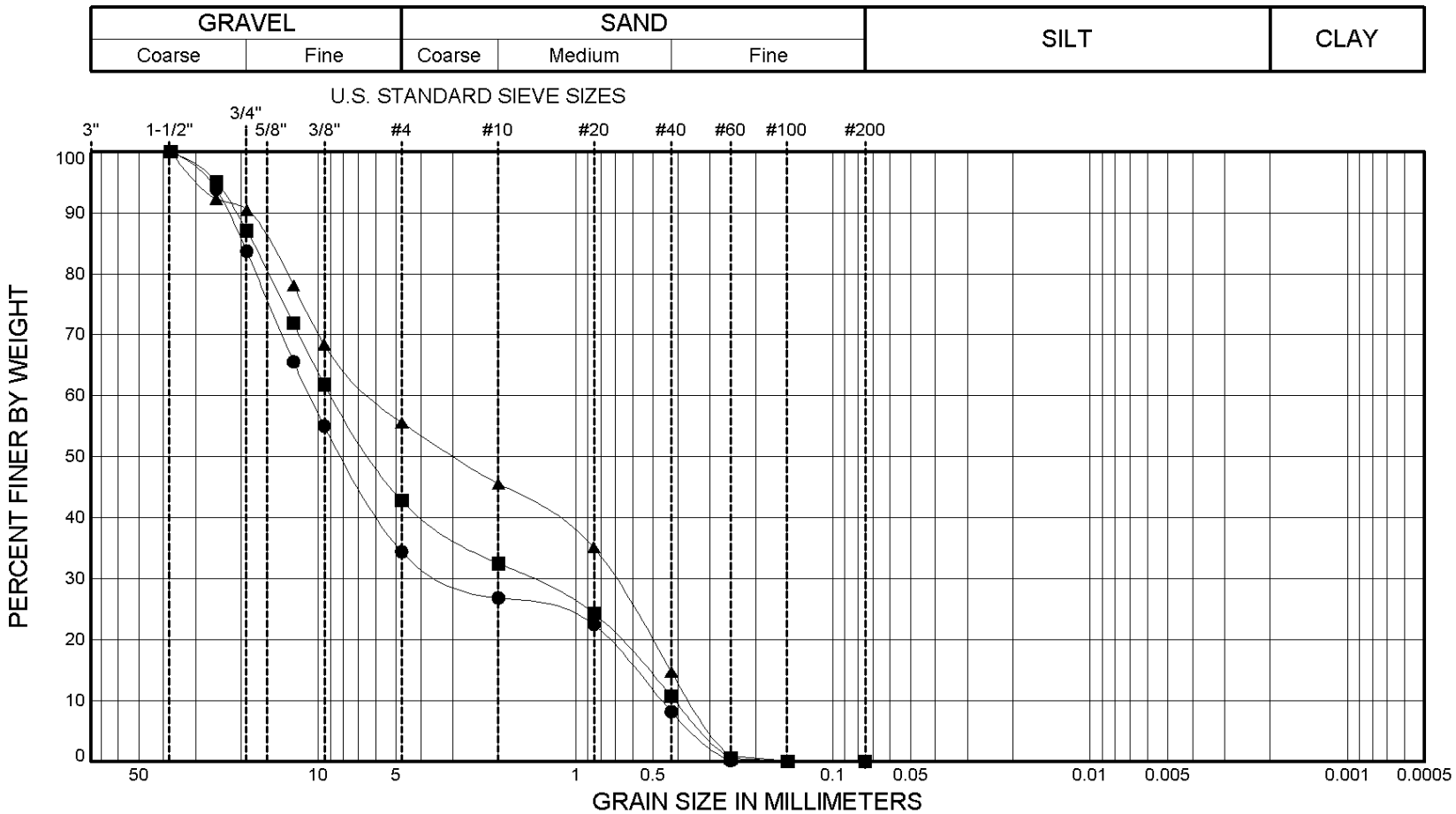
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 18

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	SAL-A		(GW) olive-gray, well graded GRAVEL with sand	2				65.6	34.4	0.0
■	SAL-B		(GP) olive-gray, poorly graded GRAVEL with sand	2				57.2	42.8	0.0
▲	SAL-C		(SP) olive-gray, poorly graded SAND with gravel	2				44.4	55.6	0.1

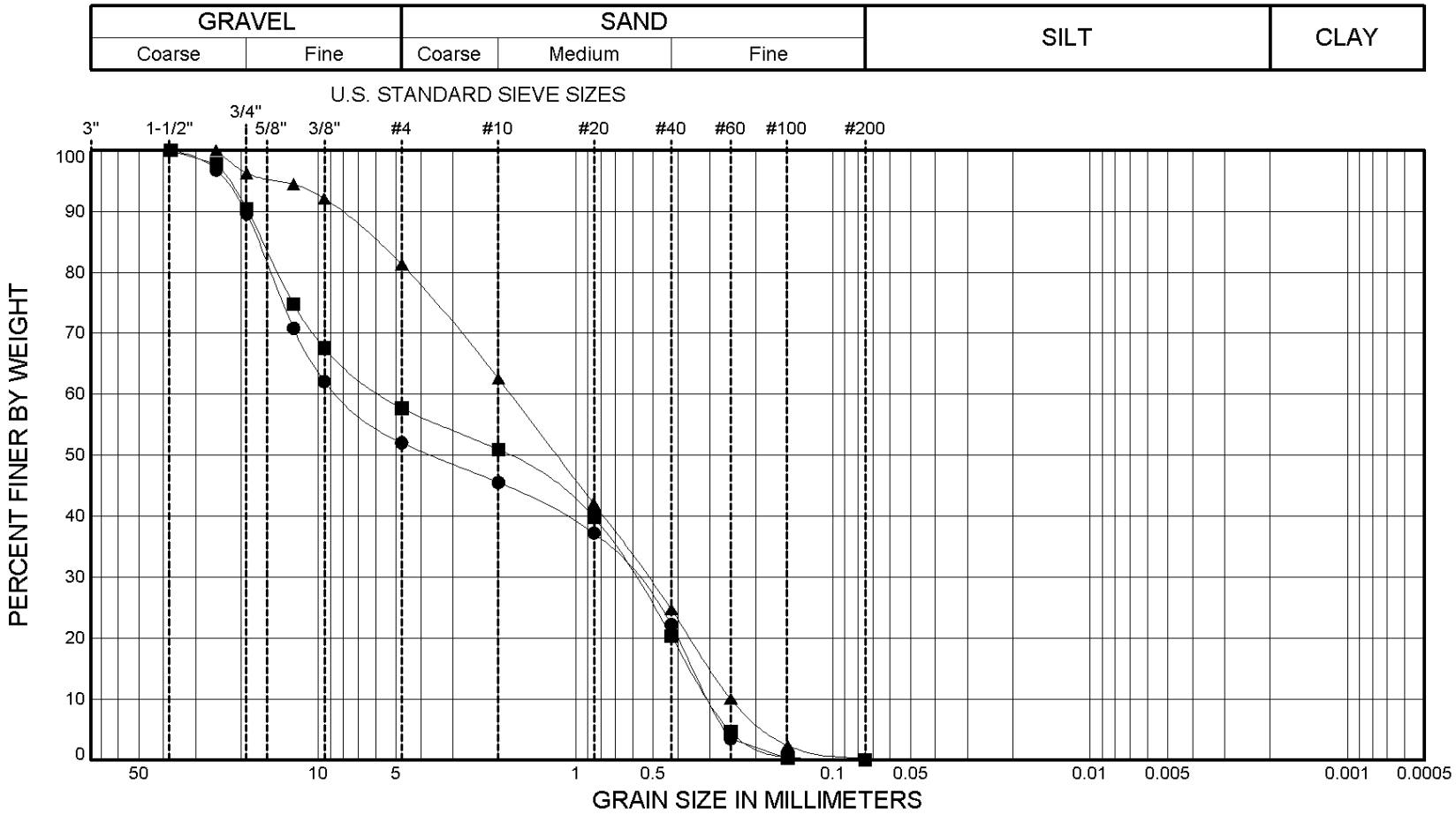
HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 19

HWAGRSZ 2002-111-23.GPJ 7/23/02



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Gravel	% Sand	% Fines
●	SAL-D		(SP) olive-gray, poorly graded SAND with gravel	4				48.0	52.0	0.0
■	SAL-E		(SP) olive-gray, poorly graded SAND with gravel	3				42.3	57.7	0.0
▲	SAL-F		(SP) olive-gray, poorly graded SAND with gravel	5				18.7	80.9	0.4

HWA GEOSCIENCES INC.

Fox Island Laboratory EIS
Task 6.3 - Sediment Study

GRAIN SIZE DISTRIBUTION TEST RESULTS

PROJECT NO.: 2002-111-23 FIGURE: 20

HWAGRSZ 2002-111-23.GPJ 7/23/02