

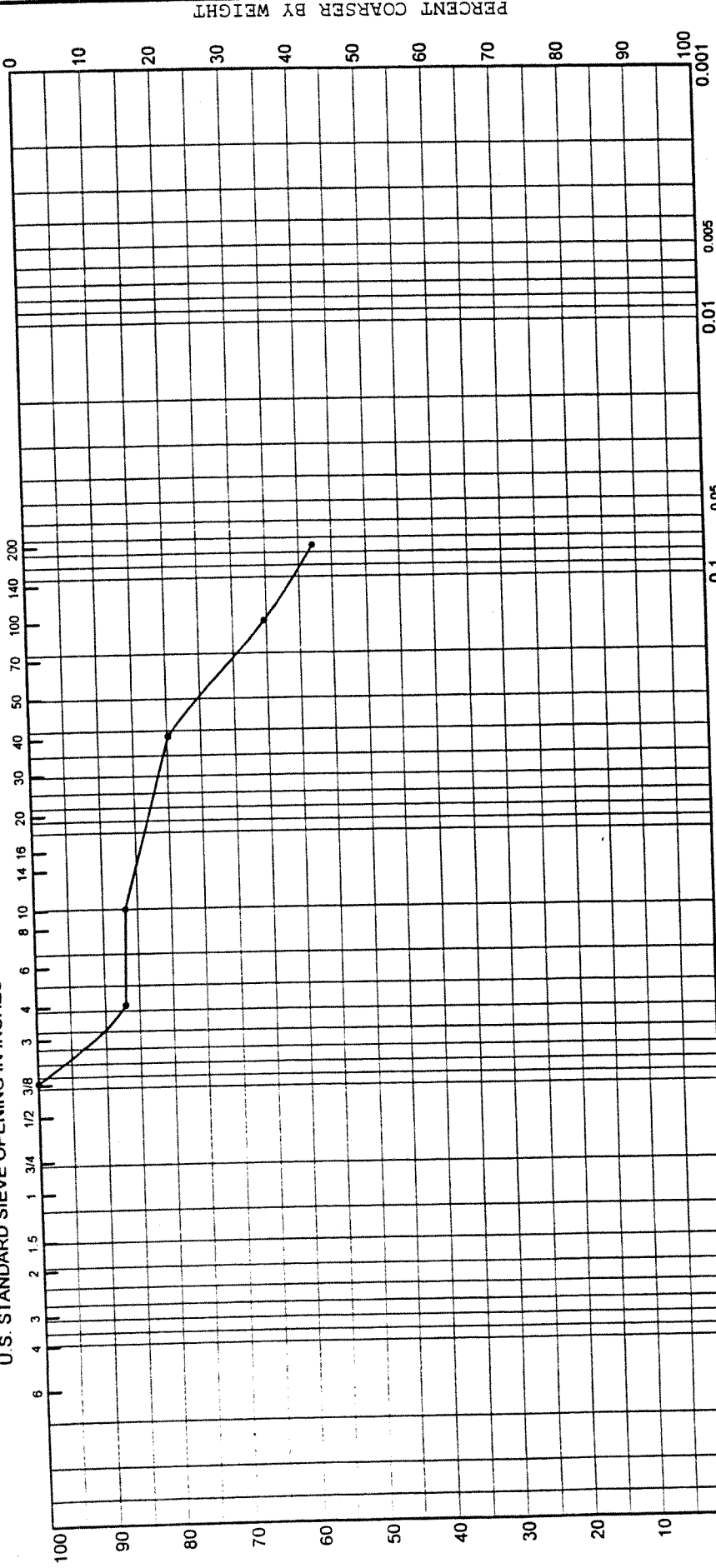
WORK ORDER: 240e  
 REQUISITION: W33SJG22119420

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

HYDROMETER

U.S. STANDARD SIEVE NUMBERS

U.S. STANDARD SIEVE OPENING IN INCHES



PERCENT COARSER BY WEIGHT

PERCENT FINER BY WEIGHT

		GRAIN SIZE IN MILLIMETERS					SAND			GRAVEL			COBBLES		
		COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE		
Sample No.	2	Black, Sandy Fat Clay (CH), with a little gravel.													
Depth (ft)	47.8 - 49.3	Classification													
		Nat w%	LL	PL	PI										
		161.0	131	40	91										
Project		Savannah Harbor													
Harbor Expansion, Savannah, Georgia															
Lab No.		K6/64													
Boring No.		SH418													
Date		10/7/02													

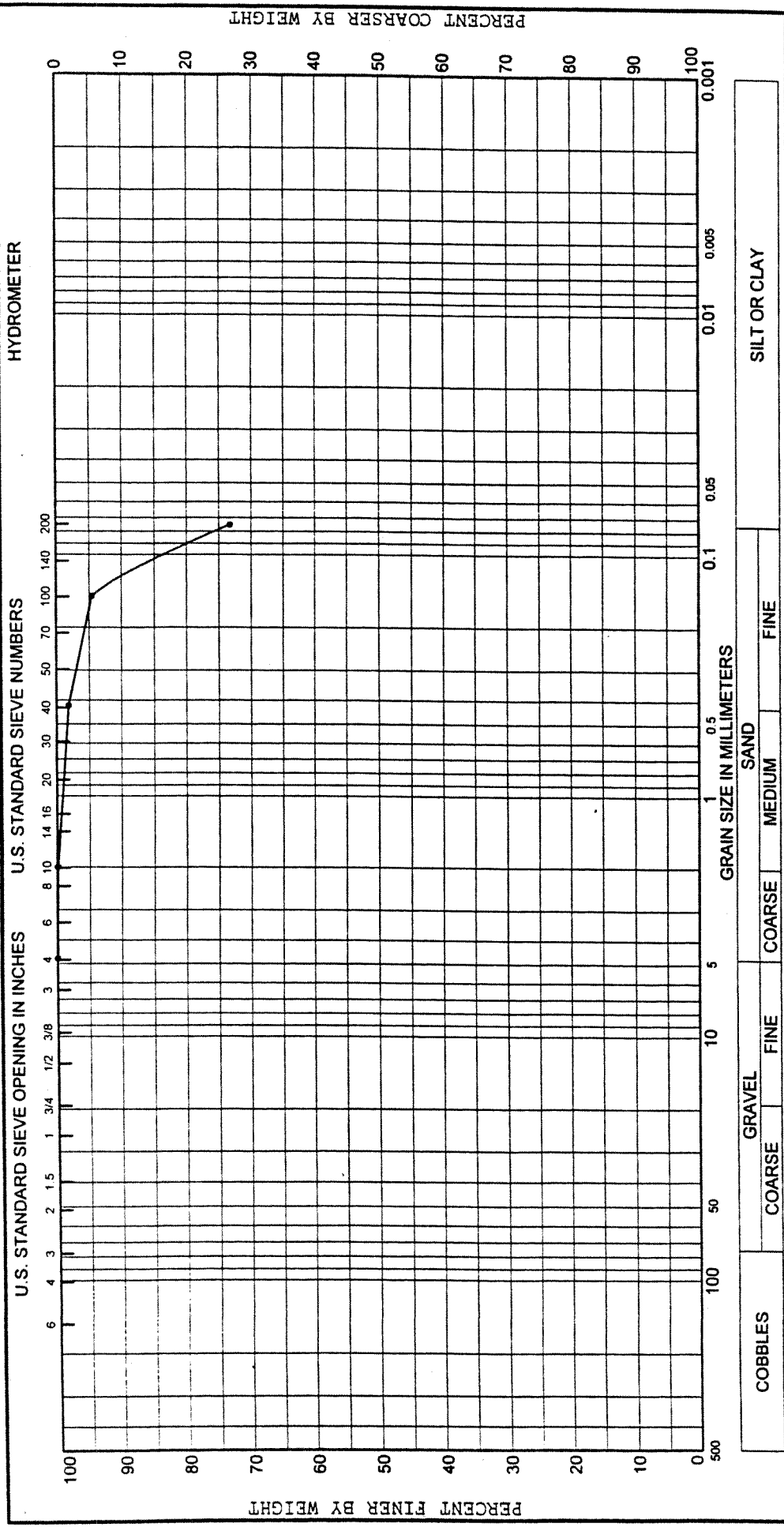
Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D854, & D2487.

GRADATION CURVES



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Sample No.	Depth (ft)	Classification	GRAVEL			SAND			PI
			COARSE	FINE	COARSE	MEDIUM	FINE		
5	52.3 - 53.8	Olive Gray, Clayey Inorganic Silt High Liquid Limit (MH), with some sand.							64

Project Savannah Harbor  
 Harbor Expansion, Savannah, Georgia  
 Lab No. K6/65  
 Boring No. SH418  
 Date 10/7/02

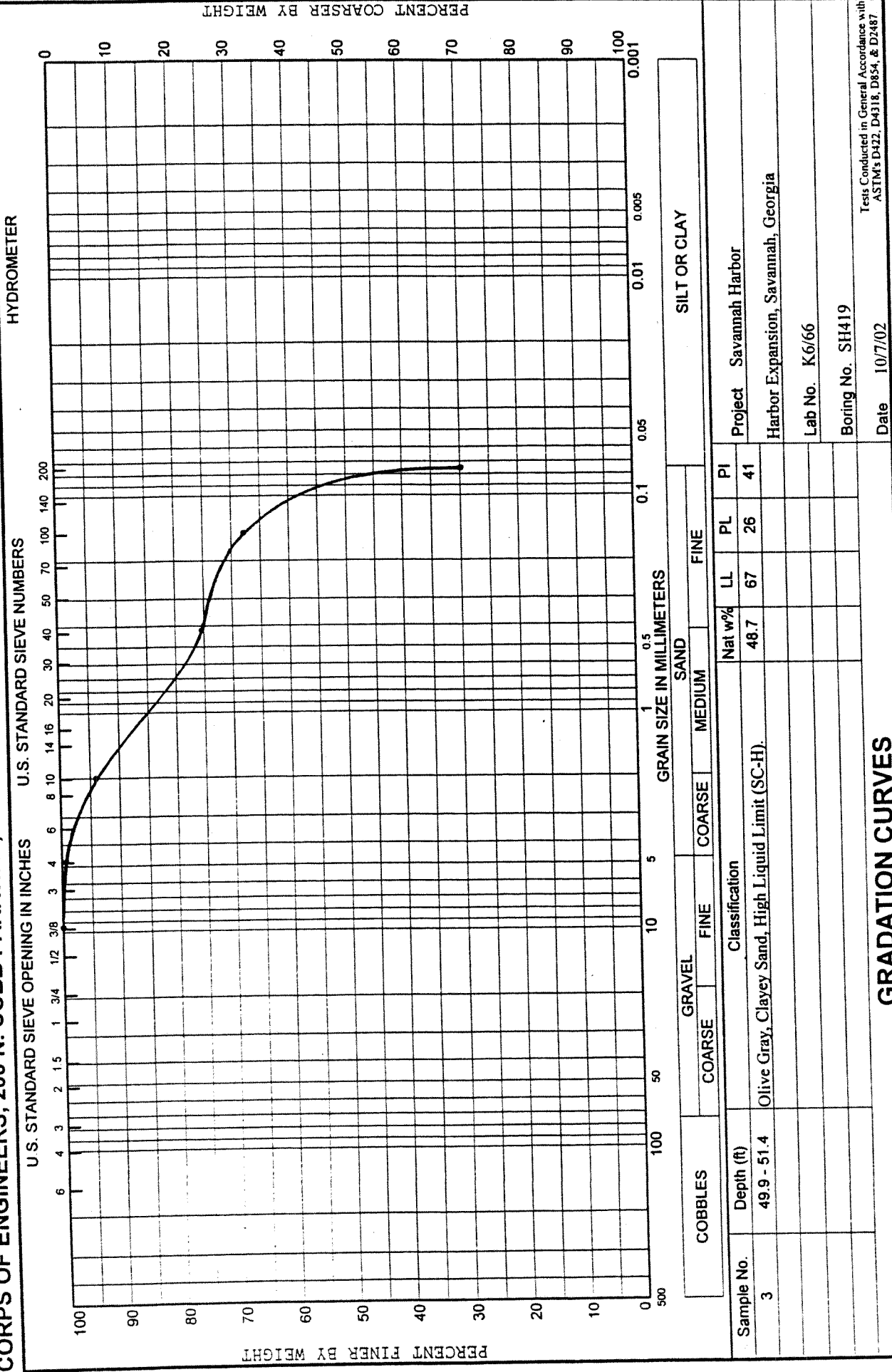
Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D854, & D2487.

GRADATION CURVES



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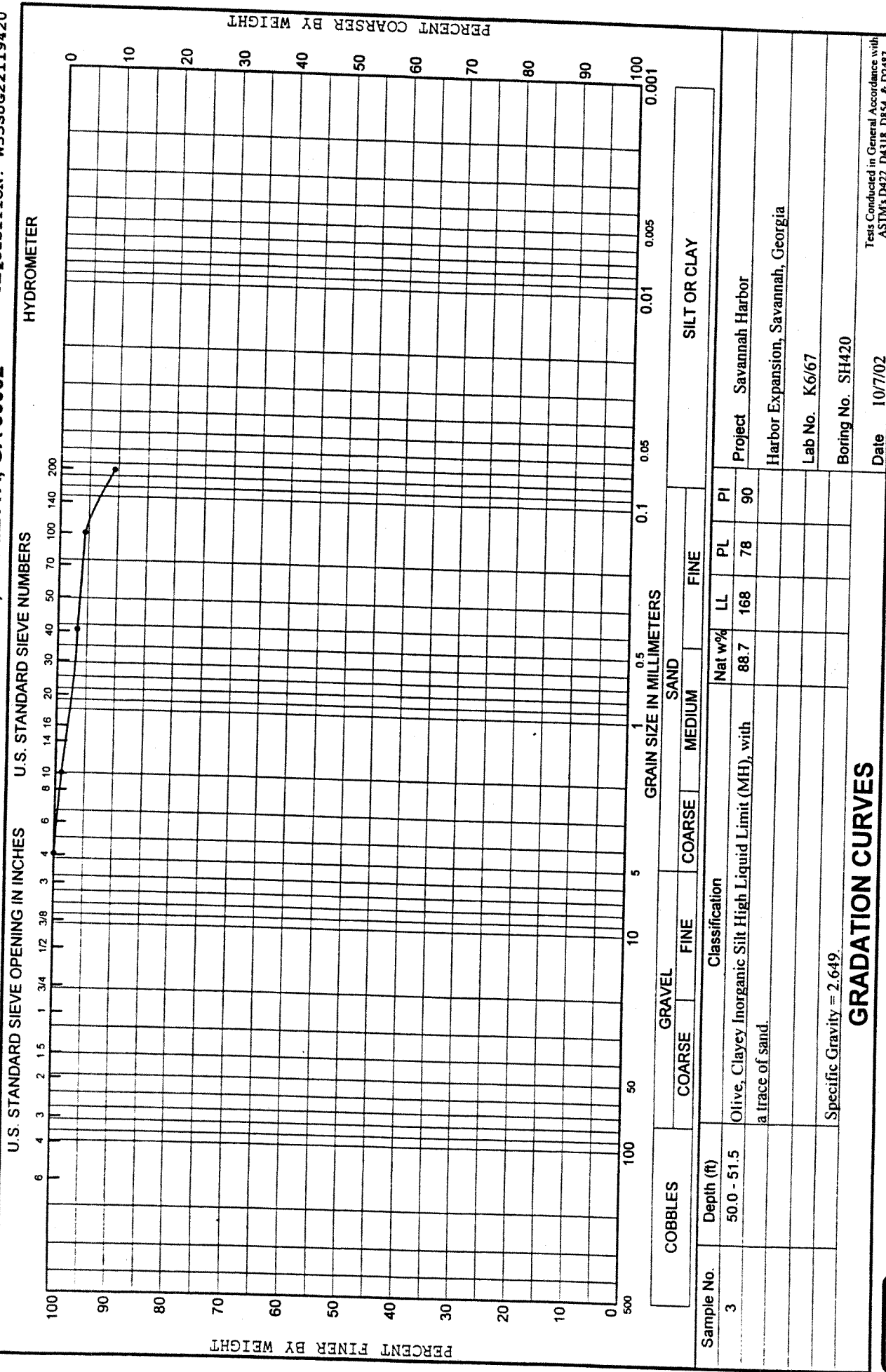
GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e

REQUISITION: W33SUG22119420



PERCENT FINER BY WEIGHT

PERCENT COARSER BY WEIGHT

HYDROMETER

U.S. STANDARD SIEVE OPENING IN INCHES

GRAVEL			SAND			SILT OR CLAY		
COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	LL	PL	PI
						88.7	168	78
Classification Olive, Clayey Inorganic Silt High Liquid Limit (MH), with a trace of sand.								
Specific Gravity = 2.649.								
<b>GRADATION CURVES</b>								
Sample No.	Depth (ft)			Project			Savannah Harbor	
3	50.0 - 51.5			Harbor Expansion, Savannah, Georgia			Lab No. K6/67	
				Boring No. SH420			Date 10/7/02	

Tests Conducted in General Accordance with ASTM's D422, D4318, D854, & D2487.



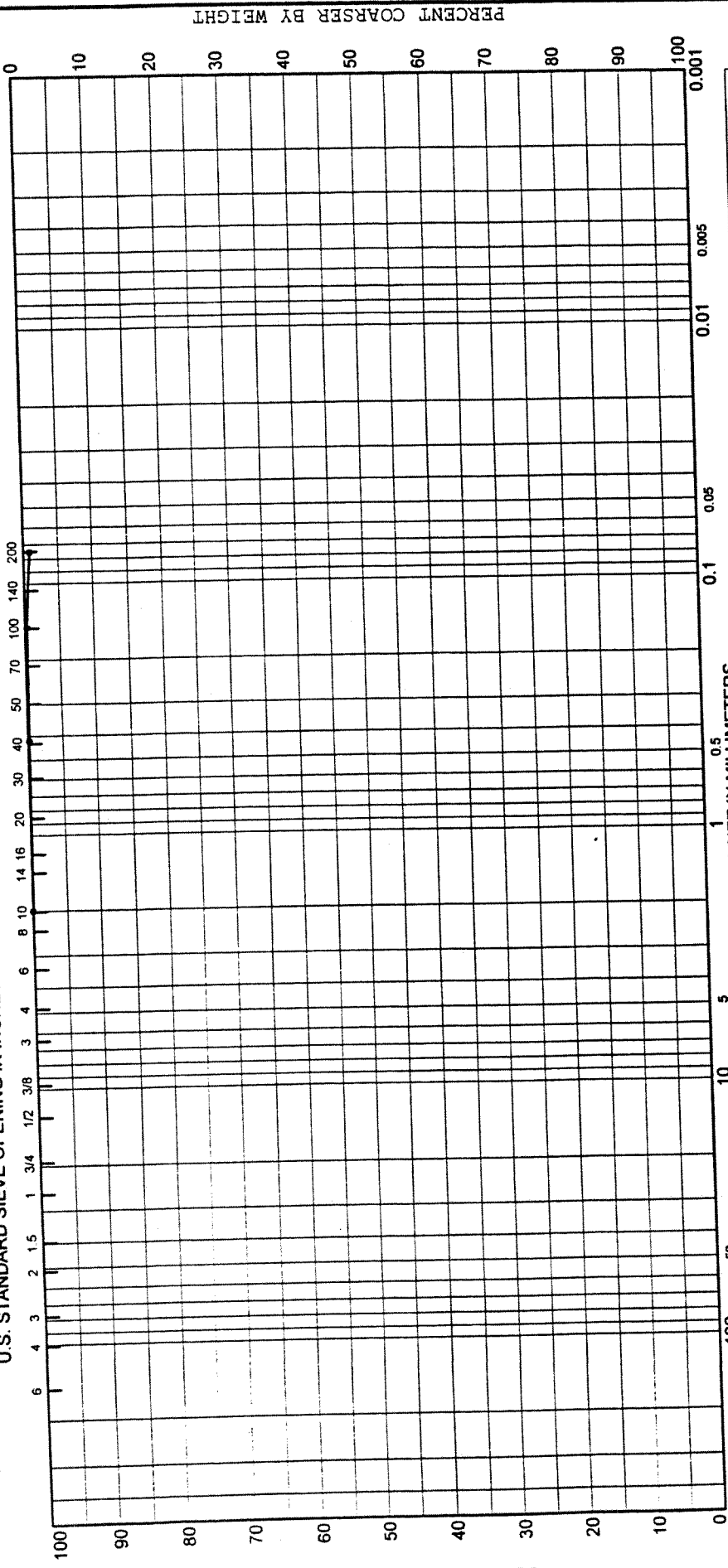
WORK ORDER: 240e  
 REQUISITION: W33SJJG22119420

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 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

HYDROMETER

U.S. STANDARD SIEVE NUMBERS

U.S. STANDARD SIEVE OPENING IN INCHES



GRAIN SIZE IN MILLIMETERS

COBBLES	GRAVEL	SAND		SILT OR CLAY		
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	3	Depth (ft)	48.5 - 50.0	Classification	Olive Gray, Fat Clay (CH).	Nat w%	116.2	LL	188	PL	63	PI	125	Project	Savannah Harbor
					Plots near the A-Line.									Harbor Expansion, Savannah, Georgia	
														Lab No. K6/68	
														Boring No. SH421	
														Date 10/7/02	

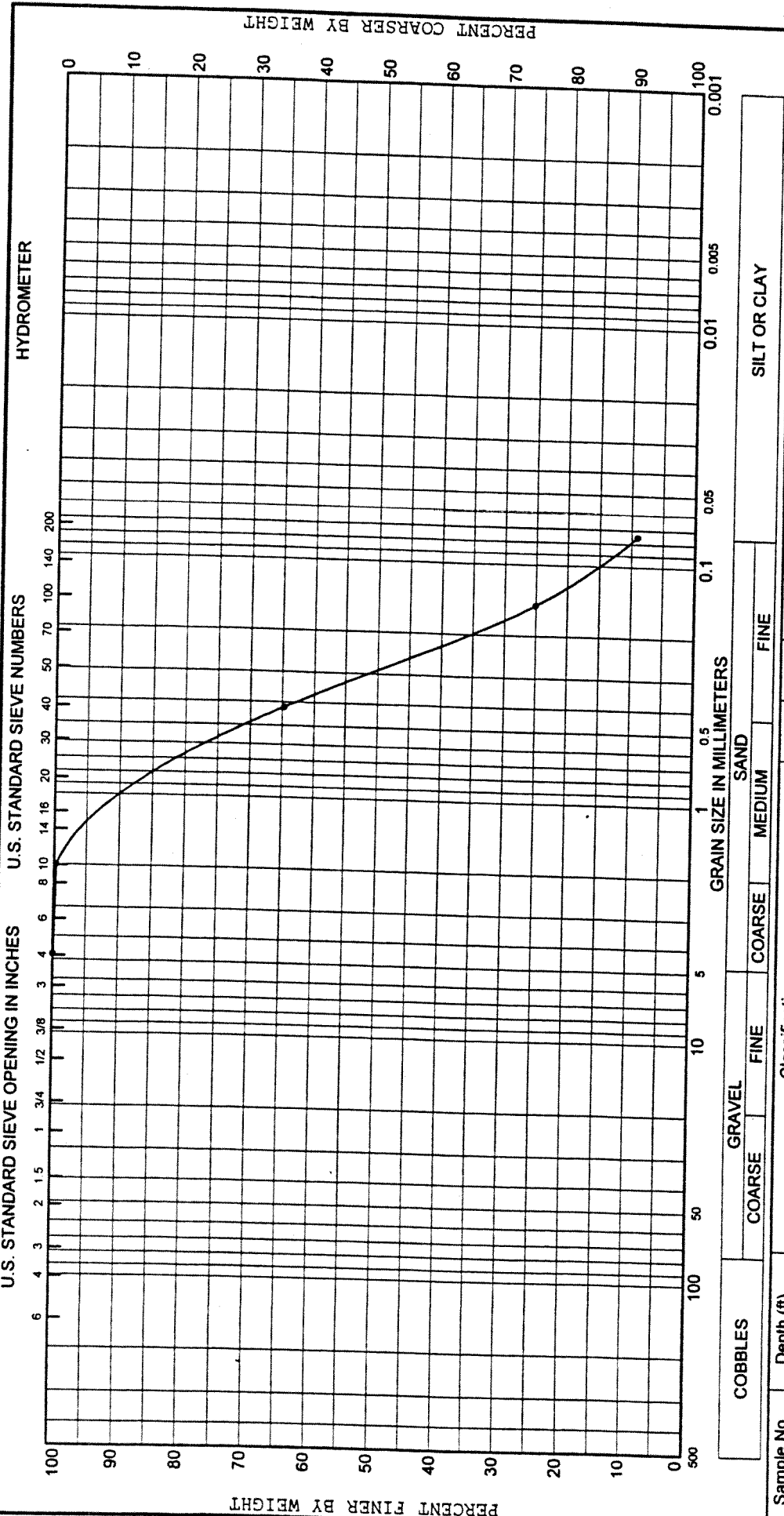
Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D654, & D2487.

GRADATION CURVES



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WORK ORDER: 240e  
 REQUISITION: W33SJG22119420



Sample No.	Depth (ft)	Gravel			Sand			Silt or Clay			
		Coarse	Fine	Total	Coarse	Medium	Fine	LL	PL	PI	
3	48.2 - 49.7				27.7			64	20	44	
Dark Olive Gray, Poorly Graded Clayey Sand, High Liquid Limit (SP-SC-H).											
Classification											
Nat. w%		27.7									
Project		Savannah Harbor									
Harbor Expansion, Savannah, Georgia											
Lab No.		K6/69									
Boring No.		SH422									
Date		10/7/02									

GRADATION CURVES

Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D854, & D2487



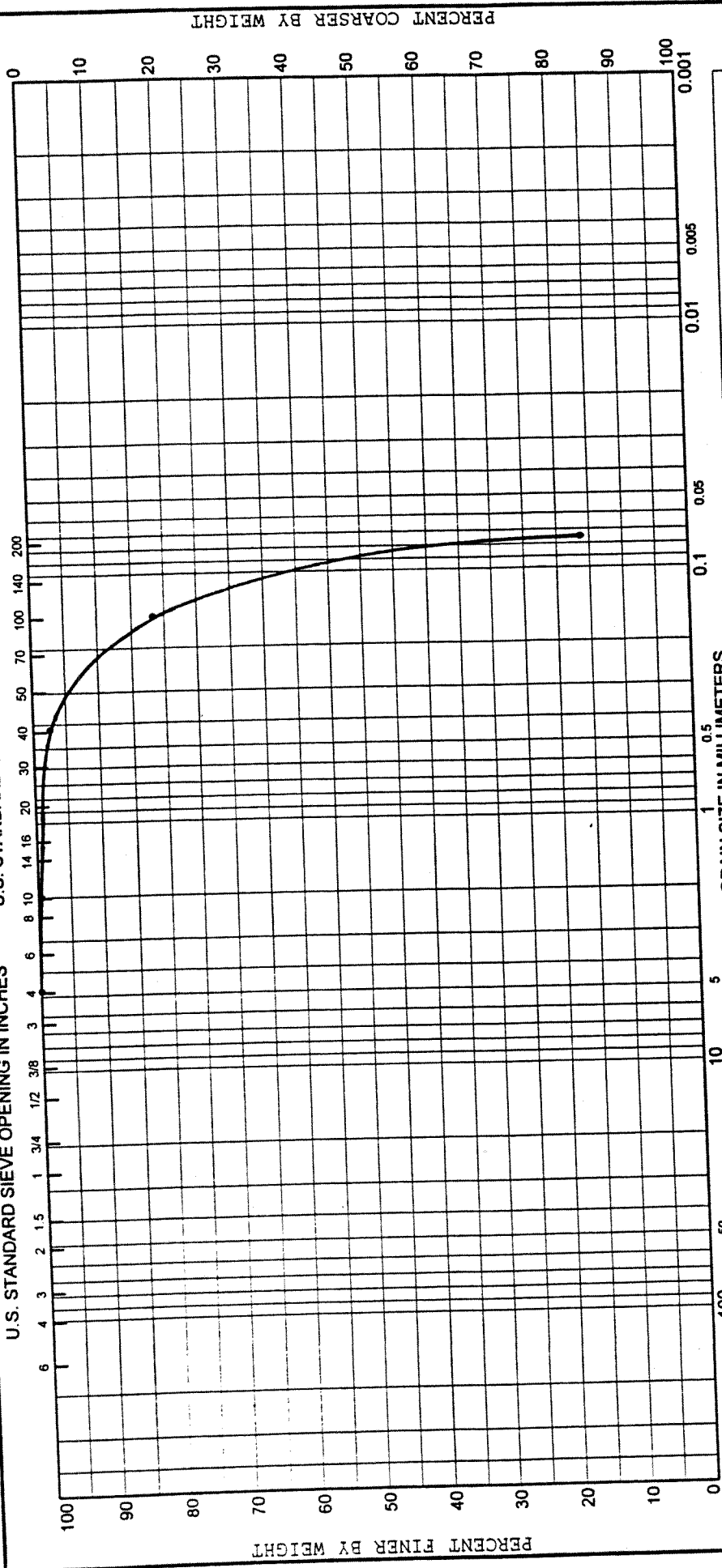
WORK ORDER: 240e  
 REQUISITION: W33SJG22119420

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 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

HYDROMETER

U.S. STANDARD SIEVE NUMBERS

U.S. STANDARD SIEVE OPENING IN INCHES



PERCENT FINER BY WEIGHT (Left Y-axis, 0-100)  
 PERCENT COARSER BY WEIGHT (Right Y-axis, 0-100)  
 GRAIN SIZE IN MILLIMETERS (Bottom X-axis, 500 to 0.001)  
 SAND (0.075 to 4.75 mm)  
 MEDIUM (4.75 to 20 mm)  
 COARSE (20 to 60 mm)  
 GRAVEL (60 to 200 mm)  
 COBBLES (200 to 500 mm)

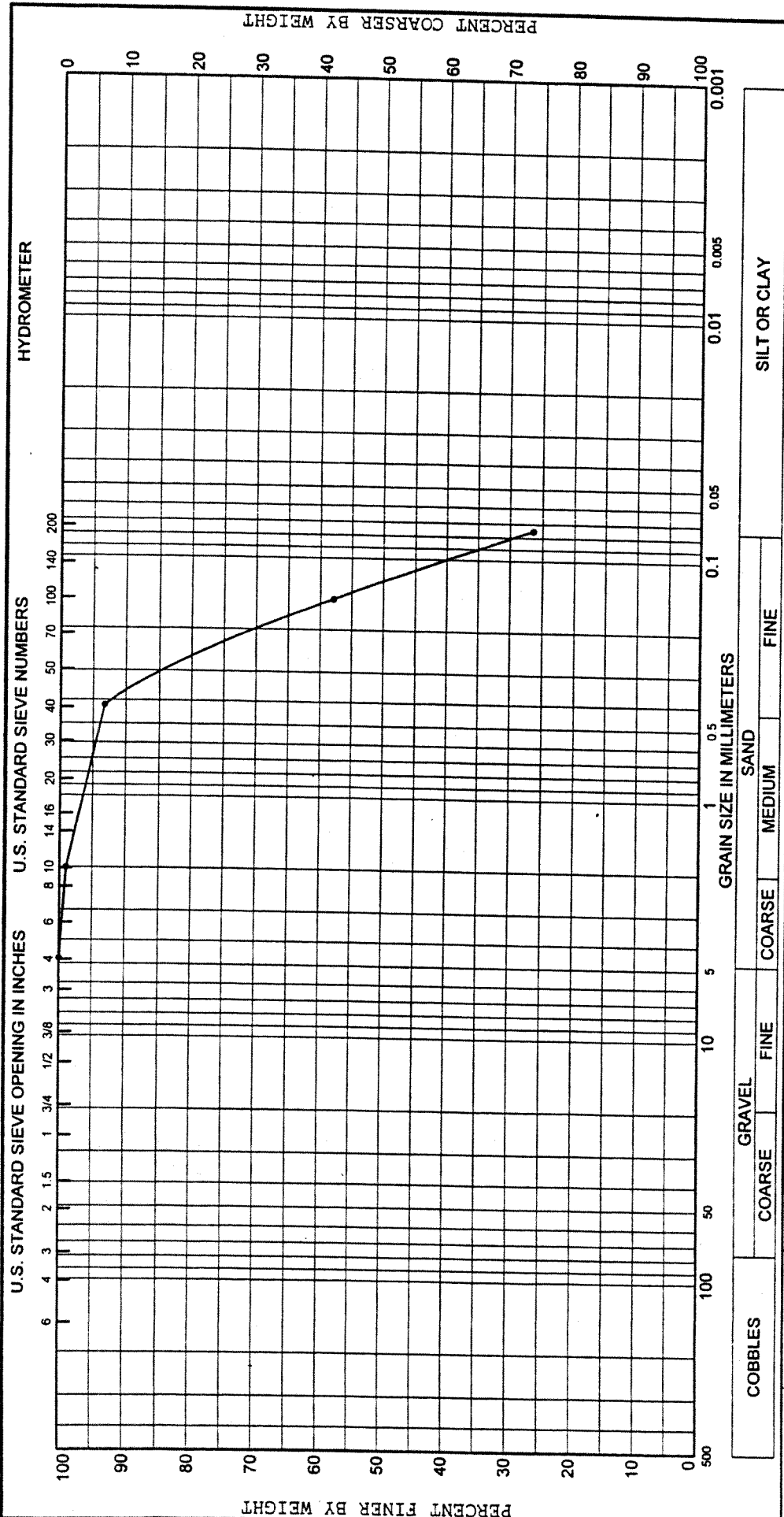
Sample No.	Depth (ft)	Classification	SAND			FINE			PI
			Nat w%	LL	PL	LL	PL		
3	48.4 - 49.9	Olive, Silty Sand (SM)	30.1	40	29			11	

Project Savannah Harbor  
 Harbor Expansion, Savannah, Georgia  
 Lab No. K6/70  
 Boring No. SH423  
 Date 10/7/02  
 Specific Gravity = 2.653  
 Tests Conducted in General Accordance with ASTM's D422, D4318, D854, & D2487

GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062  
 WORK ORDER: 240e  
 REQUISITION: W33SJJG22119420



Sample No.	Depth (ft)	Classification				Nat w%	LL	PL	PI
		COARSE	FINE	COARSE	FINE				
1	44.4 - 45.9	Olive, Silty Clayey Sand, High Liquid Limit (SC-H)				40.2	51	27	24
		Plots near the A-Line.							
Project Savannah Harbor Harbor Expansion, Savannah, Georgia Lab No. K6/71 Boring No. SH424 Date 10/7/02									

**GRADATION CURVES**

Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D854, & D2487.



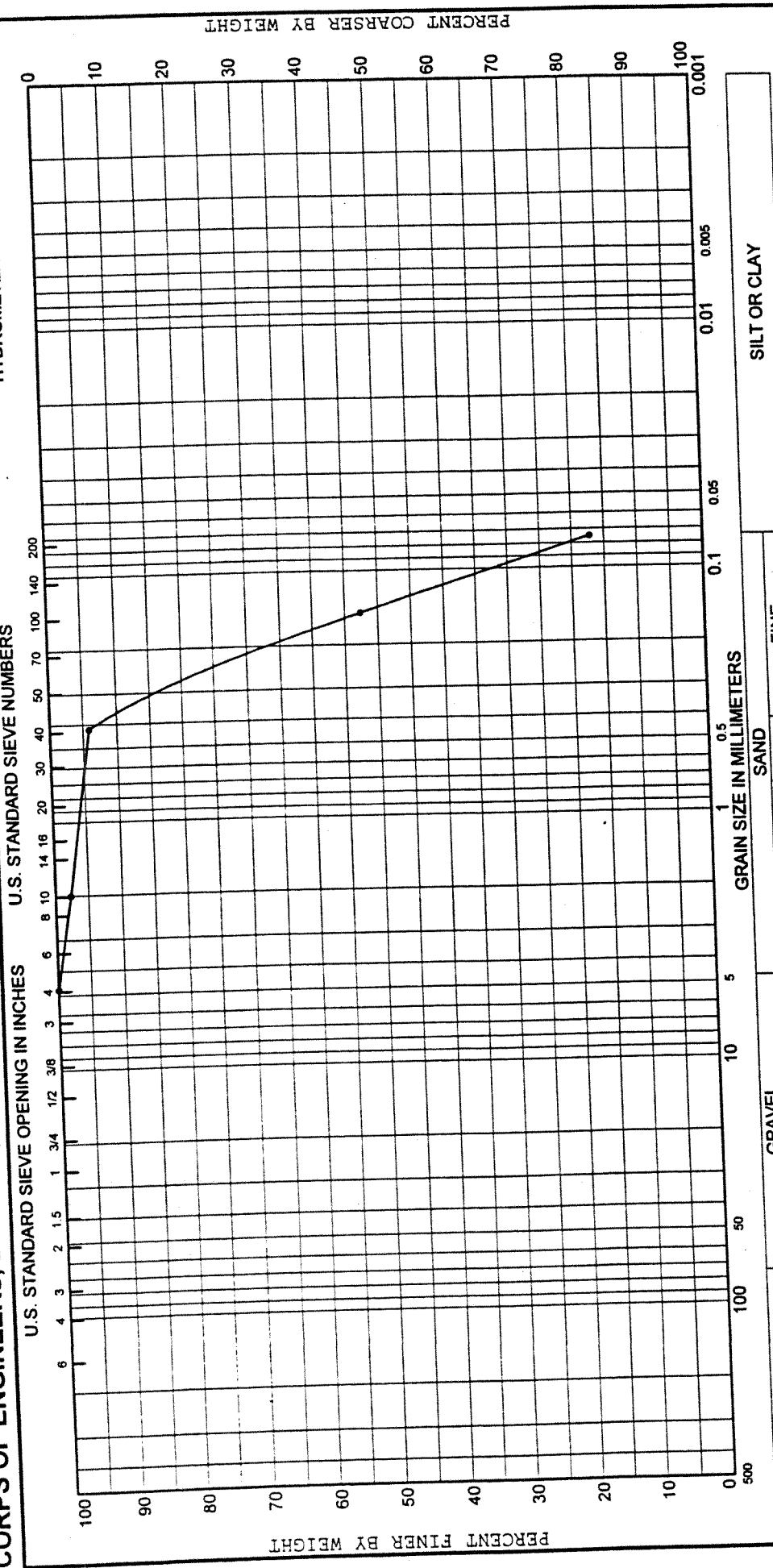


WORK ORDER: 240e  
 REQUISITION: W33SJG22119420

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

HYDROMETER

U.S. STANDARD SIEVE NUMBERS

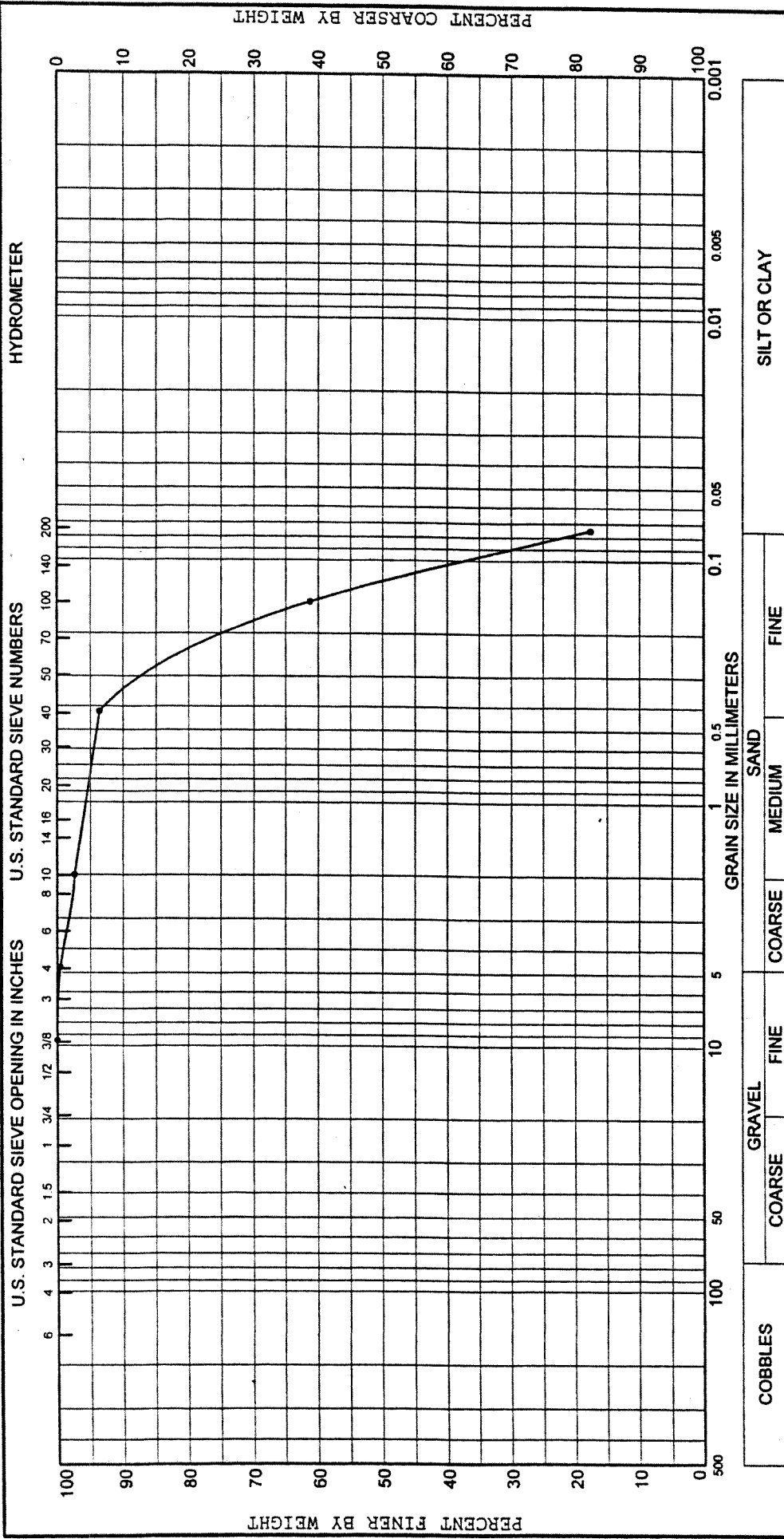


Sample No.	Depth (ft)	Classification	GRAVEL		SAND		SILT OR CLAY		Project
			COARSE	FINE	COARSE	MEDIUM	FINE	PI	
3	48.4 - 49.9	Olive, Clayey Sand, High Liquid Limit (SC-H)							Savannah Harbor
									Harbor Expansion, Savannah, Georgia
									Lab No. K6/72
									Boring No. SH424
									Date 10/7/02

Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D854, & D2487

GRADATION CURVES





Sample No.	Depth (ft)	Classification	SAND		SILT OR CLAY	
			COARSE	FINE	COARSE	FINE
3	49.7 - 51.2	Olive, Clayey Sand, High Liquid Limit (SC-H)	31.5	52	25	27

Project Savannah Harbor  
 Harbor Expansion, Savannah, Georgia  
 Lab No. K6/73  
 Boring No. SH425  
 Date 10/7/02

Tests Conducted in General Accordance with  
 ASTM's D422, D418, D854, & D2487

GRADATION CURVES



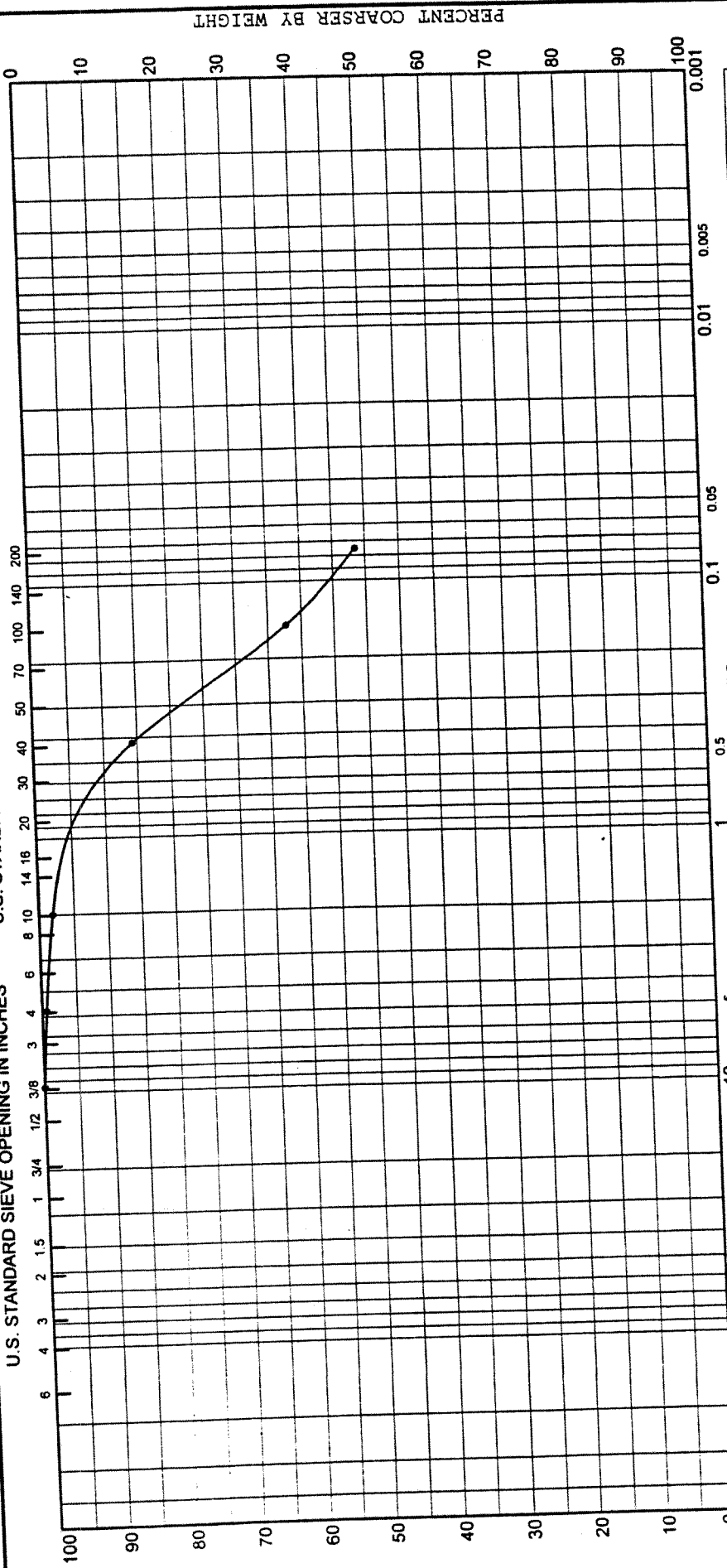
WORK ORDER: 240e  
 REQUISITION: W33SJC22119420

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 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

HYDROMETER

U.S. STANDARD SIEVE NUMBERS

U.S. STANDARD SIEVE OPENING IN INCHES



Sample No.	Depth (ft)	Classification	GRAVEL			SAND			PI		
			COARSE	FINE	COARSE	MEDIUM	FINE				
3	49.3 - 50.8	Dark Gray & Olive, Sandy Fat Clay (CH)						49.5	71	20	51

SILT OR CLAY

Project Savannah Harbor  
 Harbor Expansion, Savannah, Georgia  
 Lab No. K6/74  
 Boring No. SH426  
 Date 10/7/02

Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D854, & D2487.

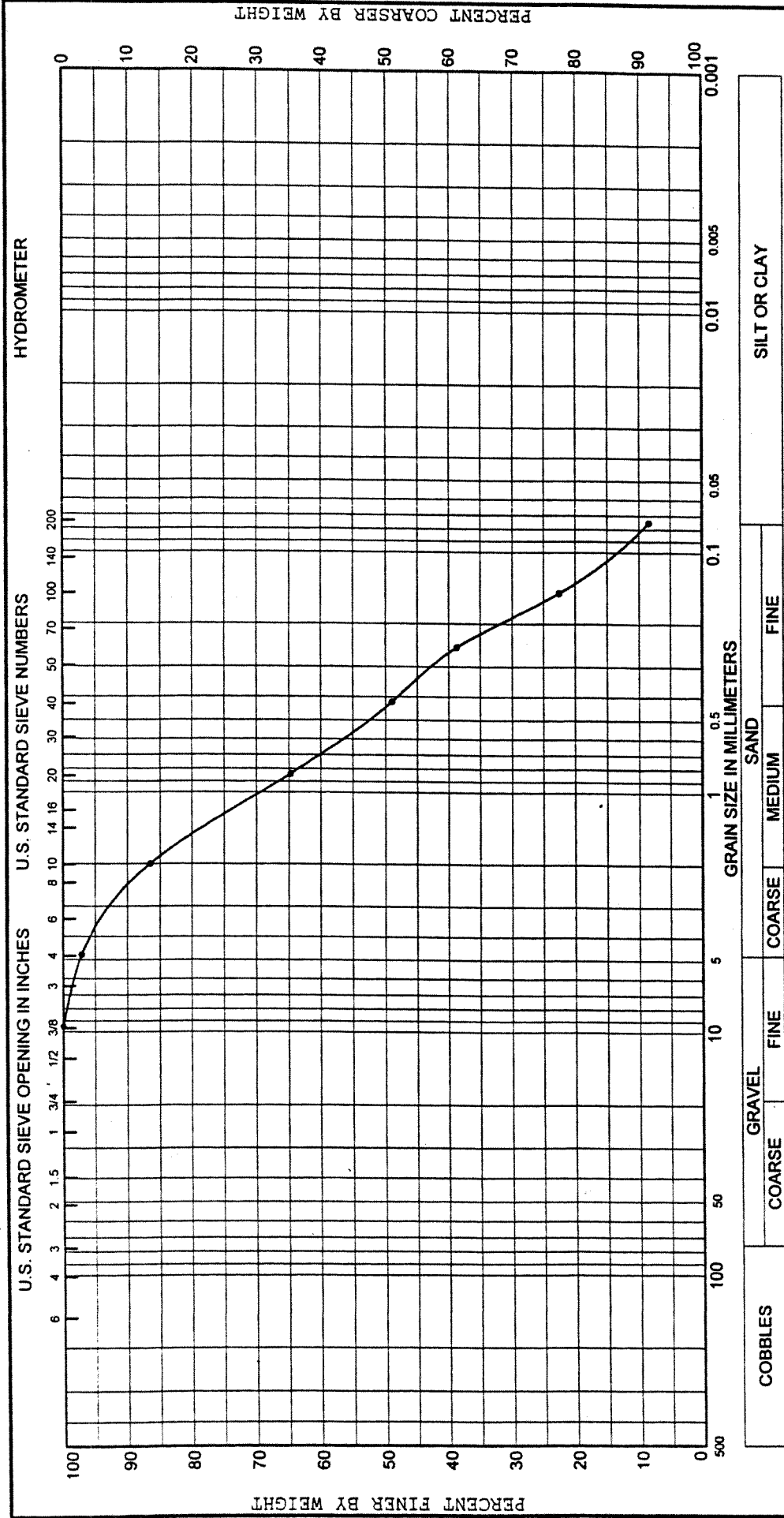
GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
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WORK ORDER: 240e

REQUISITION: W33SJG22119420



Sample No.	Depth (ft)	Classification	SAND				SILT OR CLAY	
			Nat w%	LL	PL	PI		
2	48.0 - 49.5	Olive Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size and a little sand size shell fragments.	20.2	31	25	6	Project Savannah Harbor Harbor Expansion, Savannah, Georgia	
							Lab No. K6/75	
							Boring No. SH427	
							Date 10/7/02	

Specific Gravity = 2.728.

Tests Conducted in General Accordance with ASTM's D422, D4318, D854, & D2487.

**GRADATION CURVES**

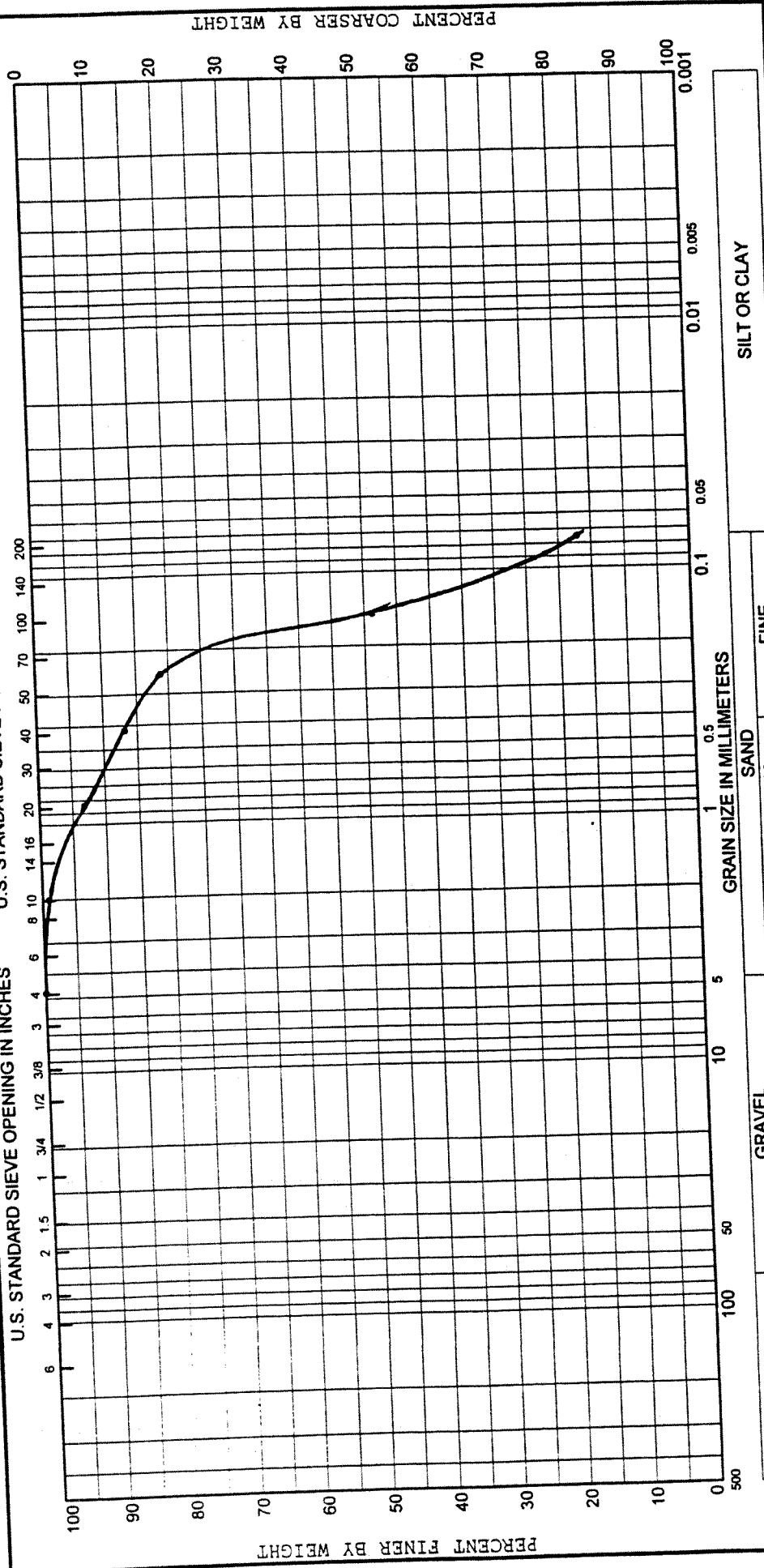


WORK ORDER: 240e  
 REQUISITION: W33SJJG22119420

**DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062**

HYDROMETER

U.S. STANDARD SIEVE NUMBERS



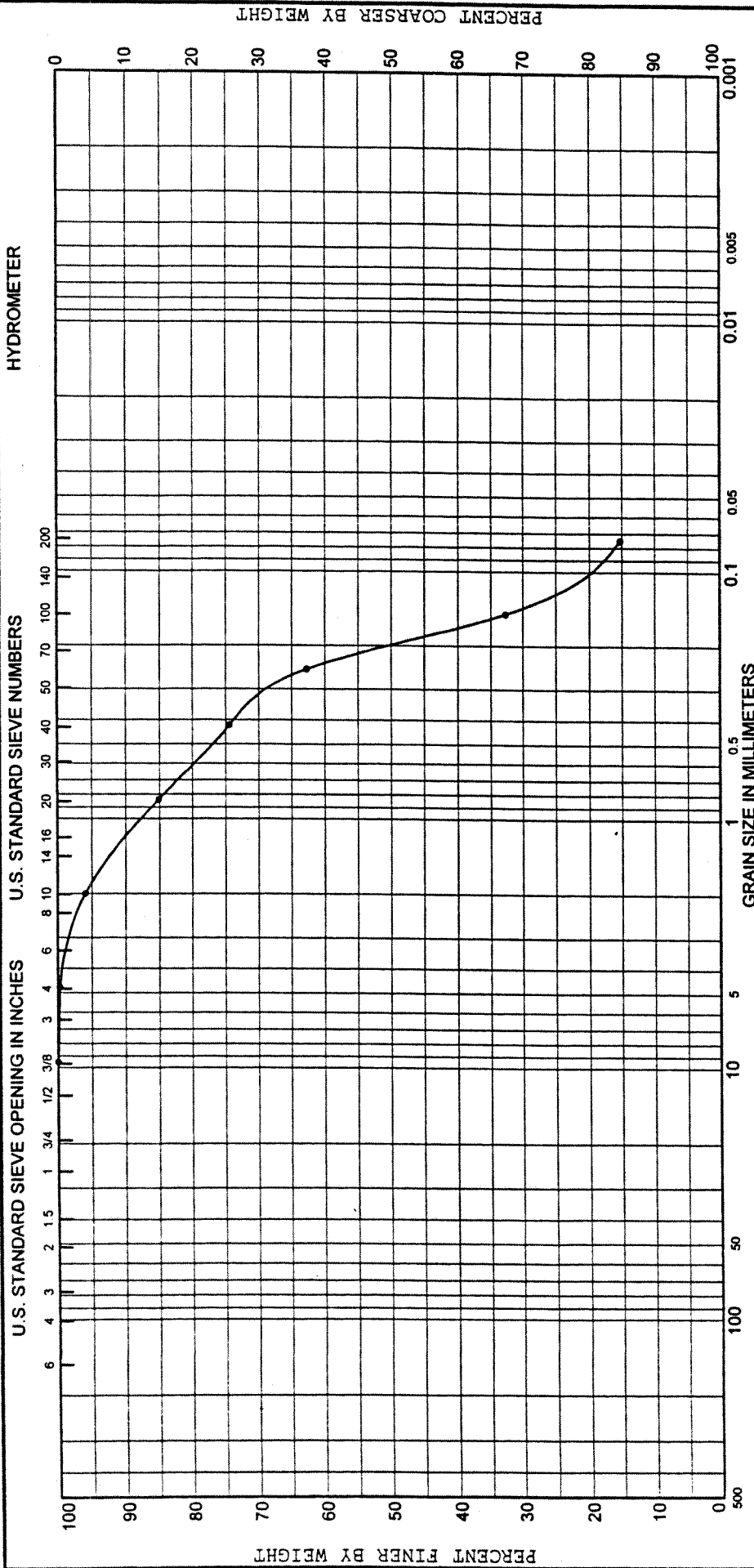
COBBLES		GRAVEL		SAND		SILT OR CLAY	
COARSE		FINE		COARSE		FINE	
Sample No.	Depth (ft)	Classification					
3	45.6 - 47.1	Nat w%	LL	PL	PI	Project Savannah Harbor	
		20.3	NP	NP	NP	Harbor Expansion, Savannah, Georgia	
		Olive Gray, Silty Sand (SM), with a trace of sand size shell fragments.					
		Lab No. K6/76					
		Boring No. SH428					
		Date 10/7/02					
Tests Conducted in General Accordance with ASTM's D422, D4318, D654, & D2487.							

**GRADATION CURVES**



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
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WORK ORDER: 240e  
 REQUISITION: W33SJG22119420



COBBLES		GRAVEL				SAND				FINE SILT OR CLAY			
Sample No.	Depth (ft)	COARSE	FINE	COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	PI	LL	PL	PI
4	47.1 - 48.6			Olive Gray, Silty Sand (SM), with a trace of sand size shell fragments.						22.3	NP	NP	NP
		Classification: _____											
		Project: Savannah Harbor Harbor Expansion, Savannah, Georgia											
		Lab No. K6/77											
		Boring No. SH428											
		Date 10/7/02											
<b>GRADATION CURVES</b>													
Tests Conducted in General Accordance with ASTM's D422, D4318, D654, & D7487.													



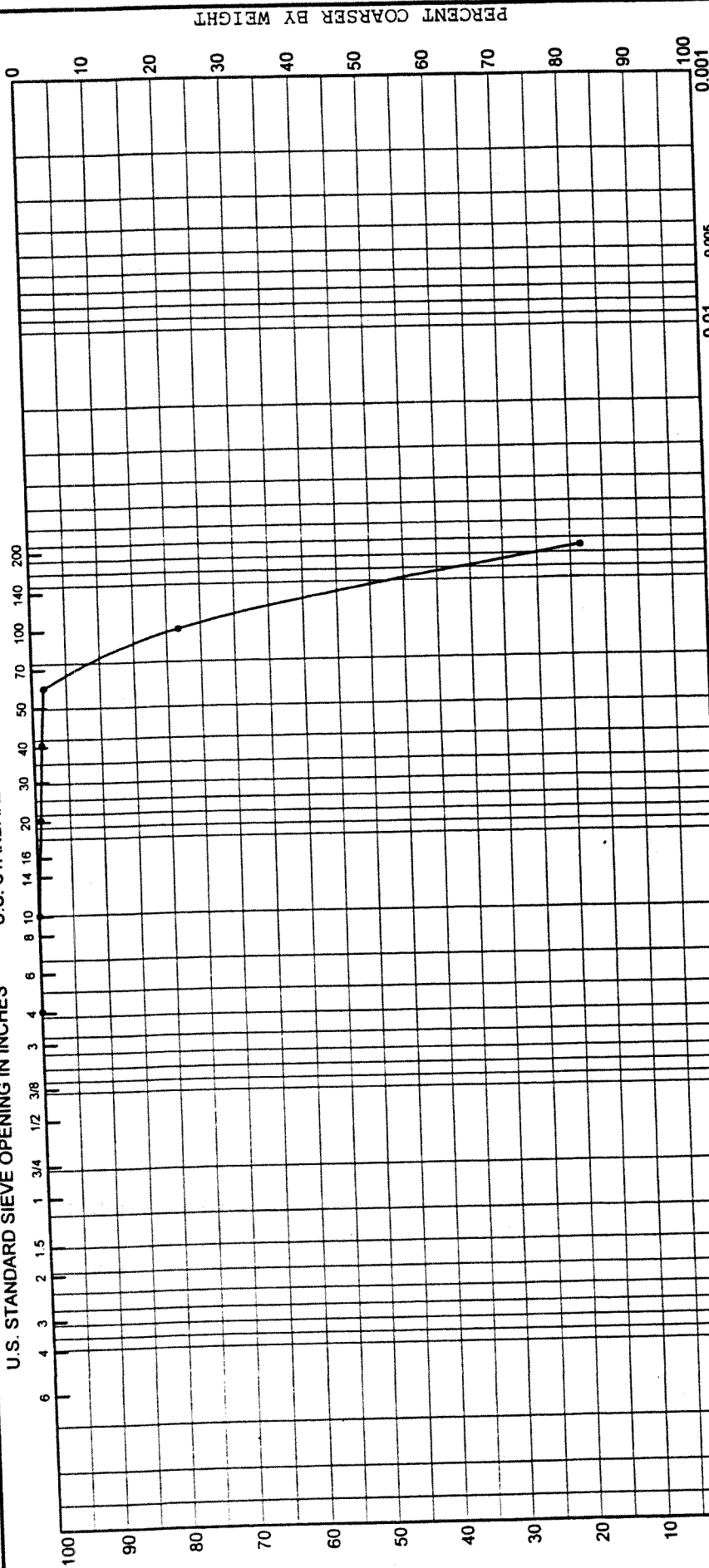
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HYDROMETER

U.S. STANDARD SIEVE NUMBERS

U.S. STANDARD SIEVE OPENING IN INCHES



PERCENT FINER BY WEIGHT

GRAIN SIZE IN MILLIMETERS

SILT OR CLAY

Sample No.	Depth (ft)	GRAVEL		SAND		FINE		PI
		COARSE	FINE	COARSE	MEDIUM	LL	PL	
2	47.9 - 49.4							
Classification		Dark Gray & Olive Gray, Silty Sand (SM).		33.5		NP	NP	NP
Project		Savannah Harbor						
Harbor Expansion, Savannah, Georgia								
Lab No.		K6/78						
Boring No.		SH429						
Date		10/7/02						

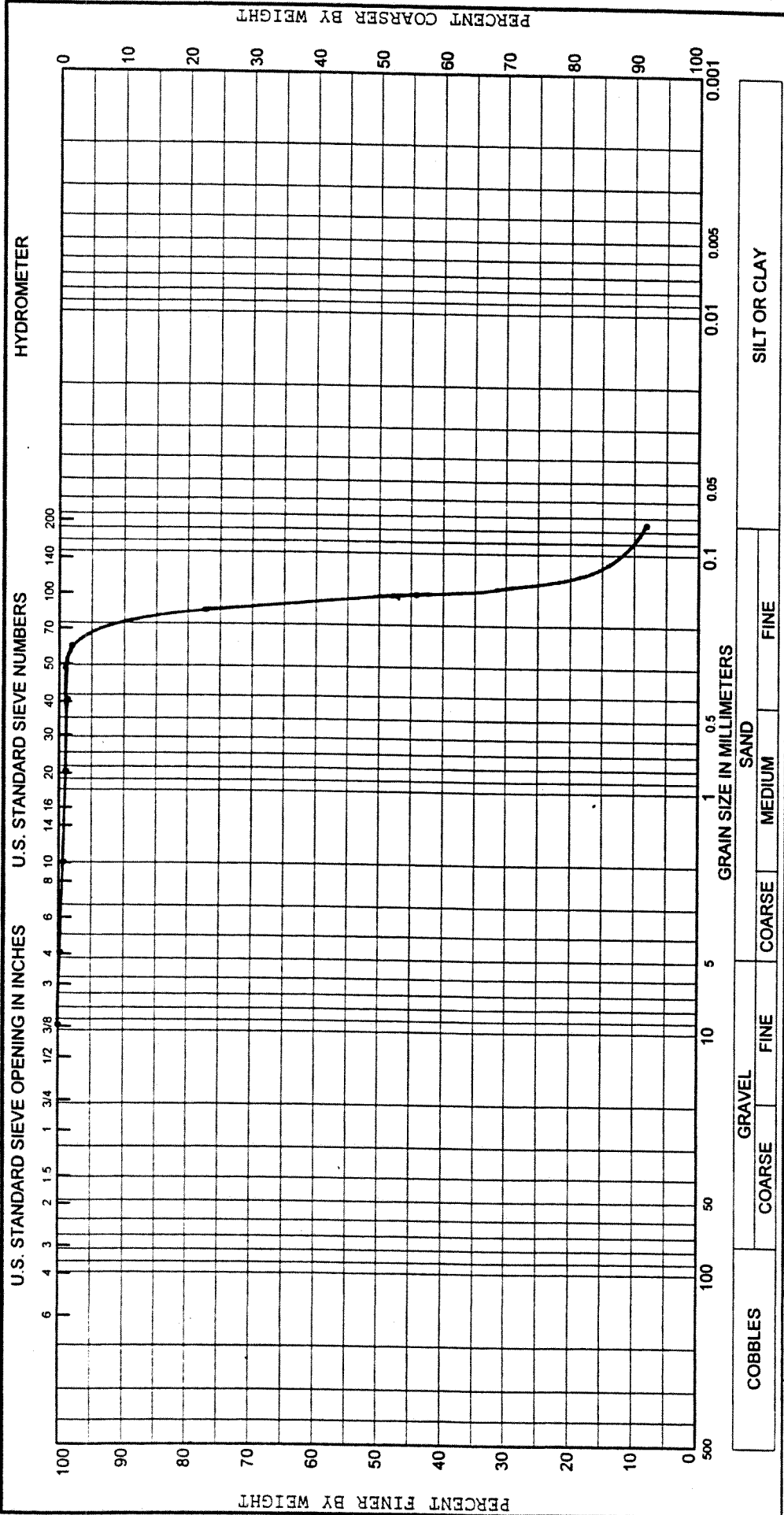
Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D854, & D2487.

GRADATION CURVES



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WORK ORDER: 240e  
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GRADATION CURVES																		
		Tests Conducted in General Accordance with ASTM's D422, D4318, D554, & D2487.																





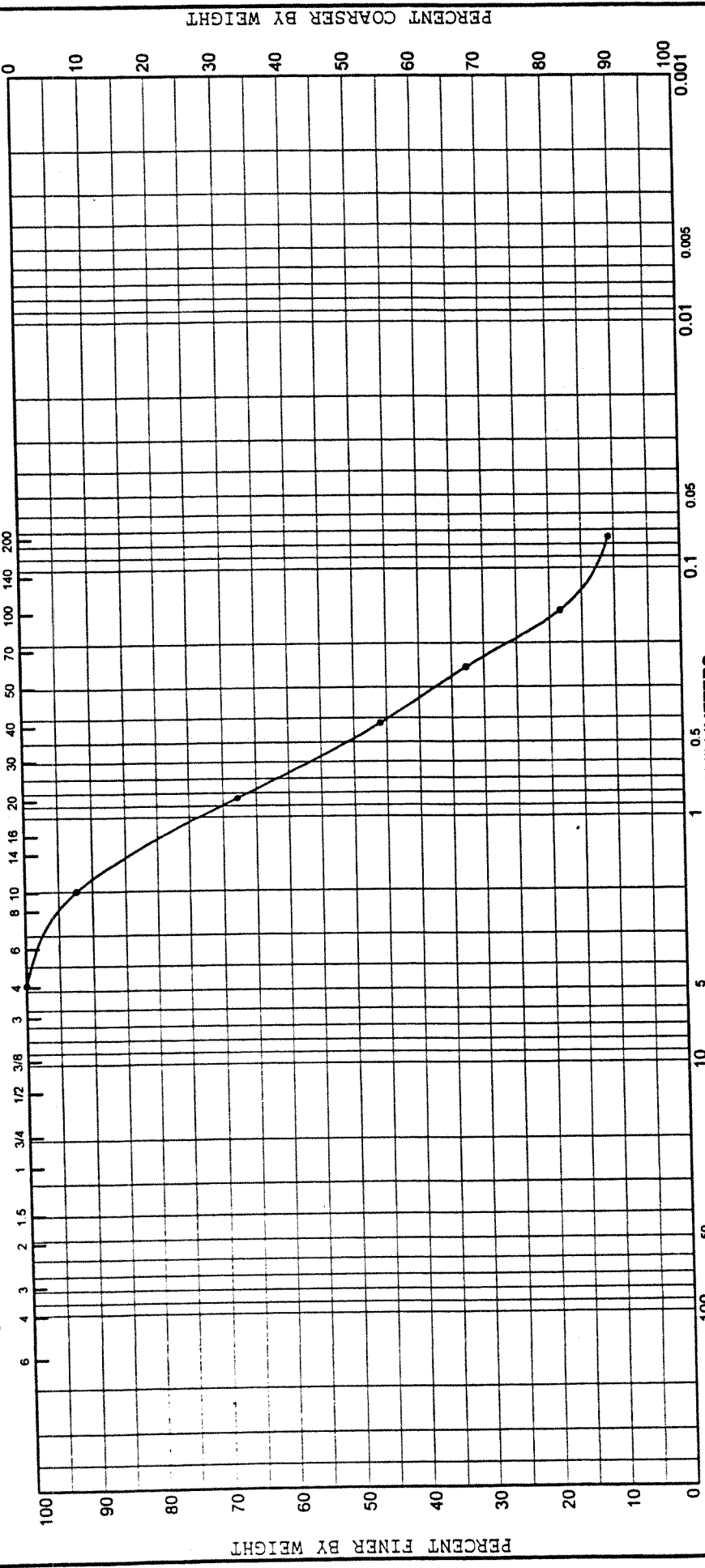
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 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

HYDROMETER

U.S. STANDARD SIEVE NUMBERS

U.S. STANDARD SIEVE OPENING IN INCHES



COBBLES	GRAVEL		SAND		SILT OR CLAY	
	COARSE	FINE	COARSE	FINE		

Sample No.	Depth (ft)	Classification						Project	Date
		LL	PL	PI	NP	NP	NP		
3	48.5 - 50.0	12.0						Savannah Harbor	10/7/02
								Harbor Expansion, Savannah, Georgia	
								Lab No. K6/80	
								Boring No. SH430	

Specific Gravity = 2.697.  
 Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D854, & D2487.

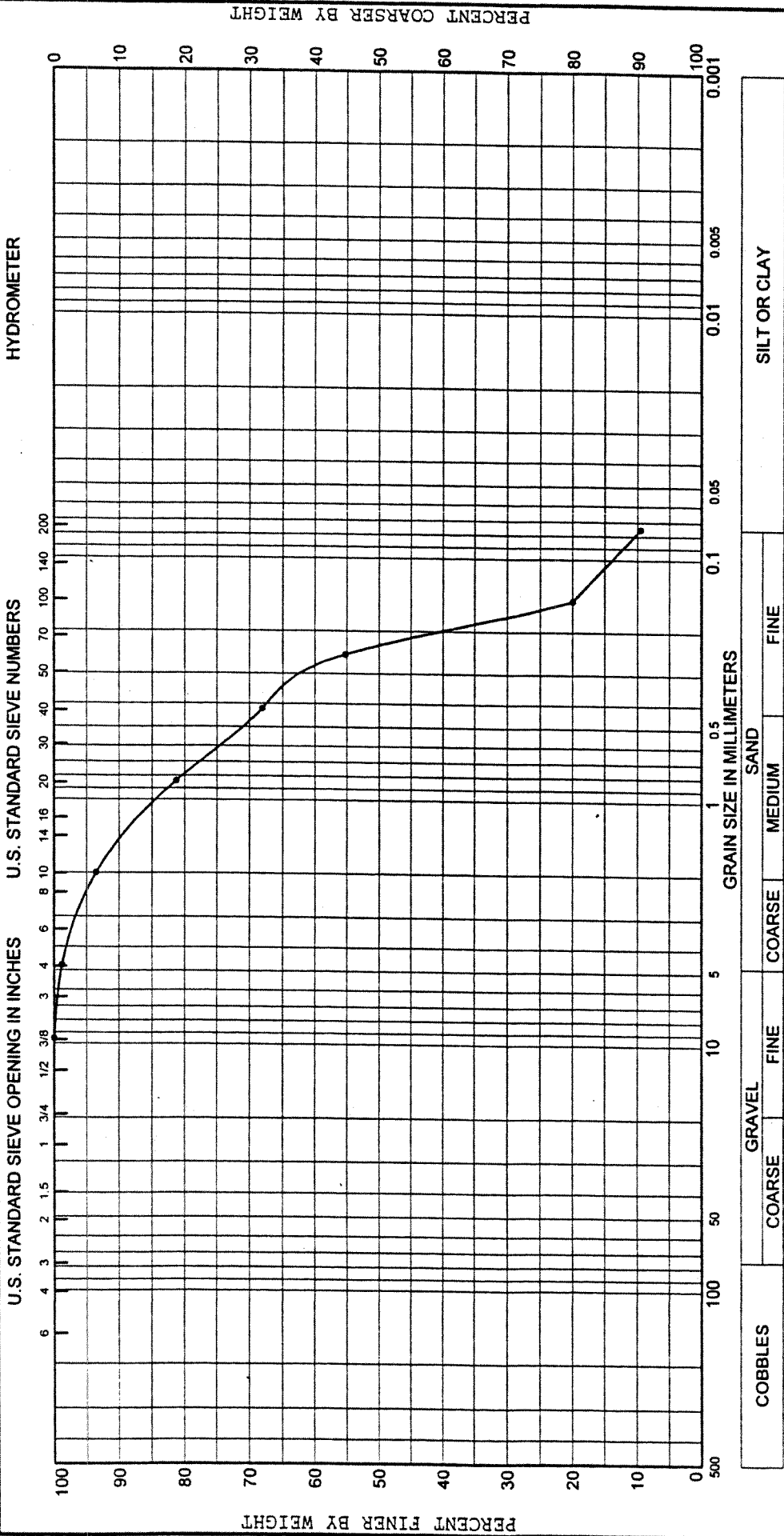
GRADATION CURVES



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 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e

REQUISITION: W33SJG22119420



Sample No.	Depth (ft)	Classification	GRAVEL			SAND			SILT OR CLAY										
			COARSE	FINE	COARSE	MEDIUM	FINE	PI	PL	NP									
2	48.6 - 50.1	Olive Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size and a little sand size shell fragments.																	
			Nat w%			22.4			NP			NP			Project Savannah Harbor				
			Specific Gravity = 2.725.									Harbor Expansion, Savannah, Georgia			Lab No. K6/81				
												Boring No. SH431			Date 10/7/02				
															Tests Conducted in General Accordance with ASTM's D422, D4318, D854, & D2487.				

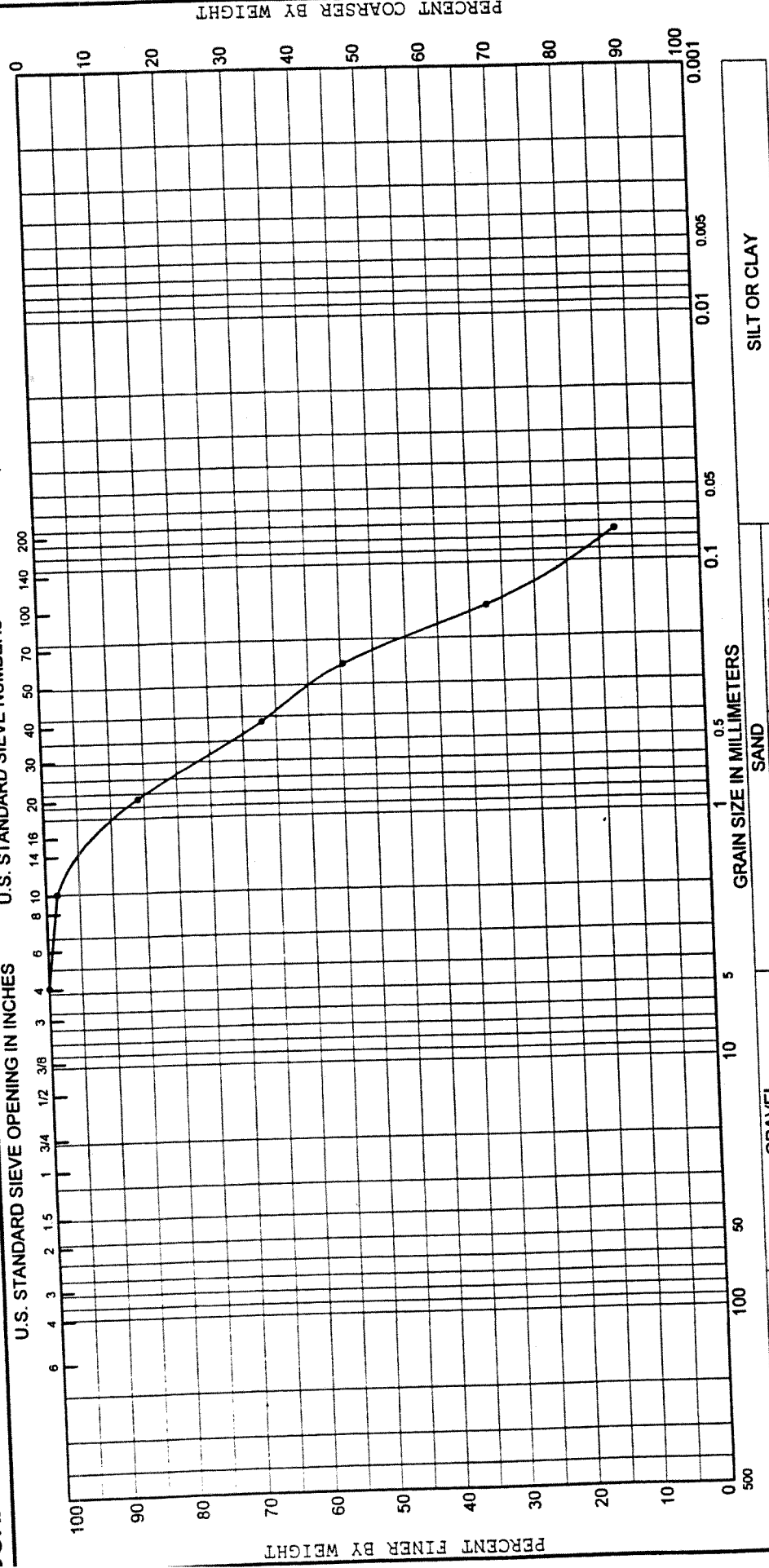
**GRADATION CURVES**



WORK ORDER: 240e  
 REQUISITION: W33SJG22119420

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 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

HYDROMETER



Sample No.	Depth (ft)	Classification	GRAVEL				SAND				PI		
			COARSE	FINE	COARSE	MEDIUM	FINE	Nat w%	LL	NP		NP	
9	60.6 - 62.1	Olive Gray, Silty Sand (SM)								24.1	NP	NP	

Project Savannah Harbor  
 Harbor Expansion, Savannah, Georgia  
 Lab No. K6/82  
 Boring No. SH431  
 Date 10/7/02

Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D654, & D2487.  
 Specific Gravity = 2.695.

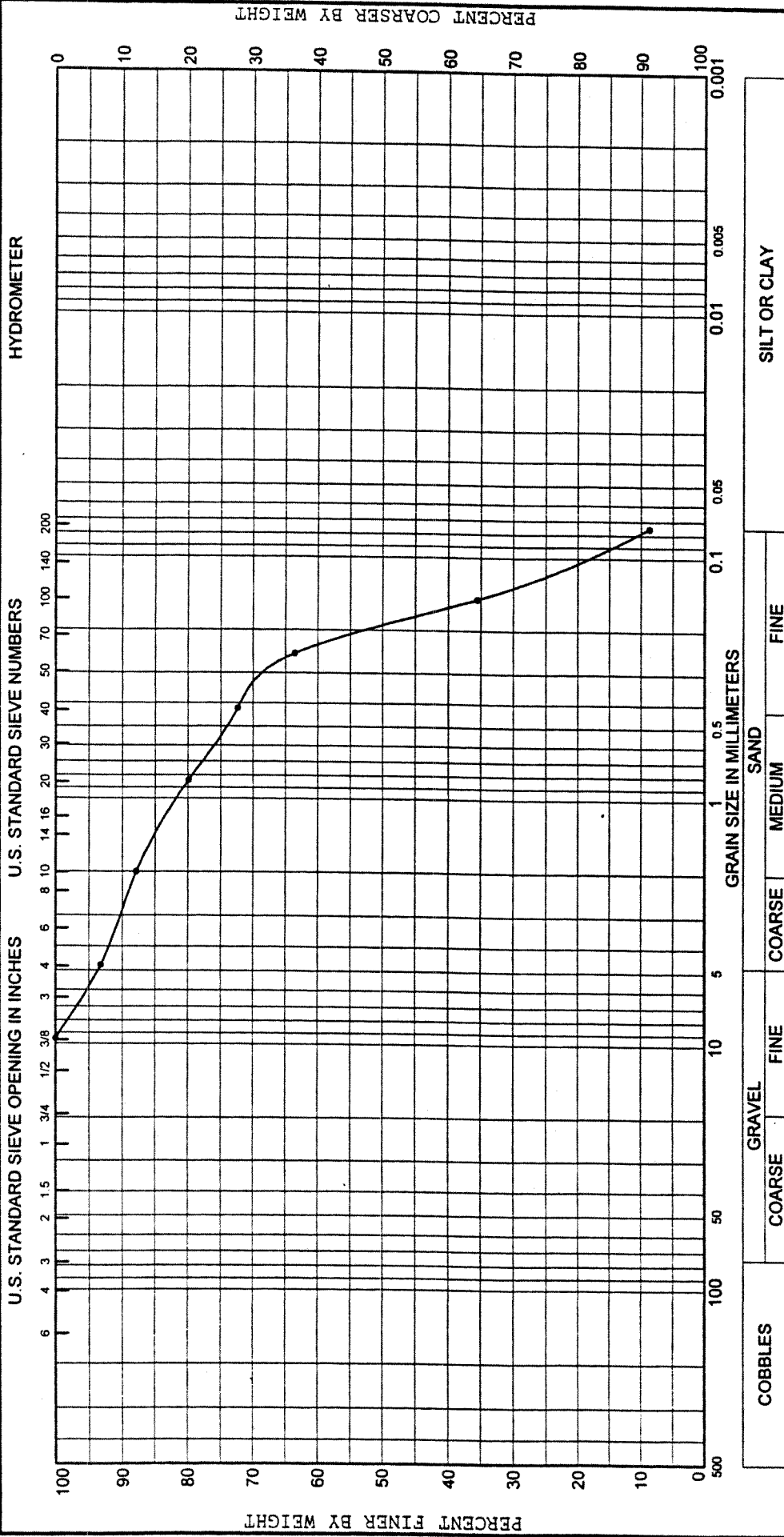
GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e

REQUISITION: W33SjG22119420



Sample No.	2	Depth (ft)	46.0 - 48.0	Classification	(Visual) Olive Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size and some sand size shell fragments.	Nat w%	23.5	LL		PL		PI		Project	Savannah Harbor
														Harbor Expansion, Savannah, Georgia	
														Lab No. K6/83	
														Boring No. SH432	
														Date	10/7/02
															Tests Conducted in General Accordance with ASTM's D422, D4318, D854, & D2487.

**GRADATION CURVES**

Specific Gravity = 2.734.



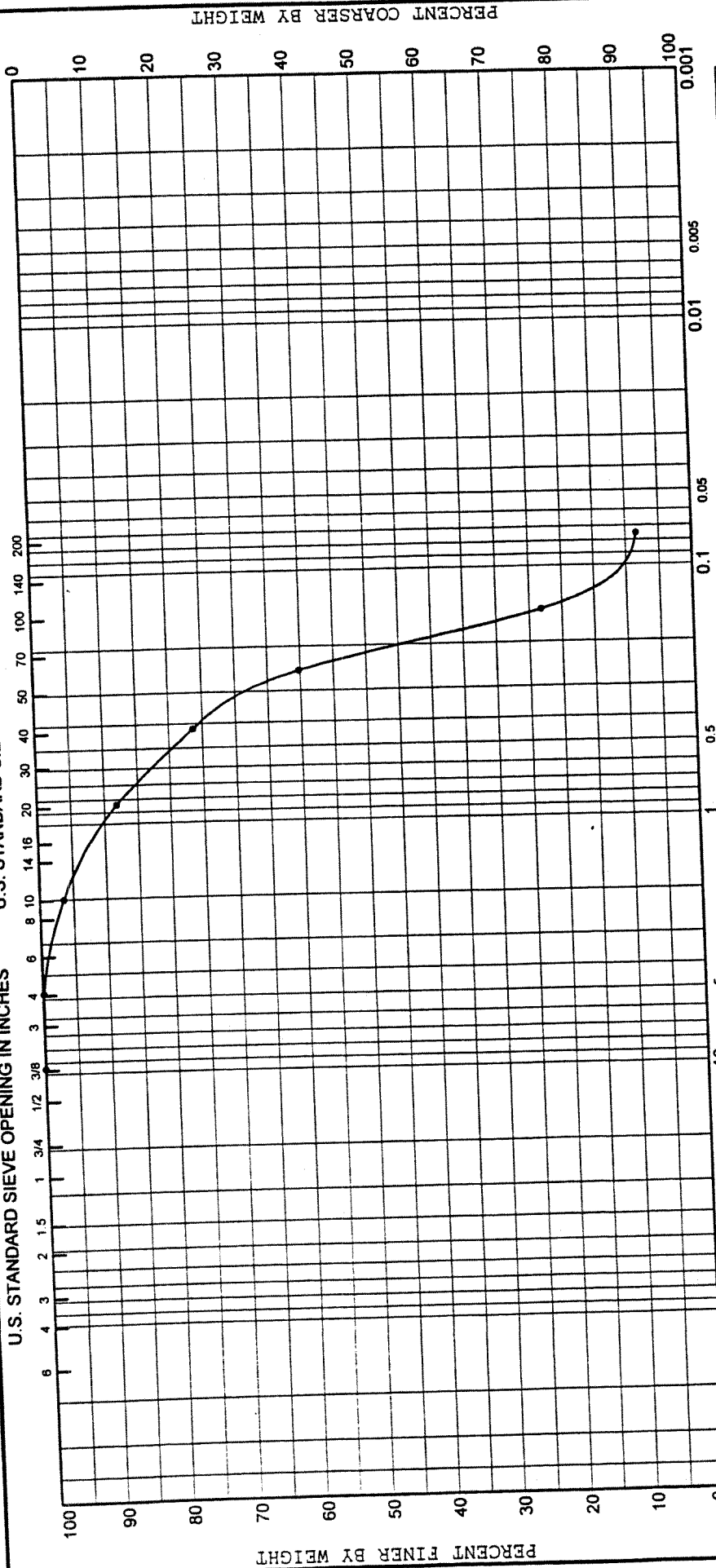
WORK ORDER: 240e  
 REQUISITION: W33SJG22119420

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 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

HYDROMETER

U.S. STANDARD SIEVE NUMBERS

U.S. STANDARD SIEVE OPENING IN INCHES



PERCENT COARSER BY WEIGHT

GRAIN SIZE IN MILLIMETERS

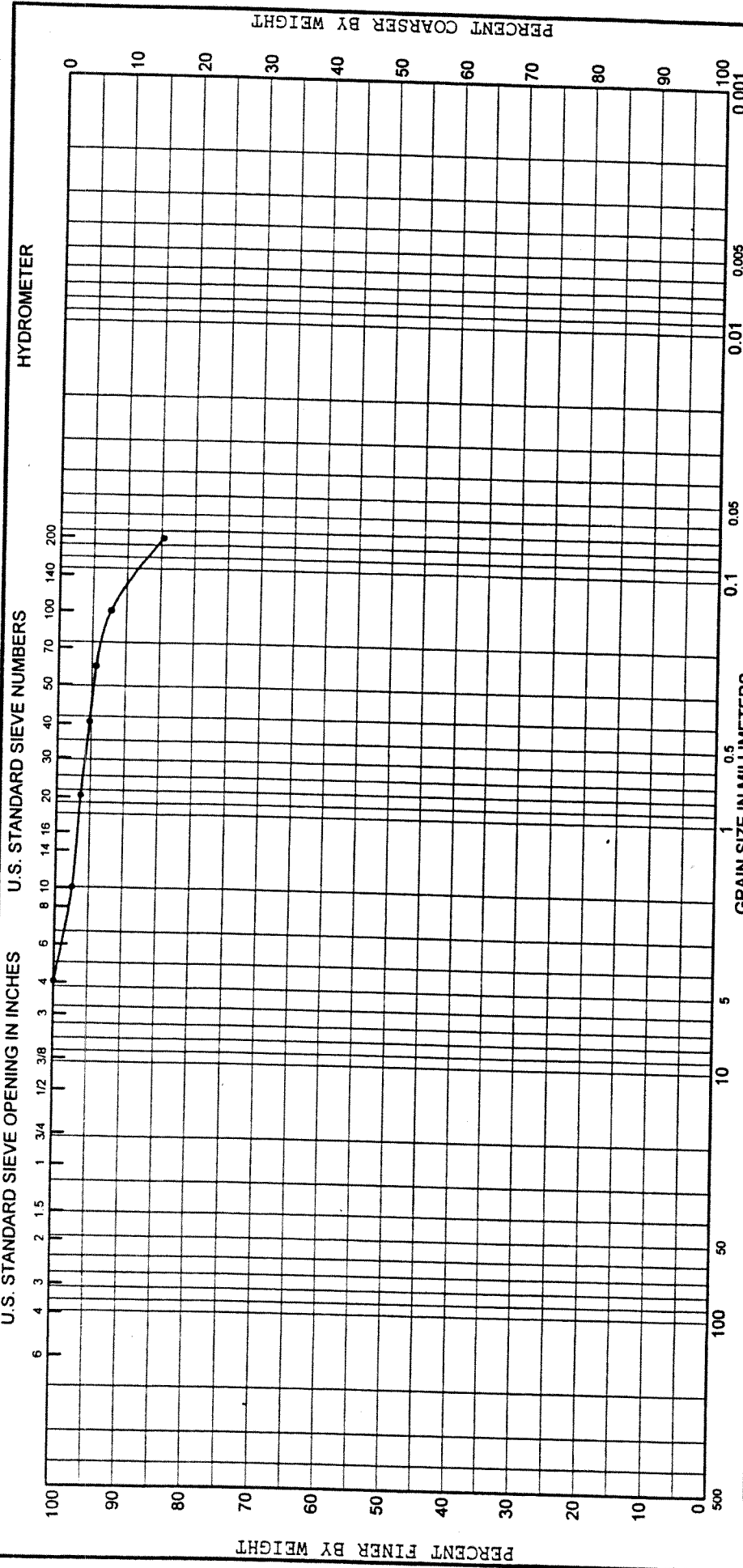
Sample No.	Depth (ft)	Classification	GRAVEL			SAND			SILT OR CLAY									
			COARSE	FINE	COARSE	MEDIUM	FINE	PI	PL	NP								
1	46.4 - 47.9	Very Dark Gray, Poorly Graded Silty Sand (SP-SM), with a little sand size shell fragments.																
			Specific Gravity = 2.719.			Boring No. SH433			Date 10/7/02			Project Savannah Harbor			Harbor Expansion, Savannah, Georgia			
						Lab No. K6/84			Tests Conducted in General Accordance with ASTM's D422, D4318, D854, & D2487.									

GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

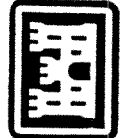
WORK ORDER: 240e  
 REQUISITION: W33SJG22119420



GRAVEL		SAND		FINE		SILT OR CLAY	
COARSE	COARSE	COARSE	MEDIUM	FINE	LL	PL	PI
100	5	5	1	0.075	120	31	89
Sample No.	5	55.4 - 56.9	Olive Gray, Fat Clay (CH), with a little sand.	Classification			
Depth (ft)	55.4 - 56.9	Project Savannah Harbor					
Harbor Expansion, Savannah, Georgia							
Lab No. K6/85							
Boring No. SH433							
Date 10/7/02							

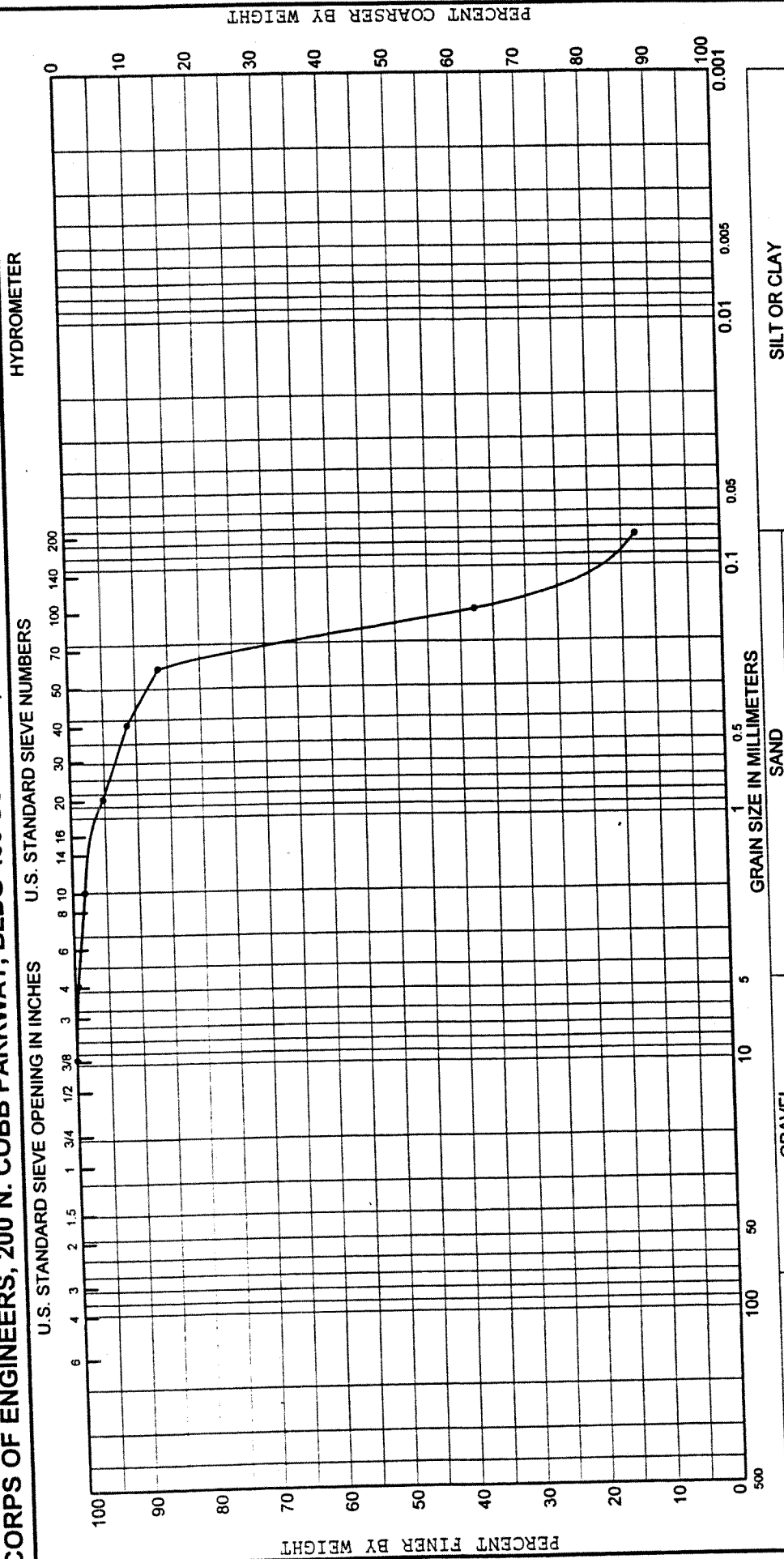
**GRADATION CURVES**

Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D854, & D2487.



WORK ORDER: 240e  
 REQUISITION: W33SJG22119420

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062



Sample No.	Depth (ft)	Classification	GRAVEL			SAND			SILT OR CLAY										
			COARSE	FINE		COARSE	MEDIUM	FINE	PI	PL	NP								
1	49.2 - 50.7	Dark Olive Gray, Silty Sand (SM), with a trace of sand size shell fragments.																	
			Nat w%						Project Savannah Harbor										
			30.3						Harbor Expansion, Savannah, Georgia										
									Lab No. K6/86										
									Boring No. SH434										
									Date 10/7/02										

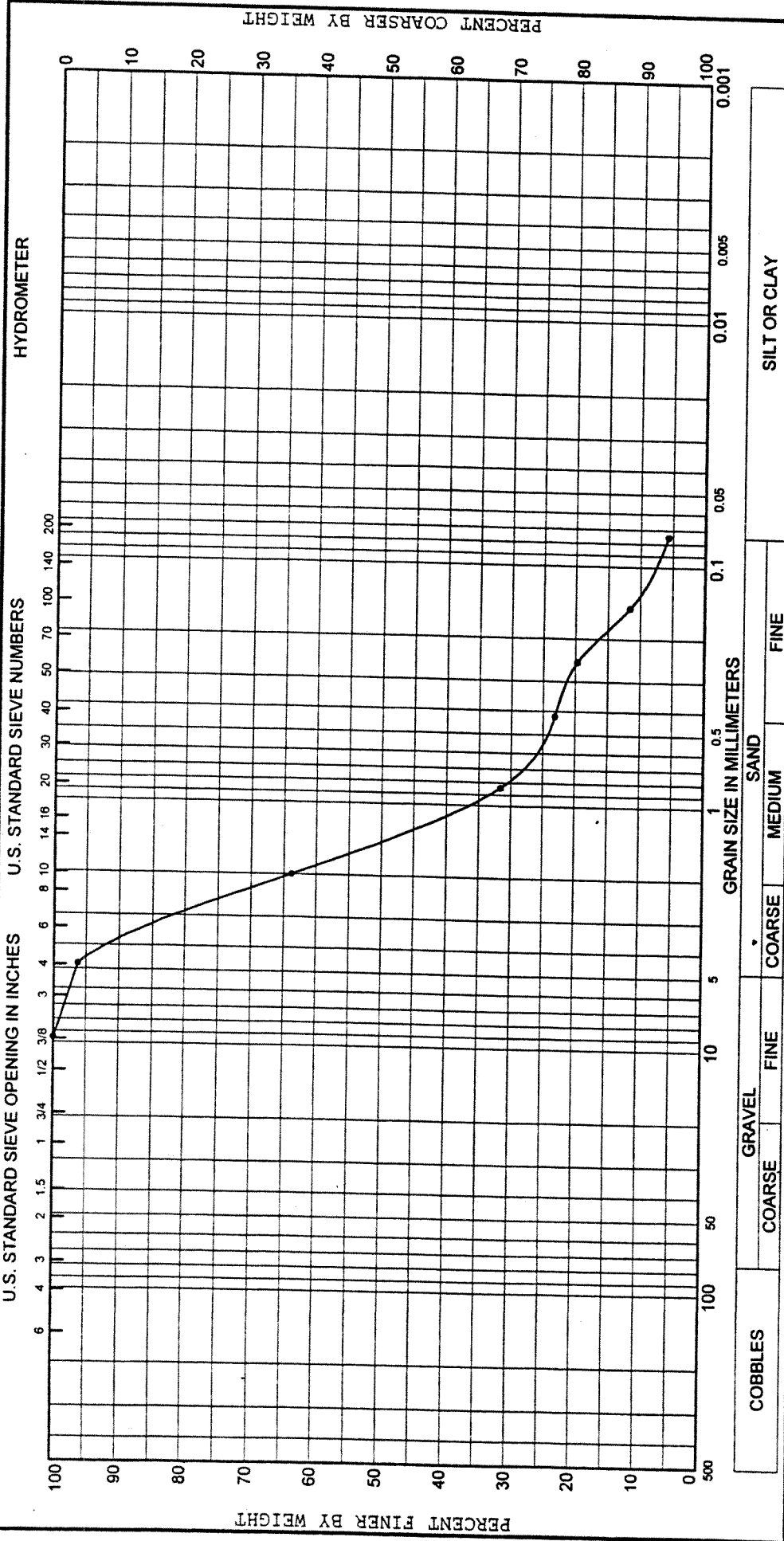
Tests Conducted in General Accordance with ASTM's D422, D4318, D854, & D2487.

GRADATION CURVES



**DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062**

WORK ORDER: 240e  
REQUISITION: W33SJG22119420



Sample No.	Depth (ft)	Classification	GRAVEL				SAND			PI					
			COARSE	FINE	COARSE	MEDIUM	FINE	Nat w%	LL		PL				
3	54.0 - 54.7	(Visual) Olive Gray & White, Well Graded Silty Sand (SW-SM) with a trace of gravel size and a trace of sand size shell fragments.							19.3						
		Insufficient Material for Atterberg Limits, Visual Conducted.													
		Specific Gravity = 2.732.													

Project Savannah Harbor  
Harbor Expansion, Savannah, Georgia  
Lab No. K6/87  
Boring No. SH435  
Date 10/7/02

Tests Conducted in General Accordance with  
ASTM's D422, D4318, D654, & D2487.

**GRADATION CURVES**

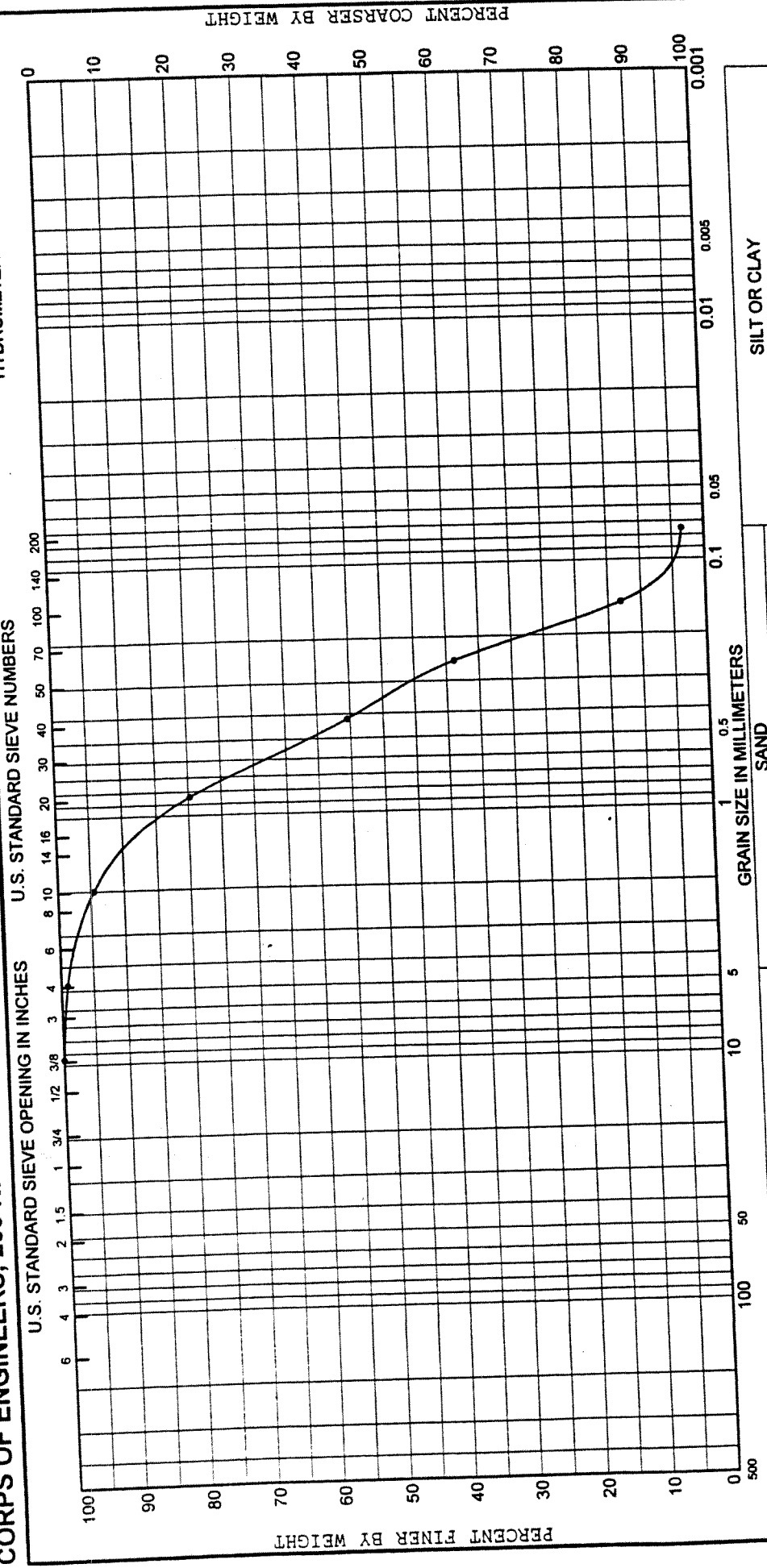




WORK ORDER: 240e  
 REQUISITION: W33SJG22119420

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

HYDROMETER



Sample No.	Depth (ft)	Classification	GRAVEL				SAND				PI		
			COARSE	FINE	COARSE	MEDIUM	FINE	LL	PL	NP			
1	49.2 - 50.1	Olive Gray, Poorly Graded Sand (SP), with a trace of sand size shell fragments.								19.0	NP	NP	
			Specific Gravity = 2.697.										
			Project Savannah Harbor										
			Harbor Expansion, Savannah, Georgia										
			Lab No. K6/88										
			Boring No. SH436										
			Date 10/7/02										

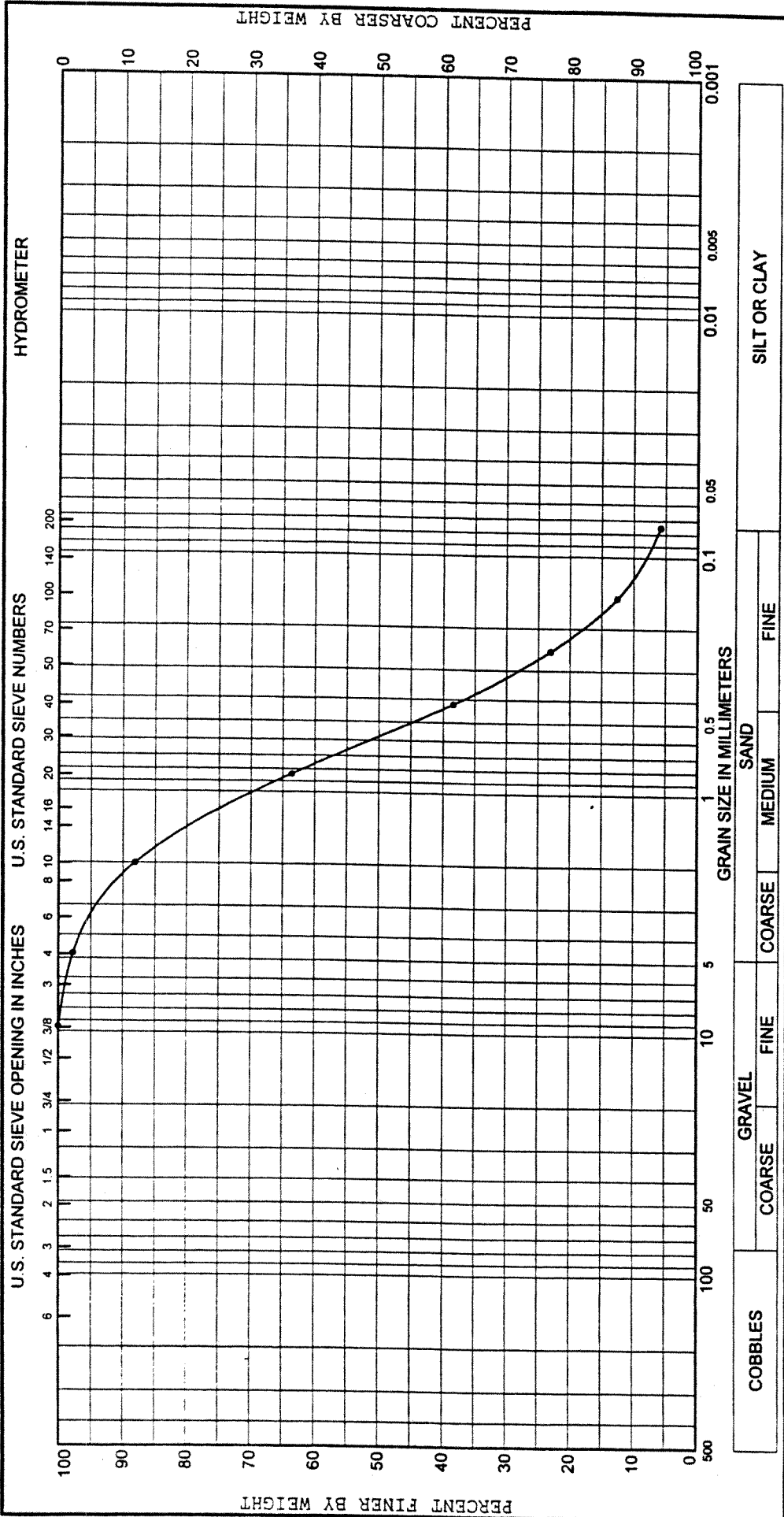
Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D854, & D2487.

GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e  
 REQUISITION: W33SJG22119420



Sample No.	Depth (ft)	Classification	GRAVEL			SAND			SILT OR CLAY		
			COARSE	FINE	COARSE	MEDIUM	FINE	LL	PL	PI	Project
3	50.7 - 52.2	Olive Gray, Well Graded Silty Sand (SW-SM), with a trace of gravel.						NP	NP	NP	
											Harbor Expansion, Savannah, Georgia
											Lab No. K6/89
											Boring No. SH436
											Date 10/7/02

Tests Conducted in General Accordance with ASTM's D422, D4318, D854, & D2487.

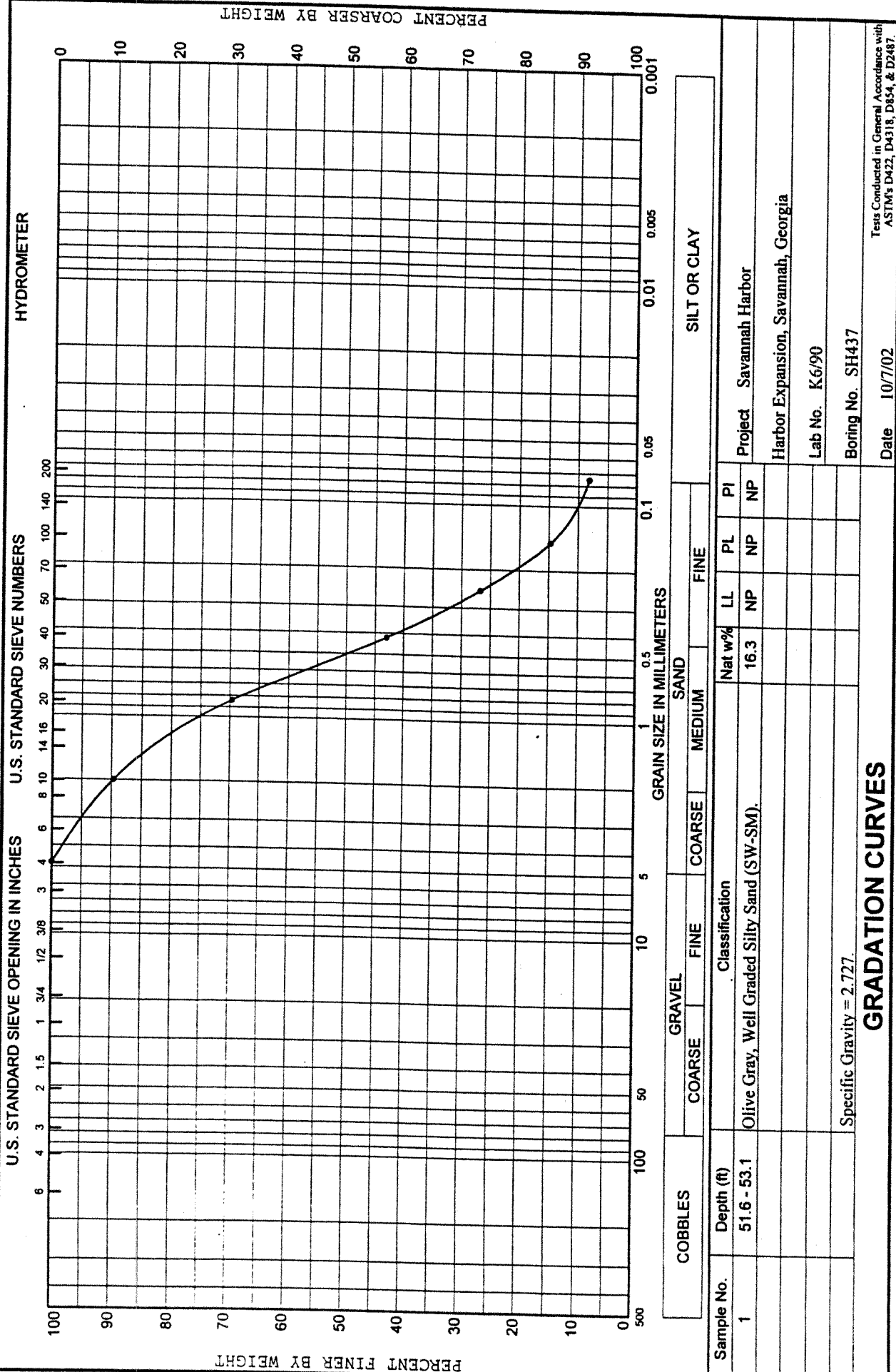
GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e

REQUISITION: W33SUG22119420



GRADATION CURVES

Specific Gravity = 2.727.

Classification: Olive Gray, Well Graded Silty Sand (SW-SM).

Depth (ft): 51.6 - 53.1

Sample No.: 1

Nat w%: 16.3

LL: NP

PL: NP

PI: NP

Project: Savannah Harbor

Harbor Expansion, Savannah, Georgia

Lab No. K6/90

Boring No. SH437

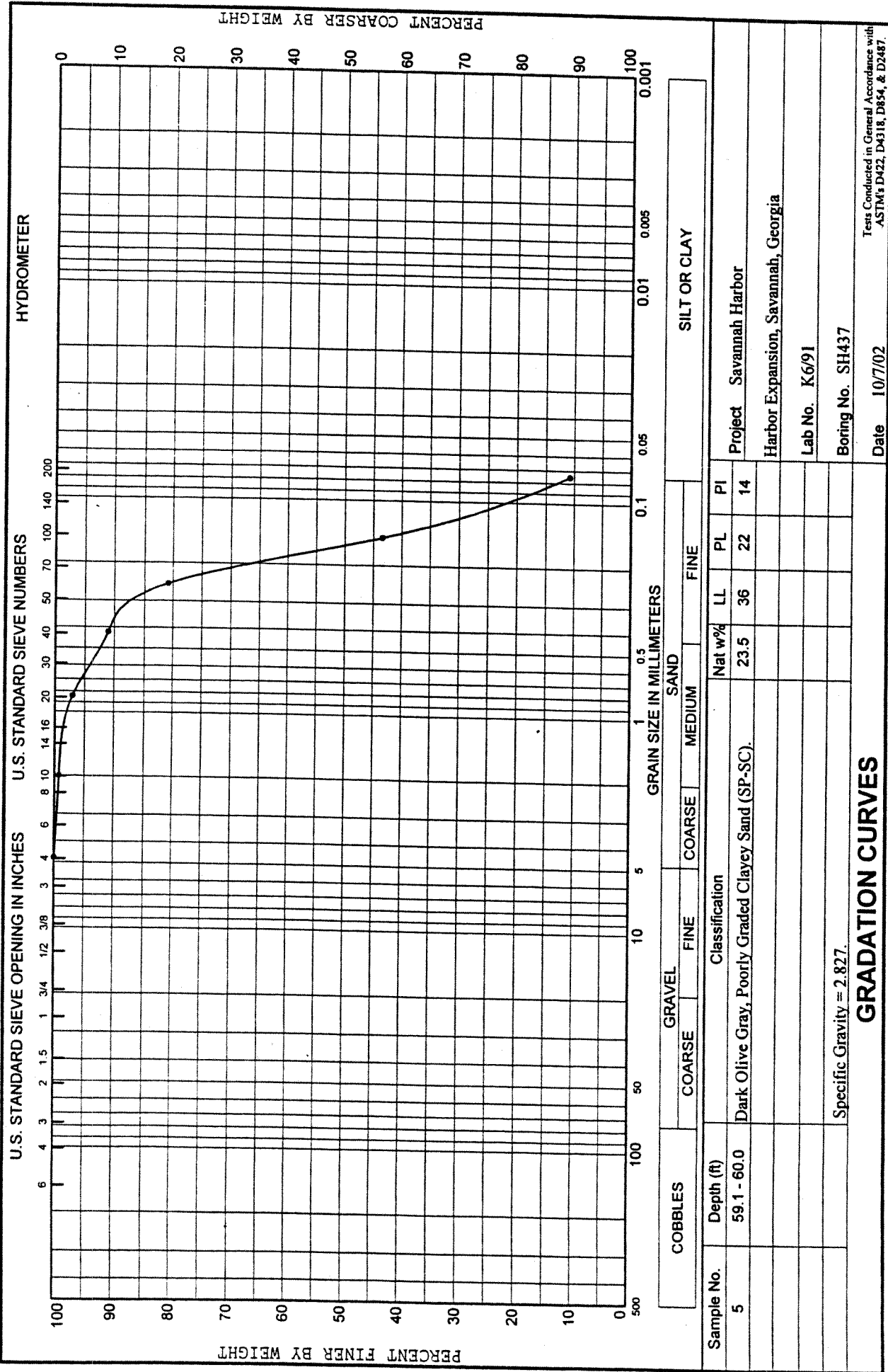
Date: 10/7/02

Tests Conducted in General Accordance with ASTM's D422, D4318, D854, & D2487.



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e  
 REQUISITION: W33SUG22119420



Sample No.	5	Depth (ft)	59.1 - 60.0	Classification	Dark Olive Gray, Poorly Graded Clayey Sand (SP-SC).
Specific Gravity = 2.827.					
GRADATION CURVES					
Boring No. SH437					
Lab No. K6/91					
Harbor Expansion, Savannah, Georgia					
Project Savannah Harbor					
Date 10/7/02					

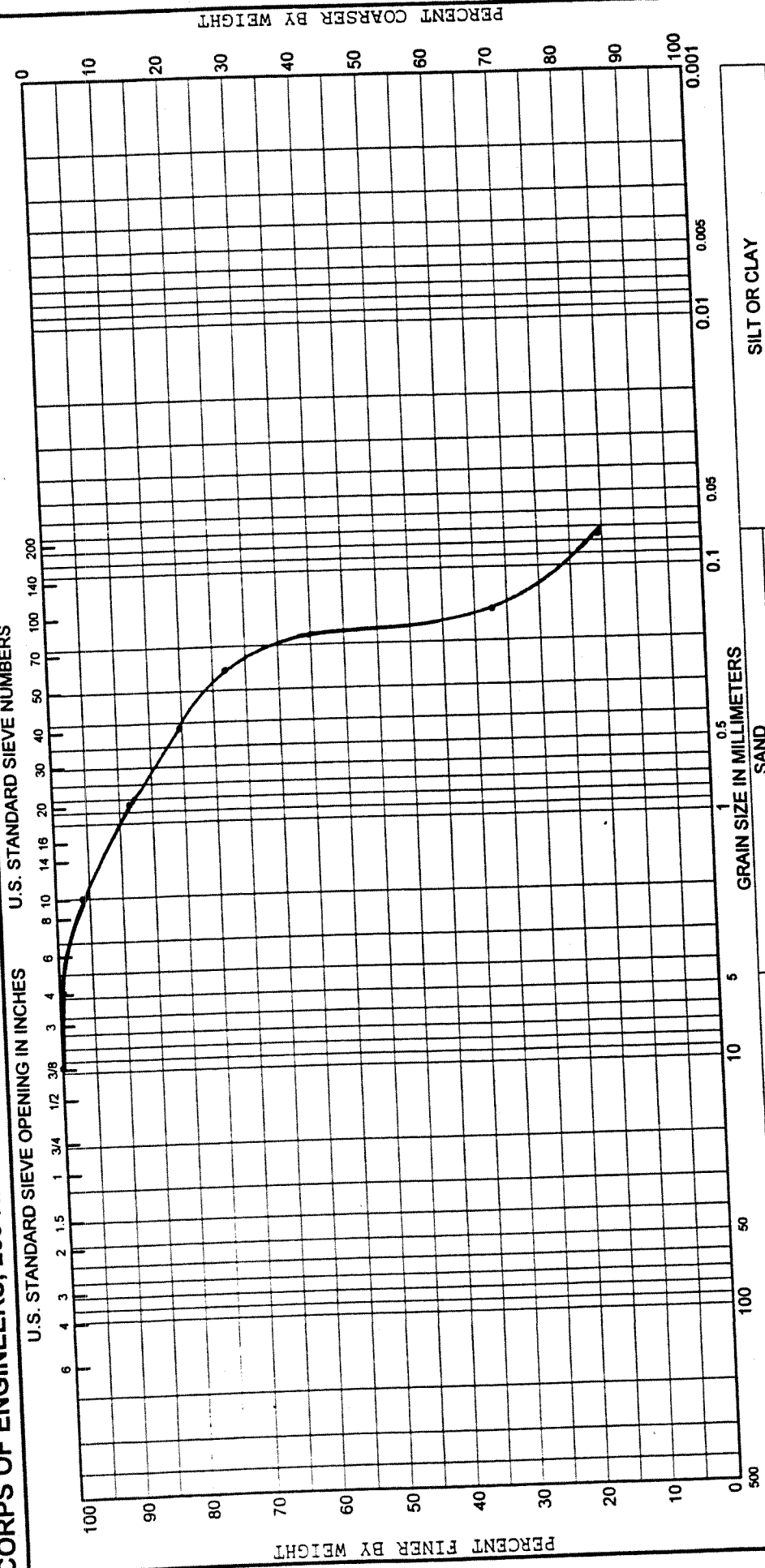
Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D854, & D2487.



WORK ORDER: 240e  
 REQUISITION: W33SJG22119420

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

HYDROMETER



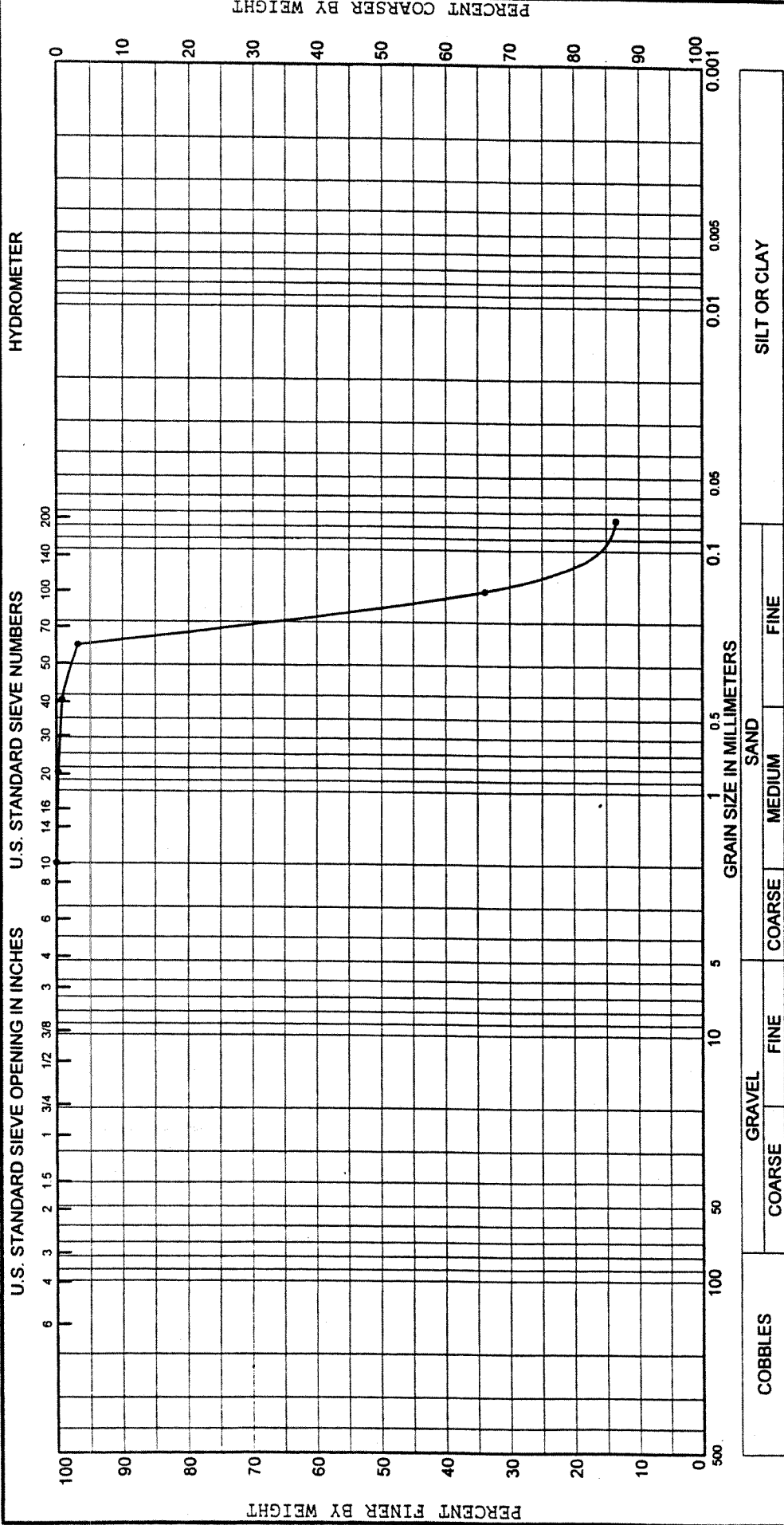
Sample No.	Depth (ft)	Classification	GRAVEL			SAND			SILT OR CLAY			Project	Date
			COARSE	FINE	COARSE	MEDIUM	FINE	PI	PL	NP			
1	43.5 - 45.0	Gray, Silty Sand (SM), with a trace of sand size shell fragments.										Savannah Harbor	10/7/02
												Harbor Expansion, Savannah, Georgia	
												Lab No. K6/92	
												Boring No. SH439	
													Tests Conducted in General Accordance with ASTM's D422, D4318, D654, & D2487.

GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e  
 REQUISITION: W33SJD22119420



Sample No.	Depth (ft)	Classification	GRAVEL			SAND			FINE			PI		
			COARSE	COARSE	FINE	COARSE	MEDIUM	FINE	LL	PL	NP			
3	46.5 - 48.0	Olive Gray, Silty Sand (SM)										23.4	NP	NP

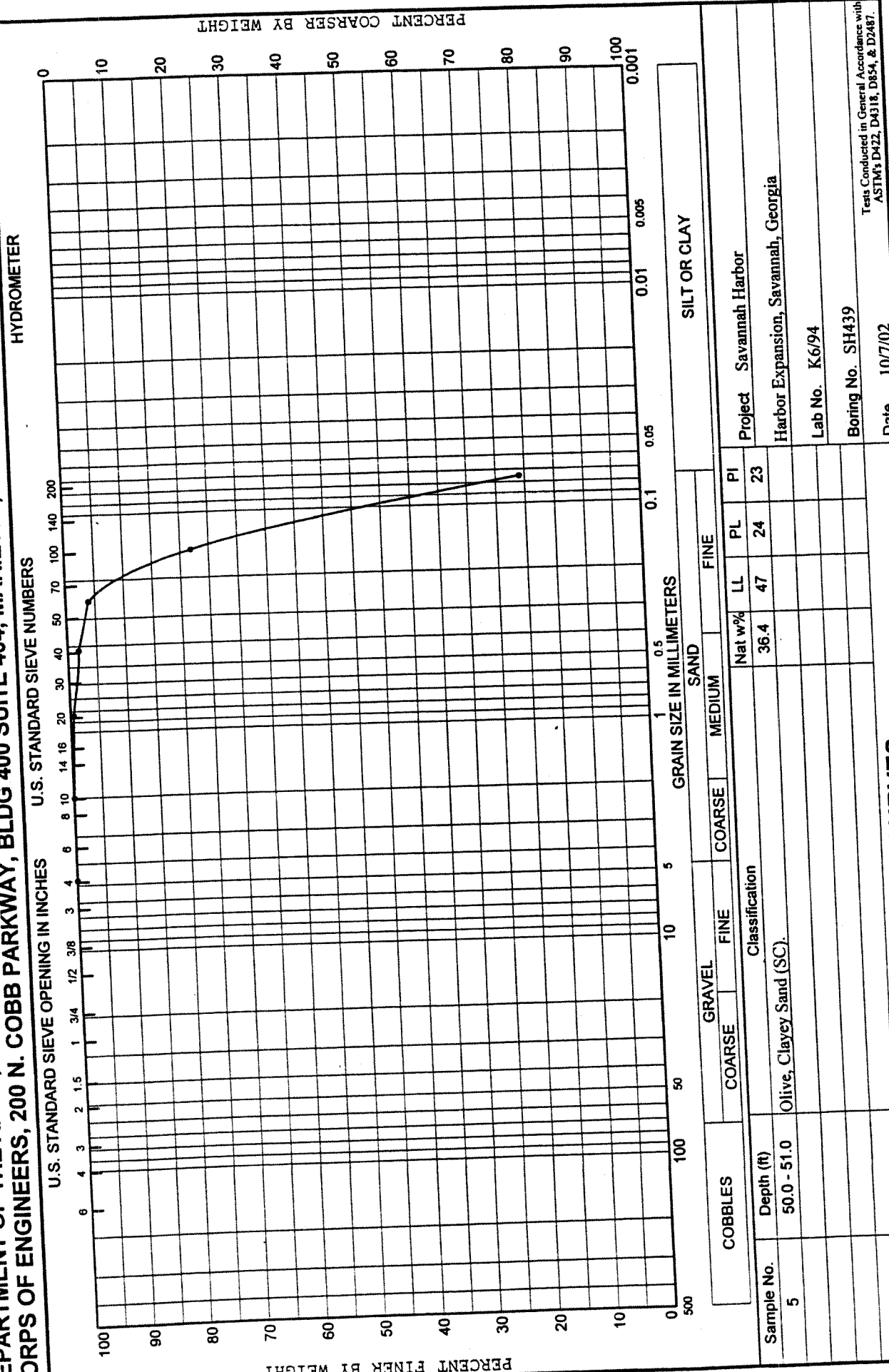
Project Savannah Harbor  
 Harbor Expansion, Savannah, Georgia  
 Lab No. K6/93  
 Boring No. SH439  
 Date 10/7/02  
 Tests Conducted in General Accordance with ASTM's D422, D4318, D854, & D2487.

**GRADATION CURVES**



WORK ORDER: 240e  
 REQUISITION: W33SUG22119420

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062



GRADATION CURVES

Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D654, & D2487.

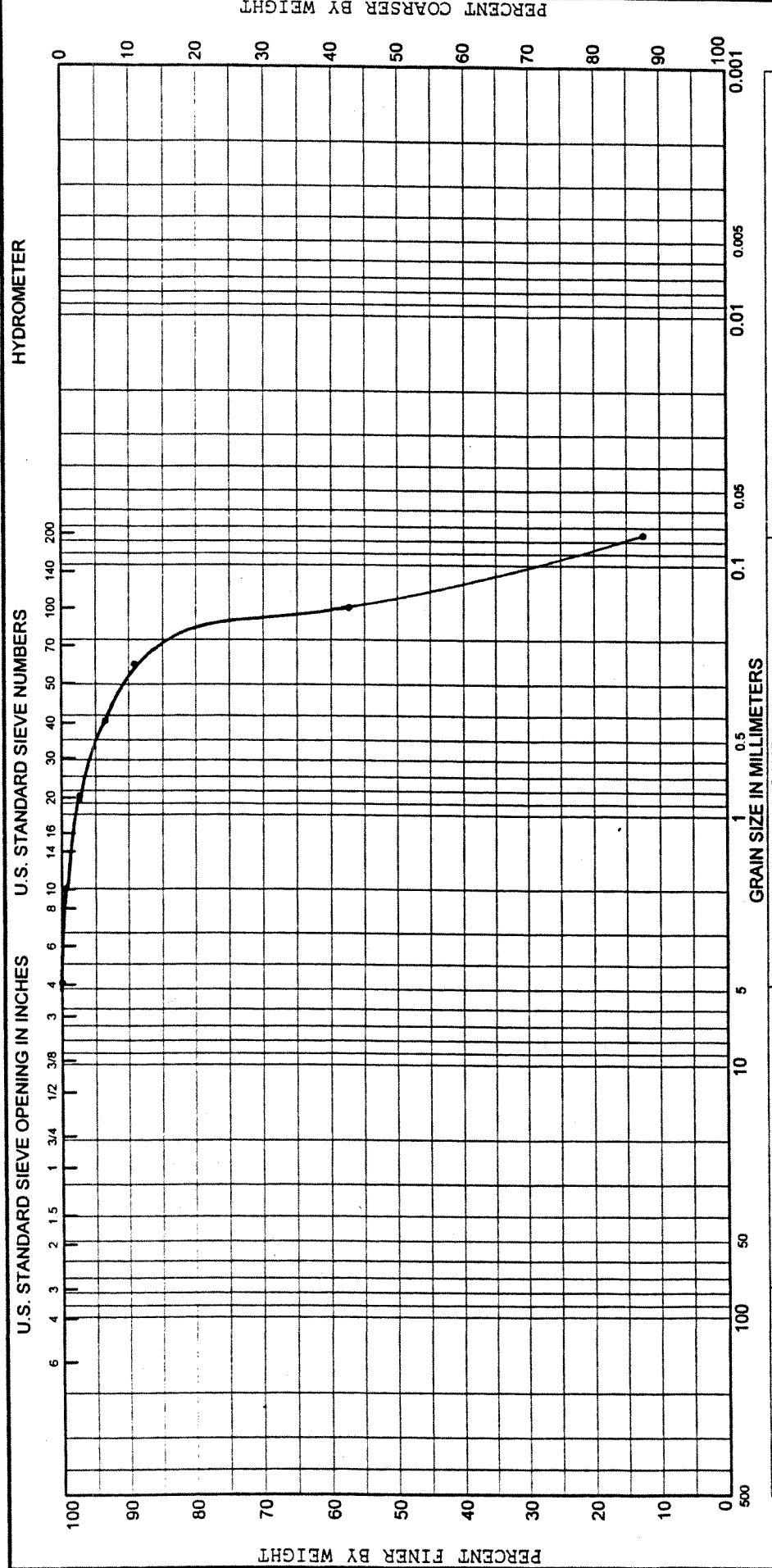
Project Savannah Harbor  
 Harbor Expansion, Savannah, Georgia  
 Lab No. K6/94  
 Boring No. SH439  
 Date 10/7/02



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e

REQUISITION: W33SJG22119420



Sample No. 2	Depth (ft)	Classification						Project Savannah Harbor Harbor Expansion, Savannah, Georgia Lab No. K6/95 Boring No. SH441
	46.5 - 48.5	Nat w%	LL	PL	PI			
	Dark Olive Gray, Silty Sand (SM), with a trace of sand size shell fragments.	28.7	NP	NP	NP			
Date		10/7/02		Tests Conducted in General Accordance with ASTM's D422, D4318, D854, & D2487				

**GRADATION CURVES**



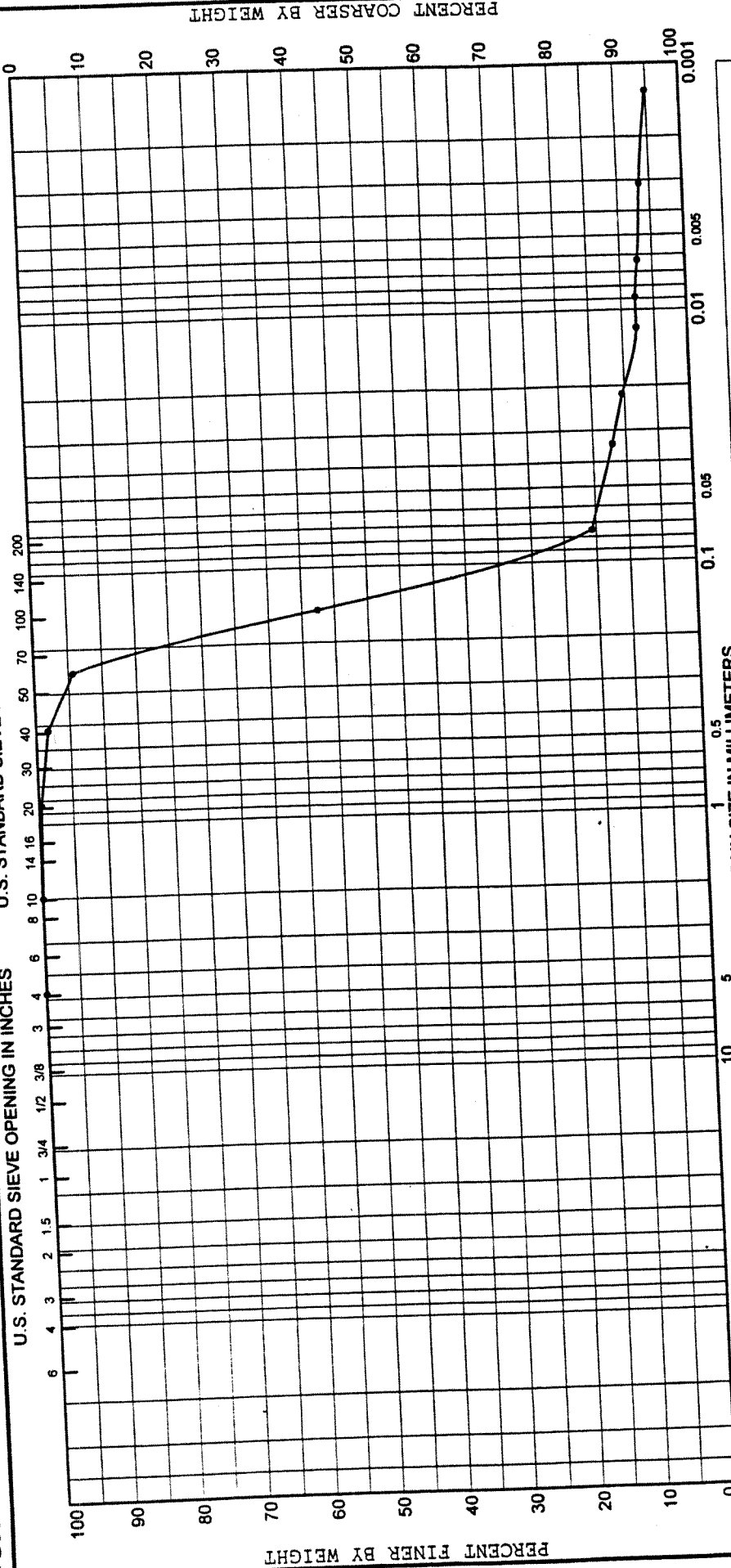


WORK ORDER: 240e  
 REQUISITION: W33SJG22119420

**DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062**

**HYDROMETER**

**U.S. STANDARD SIEVE NUMBERS**



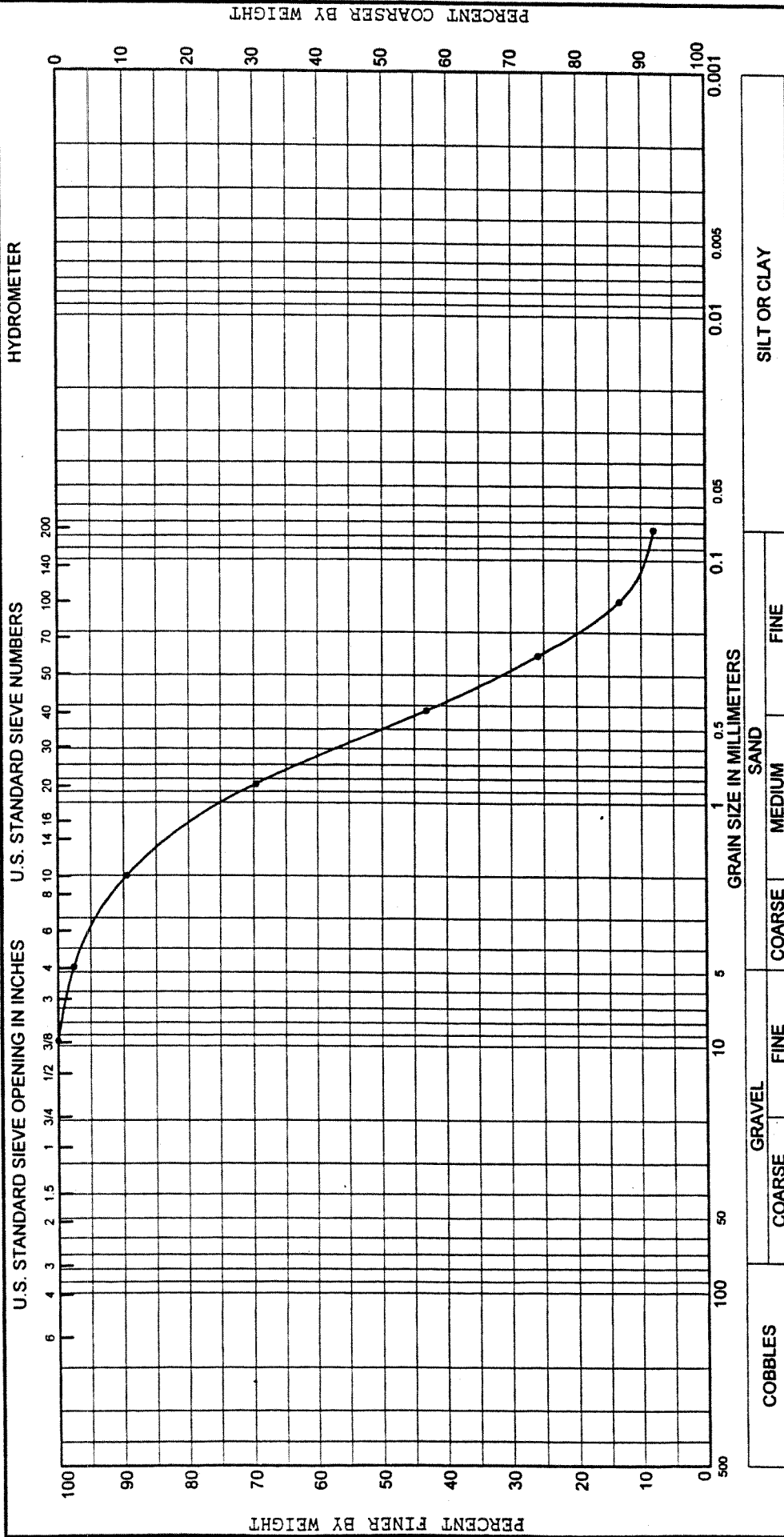
GRAVEL		SAND		FINE SAND		SILT OR CLAY	
COARSE	FINE	COARSE	MEDIUM	FINE	LL	PL	PI
Classification		Classification		Classification		Classification	
Sample No.	6	Depth (ft)	53.0 - 54.5	(Visual) Dark Gray, Well Graded Sand (SW)	Nat w%	27.5	
Project		Savannah Harbor		Harbor Expansion, Savannah, Georgia			
Lab No.		K6/96		Boring No. SH441			
Date		10/7/02		Tests Conducted in General Accordance with ASTM's D422, D4318, D854, & D2487			

**GRADATION CURVES**



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e  
 REQUISITION: W33SJG22119420



Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI	Project
1	47.4 - 48.9	Olive, Well Graded Silty Sand (SW-SM), with a trace of gravel size and sand size shell fragments.	15.7	NP	NP	NP	Savannah Harbor
							Harbor Expansion, Savannah, Georgia
							Lab No. K6/97
							Boring No. SH442
							Date 10/7/02

Tests Conducted in General Accordance with ASTM's D422, D4318, D854, & D2487.

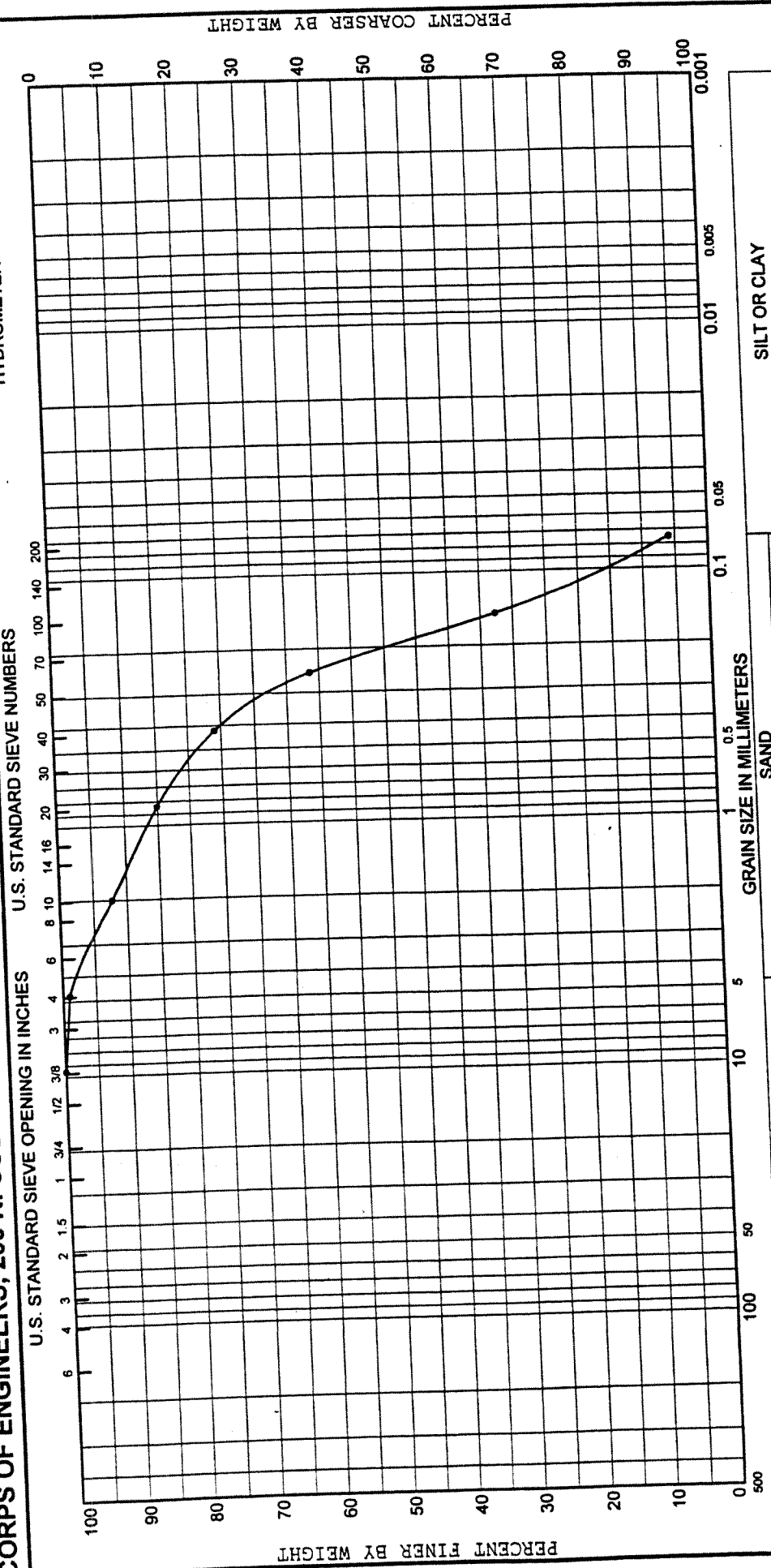
**GRADATION CURVES**



WORK ORDER: 240e  
 REQUISITION: W33SJG22119420

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

HYDROMETER



COBBLES			GRAVEL			SAND			SILT OR CLAY		
COARSE			FINE			COARSE			FINE		
Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI	Project	Savannah Harbor			
6	56.4 - 57.9	Dark Olive Gray & White, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size and sand size shell fragments. Plots near the A-Line.	20.7	34	24	10	Harbor Expansion, Savannah, Georgia				
							Lab No.	K6/98			
							Boring No.	SH442			
							Date	10/7/02			

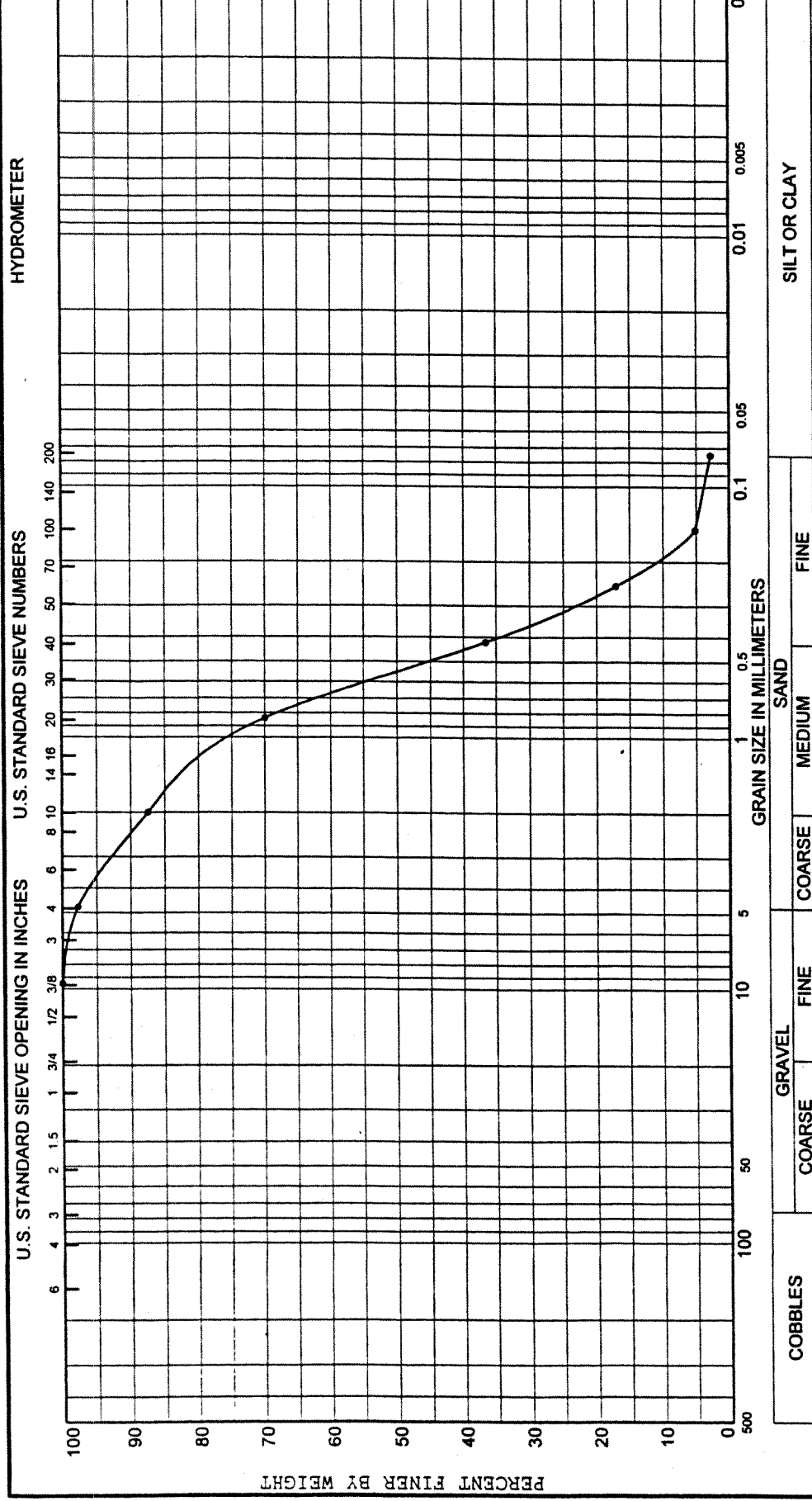
Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D854, & D2487.

GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e  
 REQUISITION: W33SJG22119420



Sample No.	Depth (ft)	Classification	GRAVEL			SAND			SILT OR CLAY		
			COARSE	FINE	COARSE	MEDIUM	FINE	PI	PL	NP	
1	48.8 - 50.3	Olive Gray, Poorly Graded Sand (SP), with a trace of gravel.			20.5	NP	NP				

Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D854, & D2487.

Project Savannah Harbor  
 Harbor Expansion, Savannah, Georgia  
 Lab No. K6/99  
 Boring No. SH443  
 Date 10/7/02

**GRADATION CURVES**



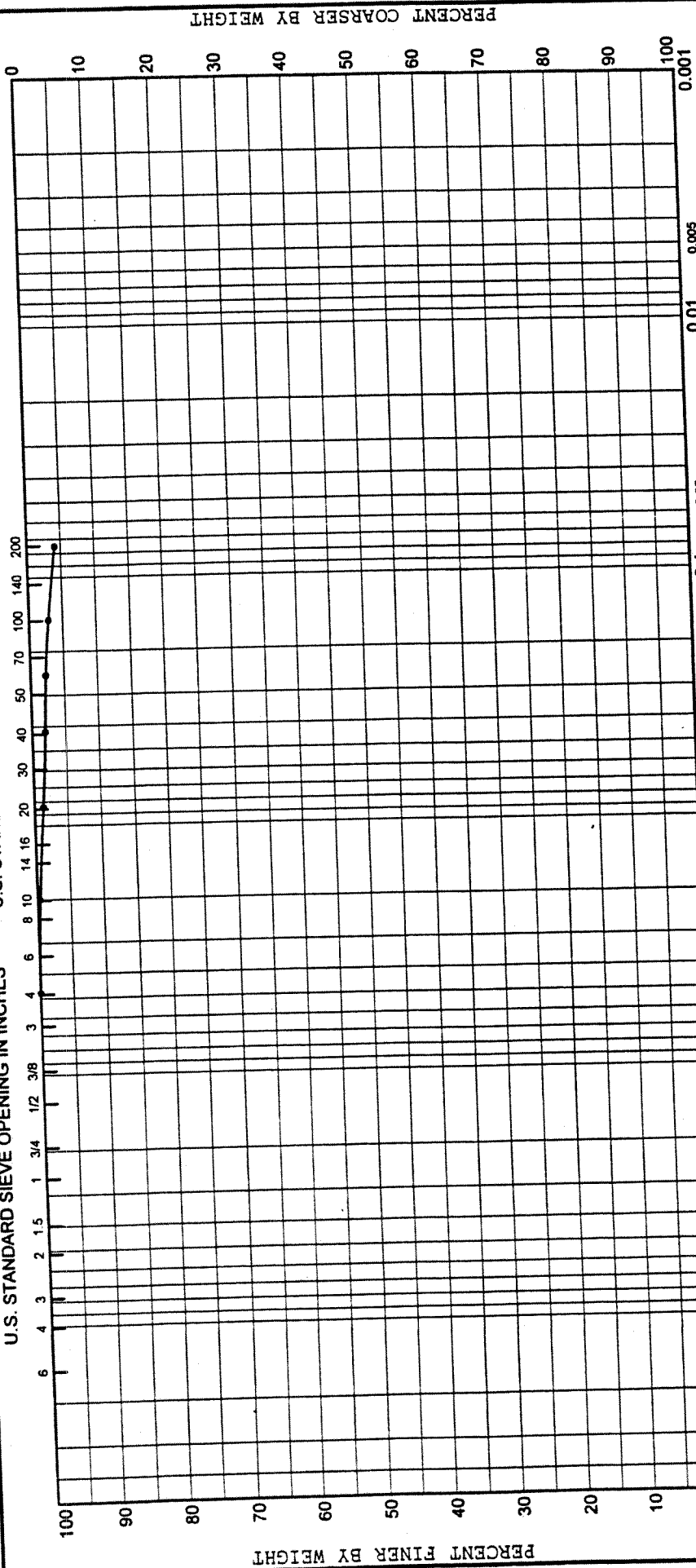
WORK ORDER: 240e  
REQUISITION: W33SJJG22119420

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

HYDROMETER

U.S. STANDARD SIEVE NUMBERS

U.S. STANDARD SIEVE OPENING IN INCHES



PERCENT FINER BY WEIGHT

PERCENT COARSER BY WEIGHT

SILT OR CLAY

Sample No.	Depth (ft)	Classification	GRAVEL			SAND			SILT OR CLAY		
			COARSE	FINE	COARSE	MEDIUM	FINE	Nat w%	LL	PL	PI
3	52.8 - 53.3	Dark Gray, Fat Clay (CH), with a trace of sand.						106.3	117	33	84

Project Savannah Harbor

Harbor Expansion, Savannah, Georgia

Lab No. K6/100

Boring No. SH443

Date 10/7/02

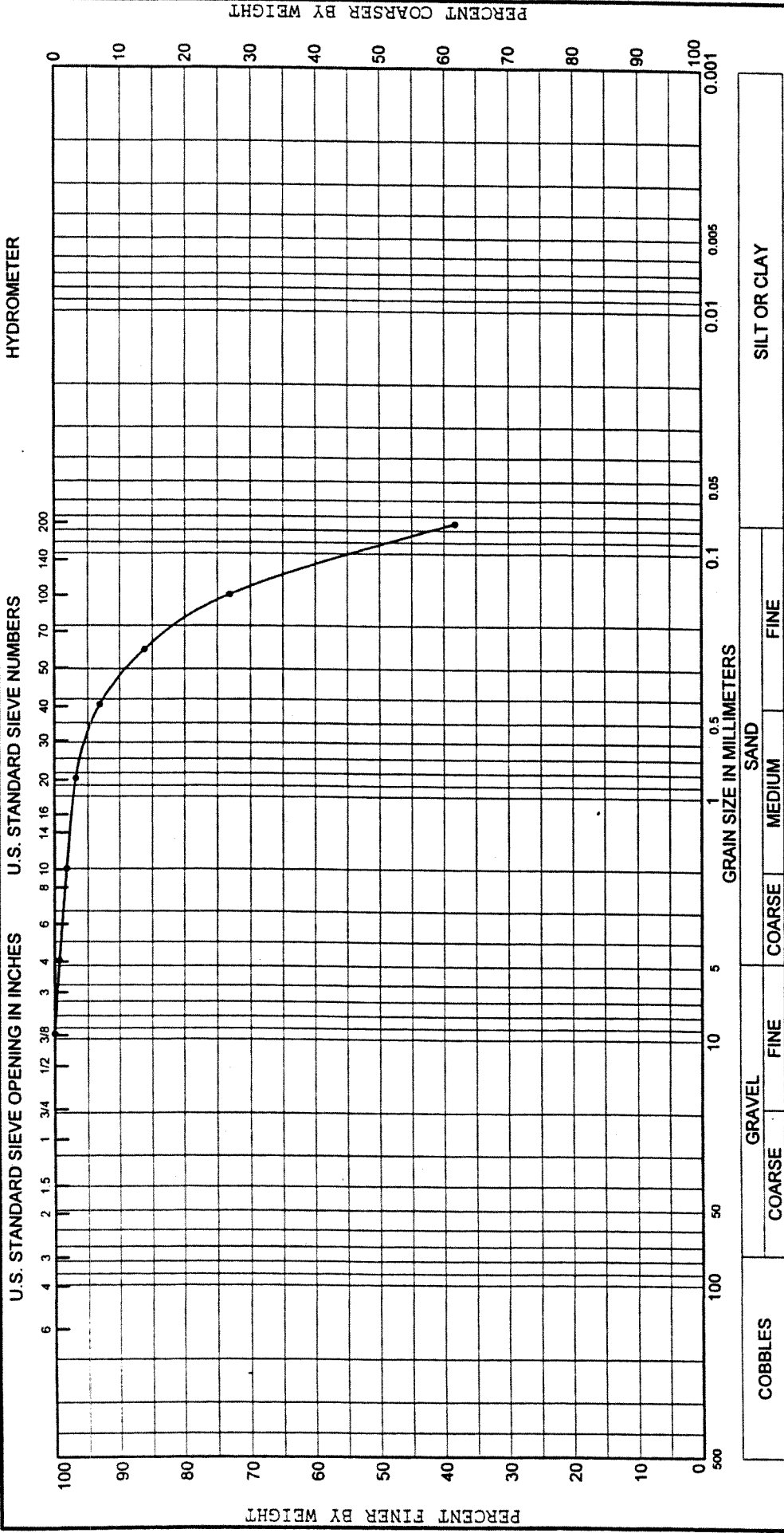
Tests Conducted in General Accordance with ASTM's D422, D4318, D654, & D2487

GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e  
 REQUISITION: W33SJG22119420



COBBLES		GRAVEL		SAND			SILT OR CLAY		
Sample No.	Depth (ft)	COARSE	FINE	COARSE	MEDIUM	FINE	LL	PL	PI
5	54.8 - 56.3	54.8 - 56.3	Dark Olive Gray, Clayey Sand, High Liquid Limit (SC-H), with a trace of sand size shell fragments.	55.3	109	38	71		
		Project Savannah Harbor							
		Harbor Expansion, Savannah, Georgia							
		Lab No. K6/101							
		Boring No. SH443							
		Date 10/7/02							

Tests Conducted in General Accordance with  
 ASTM's D422, D4318, D654, & D2487.

**GRADATION CURVES**



APPENDIX C

SAVANNAH HARBOR

RESULTS OF  
RADIOLOGICAL  
SCREENING





**US Army Corps of Engineers  
Environmental & Materials Unit  
Marietta, GA**

**Table 2 - Radiation Screening**

Lab Number	Boring Number	Sample No.	Reading <sup>1</sup> (mRem/Hr)	Color
K6/45	SH413	1	≤ 0.02	Dark Grayish Brown
	SH413	2	≤ 0.02	
K6/46	SH413	4	≤ 0.03	Dark Gray
K6/47	SH413	5	≤ 0.03	Olive Gray
	SH413	7	≤ 0.04	
K6/48	SH413	10	≤ 0.03	Olive
	SH413	12	≤ 0.04	
	SH413	14	≤ 0.03	
	SH413	16	≤ 0.03	
	SH414	1	≤ 0.02	
K6/49	SH414	3	≤ 0.02	Light Brownish Gray
	SH414	5	≤ 0.03	
K6/50	SH414	8	≤ 0.02	Dark Gray
K6/51	SH414	9	≤ 0.03	Olive Gray
K6/52	SH414	12	≤ 0.02	Grayish Brown
K6/53	SH414	15	≤ 0.03	Dark Grayish Brown
	SH414	18	≤ 0.04	
	SH414	22	≤ 0.02	
	SH415	1	≤ 0.02	
K6/54	SH415	4	≤ 0.03	Brown
K6/55	SH415	7	≤ 0.02	Gray
	SH415	9	≤ 0.03	
K6/56	SH415	11	≤ 0.02	Grayish Brown
K6/57	SH415	14	≤ 0.02	Dark Grayish Brown
	SH415	16	≤ 0.02	
K6/58	SH415	18	≤ 0.02	Grayish Brown
	SH415	21	≤ 0.03	
	SH415	24	≤ 0.02	
	SH416	1	≤ 0.02	

**Note<sup>1</sup>:** Readings are reported as the highest value in mRem/hour from a Bicon Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.

**US Army Corps of Engineers  
Environmental & Materials Unit  
Marietta, GA**

**Table 2 - Radiation Screening**

Lab Number	Boring Number	Sample No.	Reading <sup>1</sup> (mRem/Hr)	Color
K6/59	SH416	4	≤ 0.03	Light Yellowish Brown
	SH416	7	≤ 0.03	
K6/60	SH416	9	≤ 0.03	Olive Gray
K6/61	SH416	12	≤ 0.03	Olive Gray
	SH416	15	≤ 0.02	
	SH416	17	≤ 0.03	
	SH417	1	≤ 0.03	
	SH417	4	≤ 0.03	
K6/62	SH417	7	≤ 0.02	Grayish Brown
	SH417	10	≤ 0.03	
	SH417	12	≤ 0.03	
	SH417	15	≤ 0.02	
	SH417	18	≤ 0.02	
K6/63	SH417	20	≤ 0.02	Olive Gray
	SH417	22	≤ 0.03	
	SH417	24	≤ 0.02	
K6/64	SH418	2	≤ 0.02	Black
K6/65	SH418	5	≤ 0.03	Olive Gray
	SH418	7	≤ 0.04	
	SH418	10	≤ 0.03	
	SH419	1	≤ 0.02	
K6/66	SH419	3	≤ 0.03	Olive Gray
	SH419	5	≤ 0.04	
	SH419	7	≤ 0.03	
	SH419	9	≤ 0.03	
	SH420	1	≤ 0.04	
K6/67	SH420	3	≤ 0.03	Olive
	SH420	5	≤ 0.03	
	SH420	7	≤ 0.03	

**Note<sup>1</sup>:** Readings are reported as the highest value in mRem/hour from a Bicorn Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.

**US Army Corps of Engineers  
Environmental & Materials Unit  
Marietta, GA**

**Table 2 - Radiation Screening**

Lab Number	Boring Number	Sample No.	Reading <sup>1</sup> (mRem/Hr)	Color
	SH420	9	≤ 0.04	
	SH421	1	≤ 0.04	
K6/68	SH421	3	≤ 0.04	Olive Gray
	SH421	5	≤ 0.02	
	SH421	7	≤ 0.03	
	SH421	9	≤ 0.03	
	SH422	1	≤ 0.03	
K6/69	SH422	3	≤ 0.04	Dark Olive Gray
	SH422	5	≤ 0.03	
	SH422	7	≤ 0.04	
	SH422	9	≤ 0.04	
	SH423	1	≤ 0.03	
K6/70	SH423	3	≤ 0.03	Olive
	SH423	5	≤ 0.03	
	SH423	7	≤ 0.02	
	SH423	9	≤ 0.04	
K6/71	SH424	1	≤ 0.04	Olive
K6/72	SH424	3	≤ 0.04	Olive
	SH424	5	≤ 0.03	
	SH424	7	≤ 0.03	
	SH424	9	≤ 0.03	
	SH425	1	≤ 0.03	
K6/73	SH425	3	≤ 0.03	Olive
	SH425	5	≤ 0.03	
	SH425	7	≤ 0.03	
	SH425	9	≤ 0.03	
K6/74	SH426	3	≤ 0.02	Dark Gray & Olive
	SH426	5	≤ 0.03	
	SH426	7	≤ 0.03	

**Note<sup>1</sup>:** Readings are reported as the highest value in mRem/hour from a Bicon Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.

**US Army Corps of Engineers  
Environmental & Materials Unit  
Marietta, GA**

**Table 2 - Radiation Screening**

Lab Number	Boring Number	Sample No.	Reading <sup>1</sup> (mRem/Hr)	Color
	SH426	9	≤ 0.03	
	SH426	11	≤ 0.03	
	SH426	13	≤ 0.03	
K6/75	SH427	2	≤ 0.03	Olive Gray
	SH427	4	≤ 0.02	
	SH427	6	≤ 0.02	
	SH427	8	≤ 0.03	
	SH428	1	≤ 0.02	
K6/76	SH428	3	≤ 0.02	Olive Gray
K6/77	SH428	4	≤ 0.02	Olive Gray
	SH428	6	≤ 0.02	
	SH428	8	≤ 0.02	
	SH428	10	≤ 0.03	
	SH428	12	≤ 0.02	
	SH428	14	≤ 0.02	
K6/78	SH429	2	≤ 0.03	Dark Gray & Olive Gray
K6/79	SH429	4	≤ 0.03	Olive
	SH429	6	≤ 0.02	
	SH429	8	≤ 0.02	
	SH429	10	≤ 0.02	
K6/80	SH430	3	≤ 0.02	Olive Gray
	SH430	6	≤ 0.02	
	SH430	9	≤ 0.02	
	SH430	12	≤ 0.02	
	SH430	14	≤ 0.02	
	SH430	16	≤ 0.02	
K6/81	SH431	2	≤ 0.03	Olive Gray
	SH431	4	≤ 0.02	
	SH431	6	≤ 0.02	

**Note<sup>1</sup>:** Readings are reported as the highest value in mRem/hour from a Bicorn Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.

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**Table 2 - Radiation Screening**

Lab Number	Boring Number	Sample No.	Reading <sup>1</sup> (mRem/Hr)	Color
K6/82	SH431	9	≤ 0.02	Olive Gray
	SH431	12	≤ 0.03	
K6/83	SH432	2	≤ 0.02	Olive Gray
	SH432	4	≤ 0.02	
	SH432	6	≤ 0.02	
	SH432	8	≤ 0.03	
	SH432	10	≤ 0.02	
	SH432	12	≤ 0.03	
	SH432	14	≤ 0.03	
K6/84	SH433	1	≤ 0.02	Very Dark Gray
	SH433	3	≤ 0.03	
K6/85	SH433	5	≤ 0.02	Olive Gray
	SH433	7	≤ 0.03	
K6/86	SH434	1	≤ 0.03	Dark Olive Gray
	SH434	3	≤ 0.03	
	SH434	5	≤ 0.03	
	SH434	7	≤ 0.03	
	SH435	1	≤ 0.03	
K6/87	SH435	3	≤ 0.03	Olive Gray & White
	SH435	5	≤ 0.03	
	SH435	7	≤ 0.03	
	SH435	9	≤ 0.03	
K6/88	SH436	1	≤ 0.04	Olive Gray
K6/89	SH436	3	≤ 0.03	Olive Gray
	SH436	5	≤ 0.03	
	SH436	7	≤ 0.04	
	SH436	9	≤ 0.04	
K6/90	SH437	1	≤ 0.03	Olive Gray
	SH437	3	≤ 0.03	

Note<sup>1</sup>: Readings are reported as the highest value in mRem/hour from a Bicon Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.

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**Table 2 - Radiation Screening**

Lab Number	Boring Number	Sample No.	Reading <sup>1</sup> (mRem/Hr)	Color
K6/91	SH437	5	≤ 0.03	Dark Olive Gray
	SH438	1	≤ 0.03	
	SH438	4	≤ 0.03	
	SH438	7	≤ 0.02	
	SH438	10	≤ 0.04	
	SH438	13	≤ 0.03	
	SH438	16	≤ 0.02	
	SH438	19	≤ 0.03	
	SH438	21	≤ 0.03	
	SH438	24	≤ 0.02	
K6/92	SH439	1	≤ 0.02	Gray
K6/93	SH439	3	≤ 0.03	Olive Gray
K6/94	SH439	5	≤ 0.02	Olive
	SH439	7	≤ 0.02	
	SH439	9	≤ 0.03	
	SH439	11	≤ 0.02	
	SH440	1	≤ 0.02	
	SH440	4	≤ 0.04	
	SH440	7	≤ 0.02	
	SH440	10	≤ 0.02	
	SH440	13	≤ 0.02	
	SH440	16	≤ 0.02	
	SH440	19	≤ 0.02	
	SH440	21	≤ 0.02	
	SH440	24	≤ 0.03	
K6/95	SH441	2	≤ 0.02	Dark Olive Gray
	SH441	4	≤ 0.04	
K6/96	SH441	6	≤ 0.04	Dark Gray
	SH441	8	≤ 0.03	

**Note<sup>1</sup>:** Readings are reported as the highest value in mRem/hour from a Bicon Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.

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**Table 2 - Radiation Screening**

Lab Number	Boring Number	Sample No.	Reading <sup>1</sup> (mRem/Hr)	Color
	SH441	10	≤ 0.03	
	SH441	12	≤ 0.03	
K6/97	SH442	1	≤ 0.03	Olive
	SH442	3	≤ 0.04	
	SH442	5	≤ 0.04	
K6/98	SH442	6	≤ 0.03	Dark Olive Gray & White
	SH442	7	≤ 0.02	
K6/99	SH443	1	≤ 0.03	Olive Gray
K6/100	SH443	3	≤ 0.02	Dark Gray
K6/101	SH443	5	≤ 0.04	Dark Olive Gray
	SH443	7	≤ 0.04	

**Note<sup>1</sup>:** Readings are reported as the highest value in mRem/hour from a Bicron Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.

