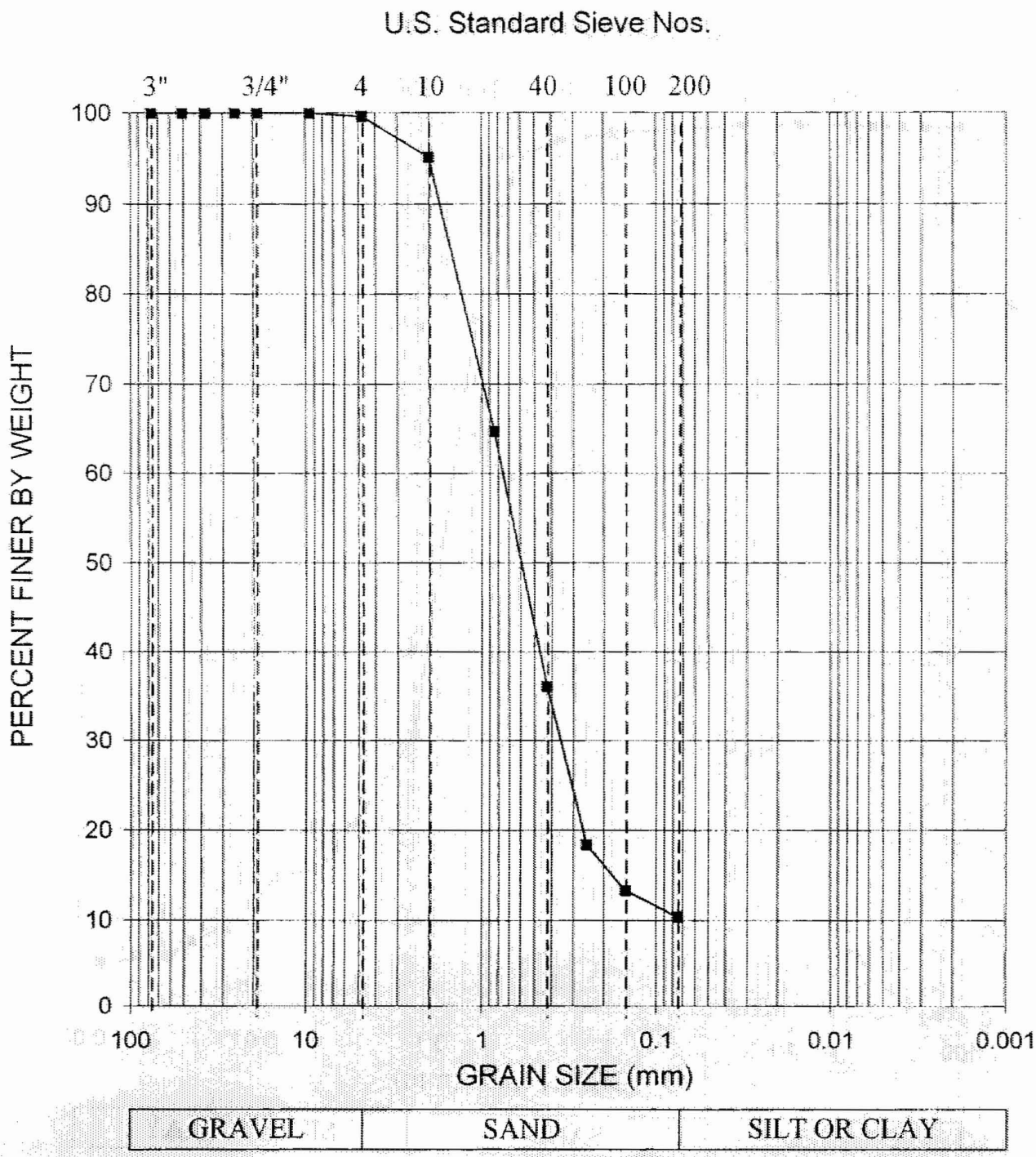

GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.:	06120048.00	Date:	10/4/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-415	28.5	Poorly Graded SAND, with silt, light brown	SP-SM		

Schnabel

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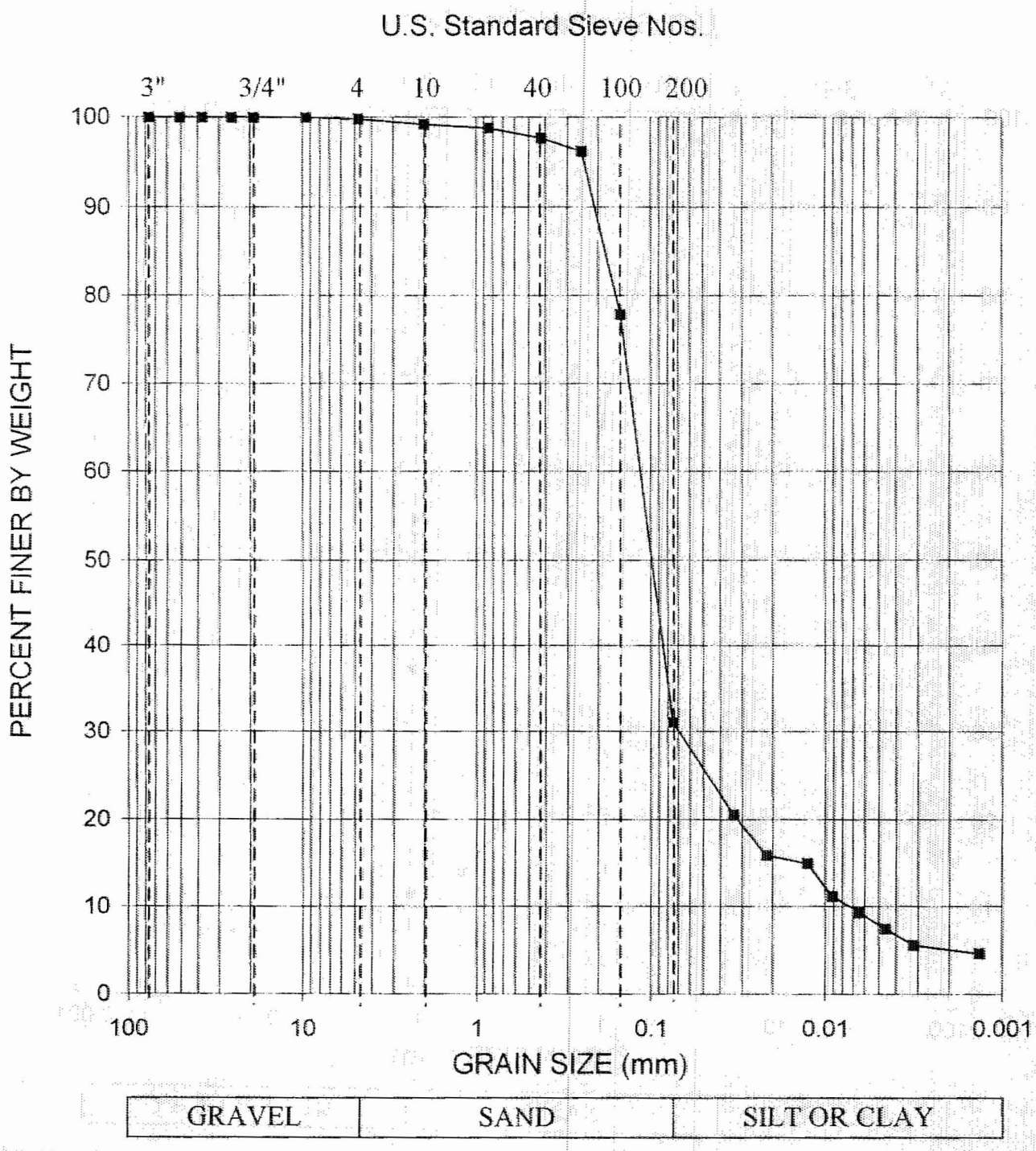

GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland		Contract No.:	06120048.00	Date:	10/11/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI	
B-415	43.5	Silty SAND, dark gray	SM	26	4	

Schnabel

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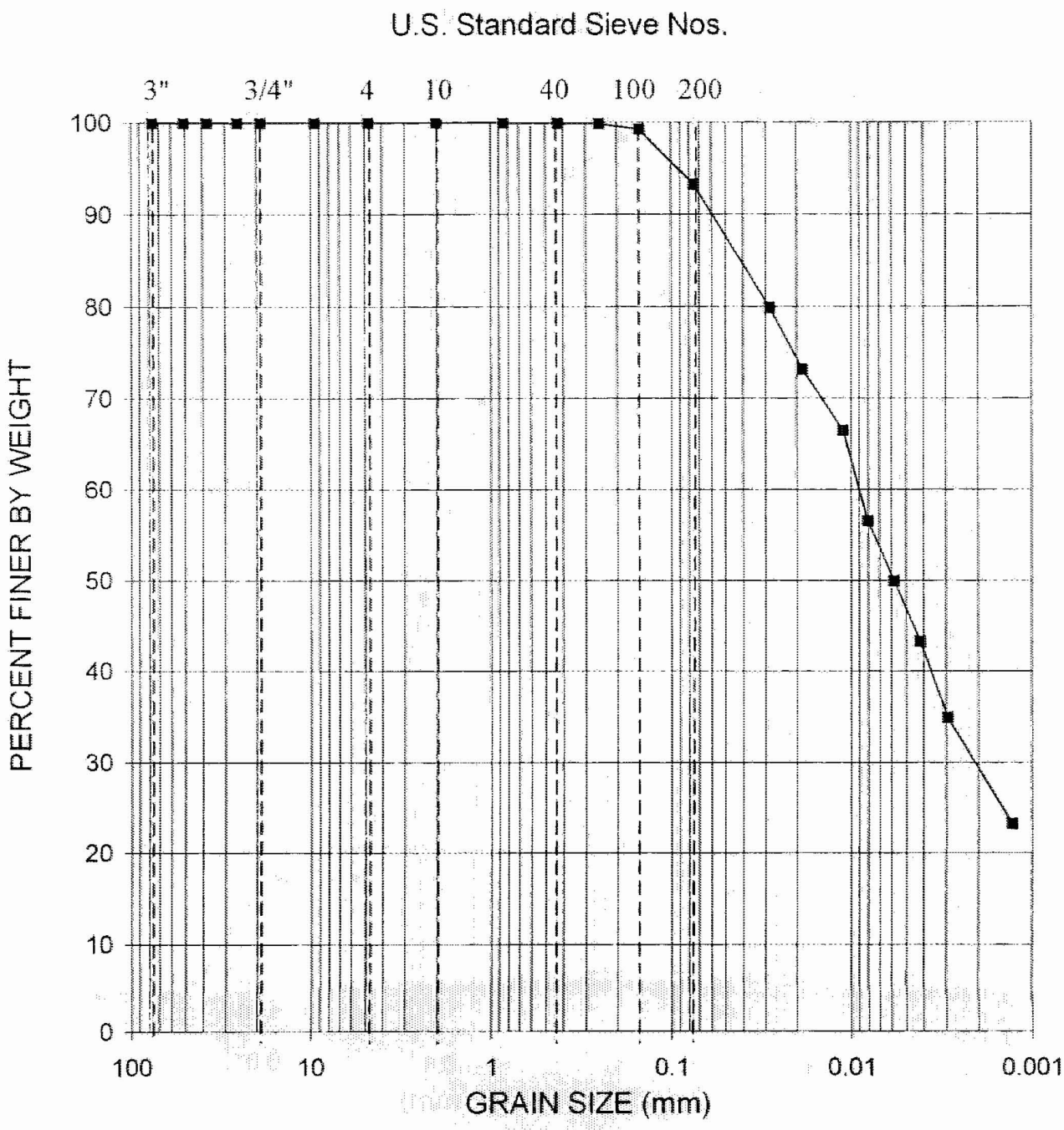

GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.:	06120048.00	Date:	10/18/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-415	58.5	FAT CLAY, trace sand, dark gray	CH	61	40

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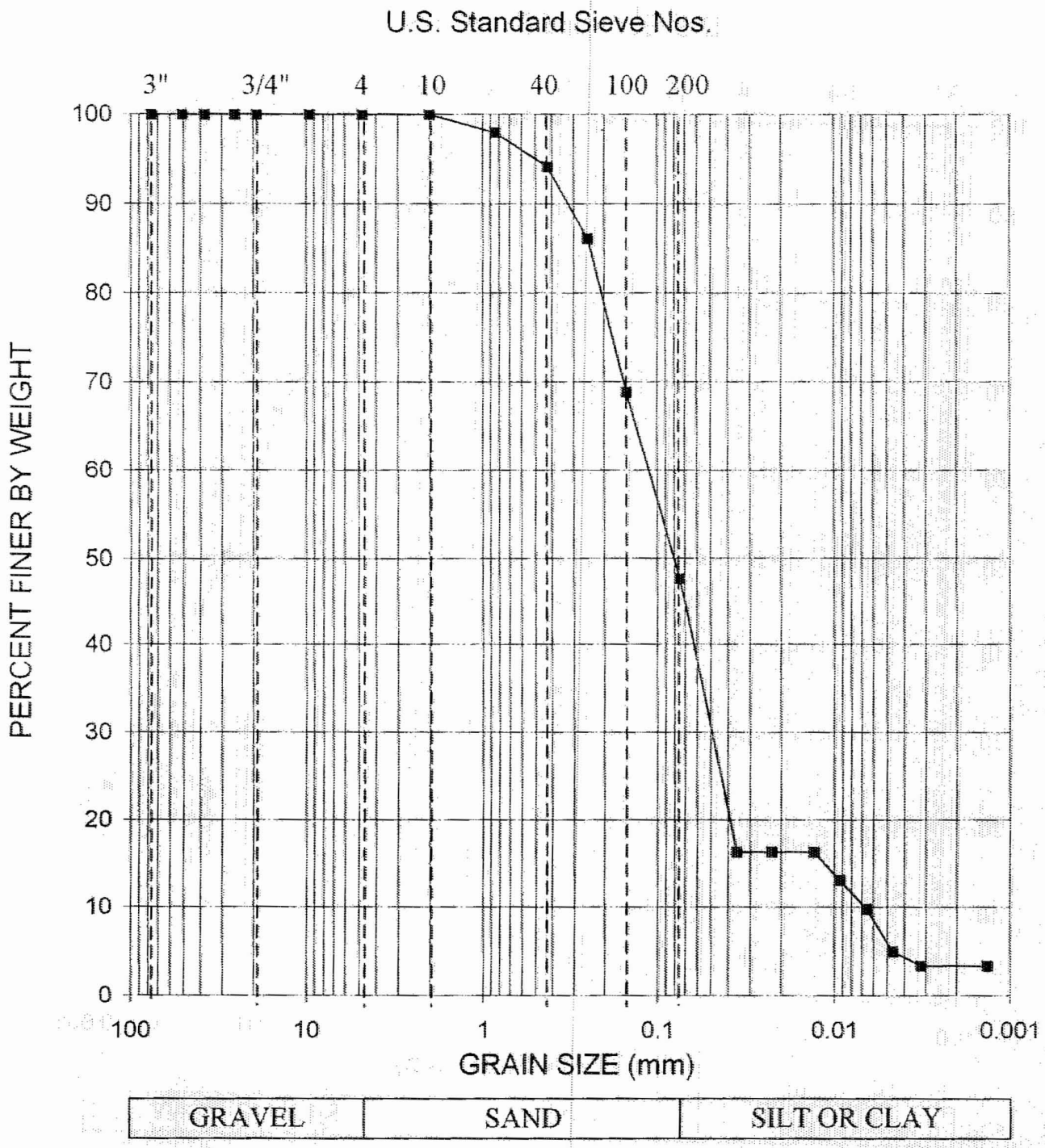
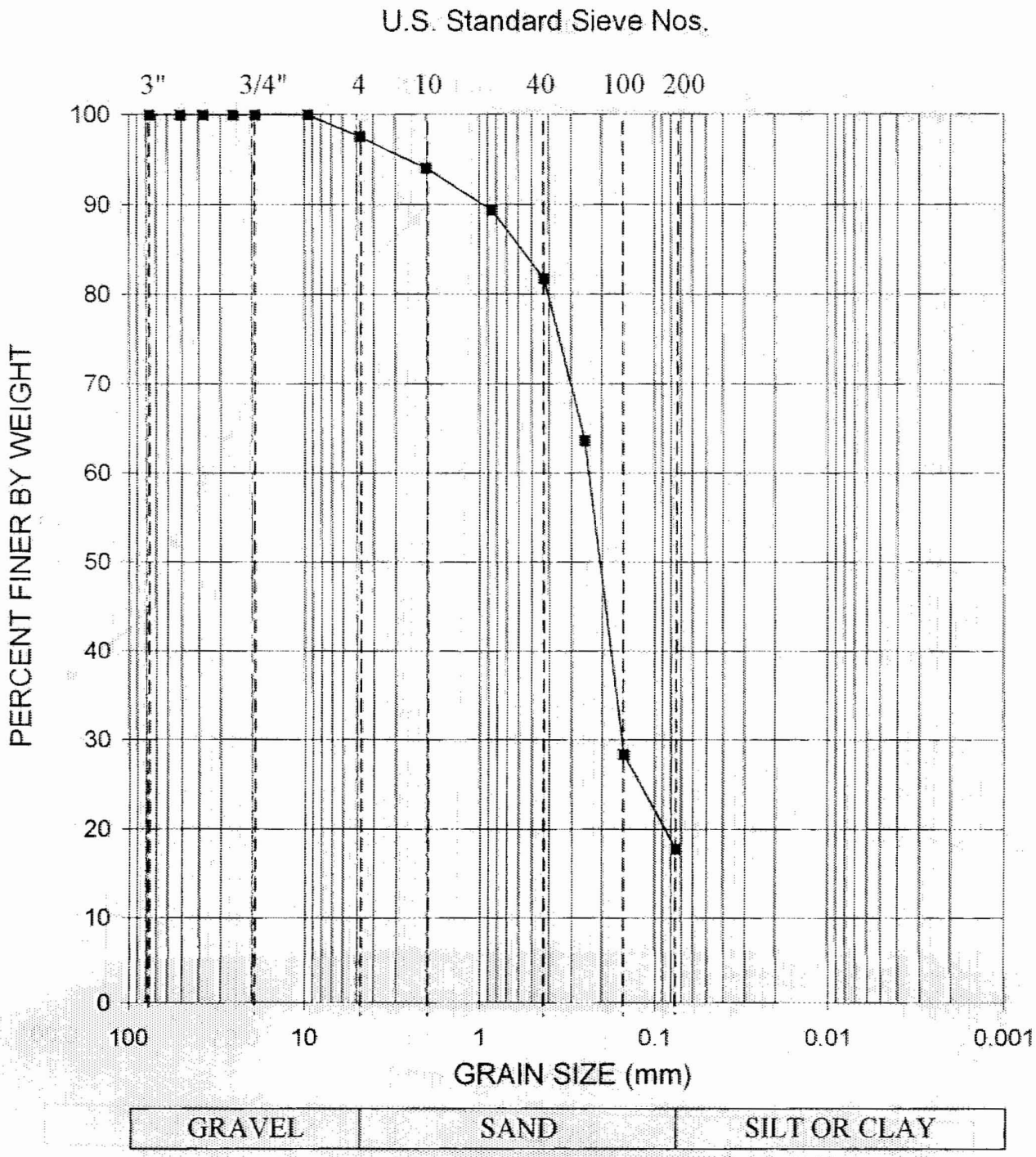
Schnabel Engineering



GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland		Contract No.:	06120048.00	Date:	10/11/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI	
B-415	73.5	Silty SAND, dark gray	SM	40	10	Schnabel Engineering



GRADATION CURVE

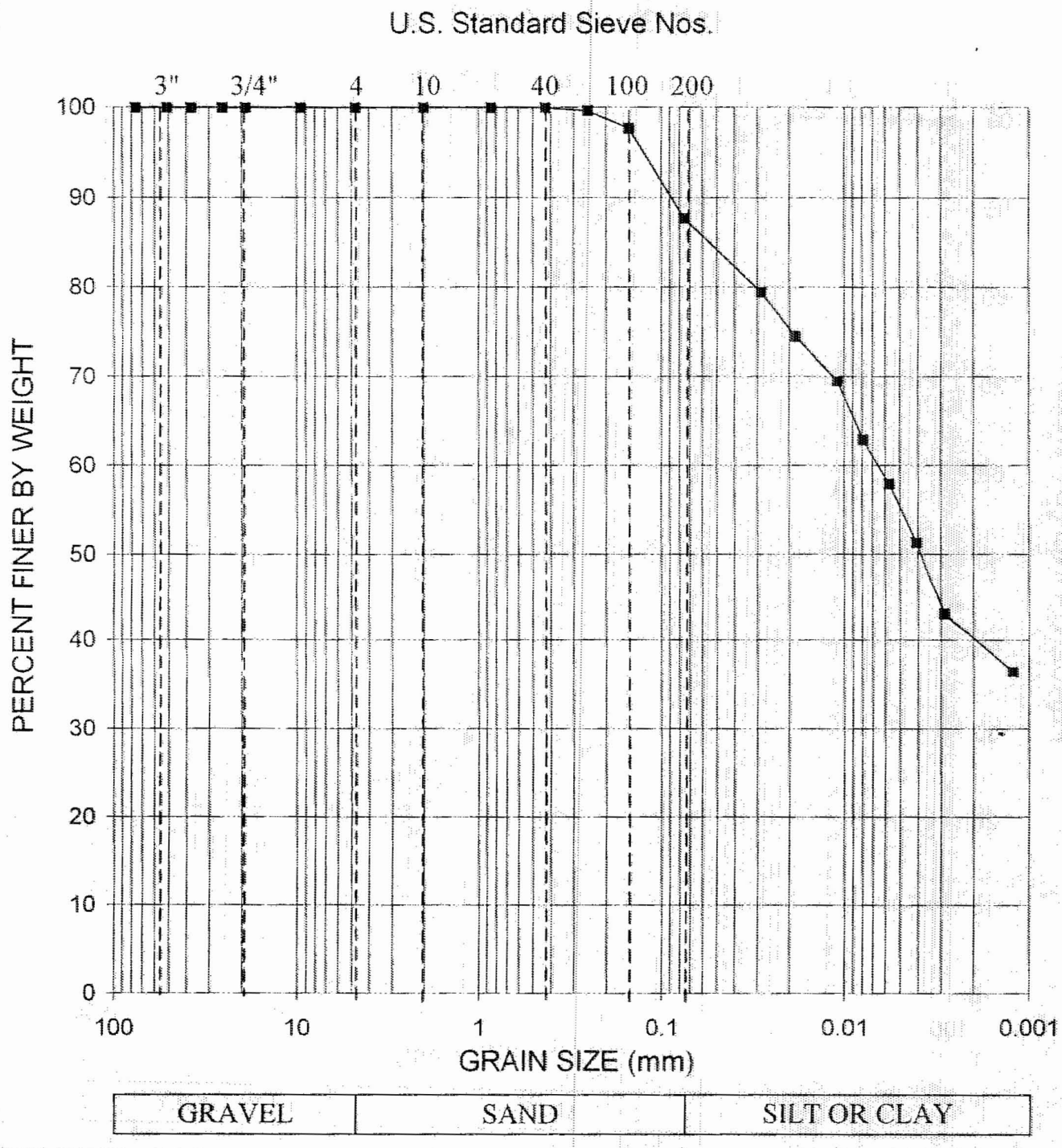
ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.:	06120048.00	Date:	10/4/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-415	83.5	Silty SAND, trace shells, green	SM		

Schnabel

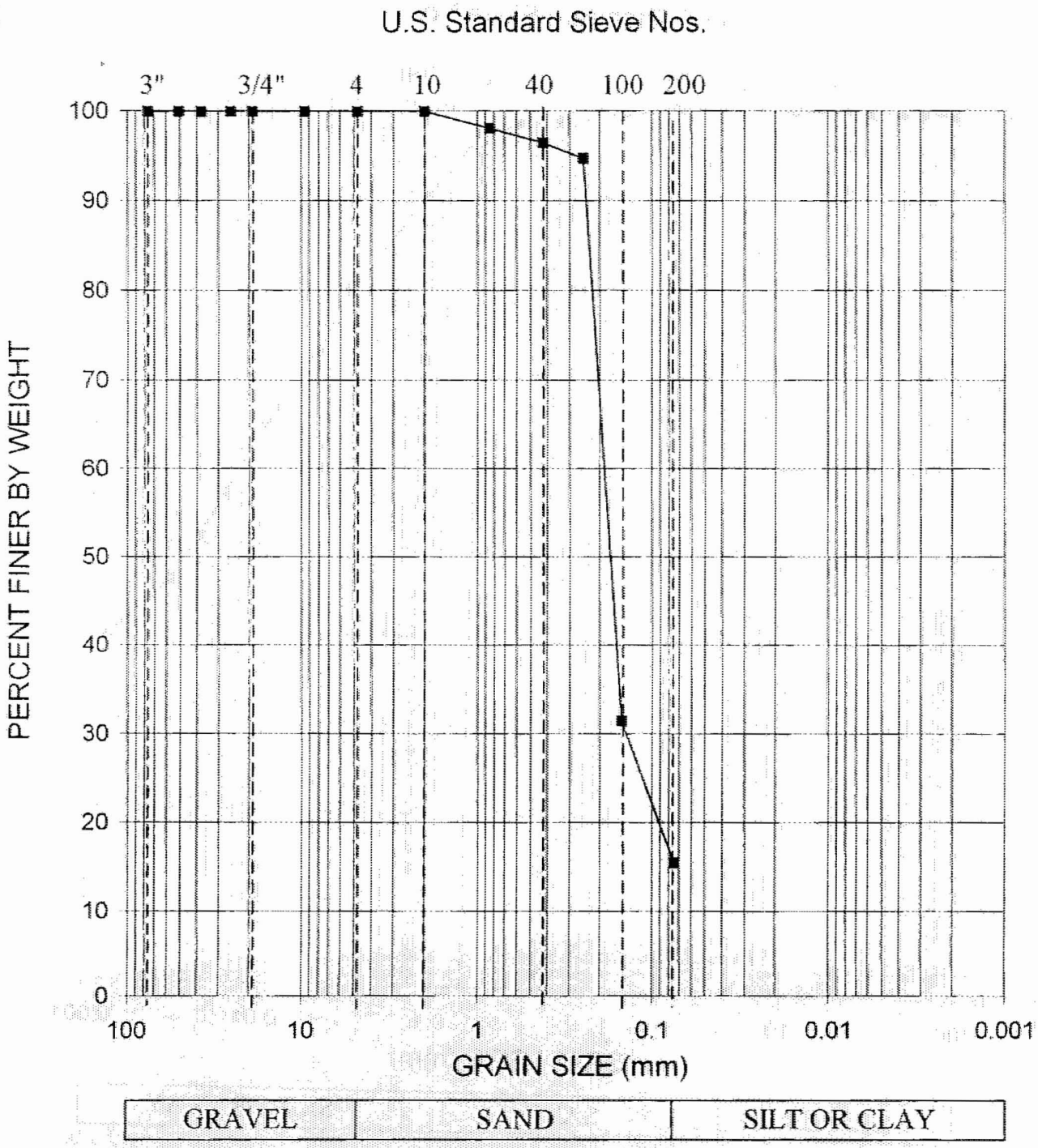
Schnabel Engineering



GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland		Contract No.:	06120048.00	Date:	10/12/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI	
B-416	28.5	FAT CLAY, trace sand, dark gray	CH	58	41	Schnabel Engineering



GRADATION CURVE

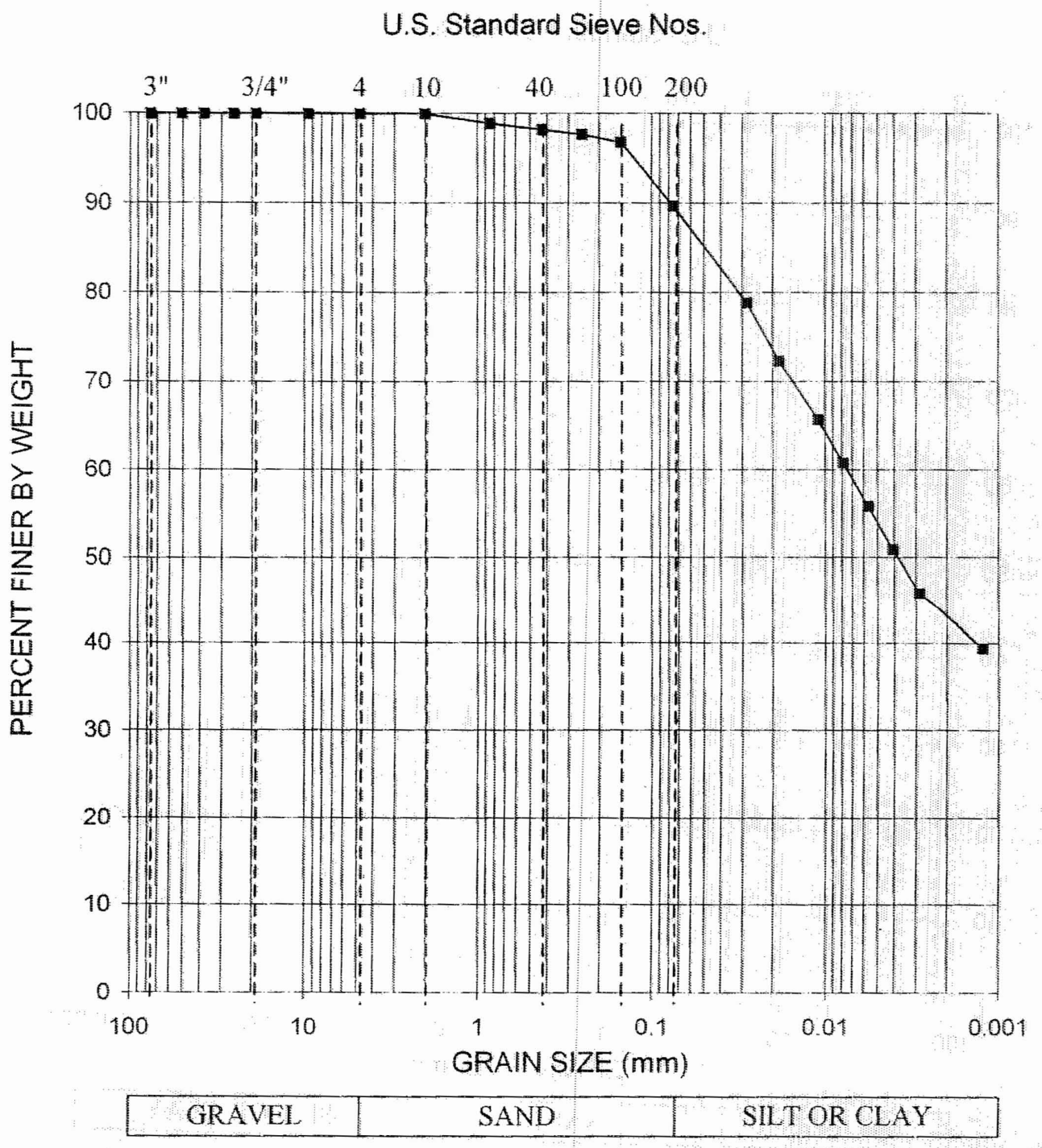
ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.:	06120048.00	Date:	10/3/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-416	58.5	Silty SAND, dark gray	SM		

Schnabel

Schnabel Engineering



GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.: 06120048.00	Date: 9/21/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-420	5.0	FAT CLAY, trace sand, gray-brown	CH	64	42

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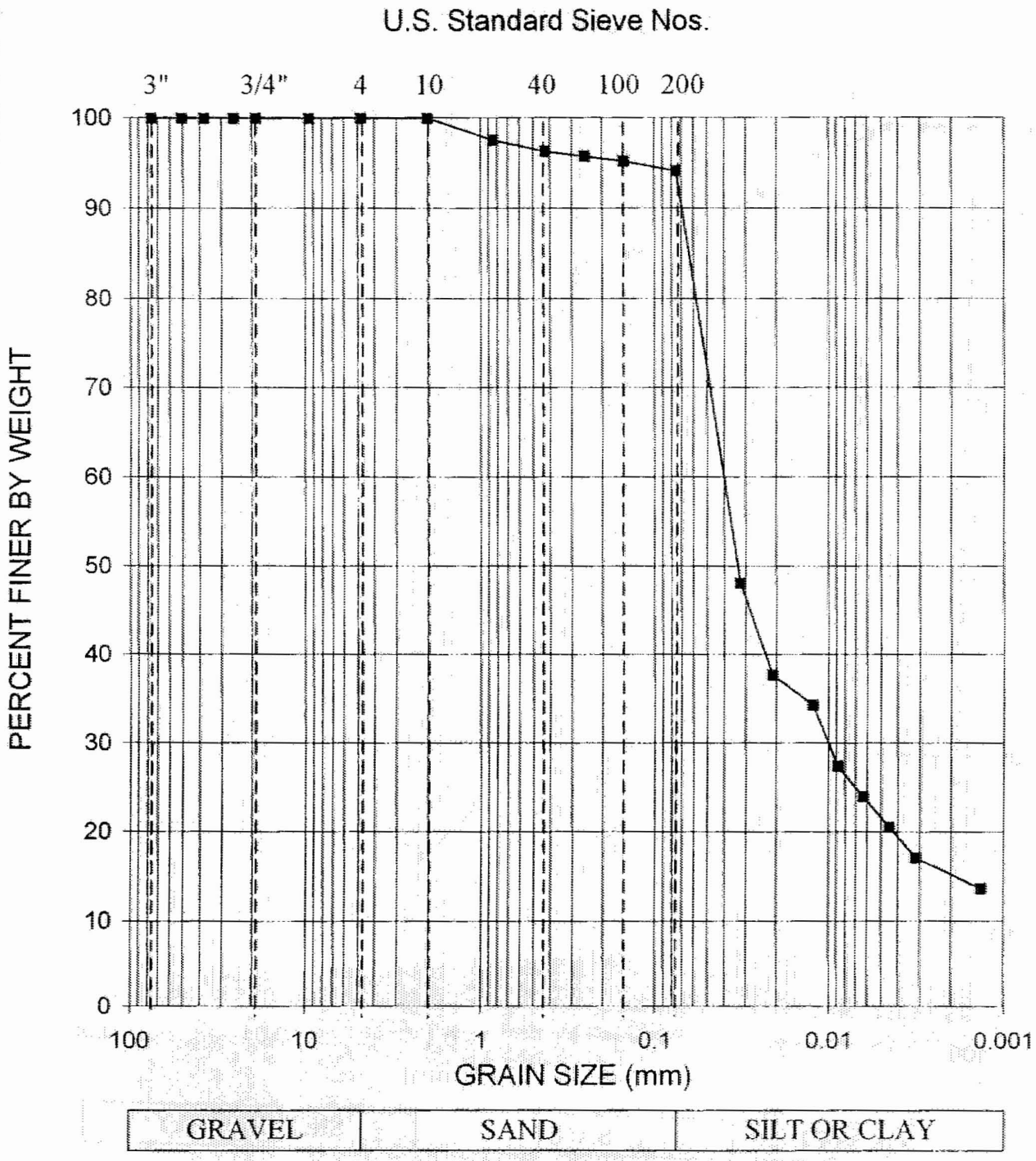
Schnabel Engineering



GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.	06120048.00	Date:	9/21/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-420	13.5	FAT CLAY, trace sand, dark gray	CH	74	43

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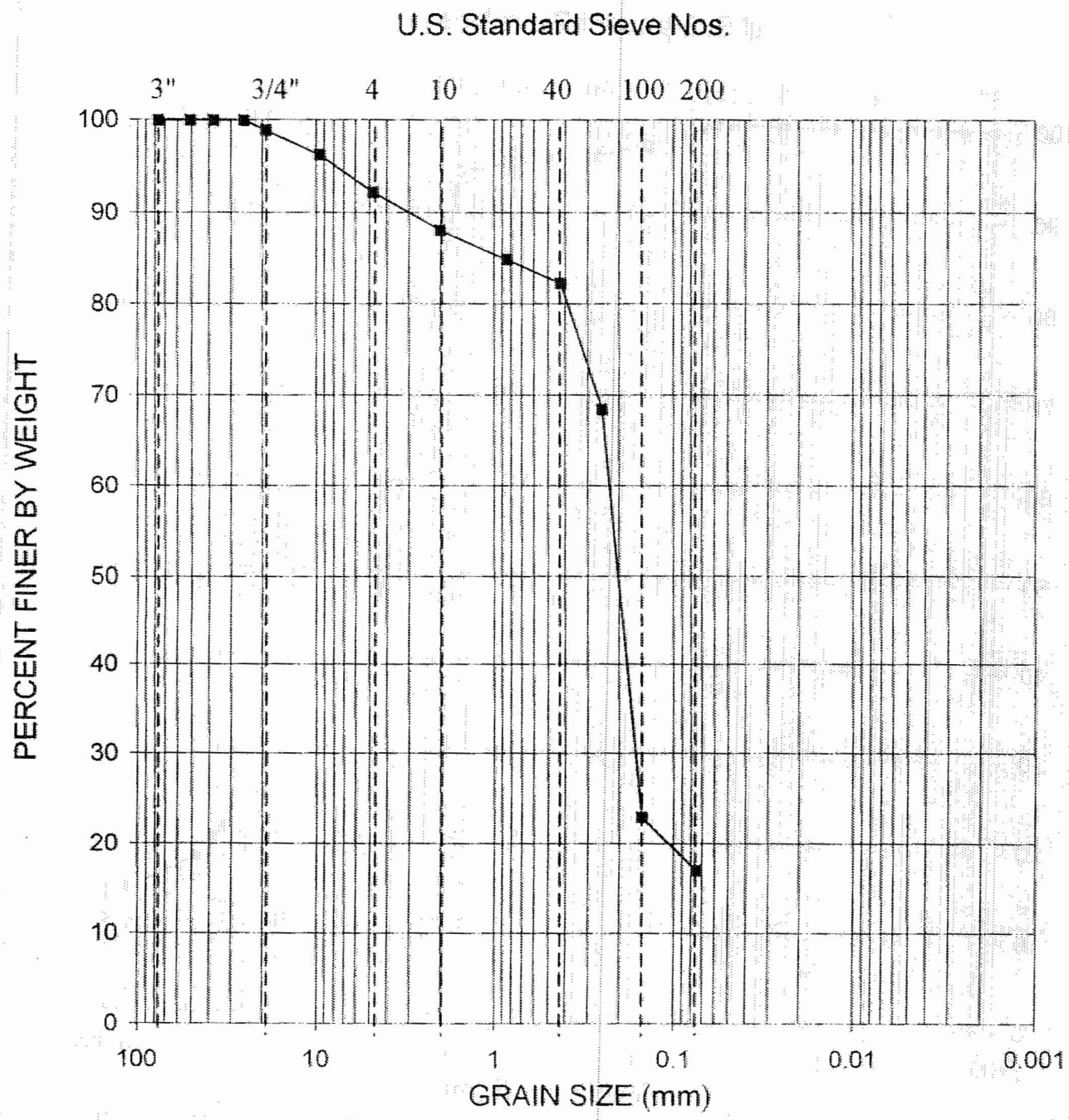
Schnabel Engineering



GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland		Contract No.: 06120048.00		Date: 9/13/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-420	43.5	Silty SAND, trace shells, gray	SM		

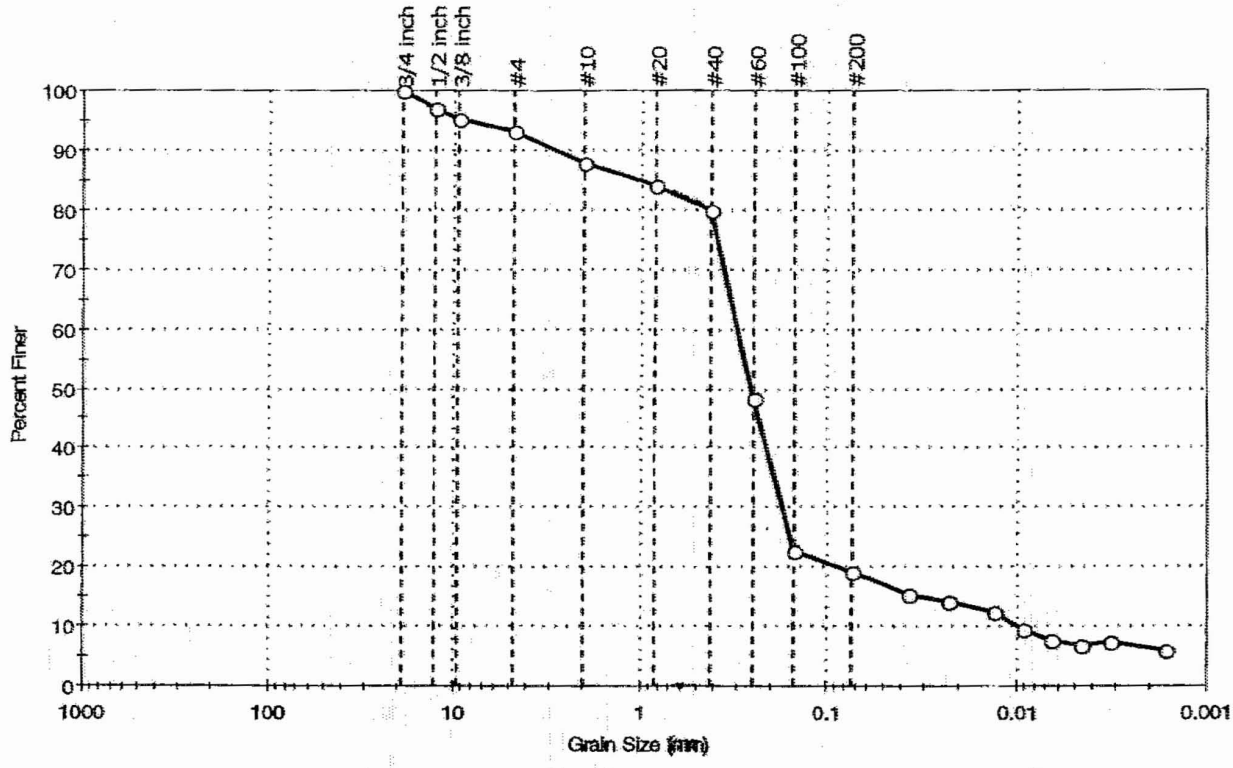
Schnabel

Schnabel Engineering

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	Schnabel Engineering, Inc.		
Project:	Subsurface Investigation Calvert Cliffs Nuclear PP		
Location:	Calvert County, MD	Project No:	GTX-6880
Boring ID: B-420	Sample Type: tube	Tested By:	sam
Sample ID: S-16	Test Date: 09/12/06	Checked By:	mcm
Depth : 63.5-65.5 ft	Test Id: 95843		
Test Comment:	---		
Sample Description:	Moist, olive gray clayey sand		
Sample Comment:	Sample contains shell fragments		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	6.7	74.2	19.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.70	97		
3/8 inch	9.51	95		
#4	4.75	93		
#10	2.00	88		
#20	0.84	84		
#40	0.42	80		
#60	0.25	48		
#100	0.15	23		
#200	0.074	19		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0367	15		
---	0.0228	14		
---	0.0131	12		
---	0.0093	9		
---	0.0065	8		
---	0.0046	7		
---	0.0032	7		
---	0.0016	6		

Coefficients

D_{85} = 1.0473 mm	D_{30} = 0.1724 mm
D_{60} = 0.3025 mm	D_{15} = 0.0333 mm
D_{50} = 0.2566 mm	D_{10} = 0.0099 mm
C_u = N/A	C_c = N/A

Classification

ASTM Clayey sand (SC)

AASHTO Clayey Gravel and Sand (A-2-7 (5))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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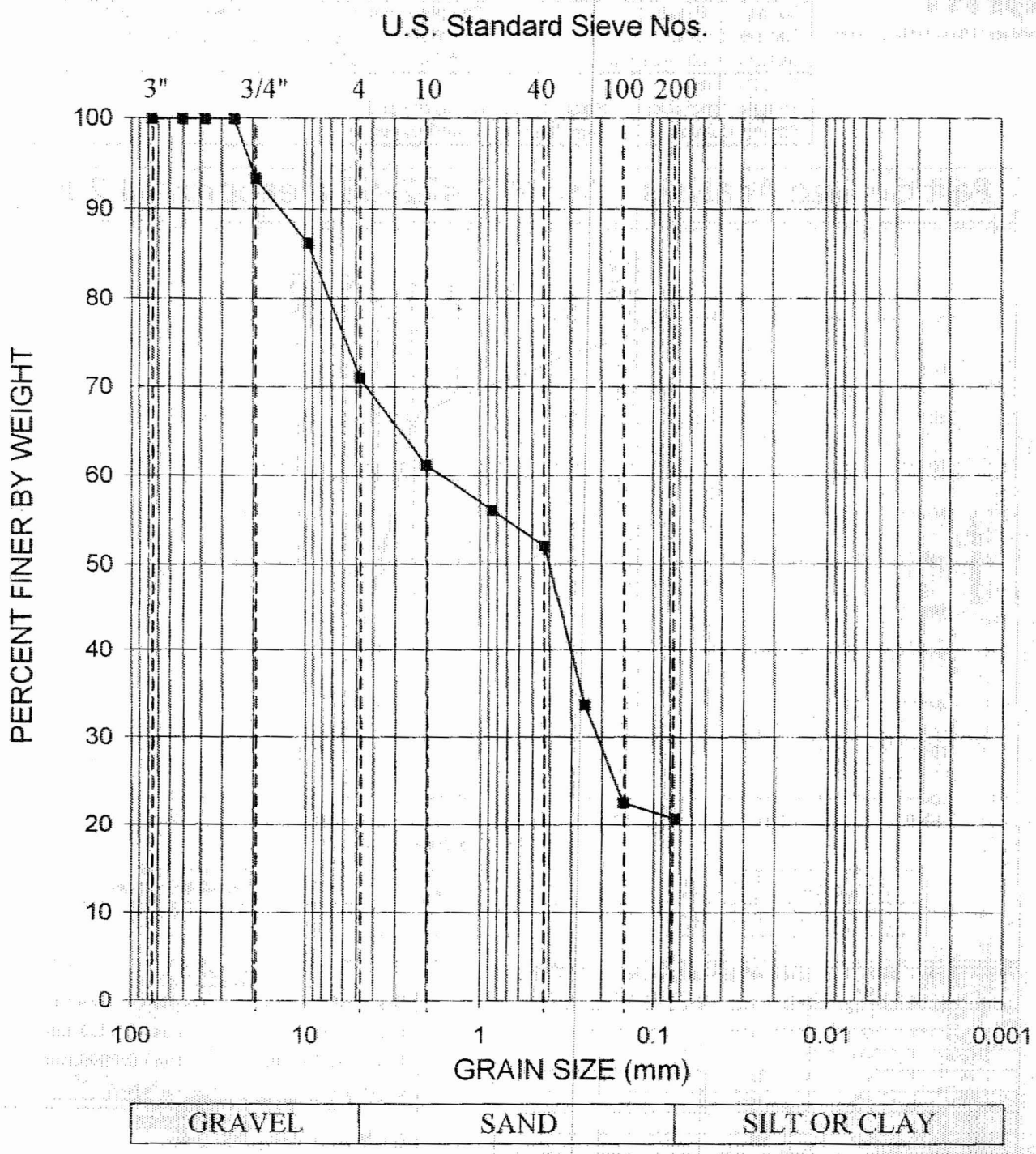

GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.:	06120048.00	Date:	9/13/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-420	68.5	Silty SAND, with shells, green	SM		

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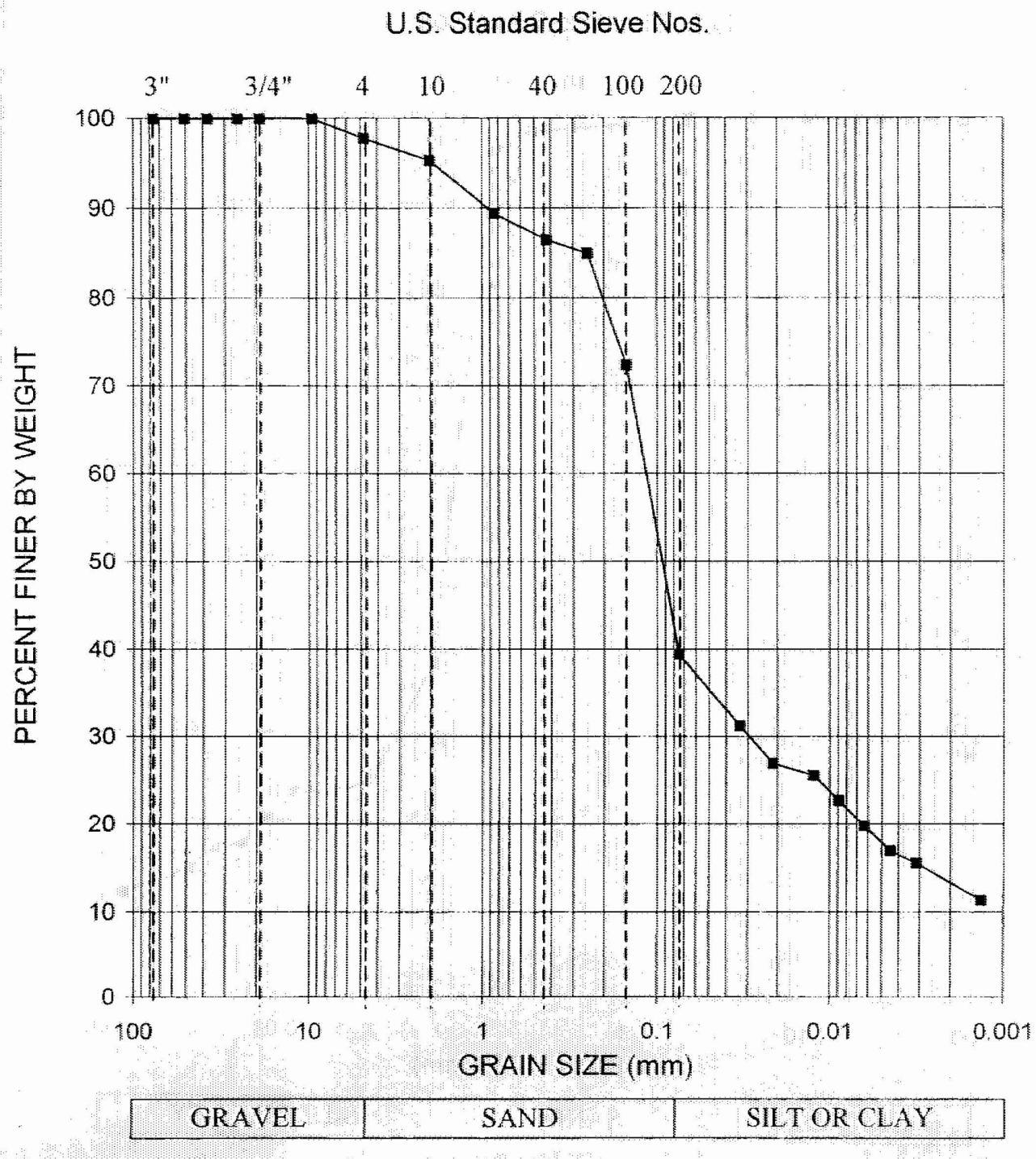

GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.	06120048.00	Date:	9/14/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-420	78.5	Silty SAND, trace shells, green	SM	48	15

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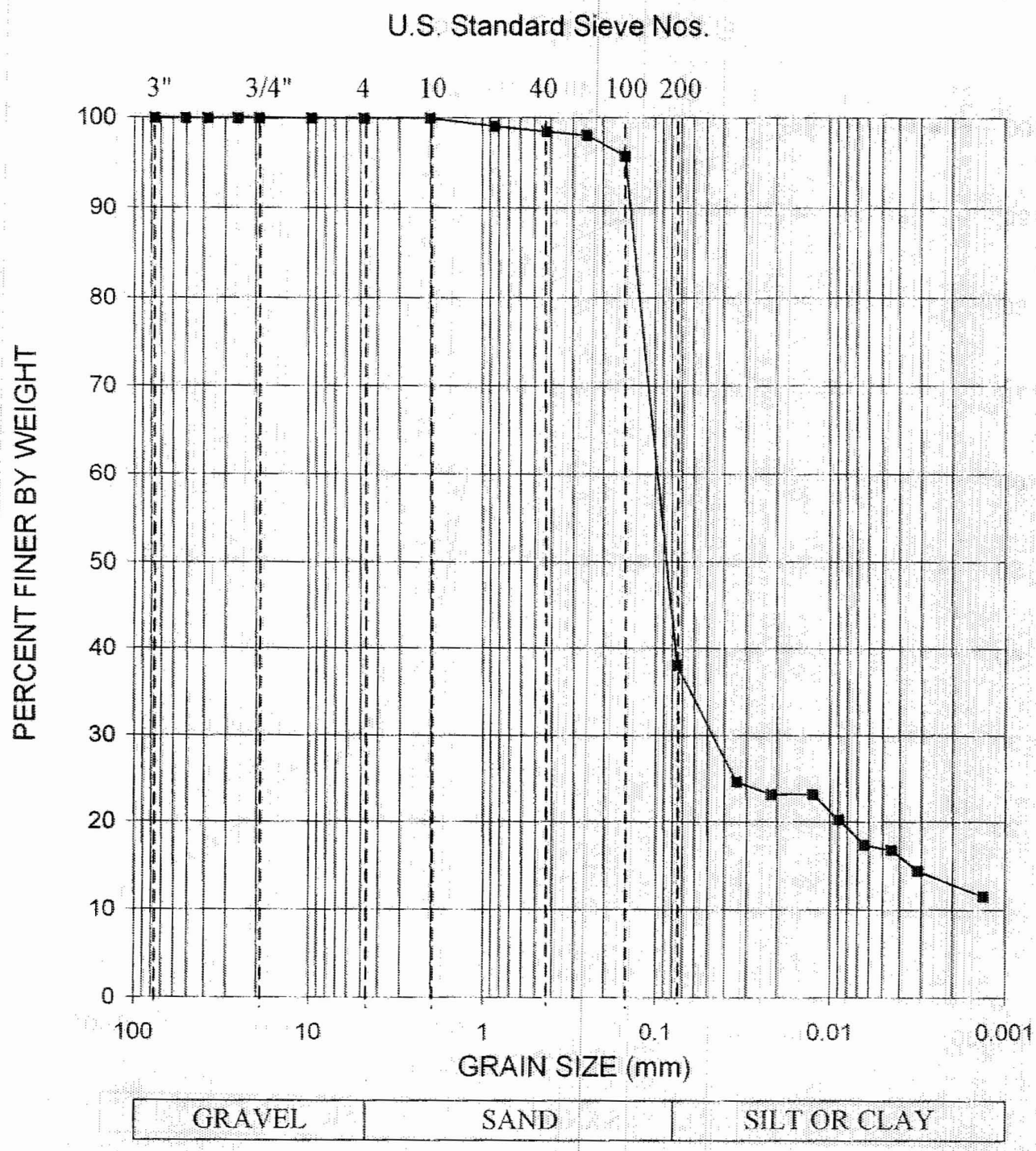
Schnabel Engineering



GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.: 06120048.00	Date: 9/21/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-420	103.5	Silty SAND, contains shells, gray	SM	57	15

Schnabel

Schnabel Engineering