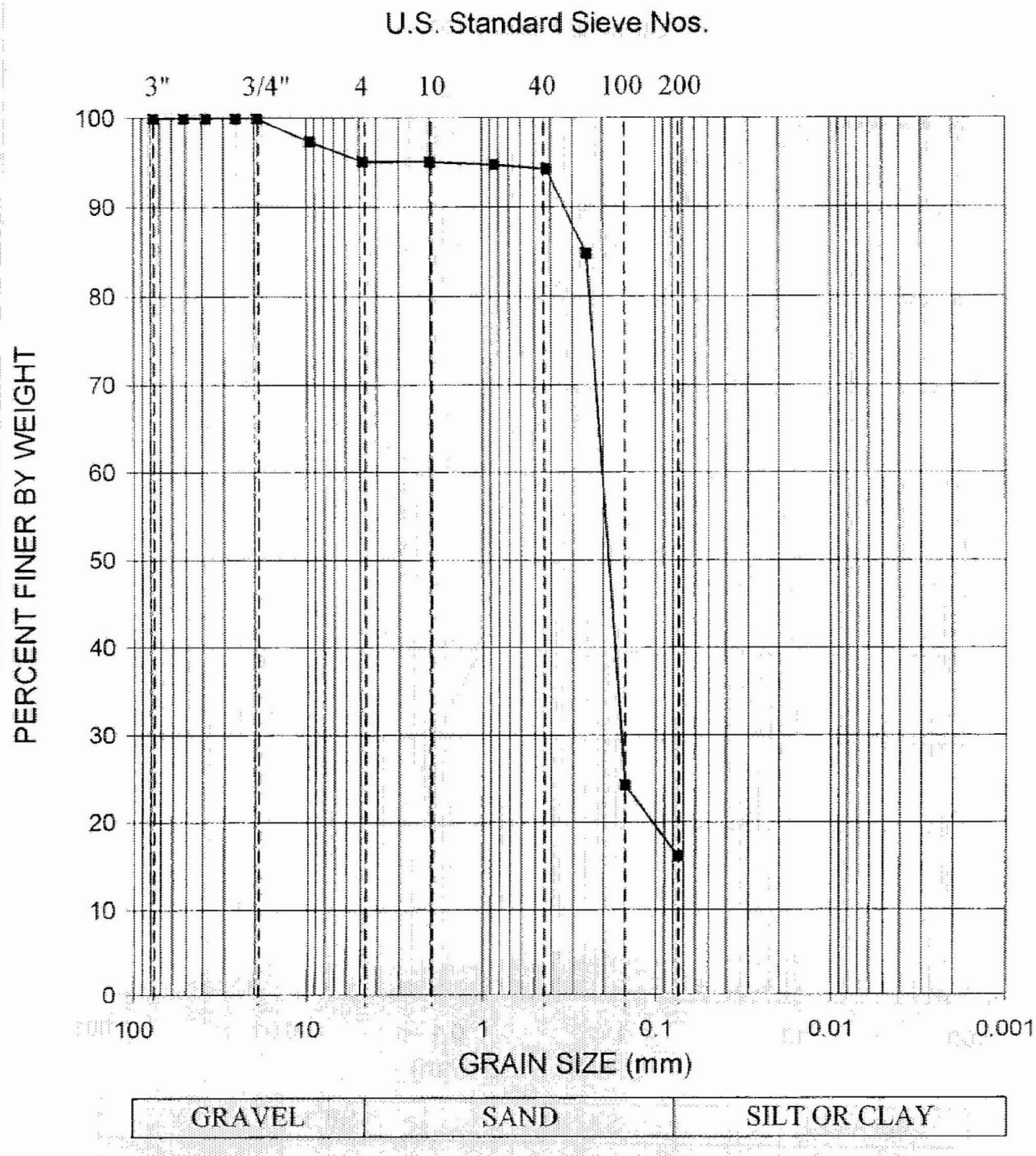


GRADATION CURVE

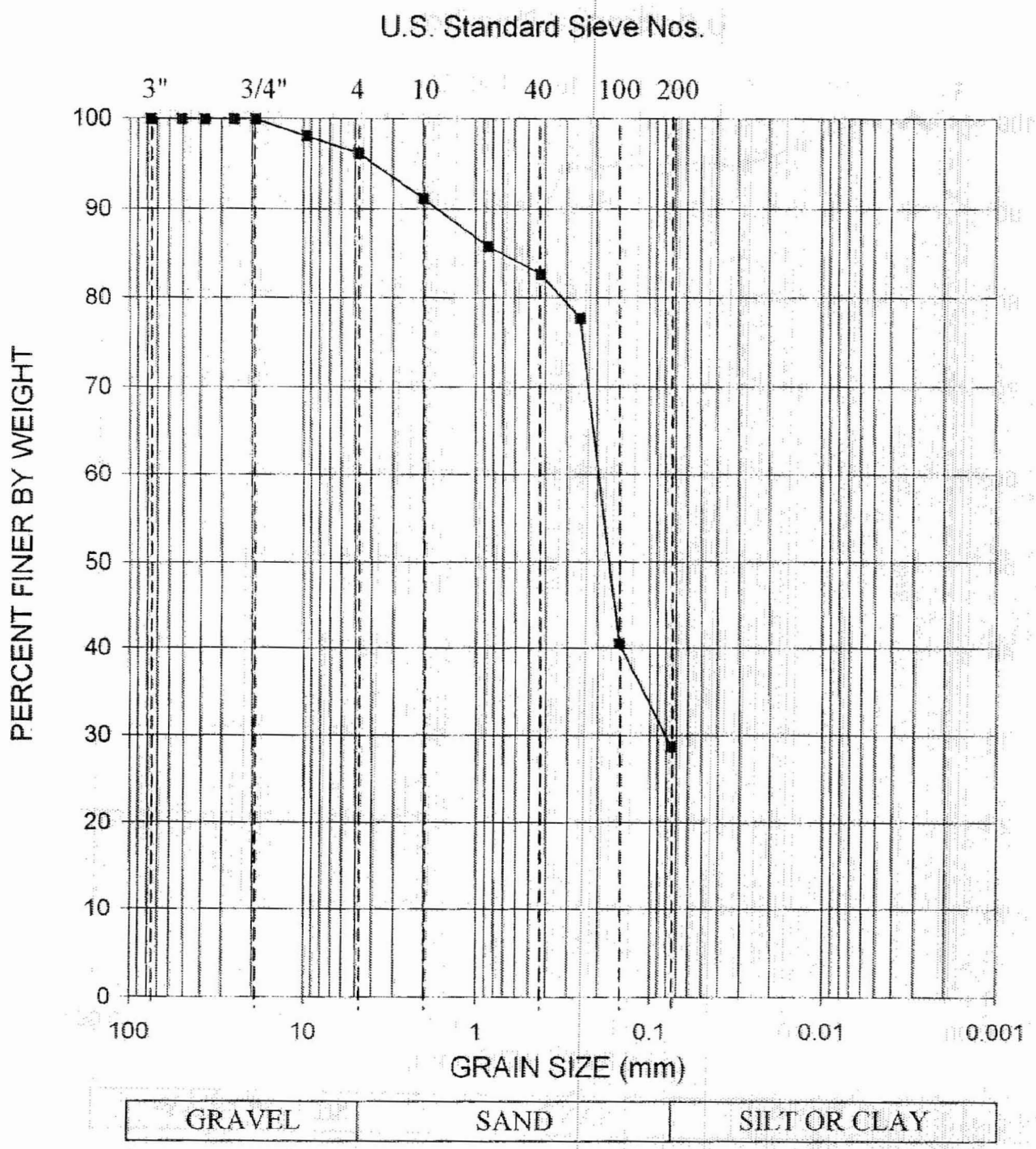
ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.:	06120048.00	Date:	9/12/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-413	118.5	Silty SAND, trace shells, green	SM		

Schnabel

Schnabel Engineering



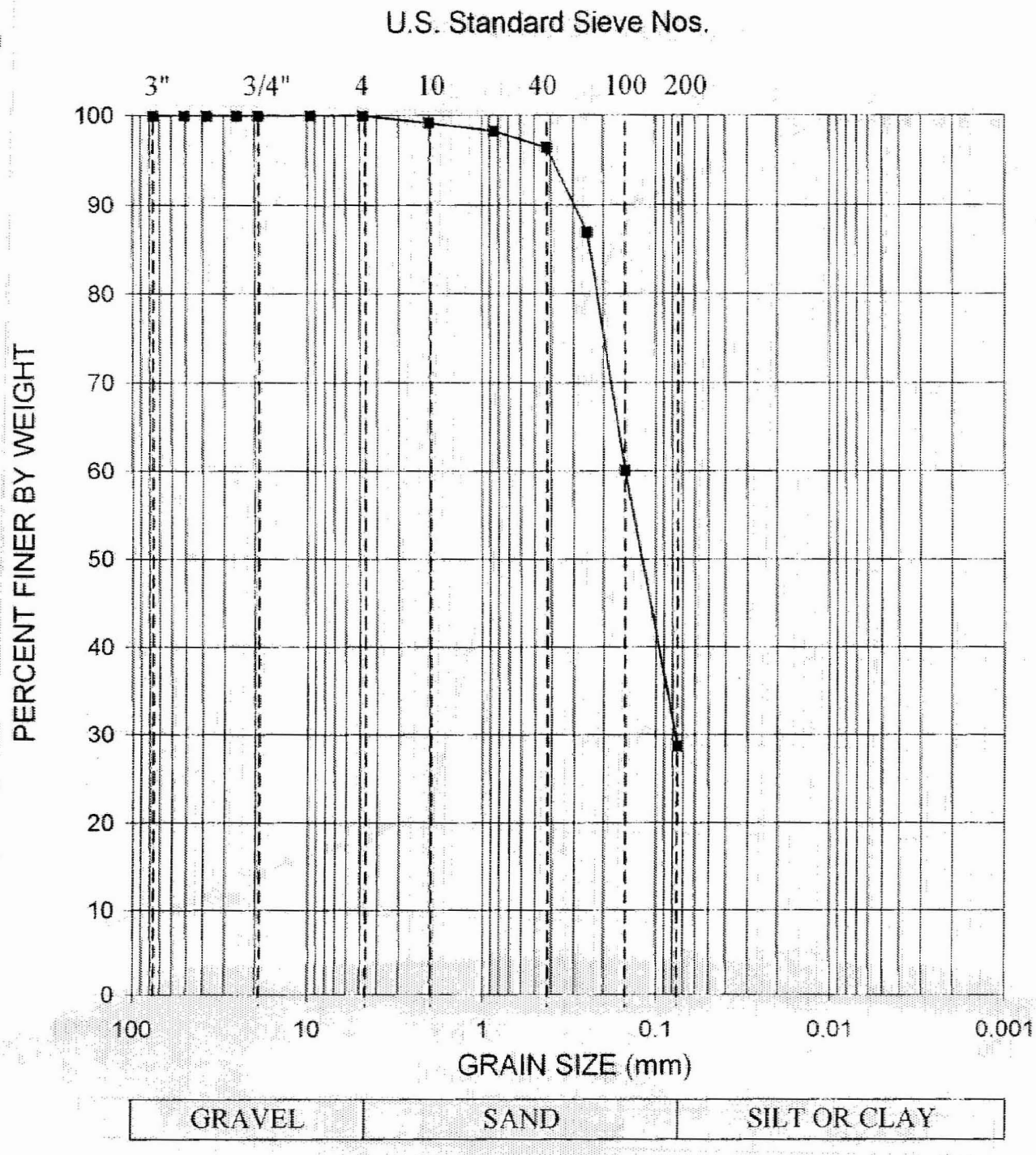
GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland		Contract No.:	06120048.00	Date:	9/13/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI	
B-413	133.5	Silty SAND, trace shells, green	SM			

Schnabel

Schnabel Engineering



GRADATION CURVE

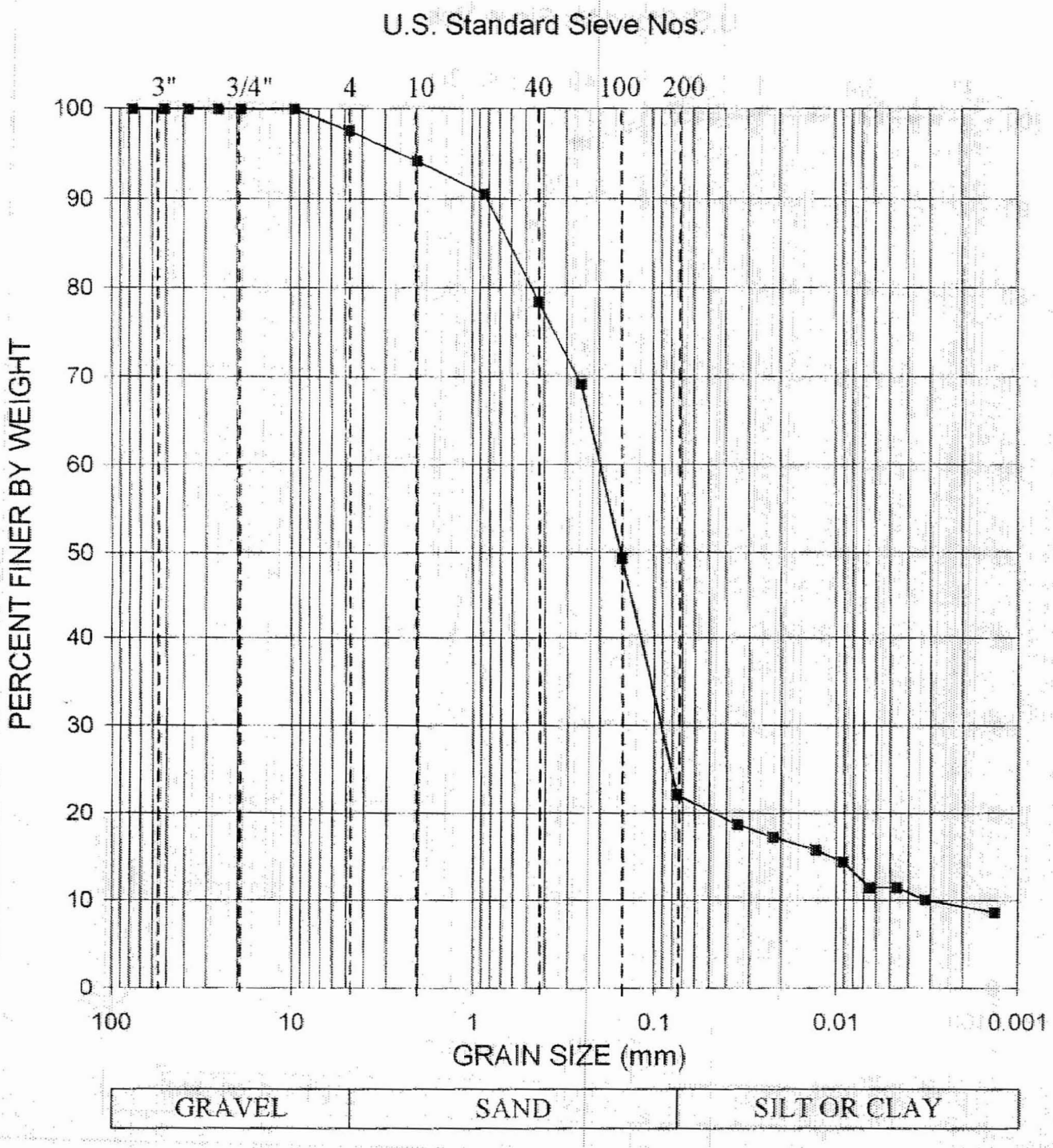
ASTM D422

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

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-413	148.5	Silty SAND, contains shells, green	SM		

Schnabel

Schnabel Engineering



GRADATION CURVE

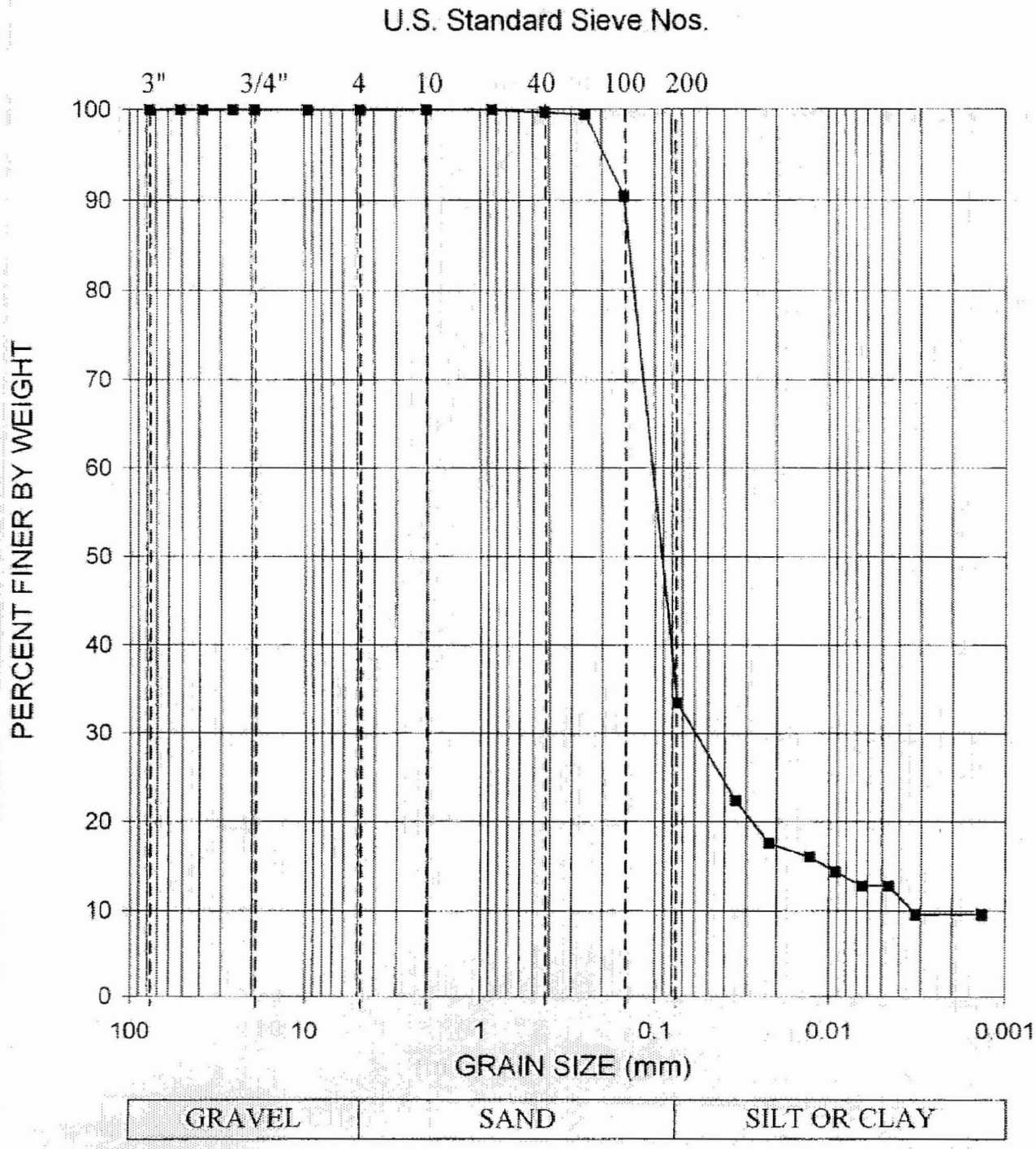
ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.:	06120048.00	Date:	9/19/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-414	43.5	Silty SAND, brown	SM	NP	NP

Schnabel

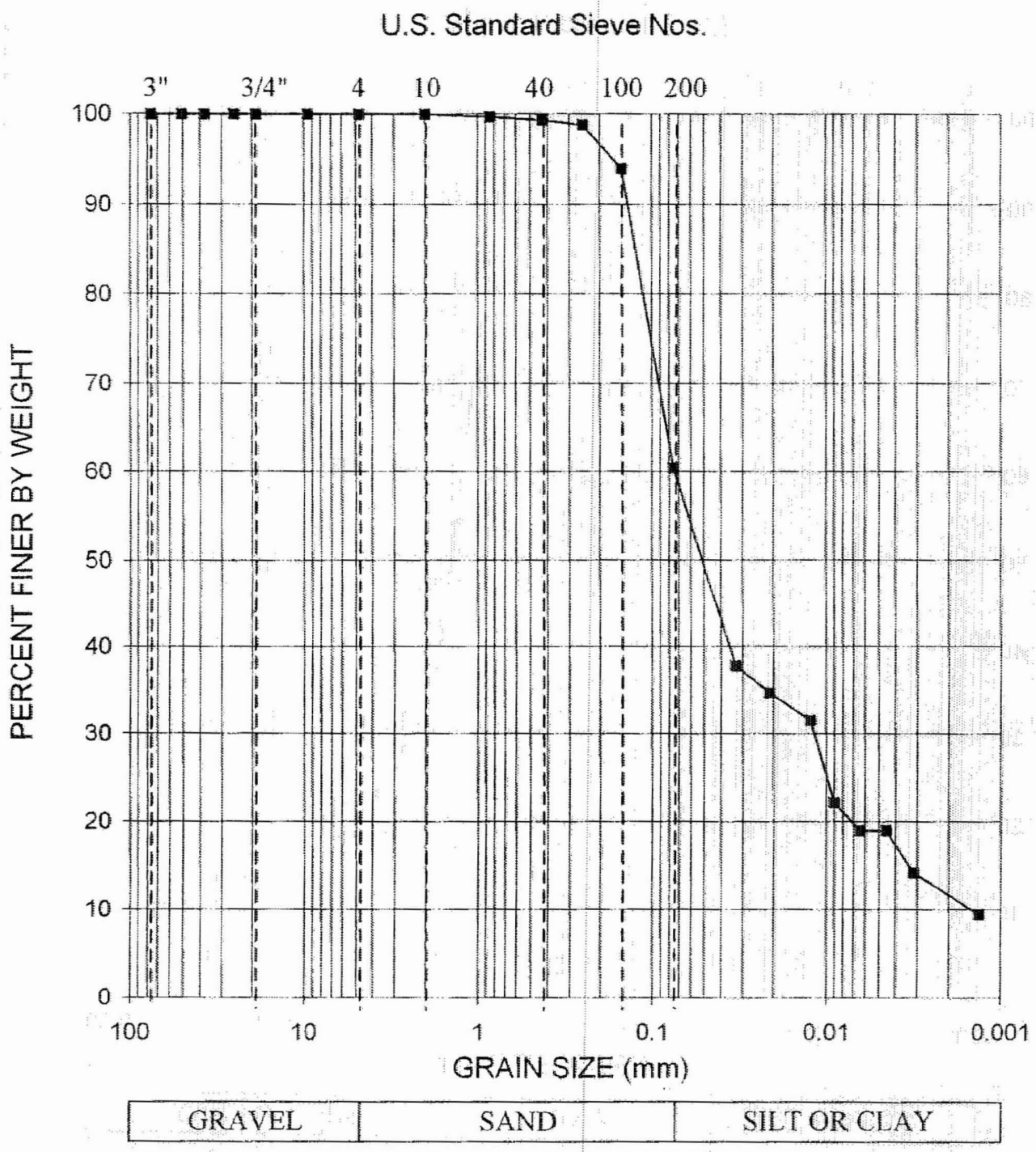
Schnabel Engineering



GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland		Contract No.:	06120048.00	Date:	9/19/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI	
B-414	48.5	Silty SAND, light brown	SM	NP	NP	Schnabel Engineering



GRADATION CURVE

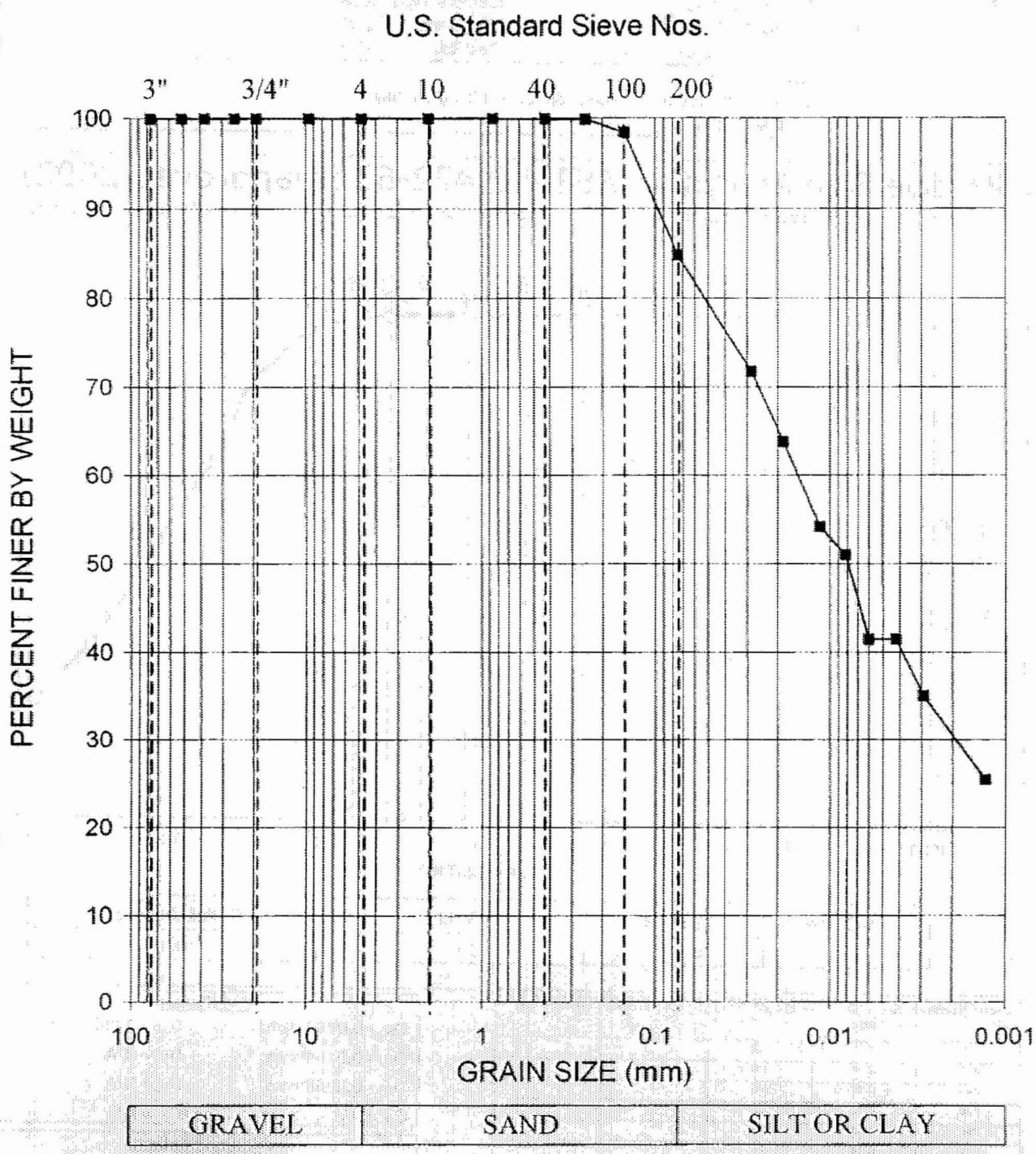
ASTM D422

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

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-414	53.5	Sandy LEAN CLAY, dark gray	CL	42	19

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:	9/20/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-414	58.0	FAT CLAY, with sand, dark gray	CH	58	38

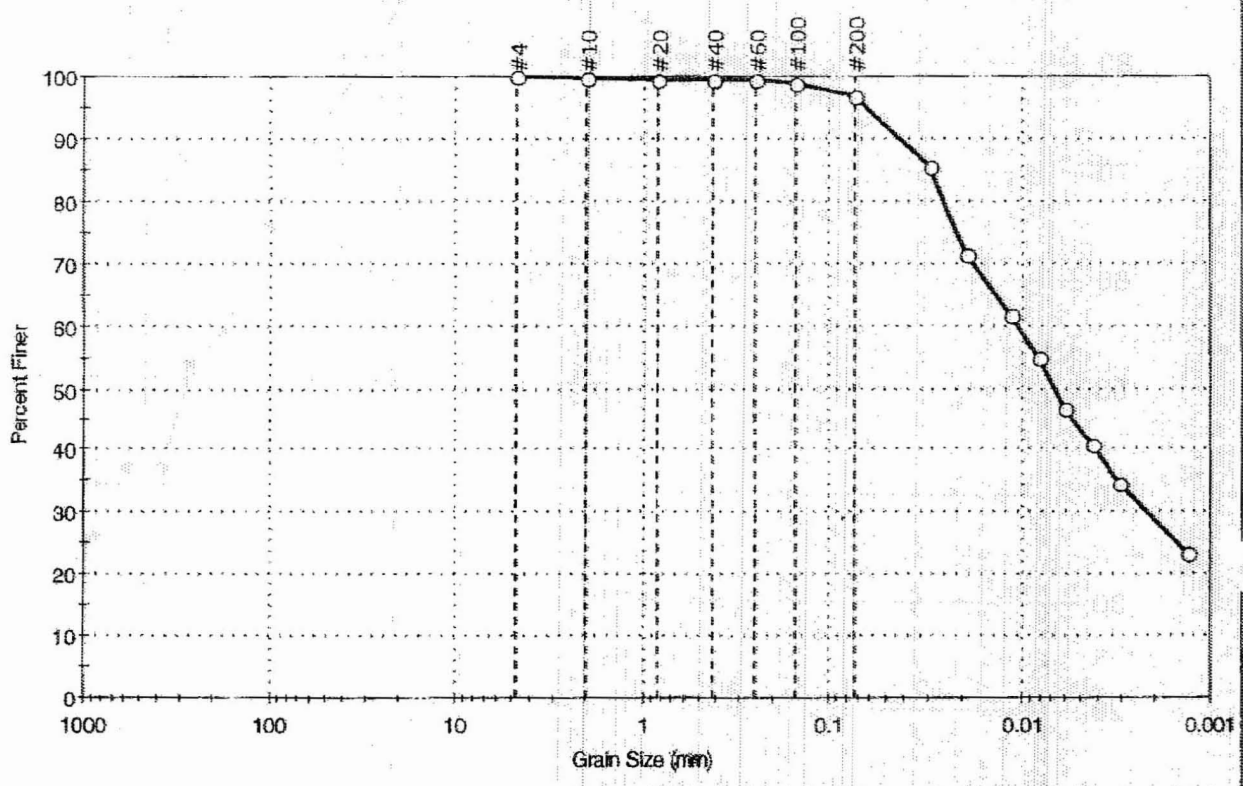
Schnabel

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-414	Sample Type: tube	Tested By:	sam
Sample ID:S-17	Test Date: 10/27/06	Checked By:	mcm
Depth : 68.0-70.0 ft	Test Id: 98069		
Test Comment:	---		
Sample Description:	Moist, dark greenish gray clay		
Sample Comment:	---		

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



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.1	3.1	96.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	97		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0293	66		
---	0.0192	71		
---	0.0113	62		
---	0.0082	55		
---	0.0060	47		
---	0.0043	41		
---	0.0031	34		
---	0.0013	23		

Coefficients

D_{85} = 0.0287 mm	D_{30} = 0.0022 mm
D_{60} = 0.0104 mm	D_{15} = N/A
D_{50} = 0.0068 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM fat clay (CH)

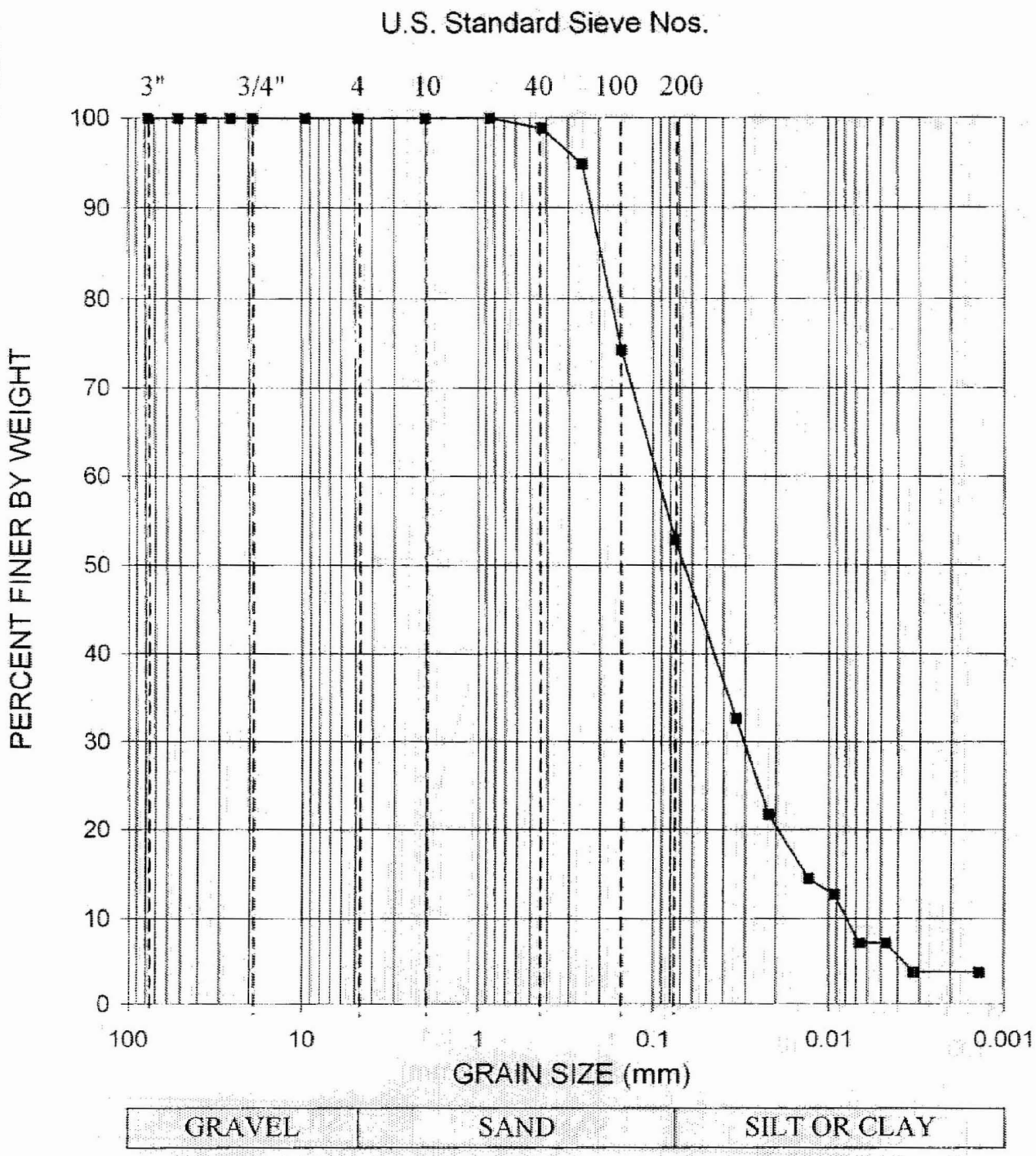
AASHTO Clayey Soils (A-7-6 (41))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

printed 11/15/2006 9:21:59 AM



GRADATION CURVE

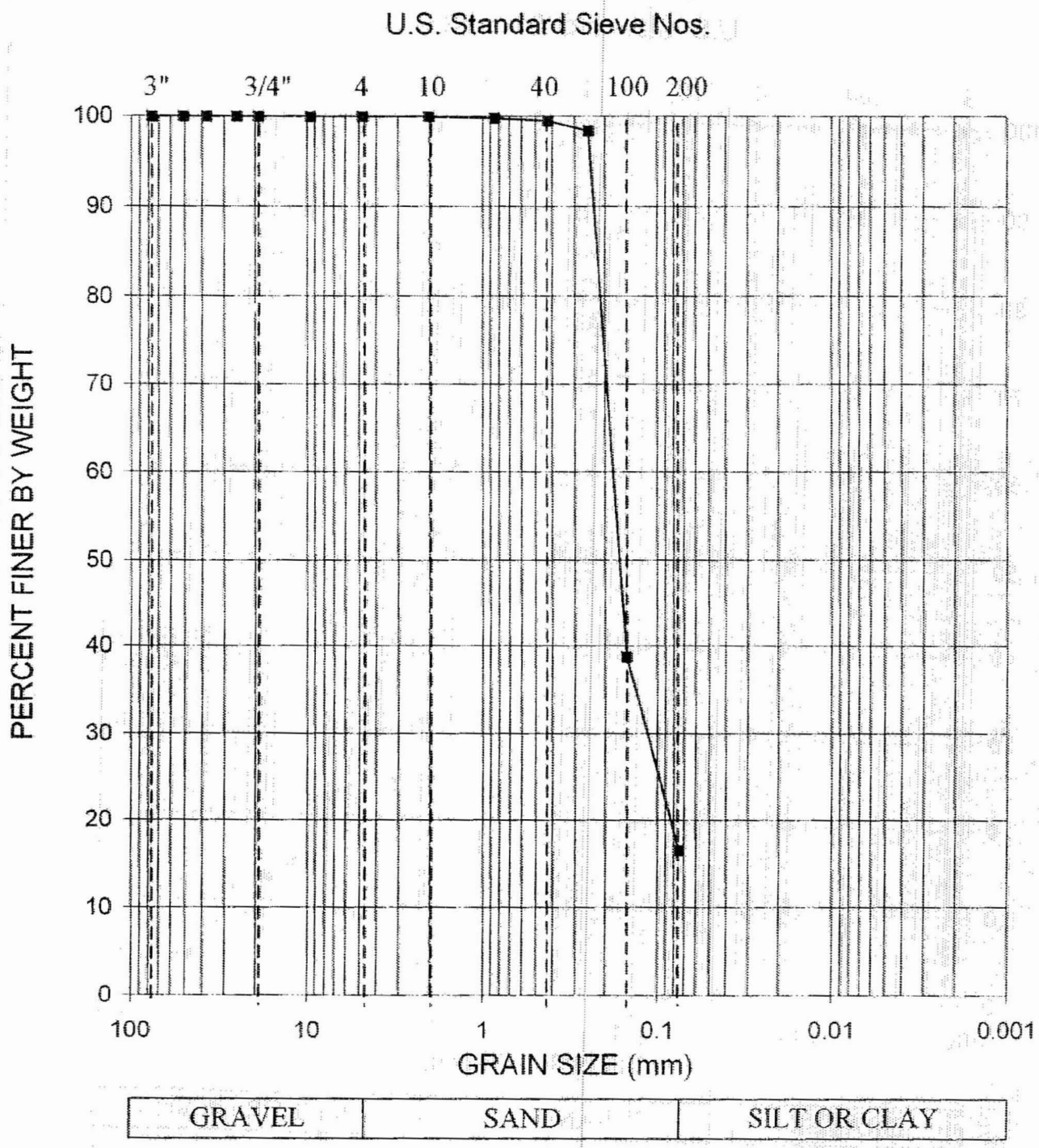
ASTM D422

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-414	73.5	Sandy LEAN CLAY, green	CL	39	19

Schnabel

Schnabel Engineering



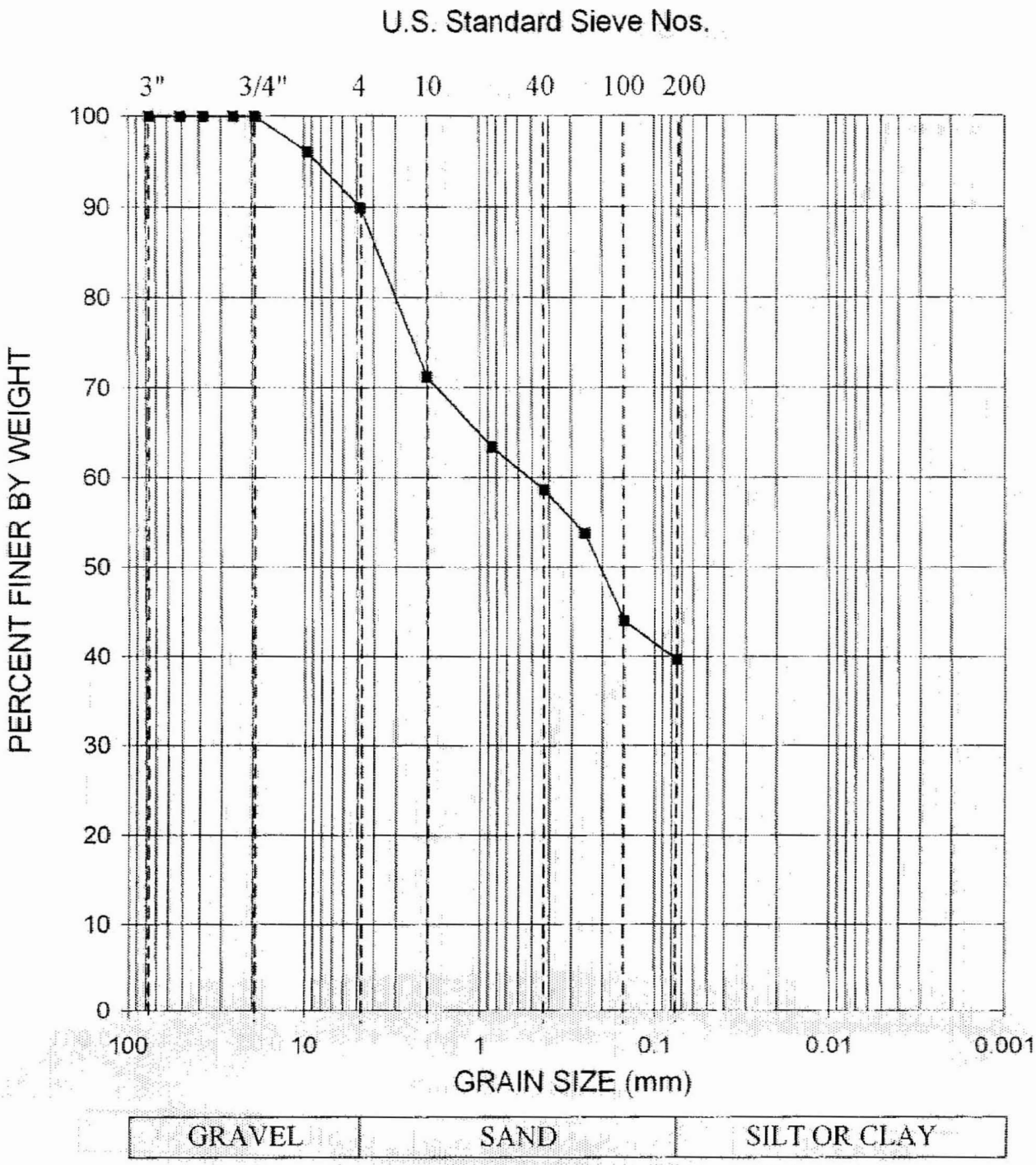
GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland		Contract No.	06120048.00	Date:	9/13/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI	
B-414	83.5	Silty SAND, light gray	SM			

Schnabel

Schnabel Engineering



GRADATION CURVE

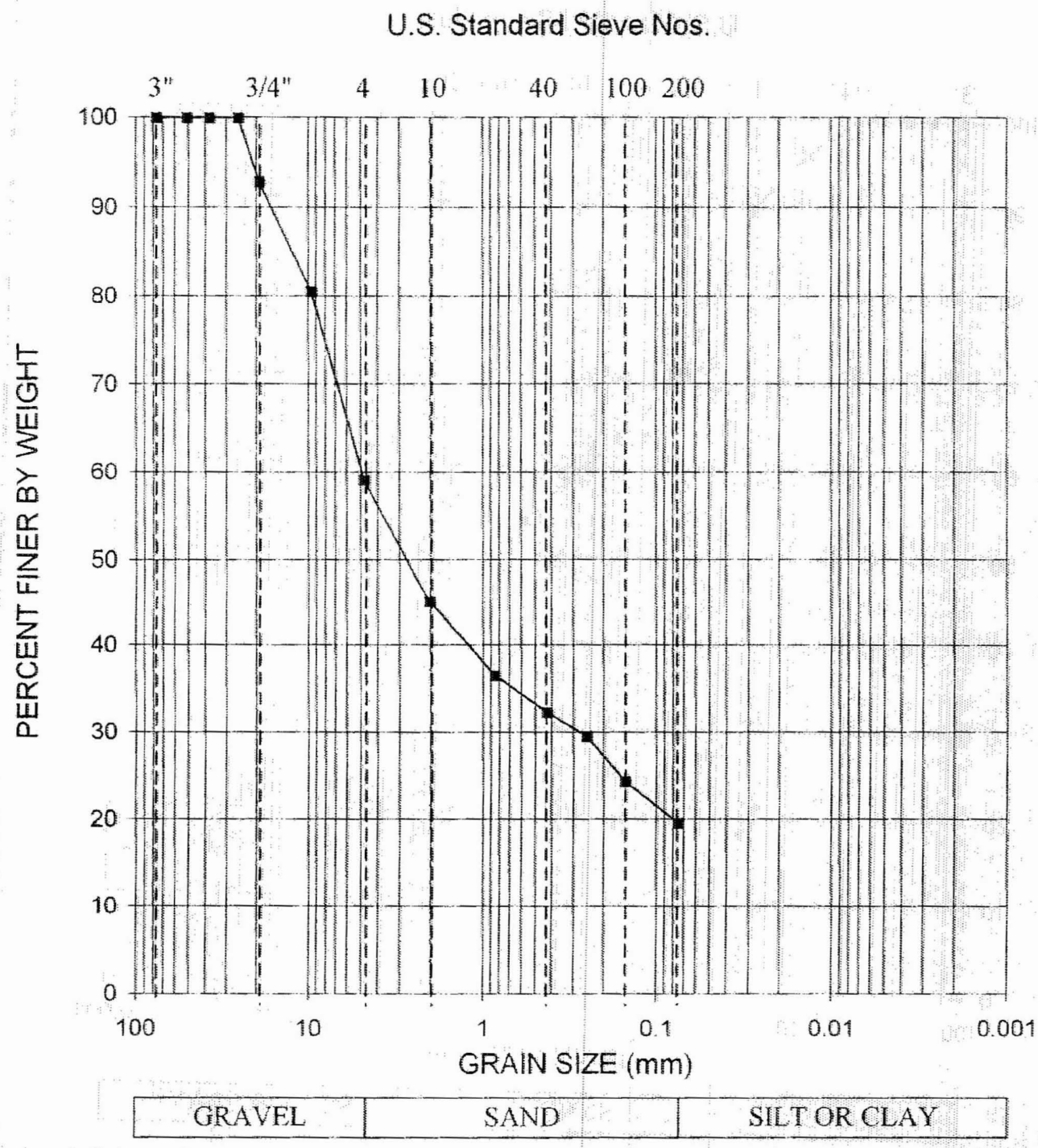
ASTM D422

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

Boring No.	Depth (ft)	Sample Description	Class	LL	PI
B-414	93.5	Silty SAND, trace shells, green	SM		

Schnabel

Schnabel Engineering



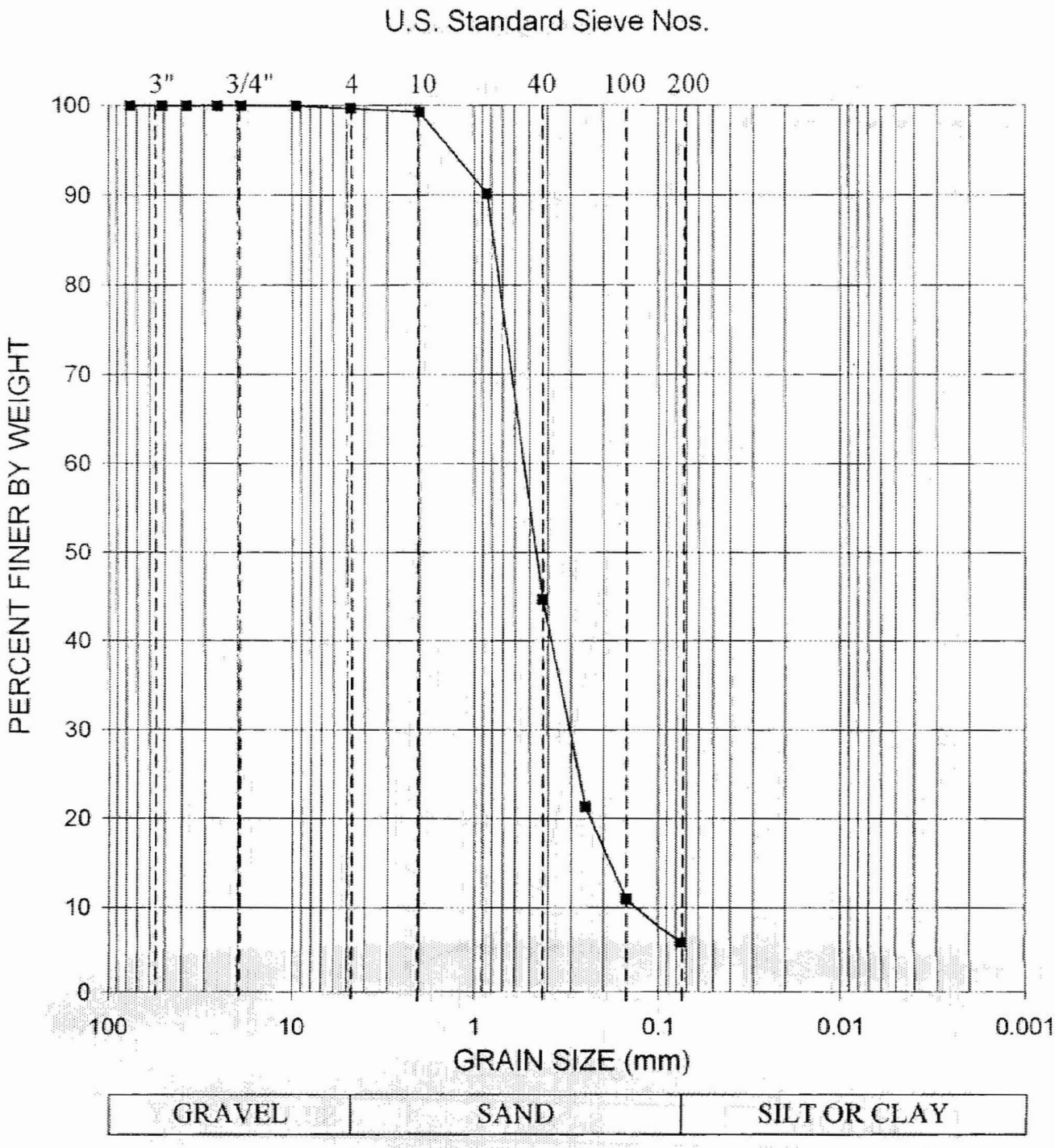
GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland		Contract No.	06120048.00		Date:	9/13/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI		
B-414	98.5	Silty SHELLS, with sand , gray	GM				

Schnabel

Schnabel Engineering



GRADATION CURVE

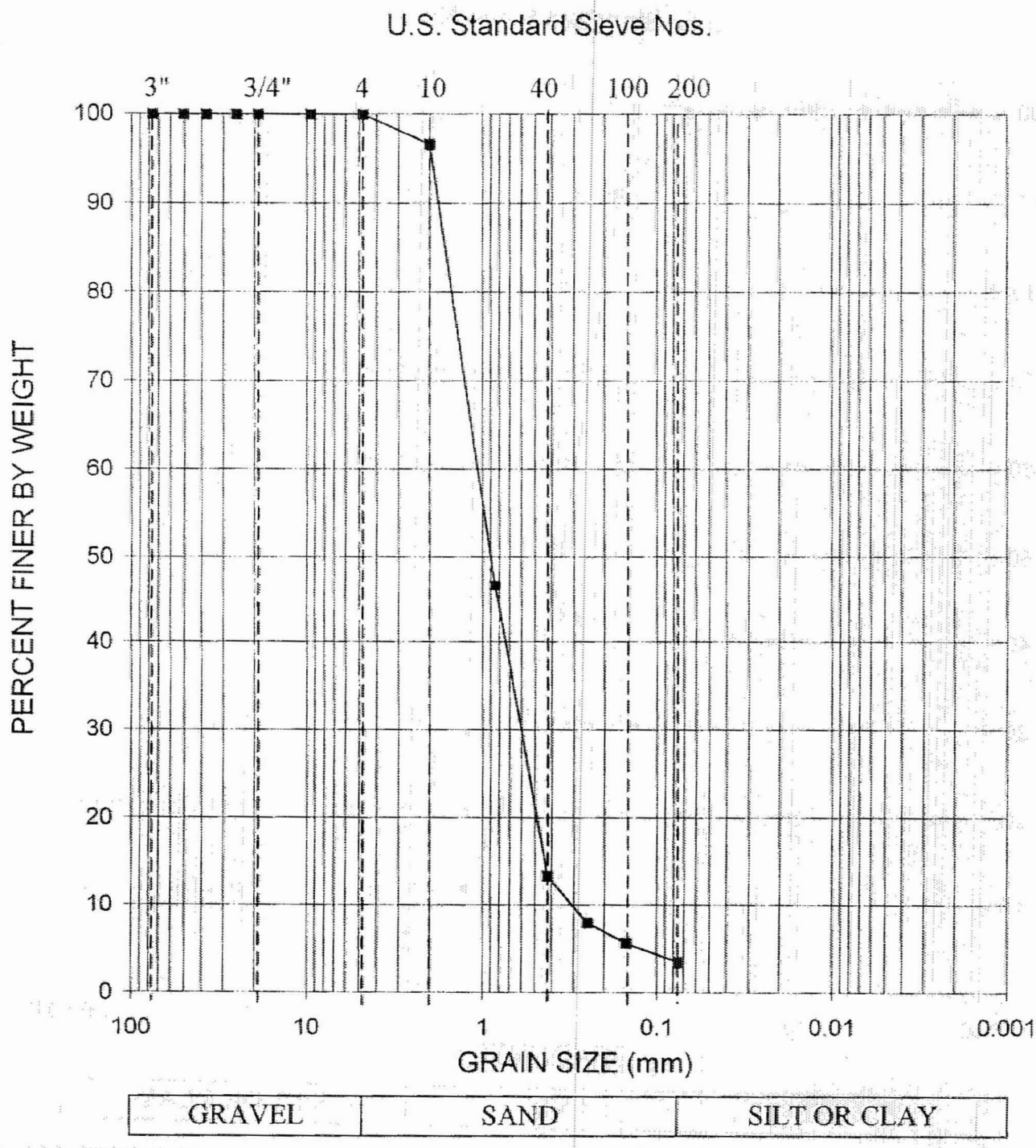
ASTM D422

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

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-415	5	Poorly Graded SAND, with silt, tan	SP-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:	10/4/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI	
B-415	13.5	Poorly Graded SAND, trace silt, brown	SP			Schnabel Engineering