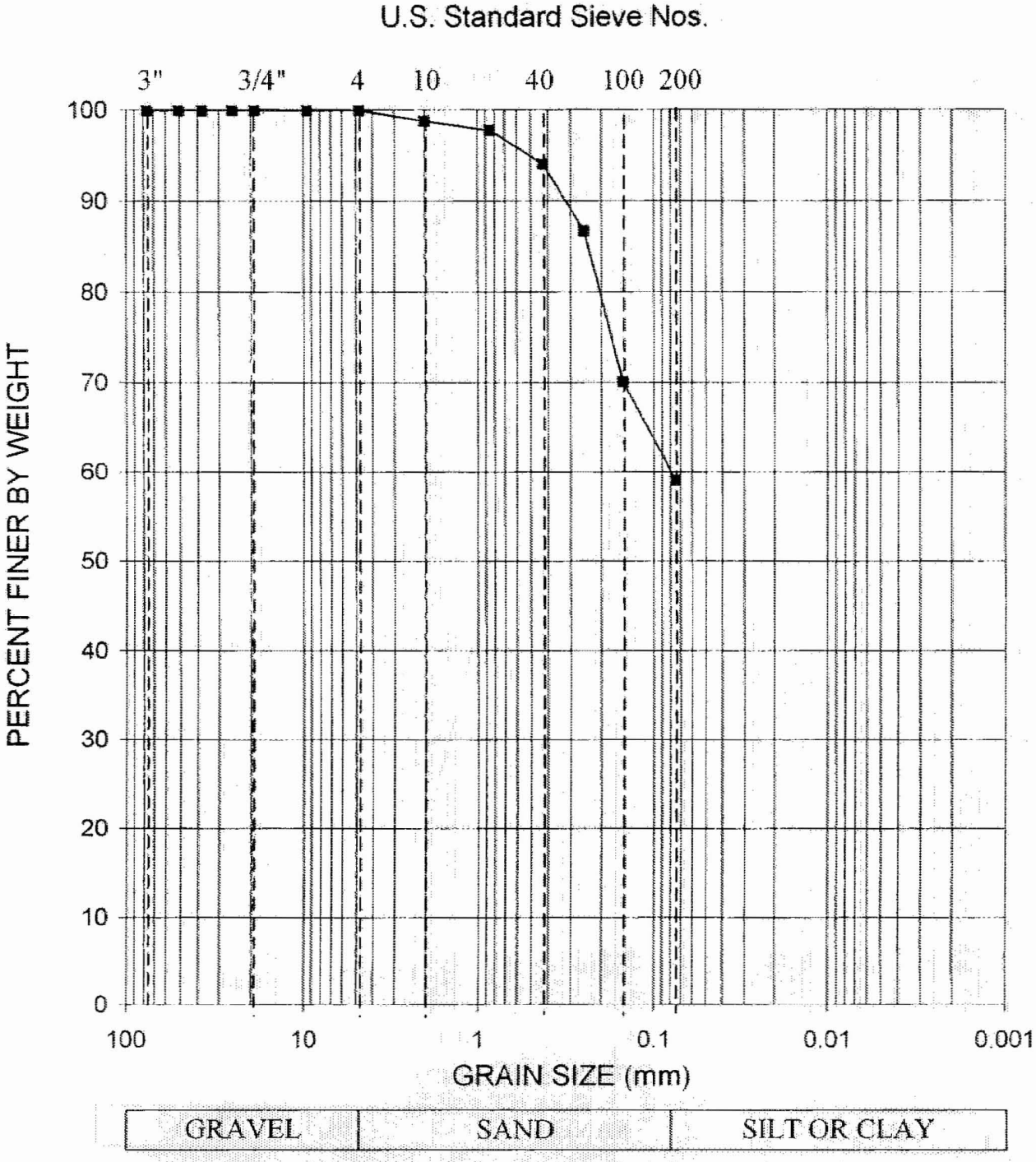


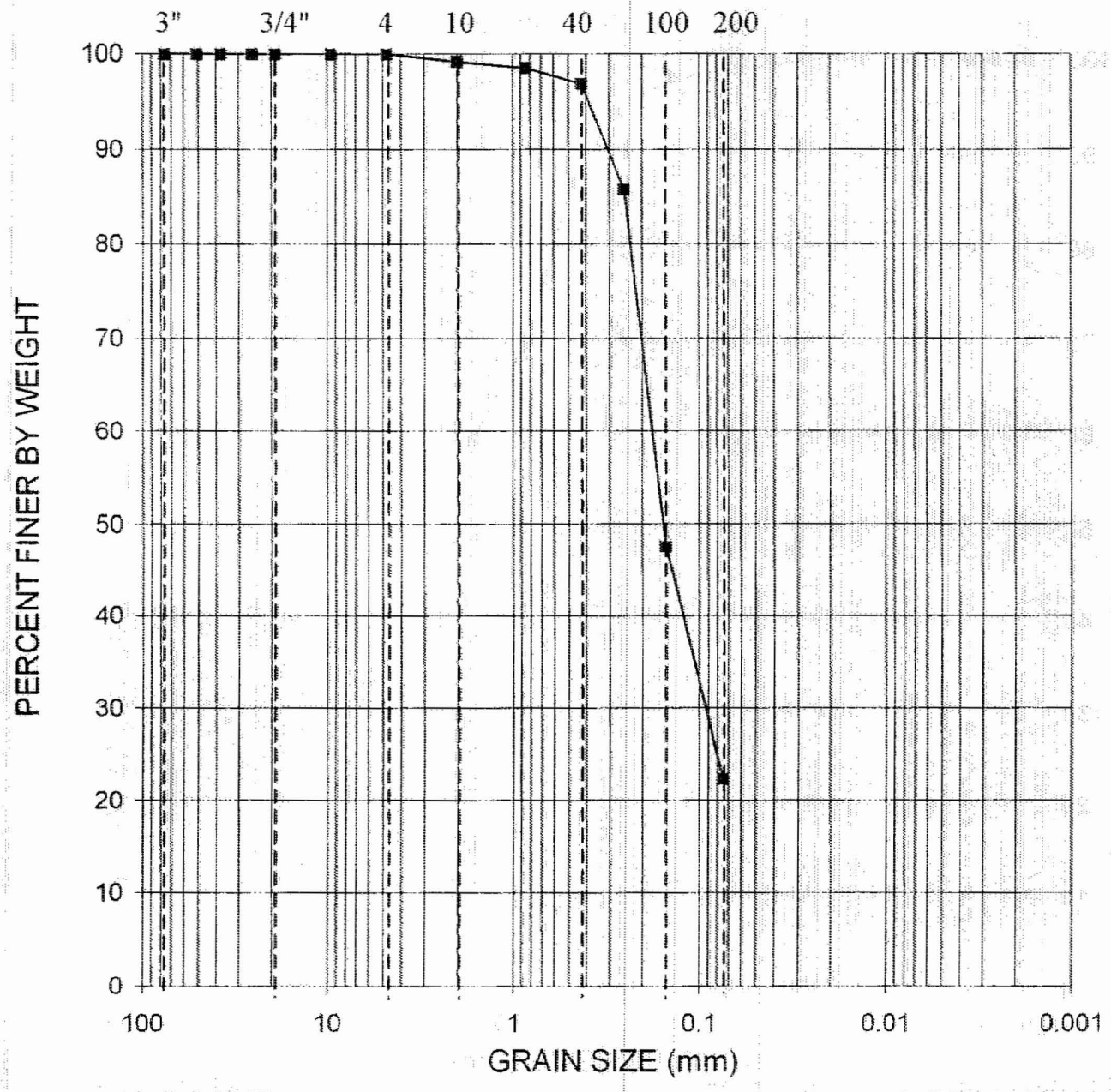
GRADATION CURVE

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-407	183.5	Sandy ELASTIC SILT, dark green	MH	154	57

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: 9/12/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-407	198.5	Silty SAND, contains shells, green	SM		

Schnabel Engineering

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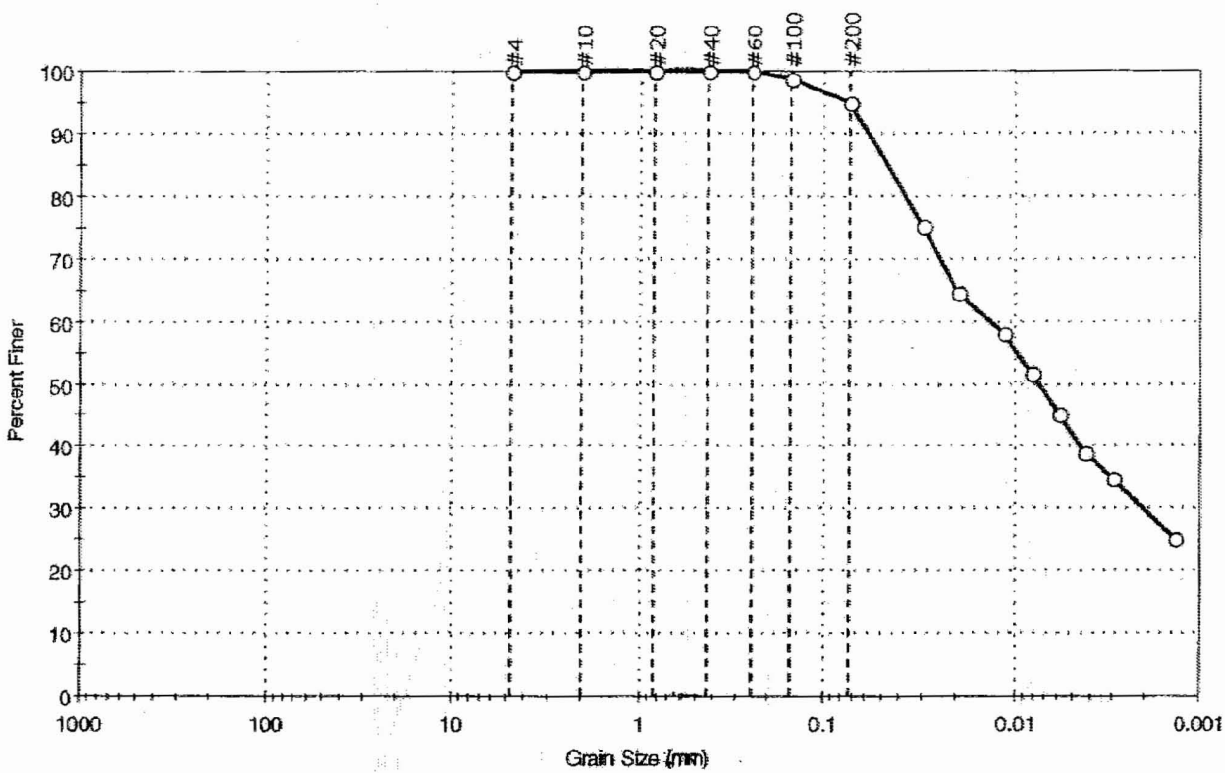
Client:	Schnabel Engineering, Inc.				
Project:	Subsurface Investigation Calvert Cliffs Nuclear PP				
Location:	Calvert County, MD			Project No:	GTX-6880
Boring ID:	B-411	Sample Type:	tube	Tested By:	sam
Sample ID:	S-8	Test Date:	10/17/06	Checked By:	mcm
Depth :	23.5-25.5 ft	Test Id:	100604		
Test Comment:	---				
Sample Description:	Moist, dark gray organic clay with sand				
Sample Comment:	---				

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



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	5.0	95.0

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	100		
#60	0.25	100		
#100	0.15	99		
#200	0.074	95		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0304	75		
---	0.0195	64		
---	0.0114	58		
---	0.0082	52		
---	0.0059	45		
---	0.0043	39		
---	0.0030	35		
---	0.0014	25		

Coefficients

D_{85} = 0.0472 mm	D_{30} = 0.0020 mm
D_{60} = 0.0134 mm	D_{15} = N/A
D_{50} = 0.0076 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM organic clay (OH)

AASHTO Clayey Soils (A-7-6 (48))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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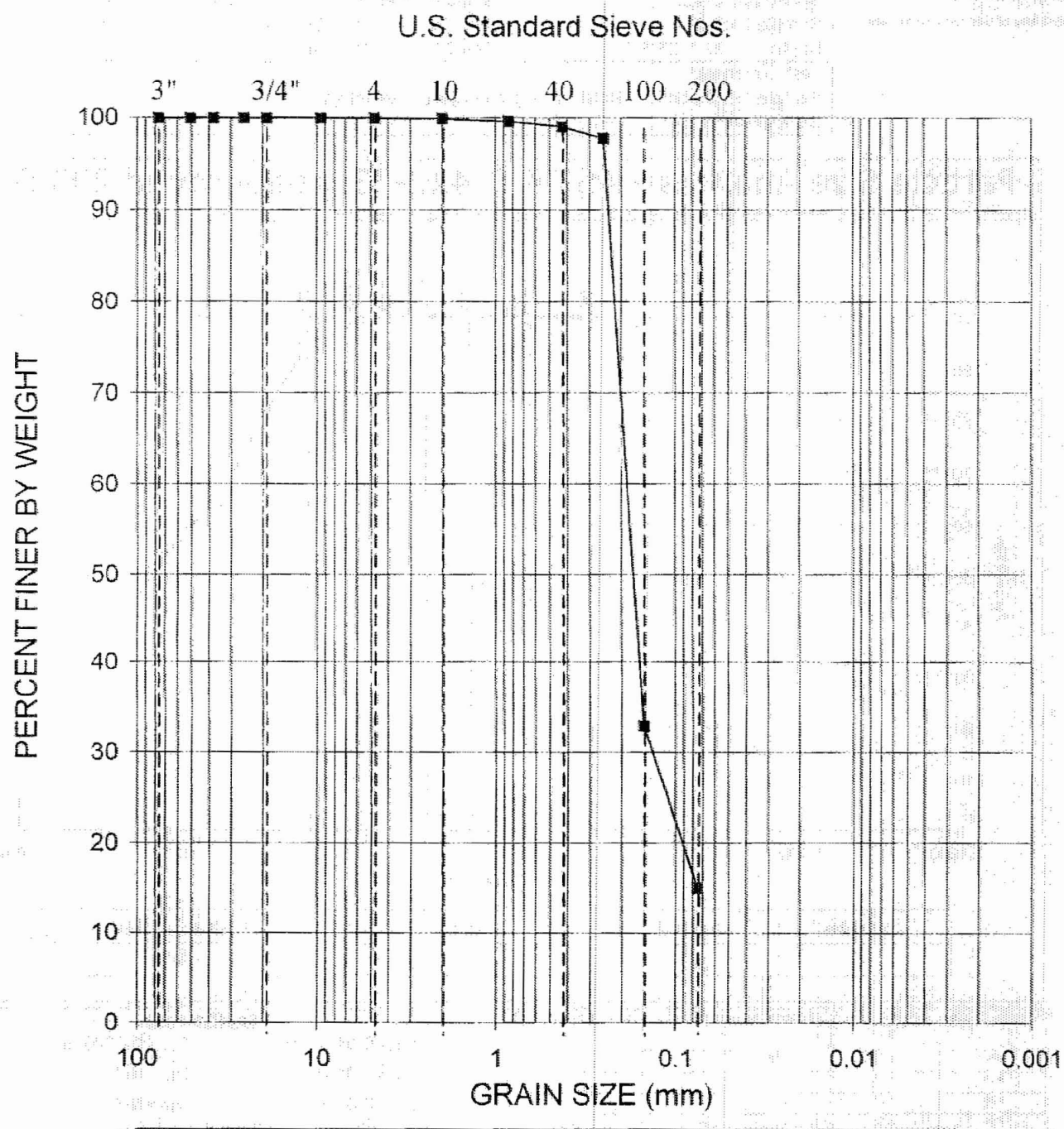
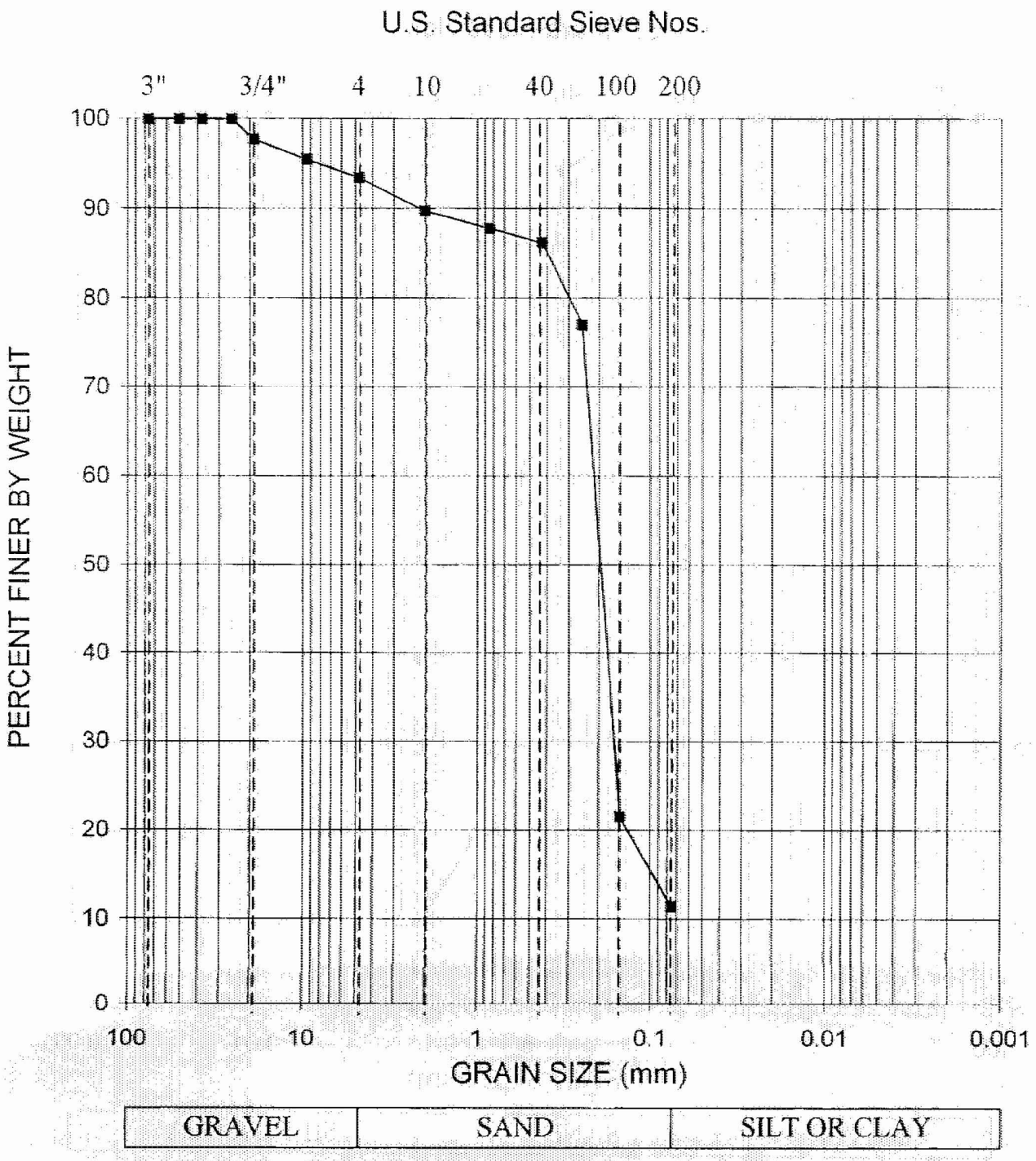


GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland		Contract No.: 06120048.00			Date: 10/3/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI	
B-411	43.5	Silty SAND, light green	SM			

Schnabel Engineering



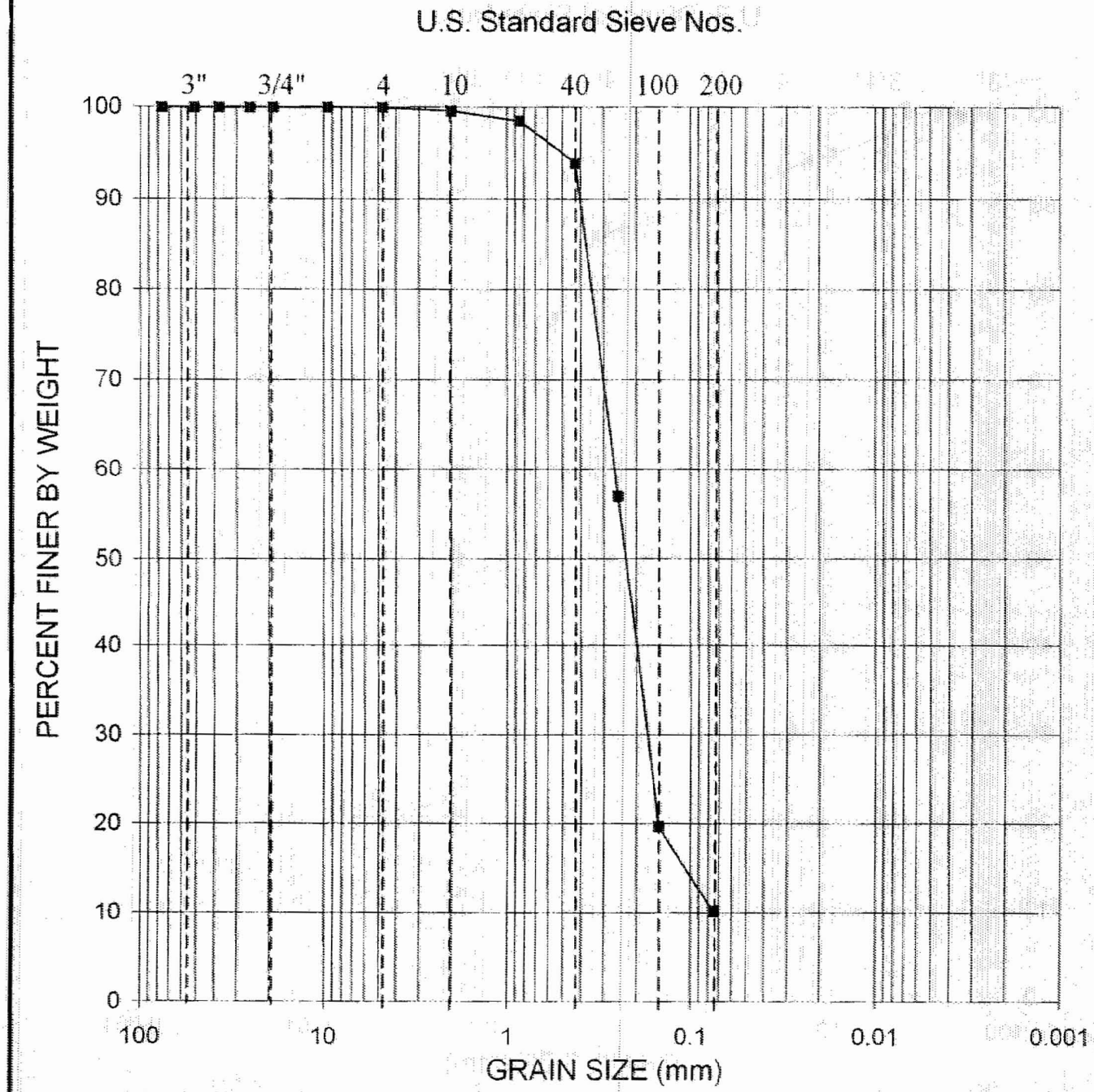
GRADATION CURVE

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-411	63.5	Poorly Graded SAND, with silt, trace shells, gray	SP-SM		

Schnabel Engineering

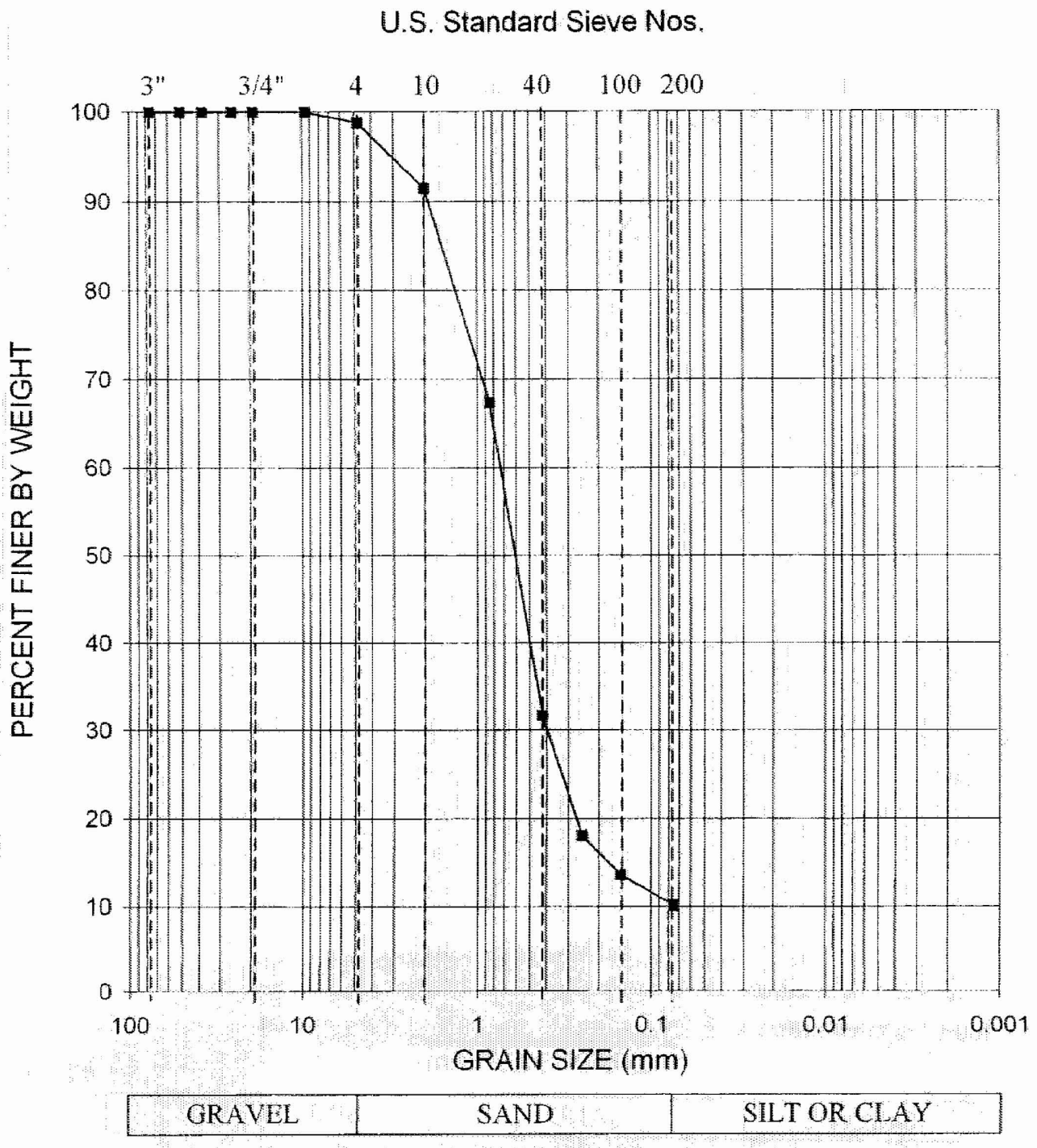


GRADATION CURVE

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	7.5	Poorly Graded SAND, with silt, tan	SP-SM				

Schnabel Engineering



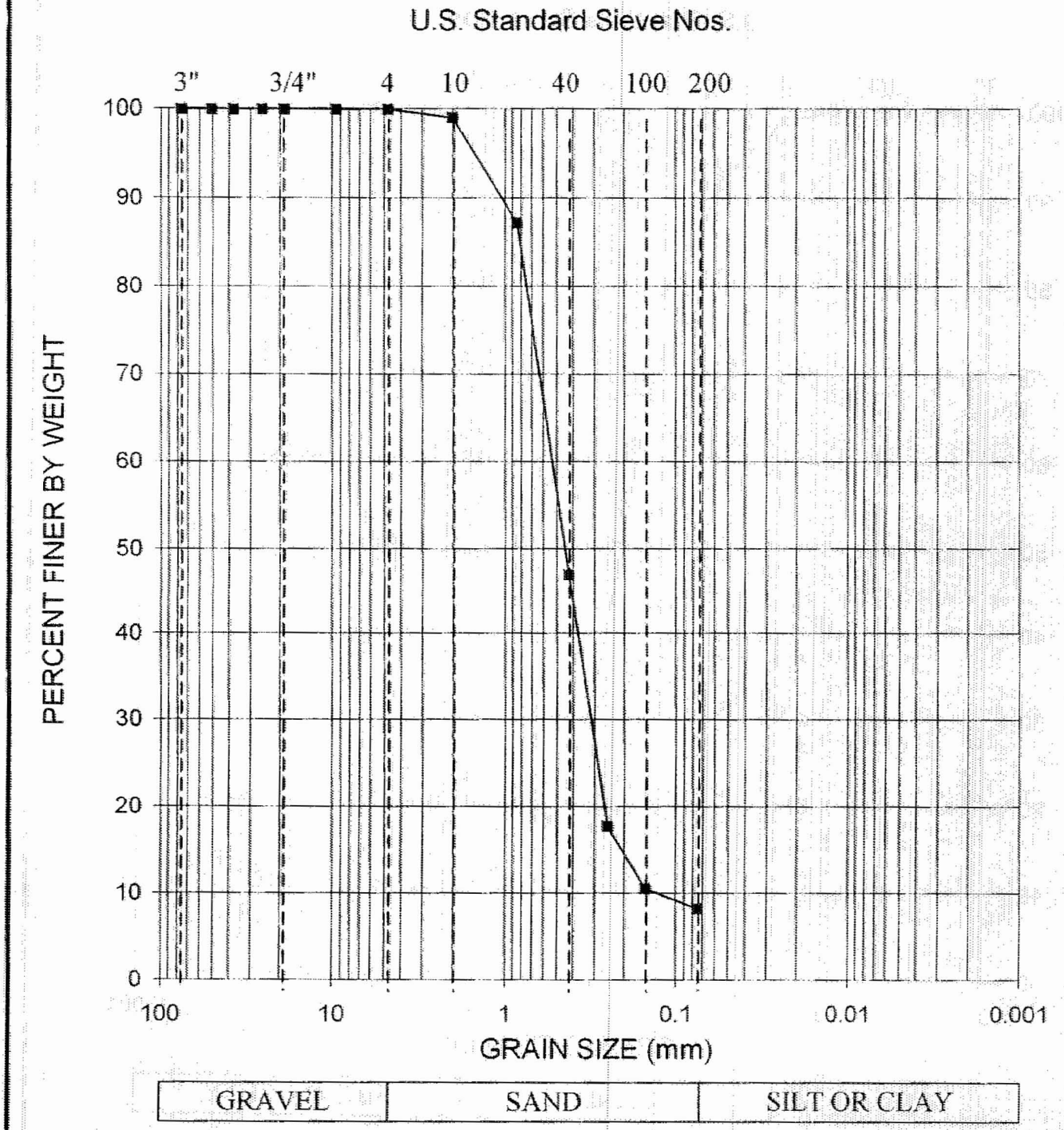
GRADATION CURVE

ASTM D422

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

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-413	18.5	Poorly Graded SAND, with silt, brown	SP-SM		

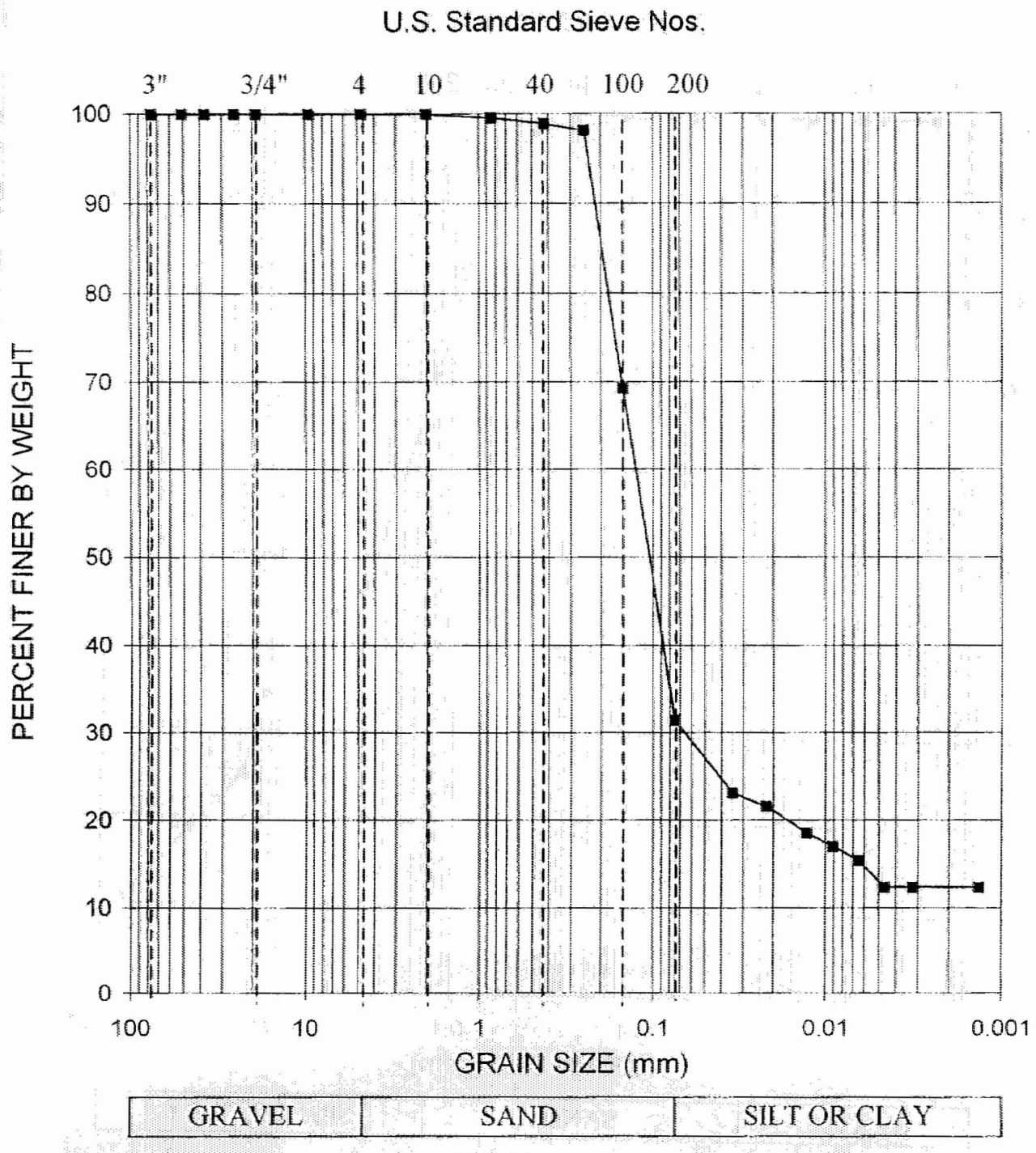
Schnabel Engineering



GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland		Contract No.: 06120048.00		Date: 9/12/2006	
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI	
B-413	33.5	Poorly Graded SAND, with silt, brown	SP-SM			Schnabel Engineering



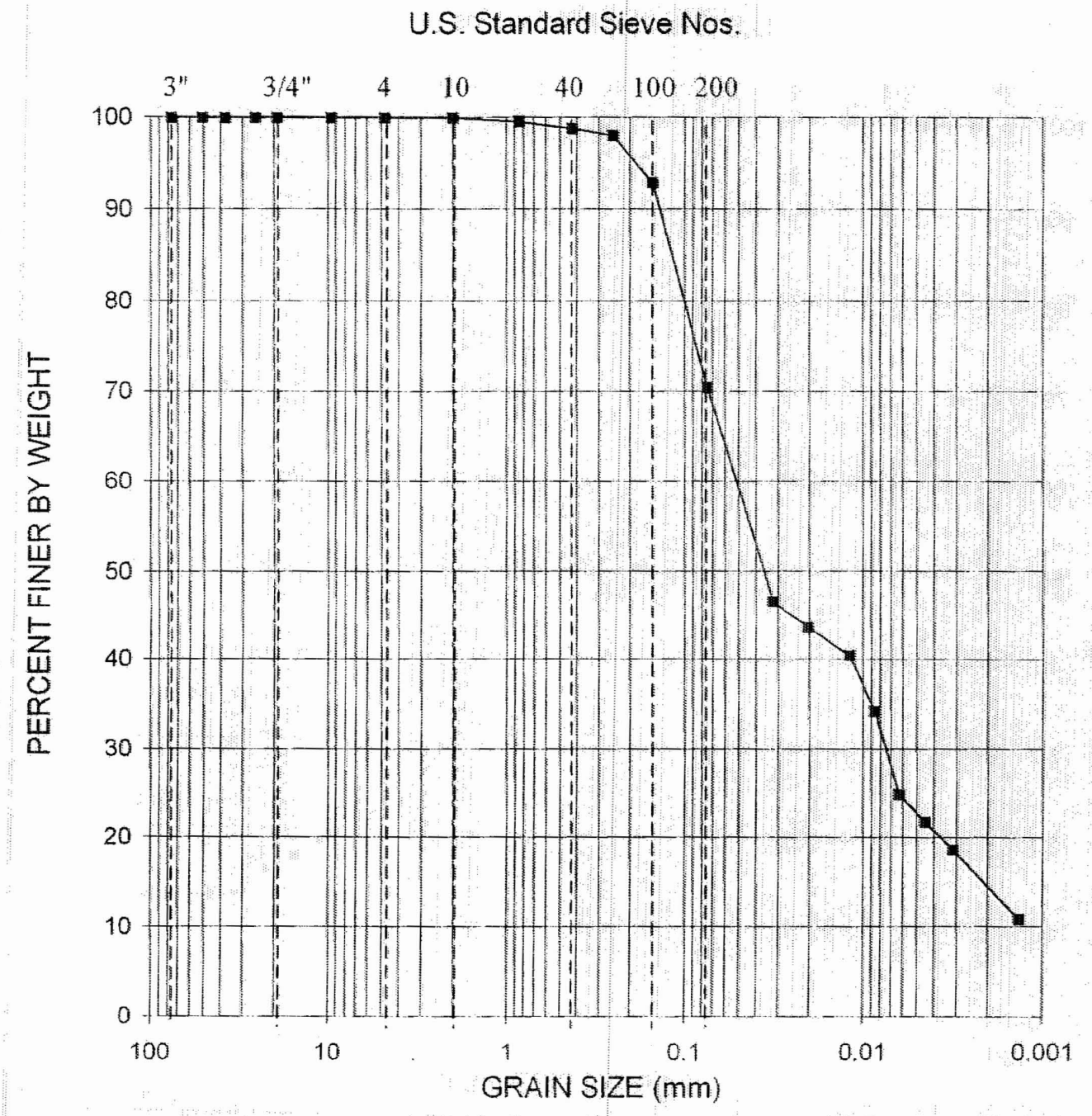
GRADATION CURVE

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-413	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

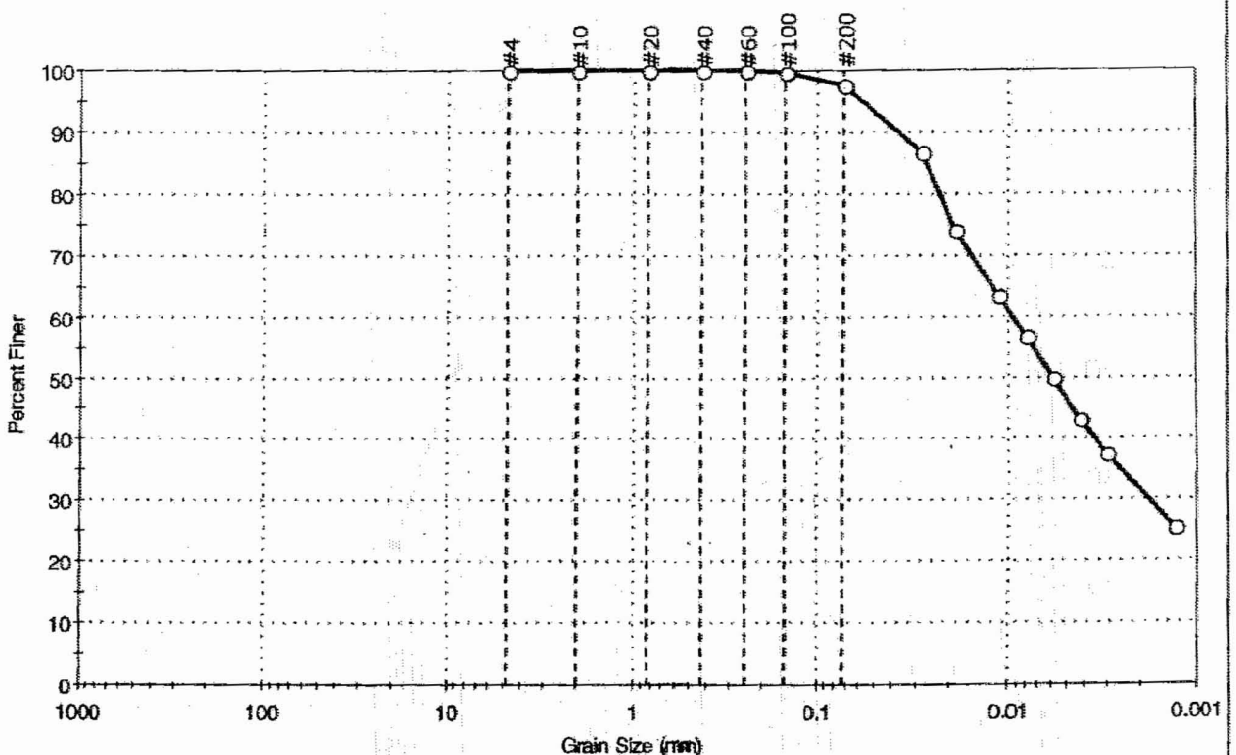
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-413	58.5	ELASTIC SILT, with sand, gray	MH	58	29

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-413	Sample Type:	tube	Tested By:	sam
Sample ID:	S-17	Test Date:	11/07/06	Checked By:	mcm
Depth :	73.0-75.0 ft	Test Id:	98060		
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
--	0.0	2.5	97.5

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	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0285	87		
---	0.0187	74		
---	0.0111	64		
---	0.0080	57		
---	0.0058	50		
---	0.0042	43		
---	0.0030	37		
---	0.0013	25		

Coefficients

D_{85} = 0.0269 mm	D_{30} = 0.0018 mm
D_{60} = 0.0094 mm	D_{15} = N/A
D_{50} = 0.0059 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM fat clay (CH)

AASHTO Clayey Soils (A-7-6 (51))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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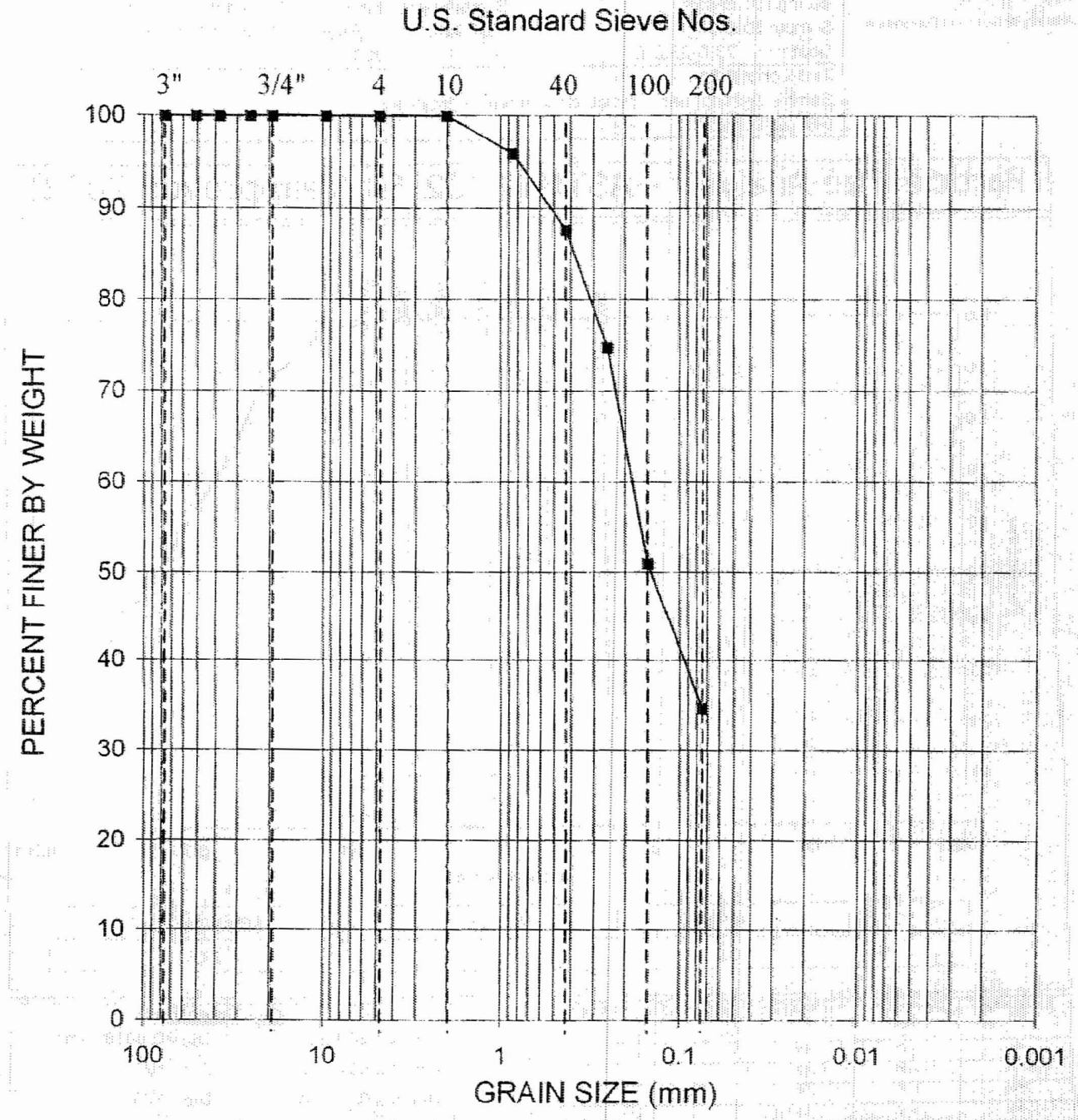


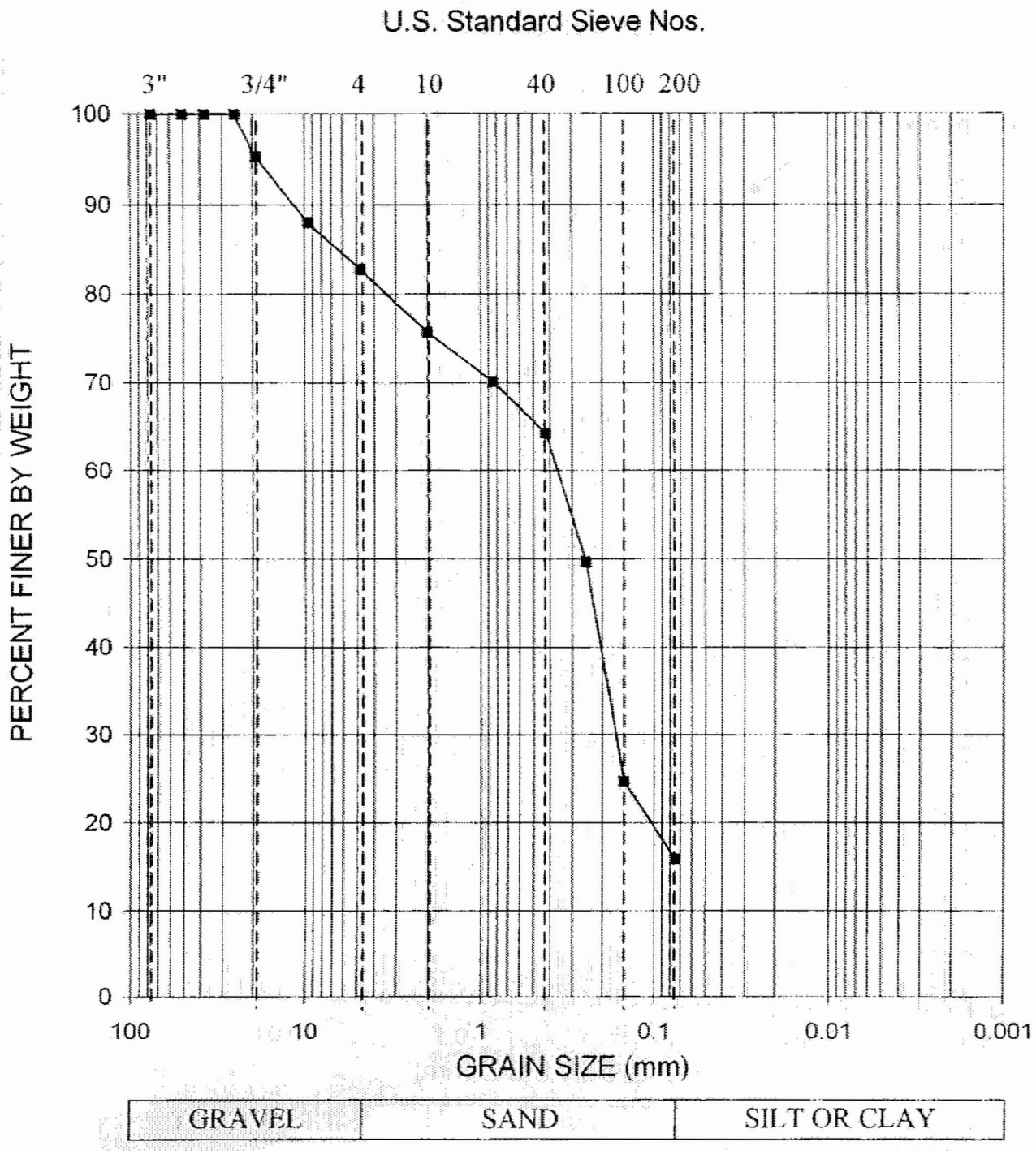
GRADATION CURVE

ASTM D422

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

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-413	78.5	Silty SAND, dark gray	SM		

Schnabel Engineering



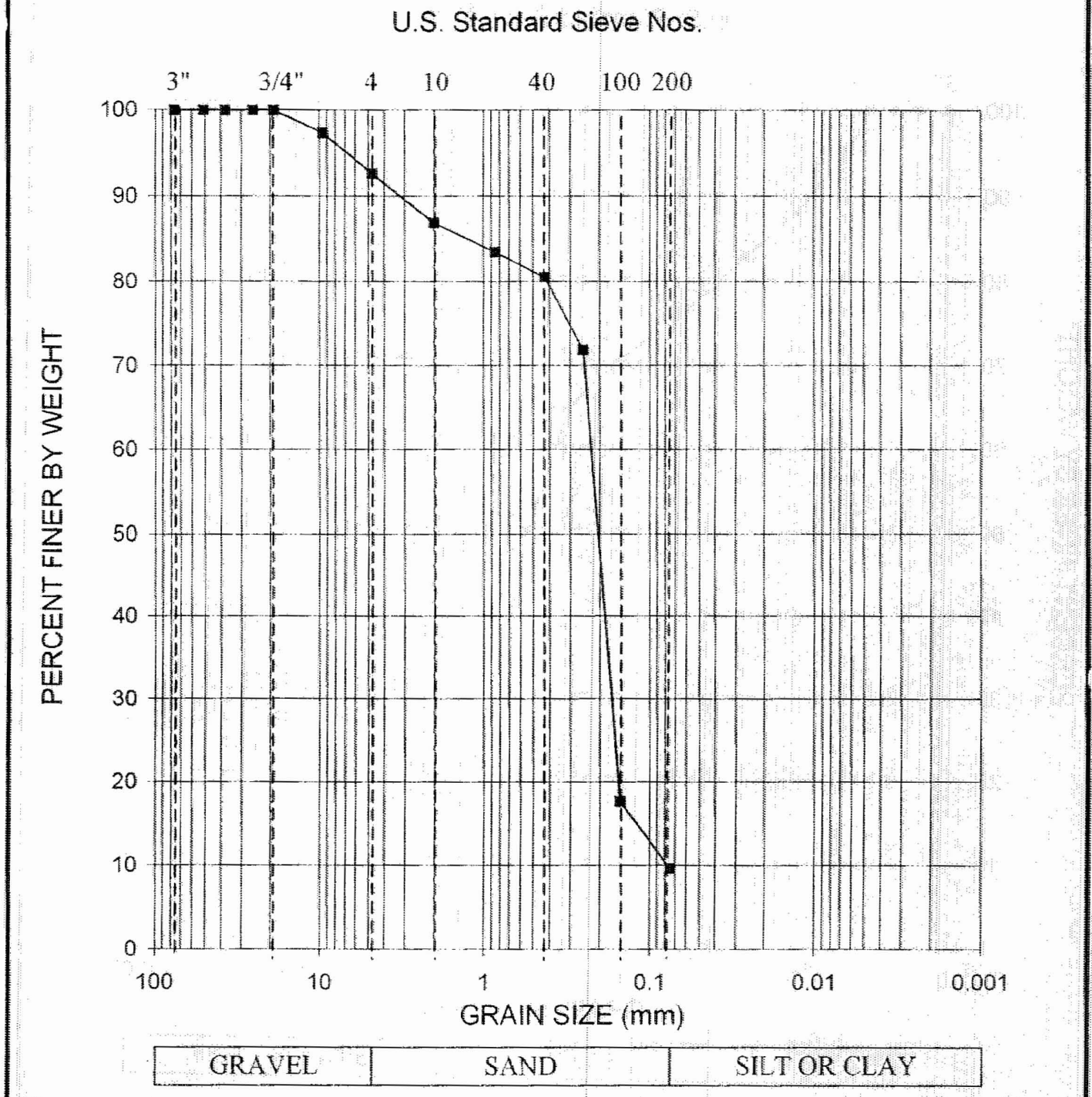
GRADATION CURVE

ASTM D422

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

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-413	98.5	Silty SAND, with shells, gray	SM		

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: 9/12/2006	
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI	Schnabel Engineering
B-413	108.5	Poorly Graded SAND, with silt, trace shells, gray	SP-SM			