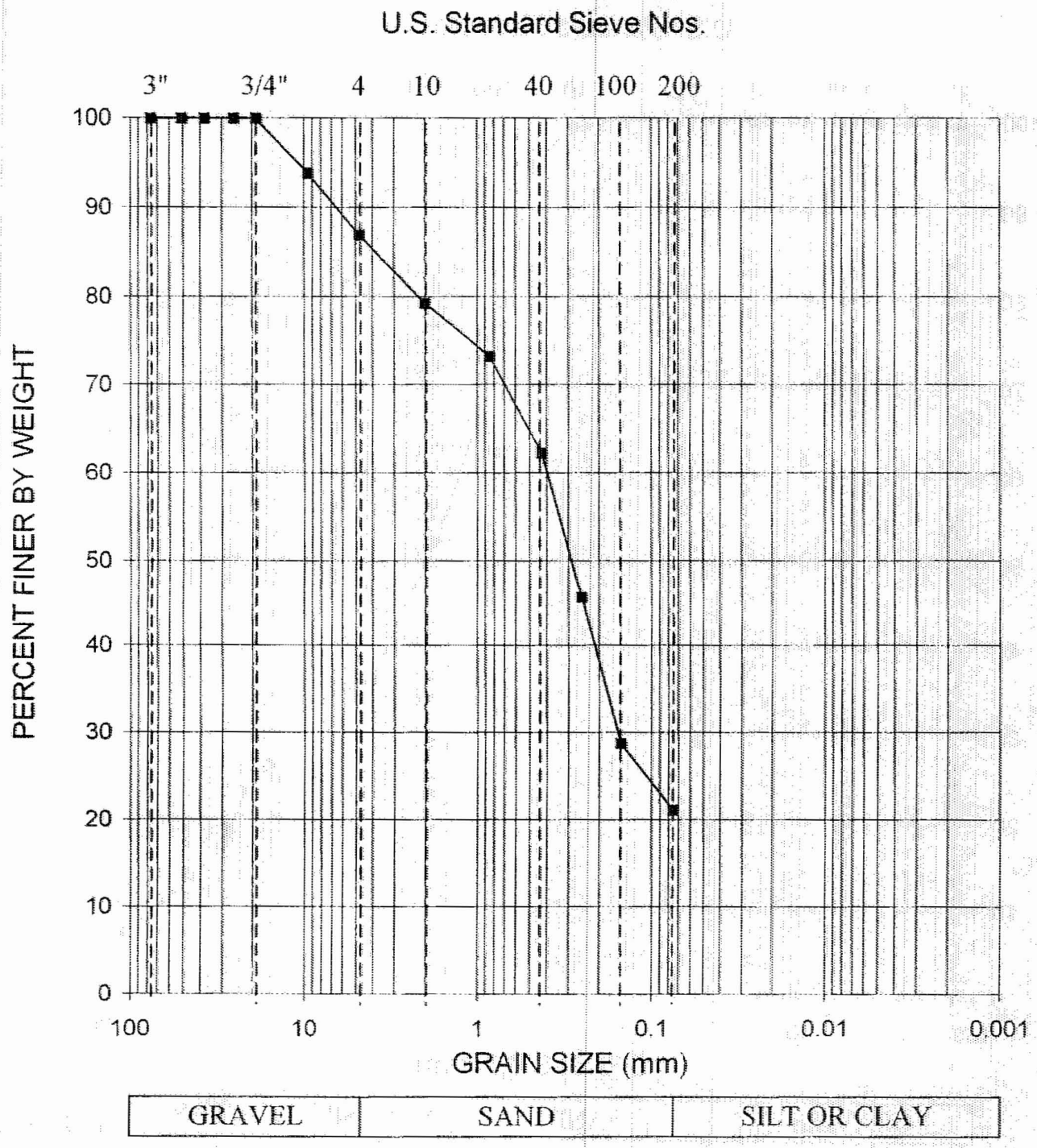


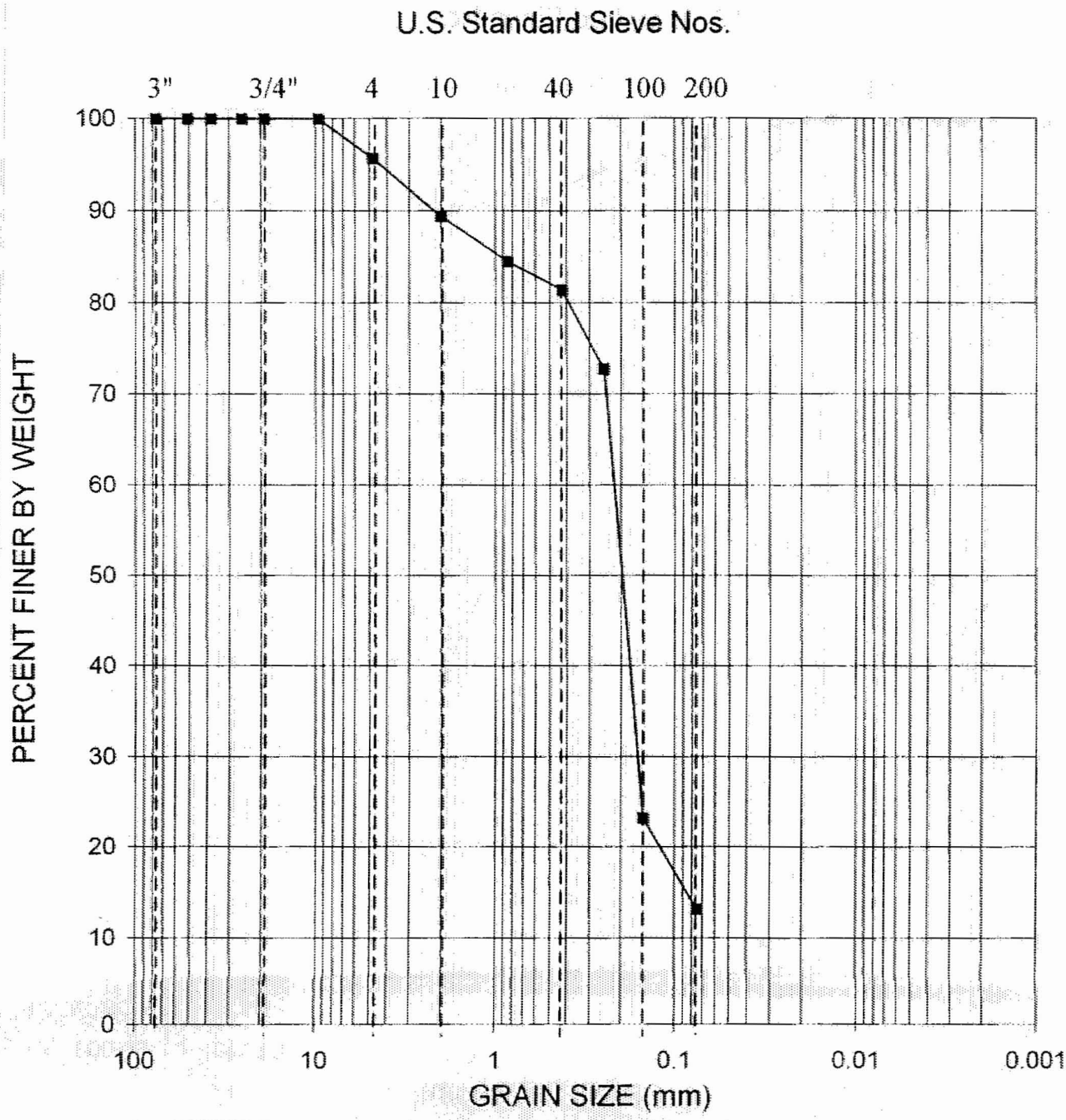
GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland		Contract No.:	06120048.00	Date:	9/11/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI	
B-401	43.5	Silty SAND, trace shells, dark brown	SM			

Schnabel

Schnabel Engineering



GRADATION CURVE

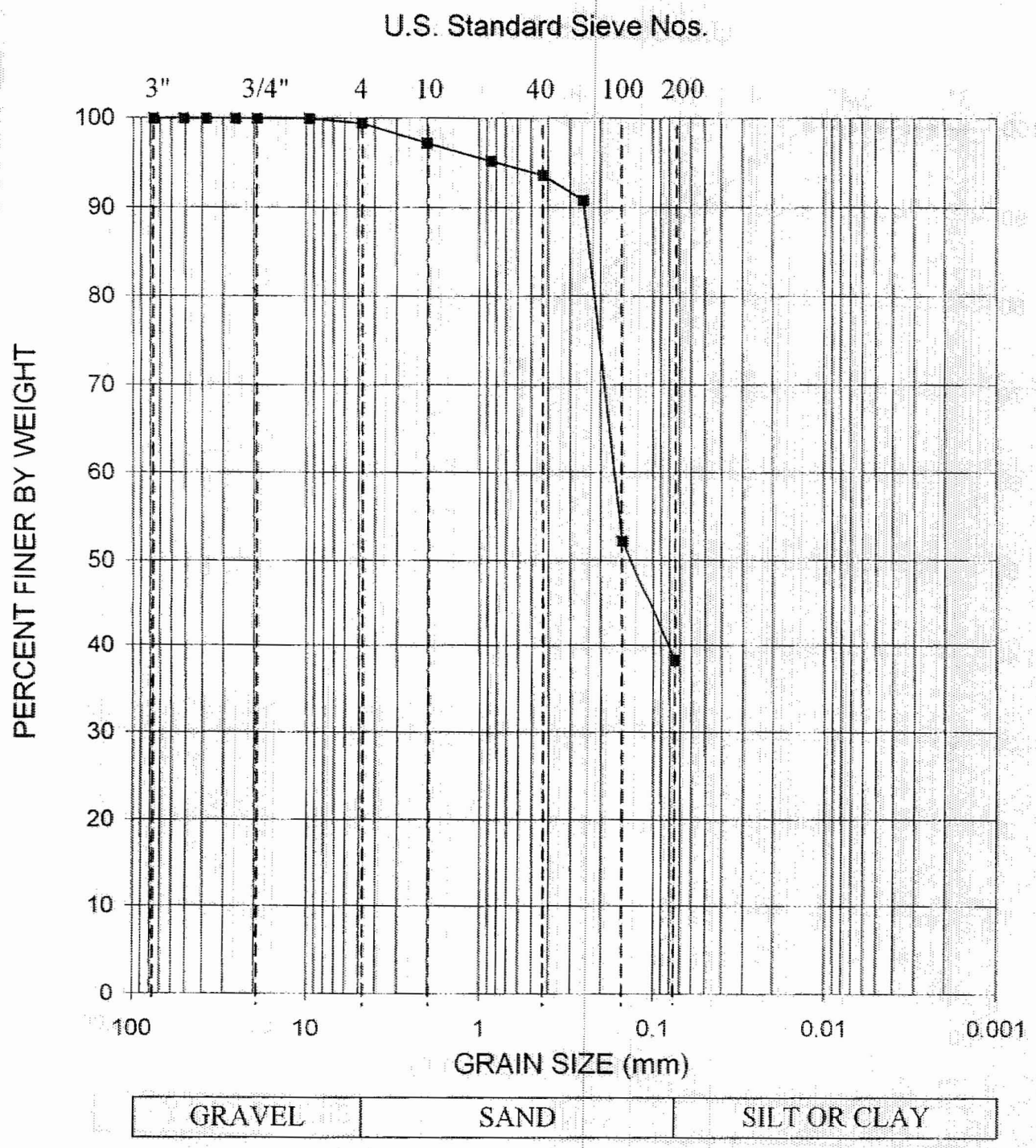
ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.:	06120048.00	Date:	9/11/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-401	58.5	Silty SAND, trace shells, dark gray	SM		

Schnabel

Schnabel Engineering



GRADATION CURVE

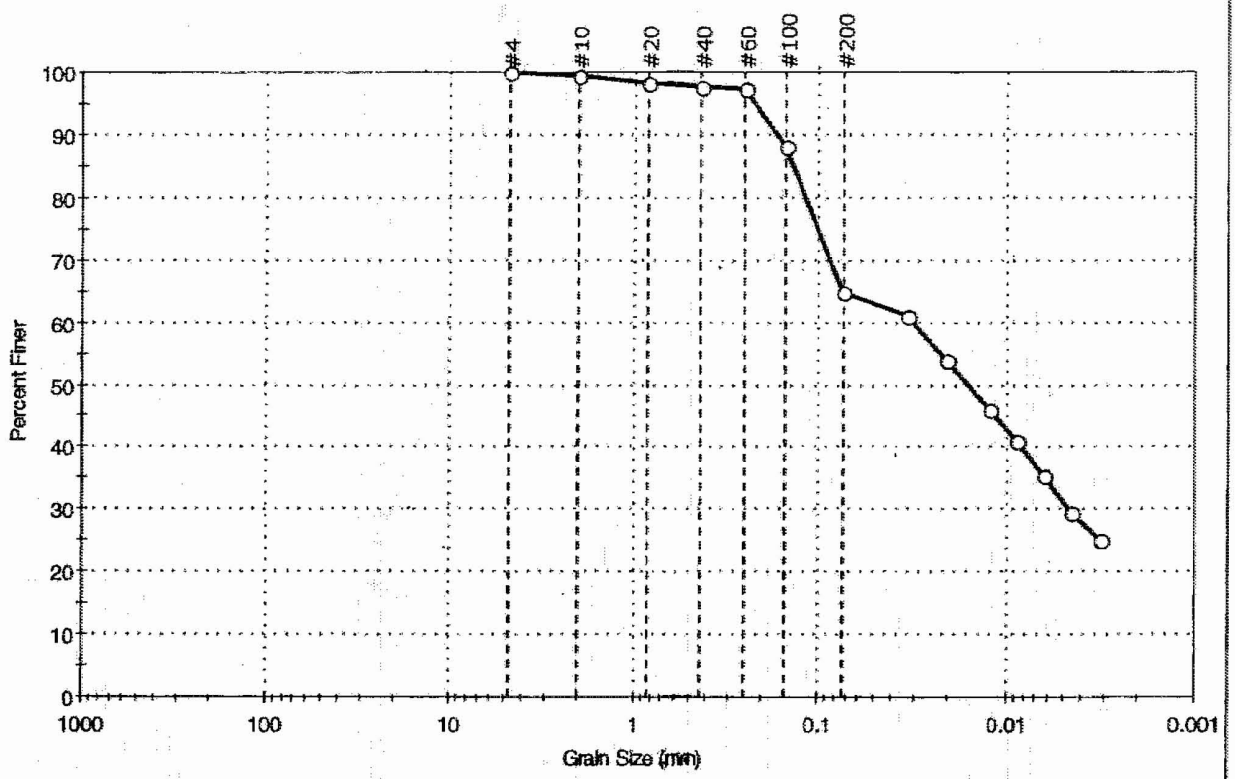
ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland		Contract No.:	06120048.00	Date:	9/11/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI	
B-401	88.5	Silty SAND, contains shells, dark gray	SM			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-401	Sample Type: tube	Tested By:	sam
Sample ID:S-23	Test Date: 10/17/06	Checked By:	mcm
Depth : 98.5-99.8 ft	Test Id: 97806		
Test Comment: ---			
Sample Description:	Moist, dark gray sandy clay		
Sample Comment:	---		

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



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	35.2	64.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	98		
#60	0.25	97		
#100	0.15	88		
#200	0.074	65		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
—	0.0331	61		
—	0.0208	54		
—	0.0122	46		
—	0.0087	41		
—	0.0063	35		
—	0.0045	30		
—	0.0032	25		

Coefficients

D_{85}=0.1360 mm D_{30}=0.0046 mm
D_{60}=0.0311 mm D_{15}=N/A
D_{50}=0.0160 mm D_{10}=N/A
C_u =N/A C_c =N/A

Classification

ASTM Sandy elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (25))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : ---

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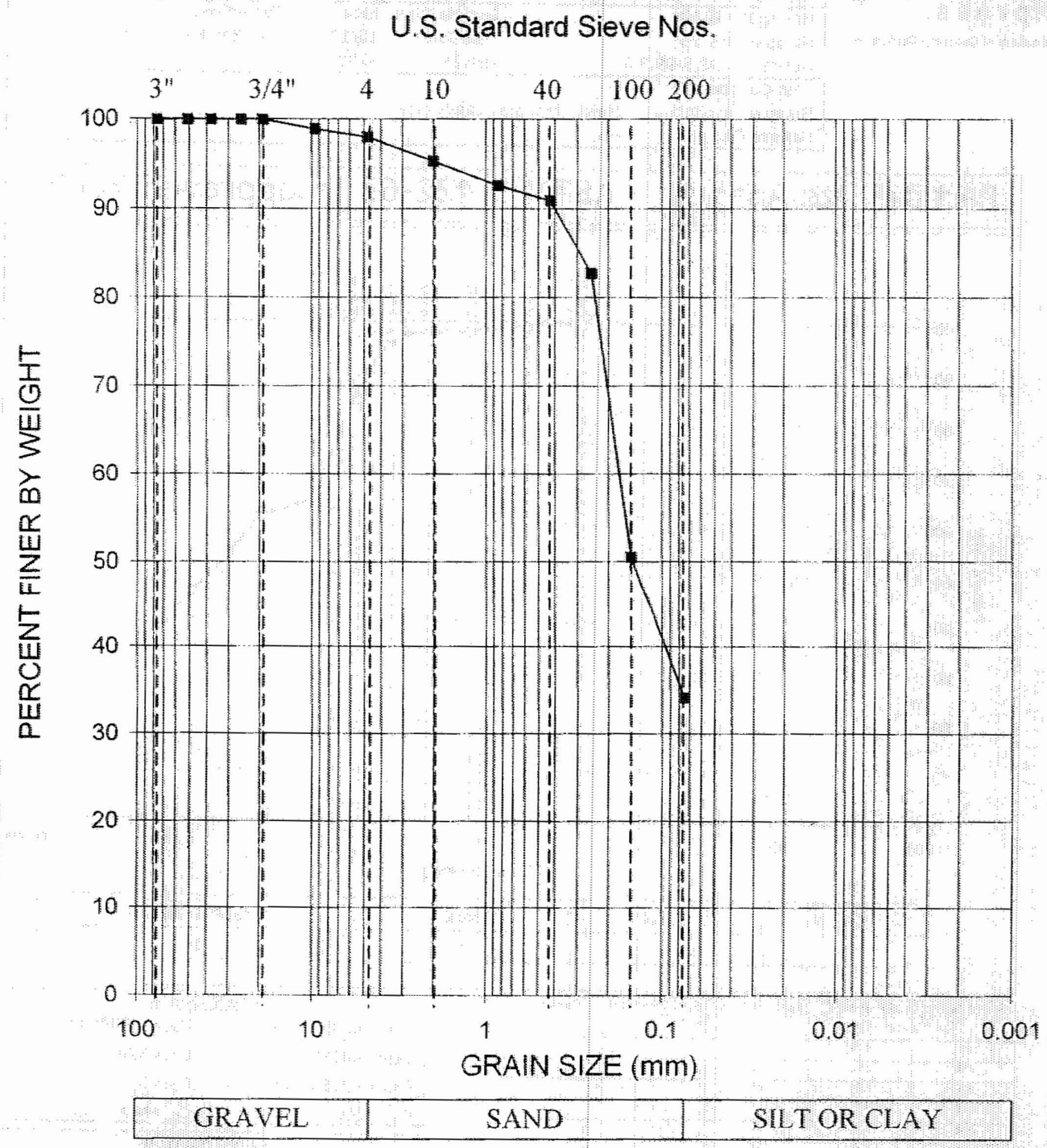


GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.:	06120048.00	Date:	9/11/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-401	108.5	Silty SAND, trace shells, dark green	SM		

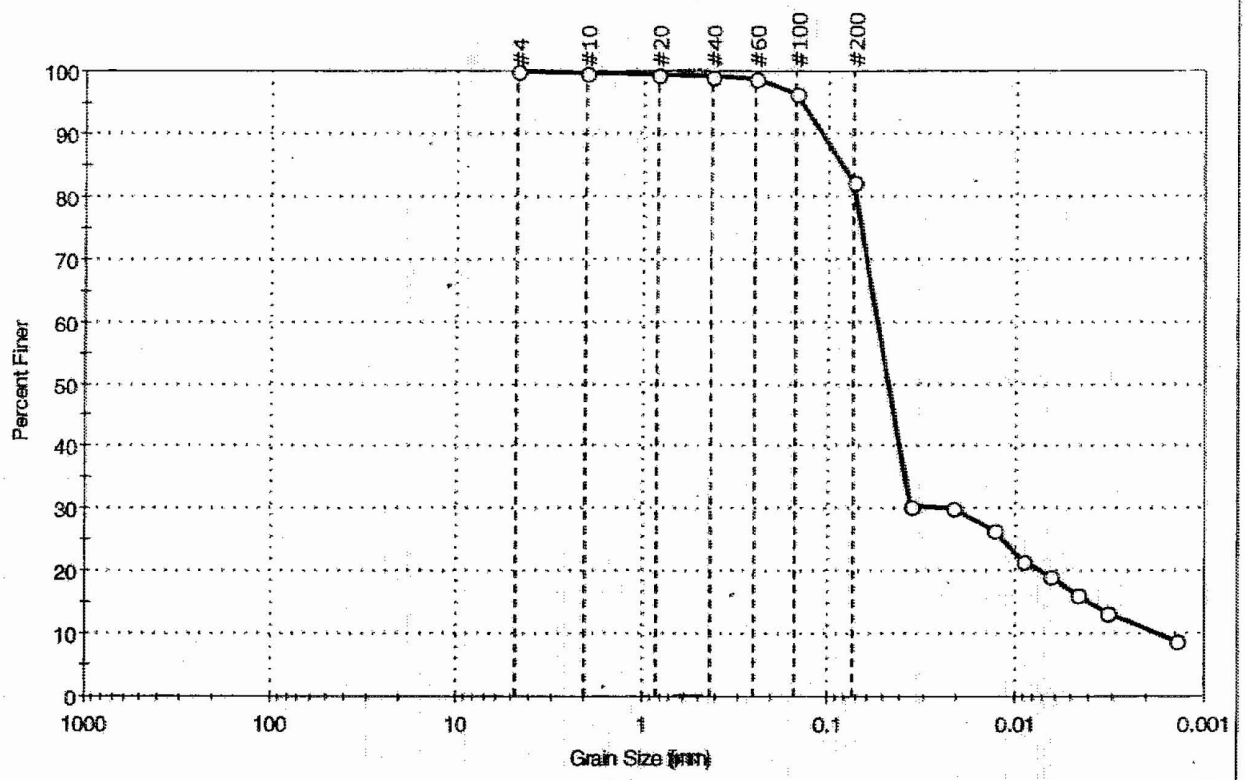
Schnabel

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-401	Sample Type: tube	Tested By:	sam
Sample ID:S-28	Test Date: 10/17/06	Checked By:	mcm
Depth : 123.5-124.8 ft	Test ID: 97814		
Test Comment:	---		
Sample Description:	Moist, dark olive gray sandy clay		
Sample Comment:	---		

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



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	17.6	82.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	97		
#200	0.074	82		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0357	31		
—	0.0213	30		
—	0.0127	26		
---	0.0091	22		
—	0.0064	19		
—	0.0046	16		
—	0.0032	13		
—	0.0014	9		

Coefficients

D_{85} = 0.0844 mm D_{30} = 0.0212 mm
D_{60} = 0.0540 mm D_{15} = 0.0039 mm
D_{50} = 0.0470 mm D_{10} = 0.0017 mm
C_u = N/A C_c = N/A

Classification

ASTM elastic silt with sand (MH)

AASHTO Clayey Soils (A-7-5 (37))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : ---

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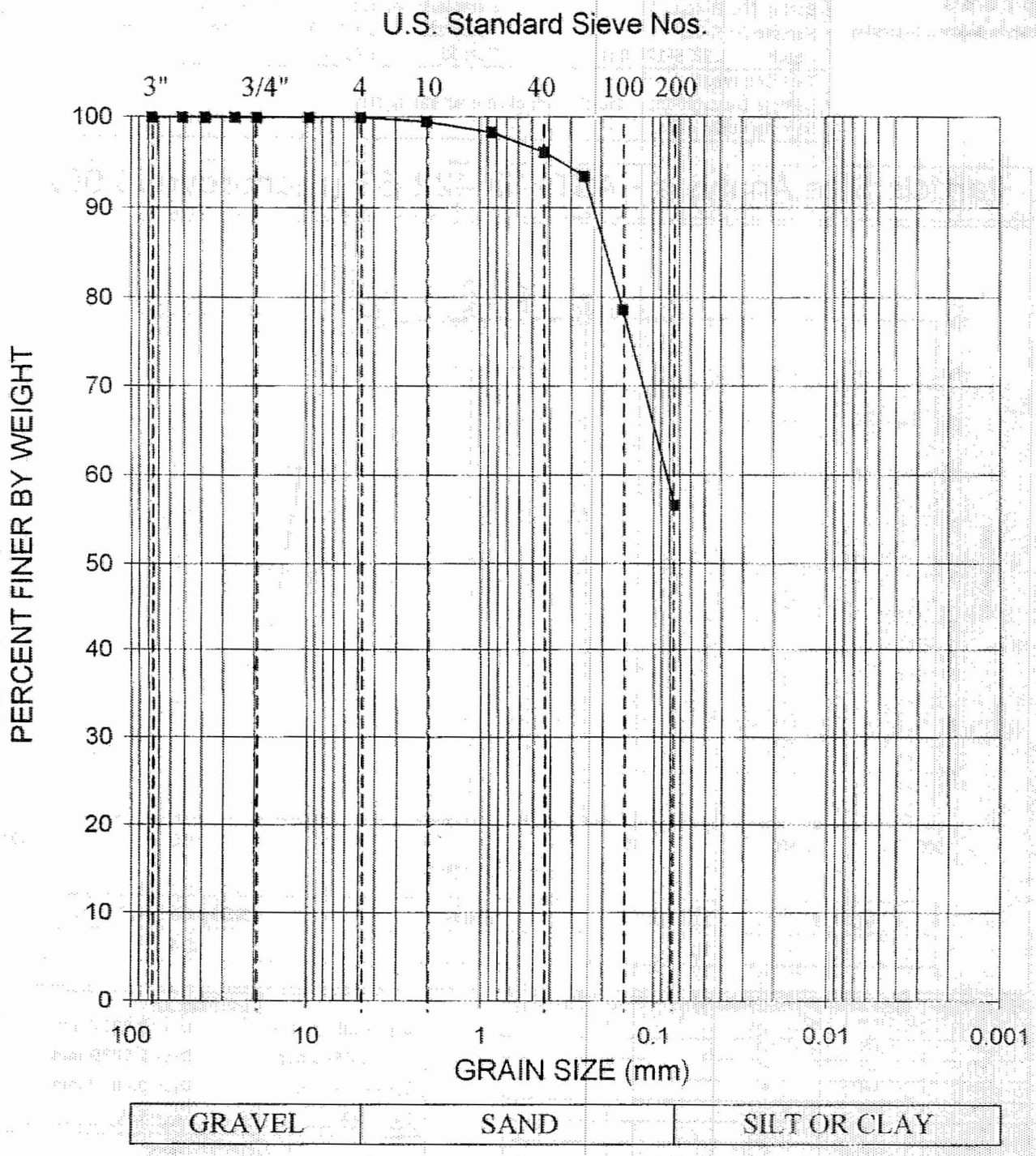


GRADATION CURVE

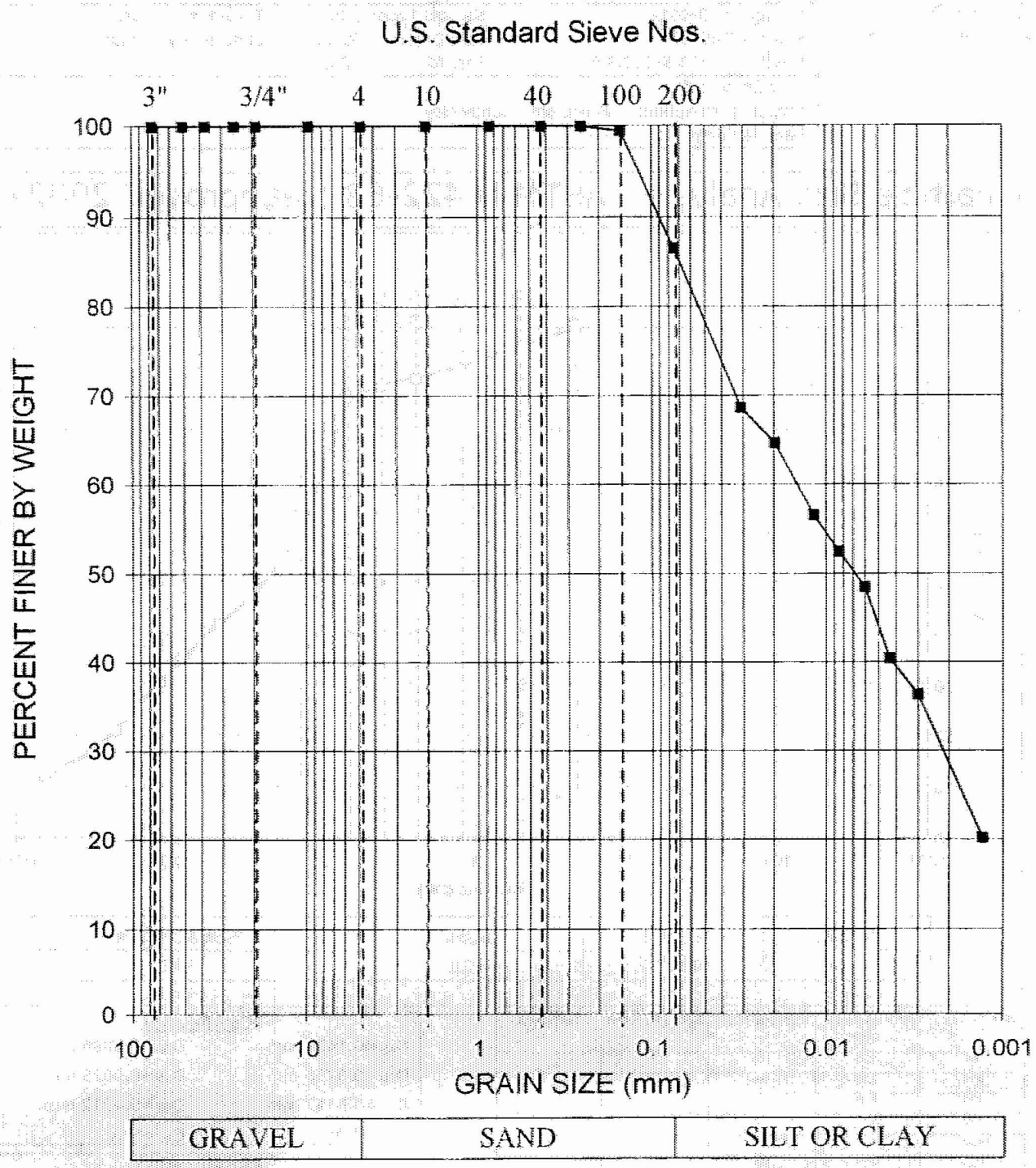
ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.:	06120048.00	Date:	9/11/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-401	128.5	Sandy SILT, contains shells, dark green	ML		

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:	9/18/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-401	148.5	ELASTIC SILT, dark green	MH	150	61

Schnabel

Schnabel Engineering

GeoTesting express
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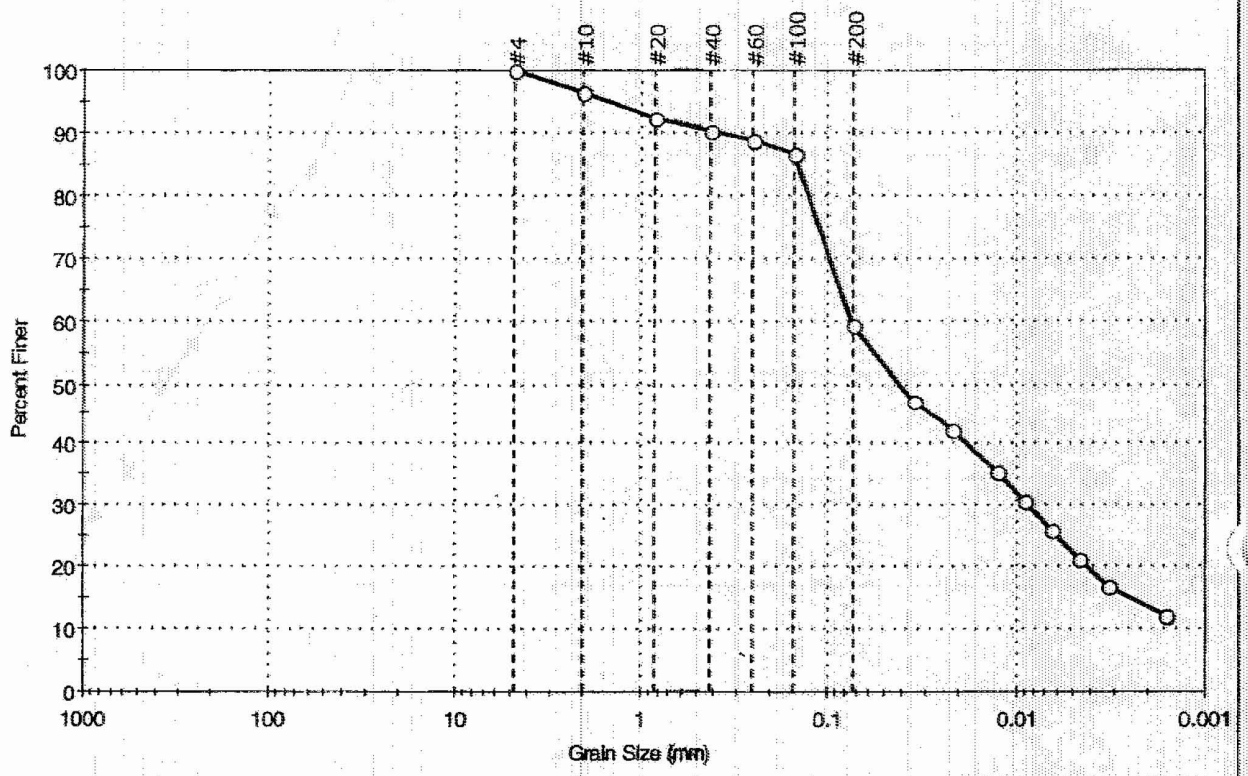
Client:	Schnabel Engineering, Inc.		
Project:	Subsurface Investigation Calvert Cliffs Nuclear PP		
Location:	Calvert County, MD	Project No:	GTX-6880
Boring ID: B-401	Sample Type: tube	Tested By:	sam
Sample ID:S-35	Test Date: 09/22/06	Checked By:	mcm
Depth : 158.5-159.3 ft	Test Id: 97822		
Test Comment: ---			
Sample Description:	Moist, olive sandy clay		
Sample Comment:	---		

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



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	0.0	40.8	59.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	97		
#20	0.84	92		
#40	0.42	90		
#60	0.25	89		
#100	0.15	87		
#200	0.074	59		
--	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0347	47		
---	0.0217	42		
---	0.0126	35		
---	0.0090	31		
---	0.0064	26		
---	0.0046	21		
---	0.0032	17		
---	0.0016	12		

Coefficients

D_{85}=0.1428 mm	D_{30}=0.0086 mm
D_{60}=0.0756 mm	D_{15}=0.0025 mm
D_{50}=0.0417 mm	D_{10}=0.0012 mm
C_u =N/A	C_c =N/A

Classification

ASTM Sandy elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (20))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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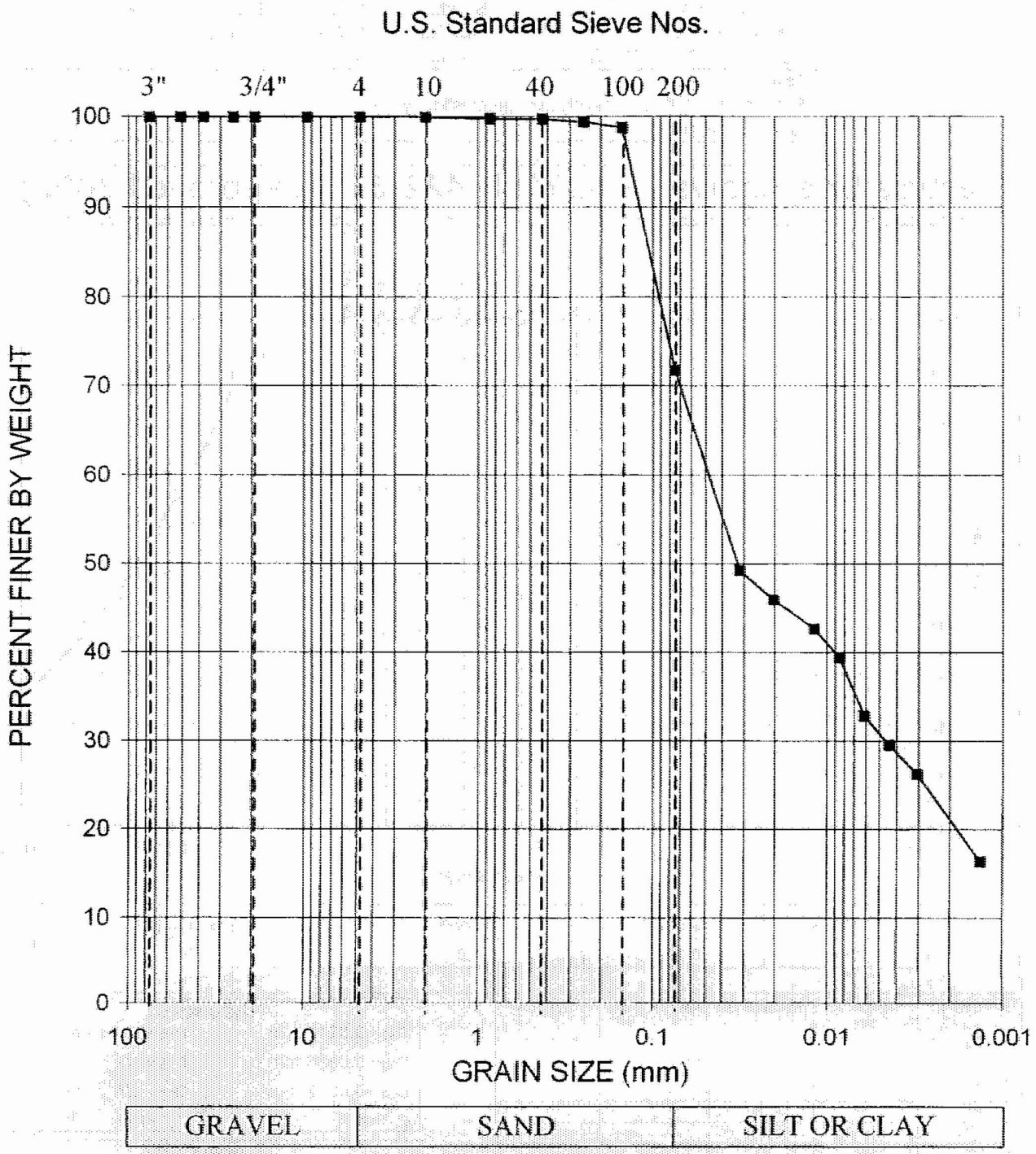

GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland		Contract No.: 06120048.00		Date: 9/14/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-401	168.5	ELASTIC SILT, with sand, dark green	MH	103	51

Schnabel

Schnabel Engineering

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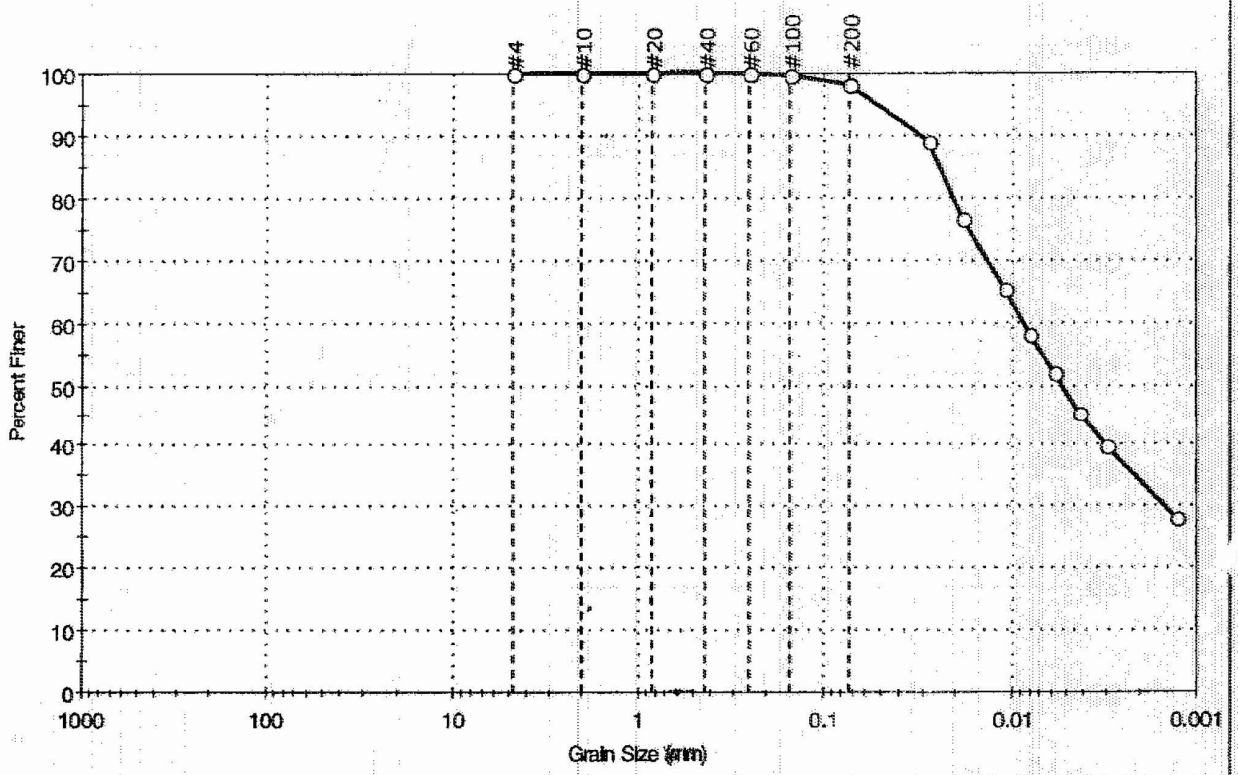
Client:	Schnabel Engineering, Inc.		
Project:	Subsurface Investigation Calvert Cliffs Nuclear PP		
Location:	Calvert County, MD	Project No:	GTX-6880
Boring ID: B-401	Sample Type: tube	Tested By:	sam
Sample ID: S-37	Test Date: 10/27/06	Checked By:	mcm
Depth : 173.5-174.4 ft	Test Id: 97830		
Test Comment: ---			
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	1.8	98.2

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
---	0.0281	89		
---	0.0184	77		
---	0.0109	65		
---	0.0080	58		
---	0.0057	52		
---	0.0041	45		
---	0.0030	40		
---	0.0013	28		

Coefficients

D_{85} = 0.0243 mm	D_{30} = 0.0015 mm
D_{60} = 0.0086 mm	D_{15} = N/A
D_{50} = 0.0052 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM fat clay (CH)

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

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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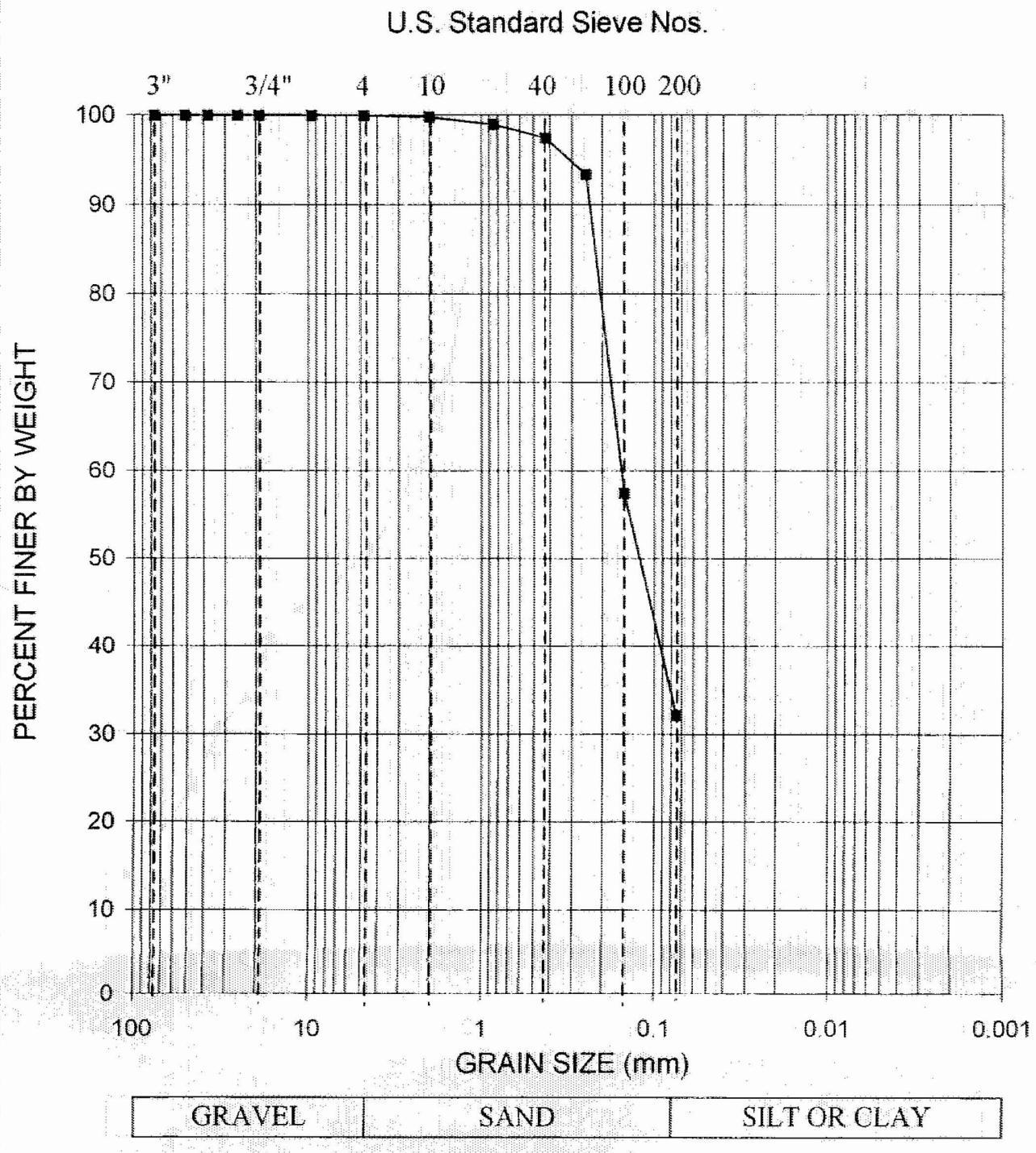


GRADATION CURVE

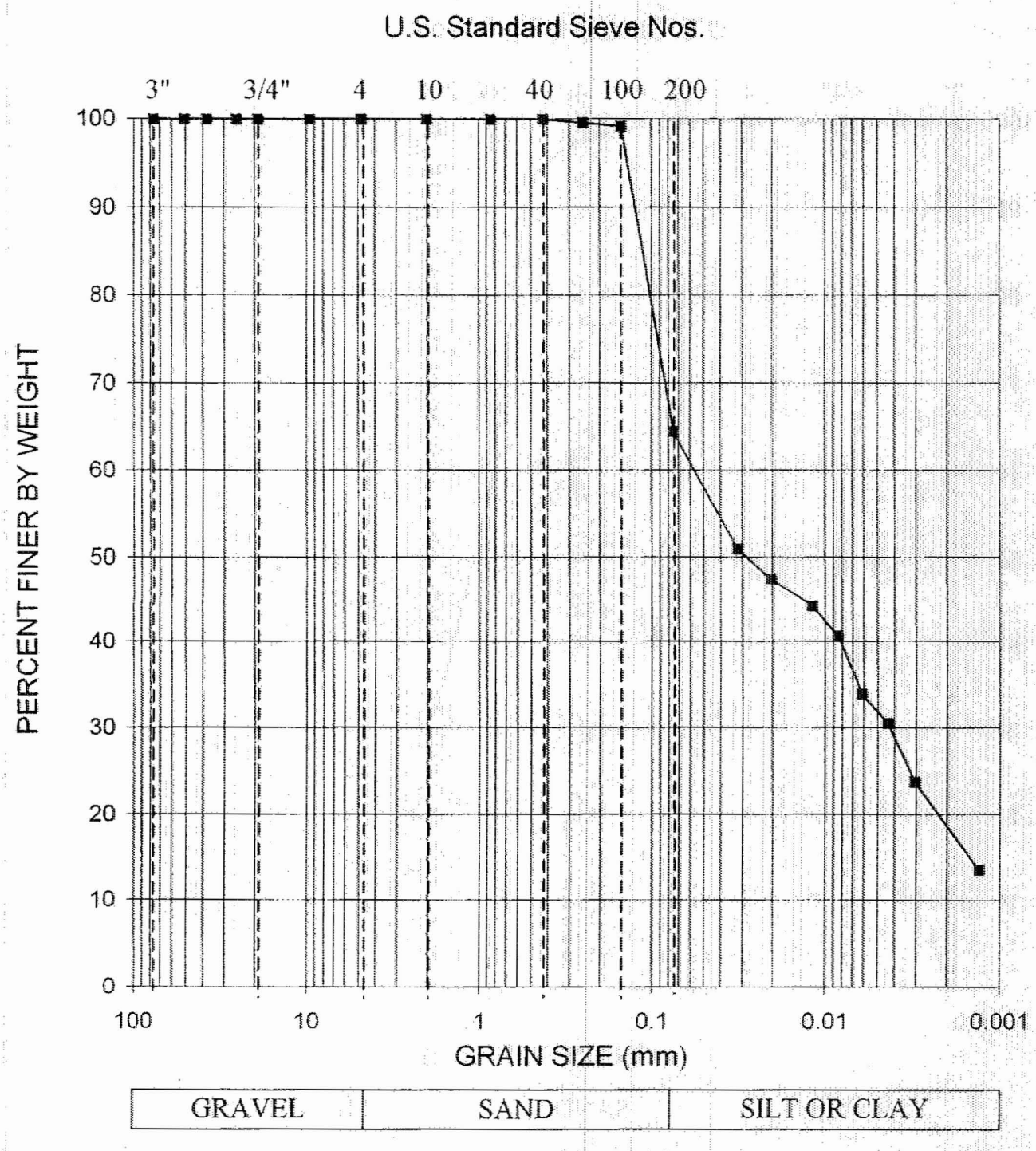
ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland	Contract No.	06120048.00	Date:	9/11/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-401	183.5	Silty SAND, contains shells, dark 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:	9/12/2006

Boring No.	Depth (ft)	Sample Description	Class.	LL	PI
B-401	208.5	Sandy ELASTIC SILT,dark green	MH	113	39

Schnabel

Schnabel Engineering