
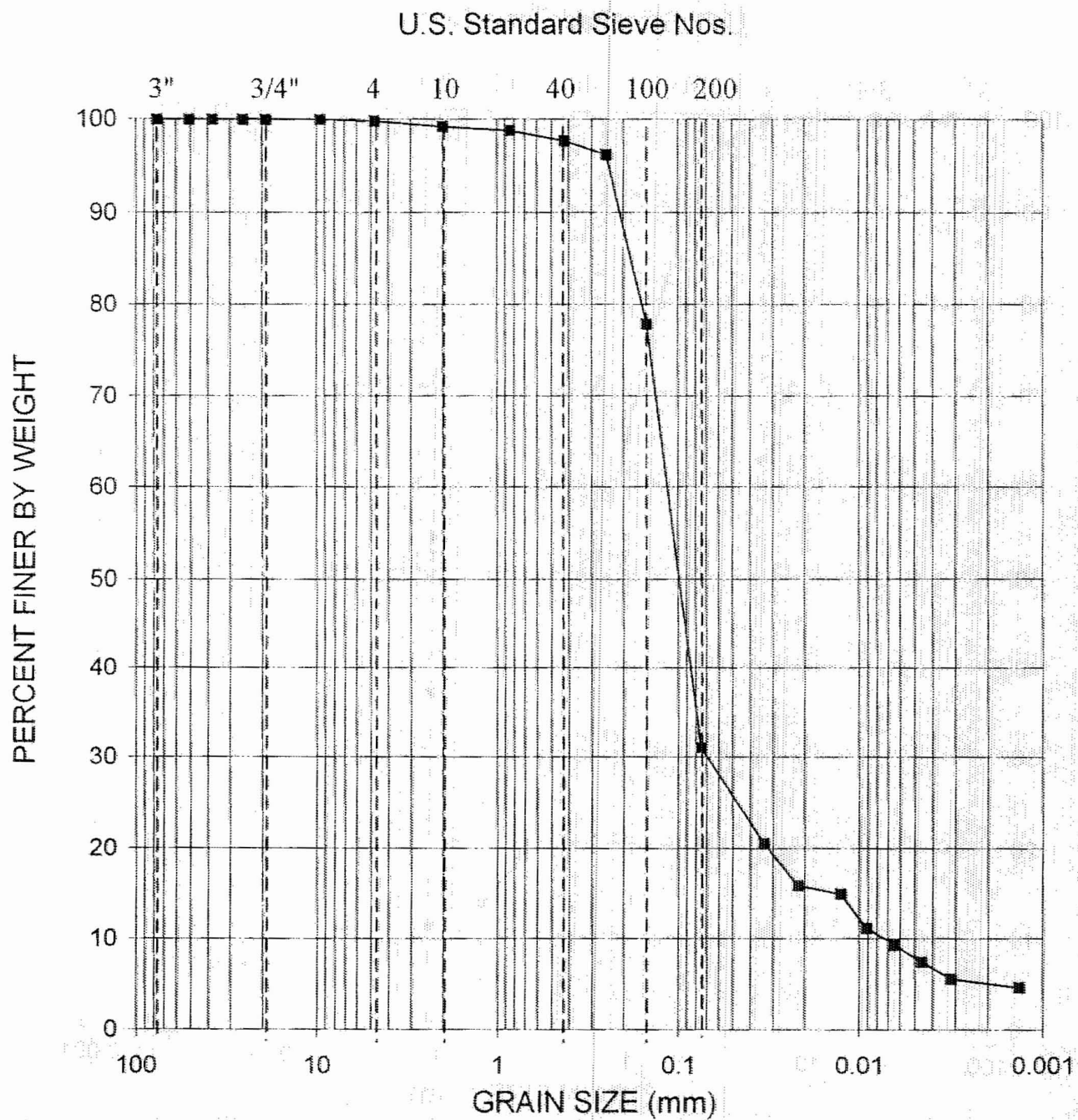



GRAVEL	SAND	SILT OR CLAY
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**GRADATION CURVE**  
ASTM D422

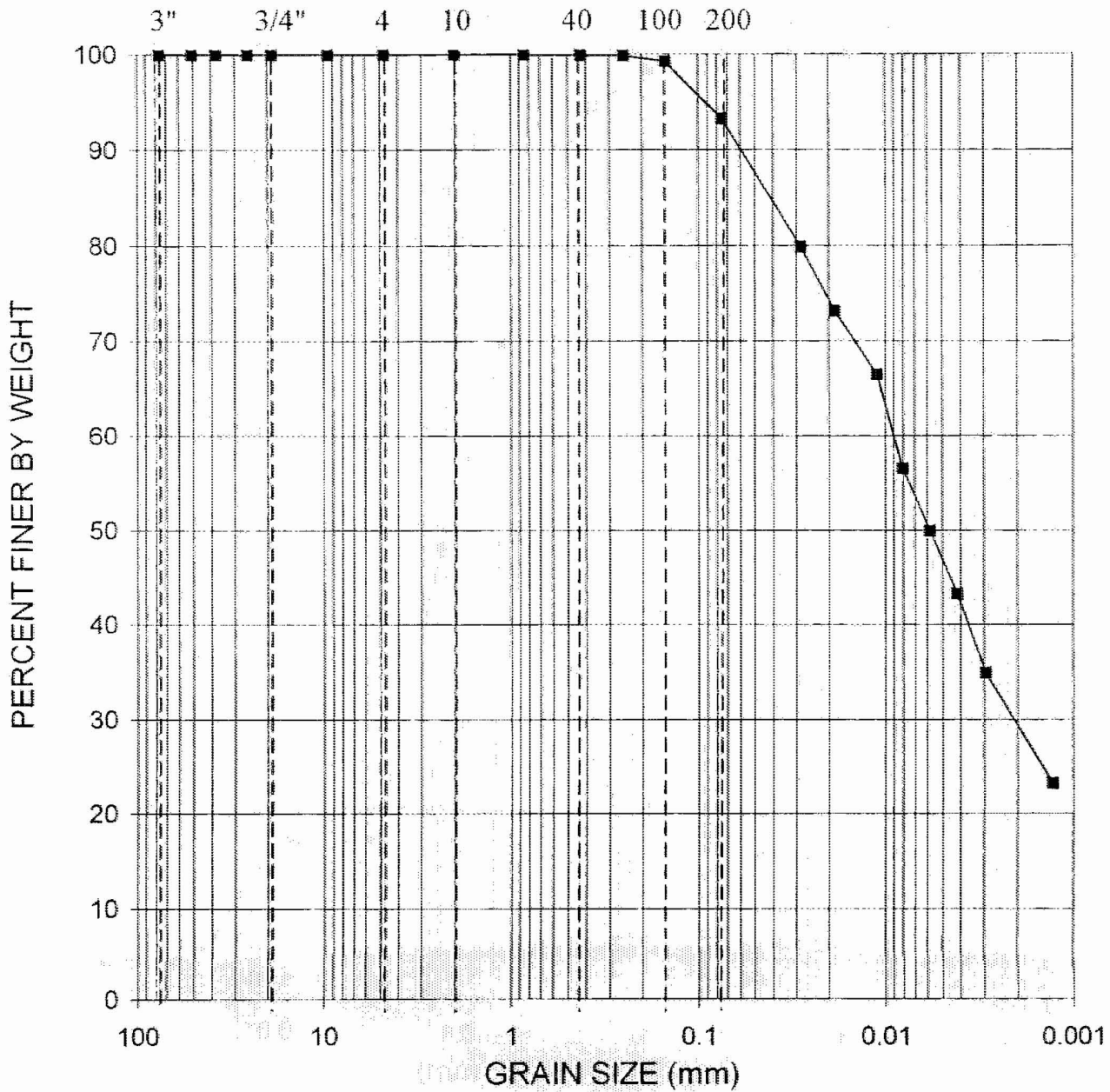
Project:	Constellation Energy Group COLA Project, Calvert Cliffs Nuclear Power Plant (CCNPP), Calvert County, Maryland			Contract No.:	06120048.00	Date:	10/4/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI		
B-415	28.5	Poorly Graded SAND, with silt, light brown	SP-SM				



**GRADATION CURVE**  
ASTM D422


Project:	Constellation Energy Group COLA Project, Calvert Cliffs Nuclear Power 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	

# U.S. Standard Sieve Nos.

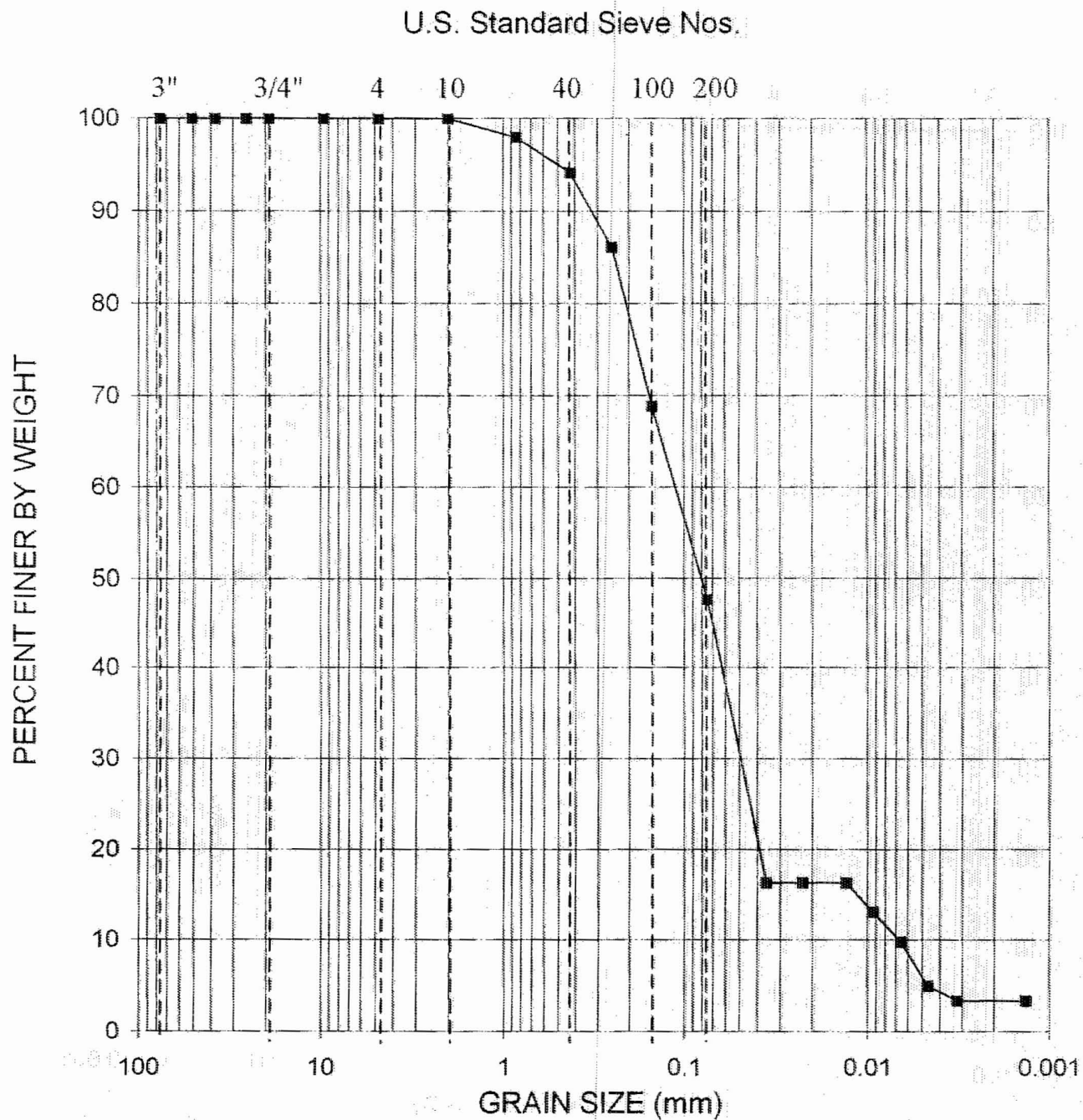


GRAVEL	SAND	SILT OR CLAY
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## GRADATION CURVE ASTM D422

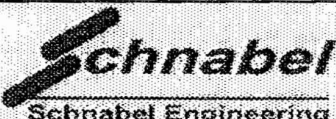
Project:	Constellation Energy Group COLA Project, Calvert Cliffs Nuclear Power Plant (CCNPP), Calvert County, Maryland			Contract No.:	06120048.00	Date:	10/18/2006
Boring No.	Depth (ft)	Sample Description	Class.	LL	PI		
B-415	58.5	FAT CLAY, trace sand, dark gray	CH	61	40		





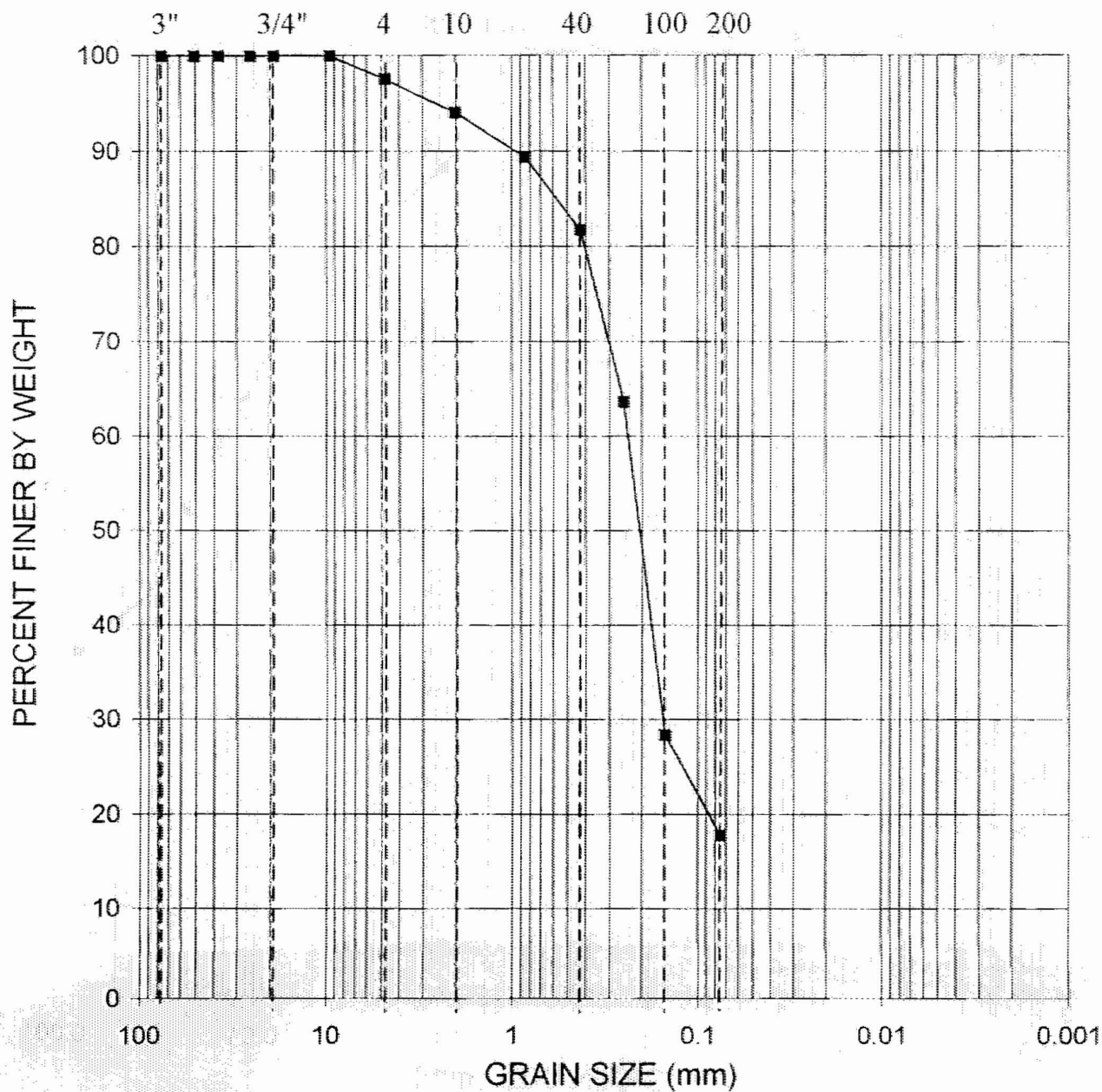
### GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs Nuclear Power 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			

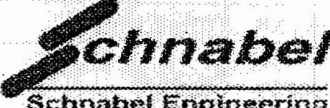


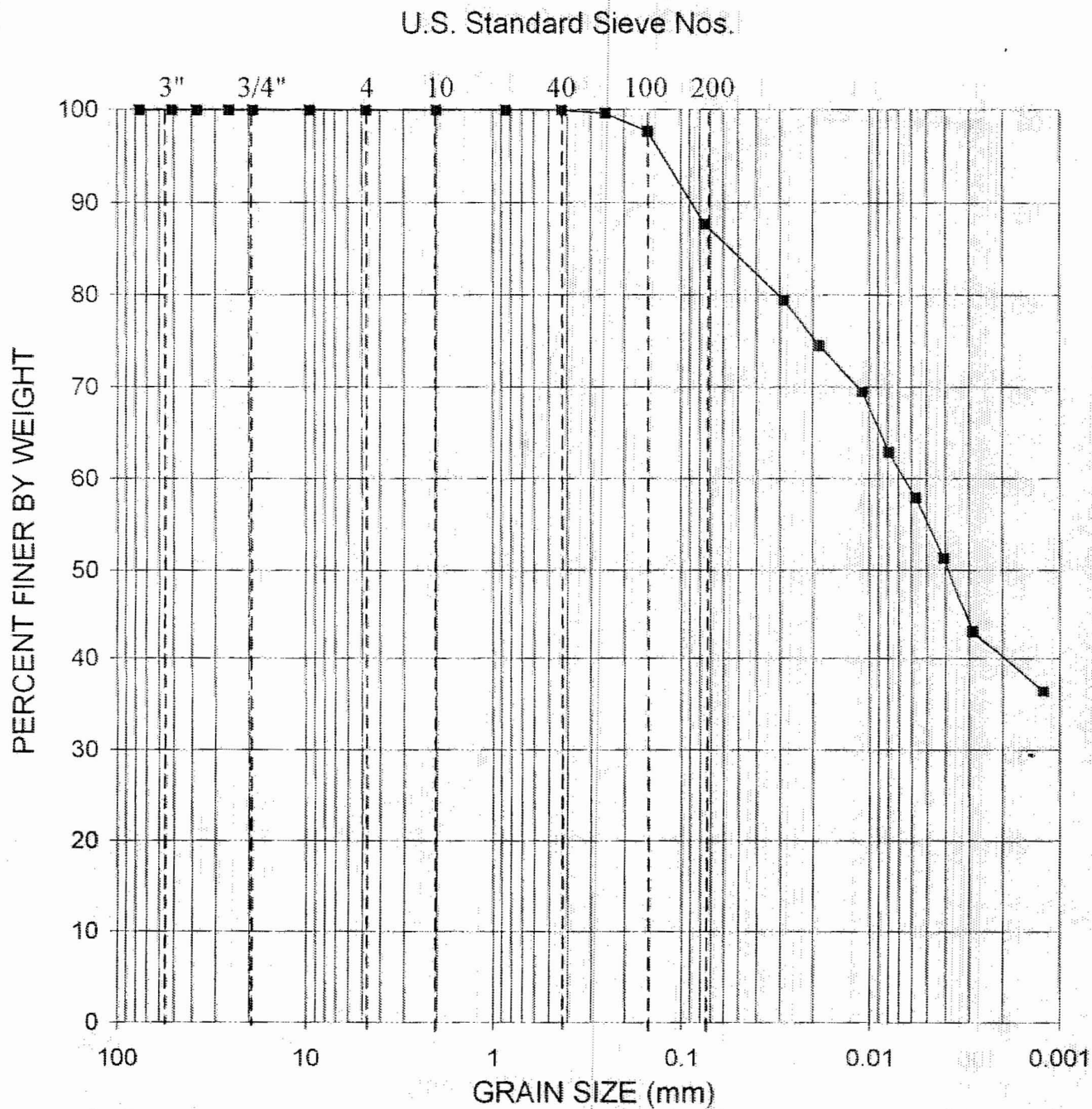
U.S. Standard Sieve Nos.




GRAVEL	SAND	SILT OR CLAY
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GRADATION CURVE  
ASTM D422

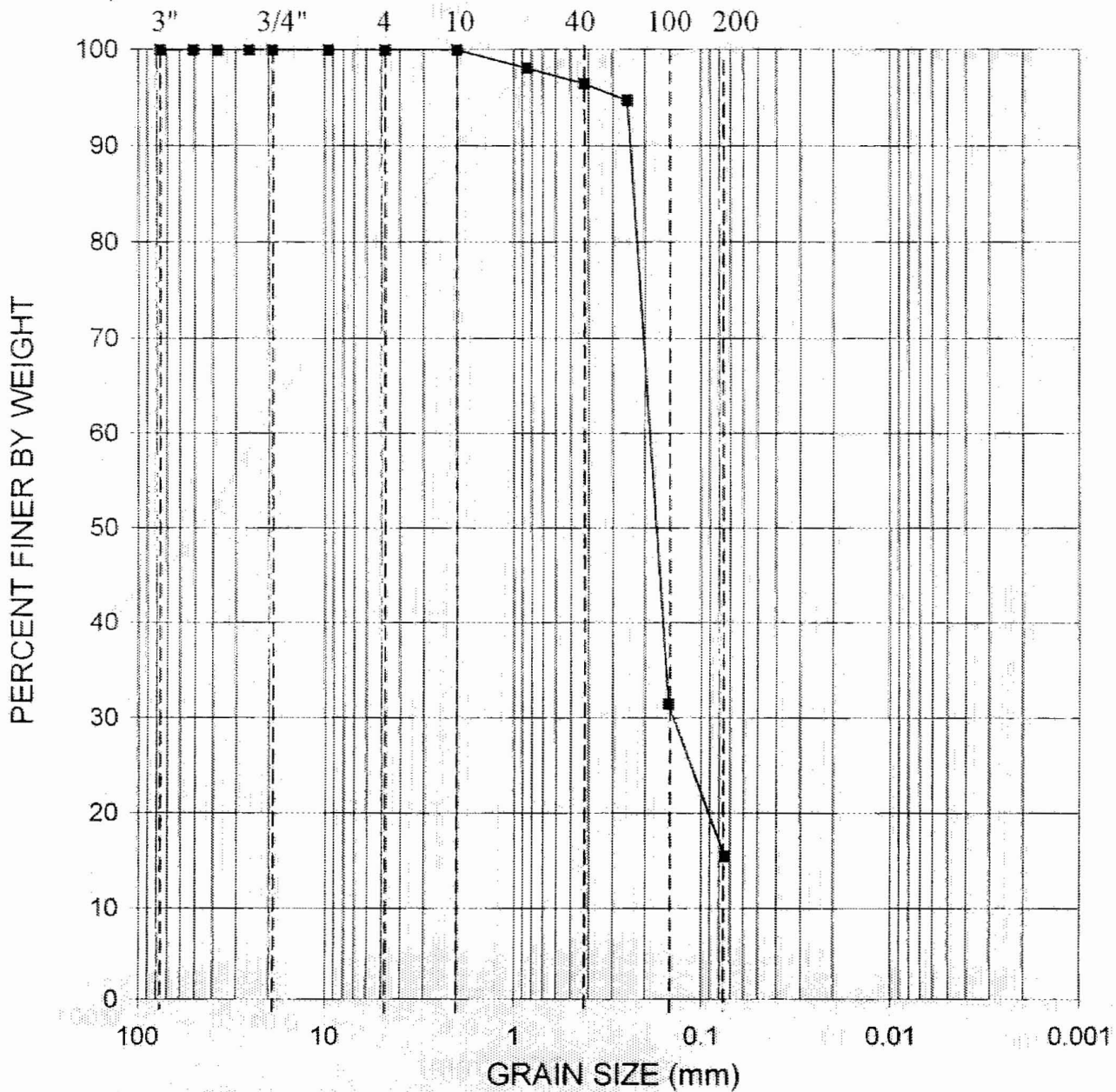
Project:	Constellation Energy Group COLA Project, Calvert Cliffs Nuclear Power Plant (CCNPP), Calvert County, Maryland			Contract No.:	06120048.00	Date:	10/4/2006
Boring No.	Depth (ft)	Sample Description	Class	LL	PI		
B-415	83.5	Silty SAND, trace shells, green	SM				



**GRADATION CURVE**  
ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs Nuclear Power 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			

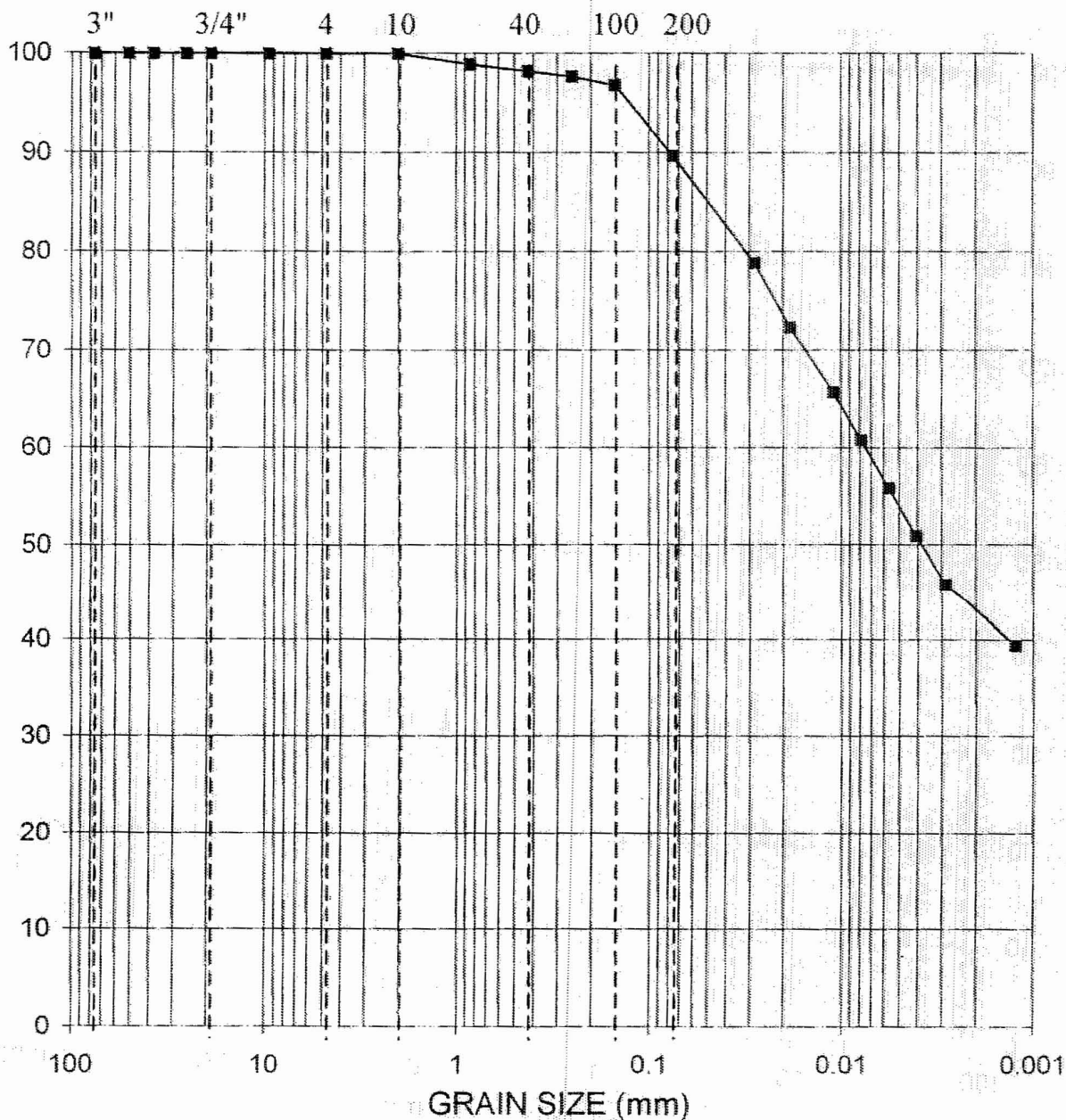
# U.S. Standard Sieve Nos.





PERCENT FINER BY WEIGHT

U.S. Standard Sieve Nos.




GRAVEL

SAND

SILT OR CLAY

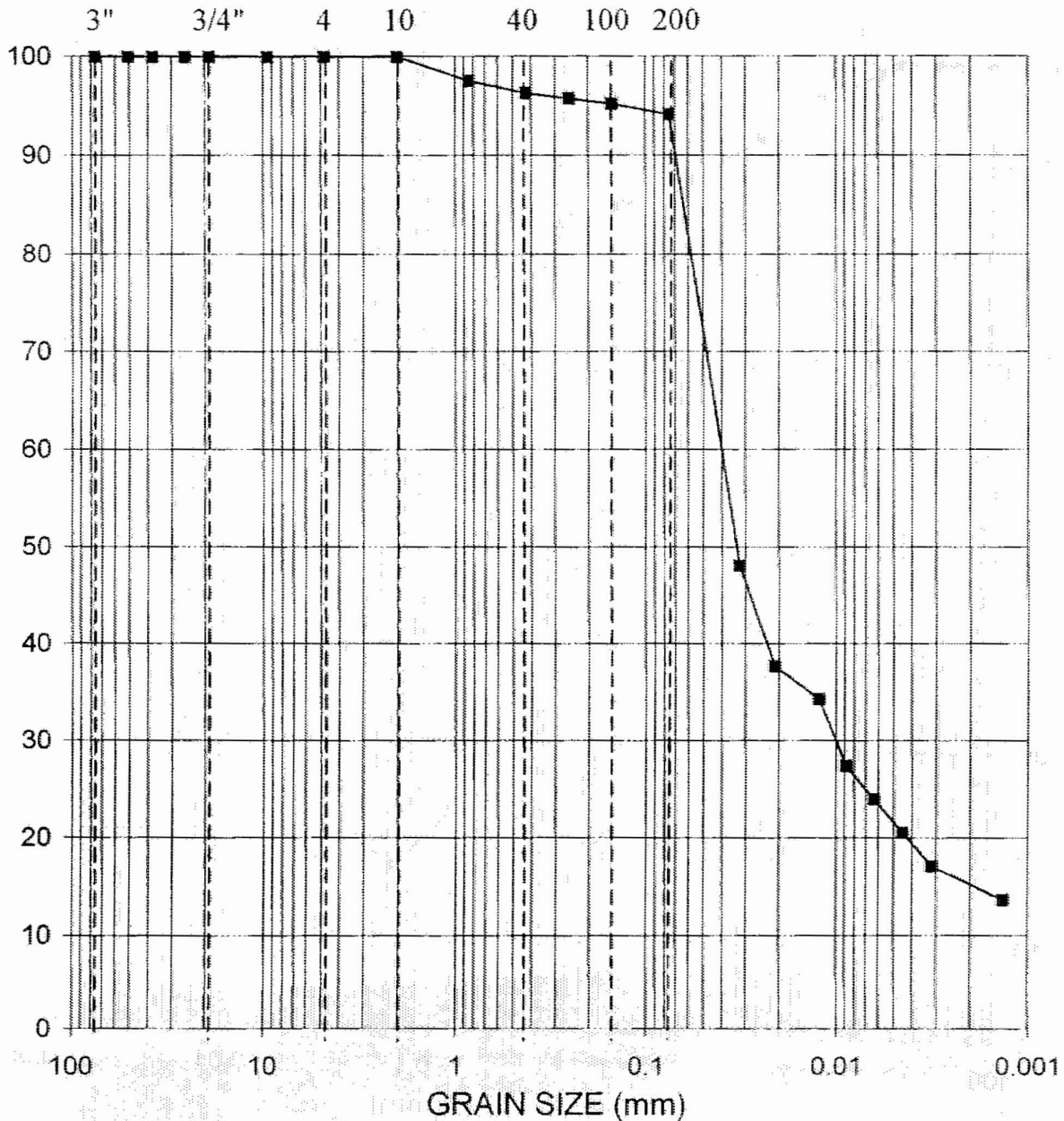
### GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs Nuclear Power 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		

# U.S. Standard Sieve Nos.


PERCENT FINER BY WEIGHT



GRAVEL	SAND	SILT OR CLAY
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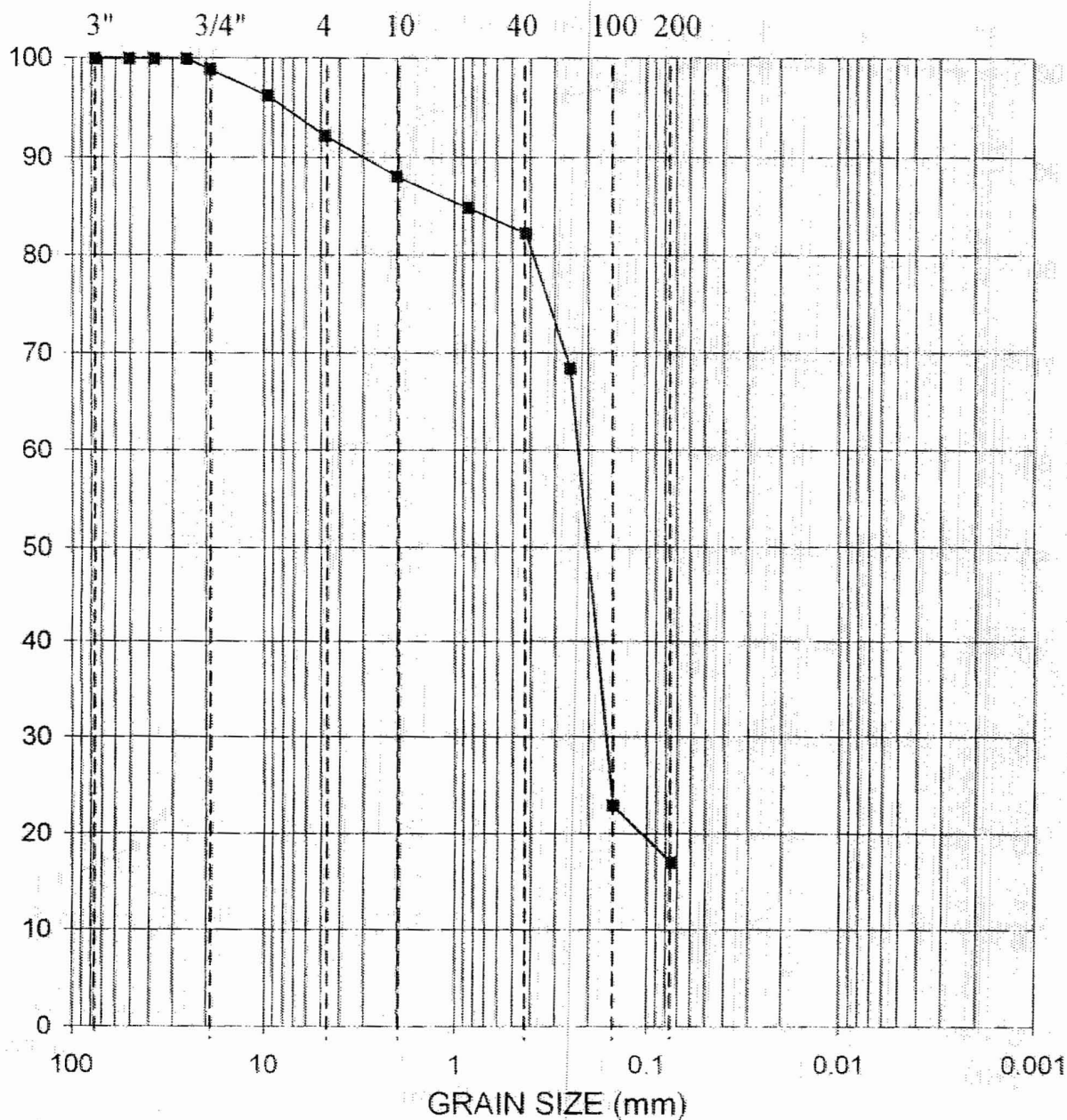
## GRADATION CURVE

ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs Nuclear Power 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			

PERCENT FINER BY WEIGHT


U.S. Standard Sieve Nos.



GRAVEL	SAND	SILT OR CLAY
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GRADATION CURVE

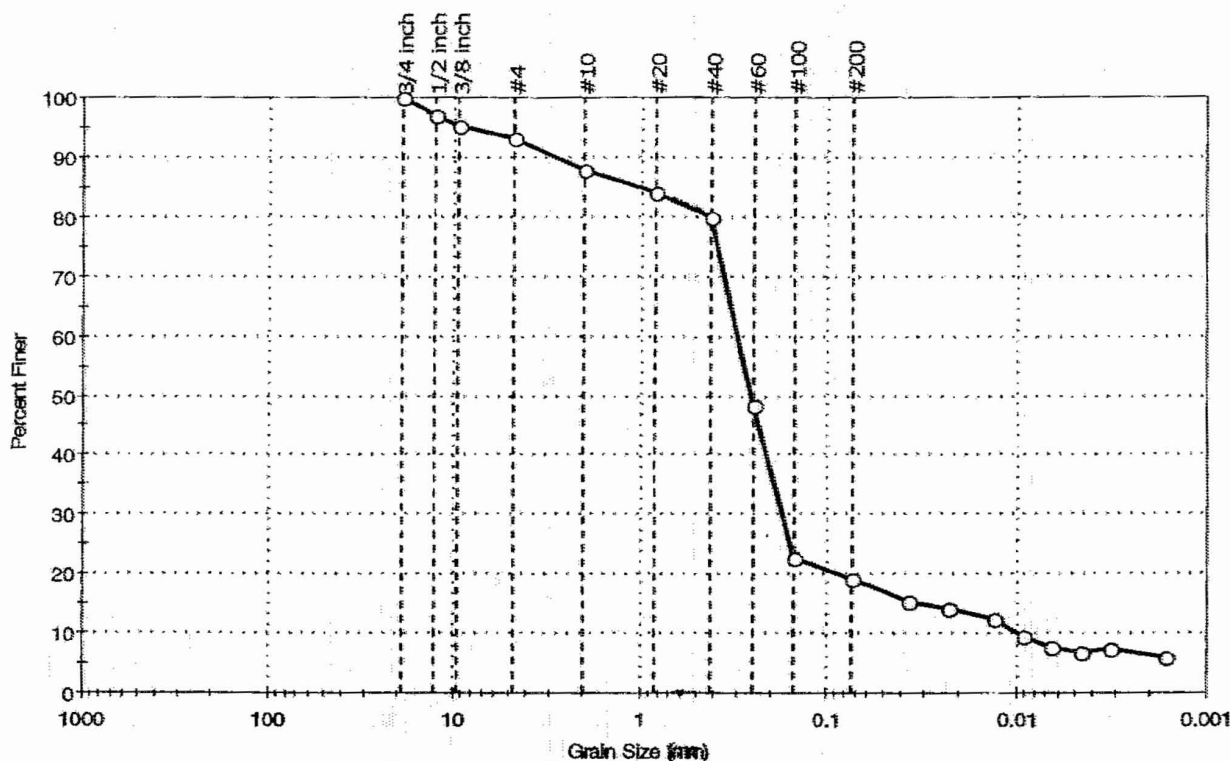
ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs Nuclear Power 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				



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	19.0	100		
1/2 inch	12.5	97		
3/8 inch	9.5	95		
#4	4.75	93		
#10	2.0	86		
#20	0.84	84		
#40	0.42	80		
#60	0.25	48		
#100	0.15	23		
#200	0.075	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	5		

### Coefficients

D<sub>85</sub> = 1.0473 mm      D<sub>30</sub> = 0.1724 mm  
D<sub>60</sub> = 0.3025 mm      D<sub>15</sub> = 0.0333 mm  
D<sub>50</sub> = 0.2566 mm      D<sub>10</sub> = 0.0099 mm  
C<sub>u</sub> = N/A      C<sub>c</sub> = N/A

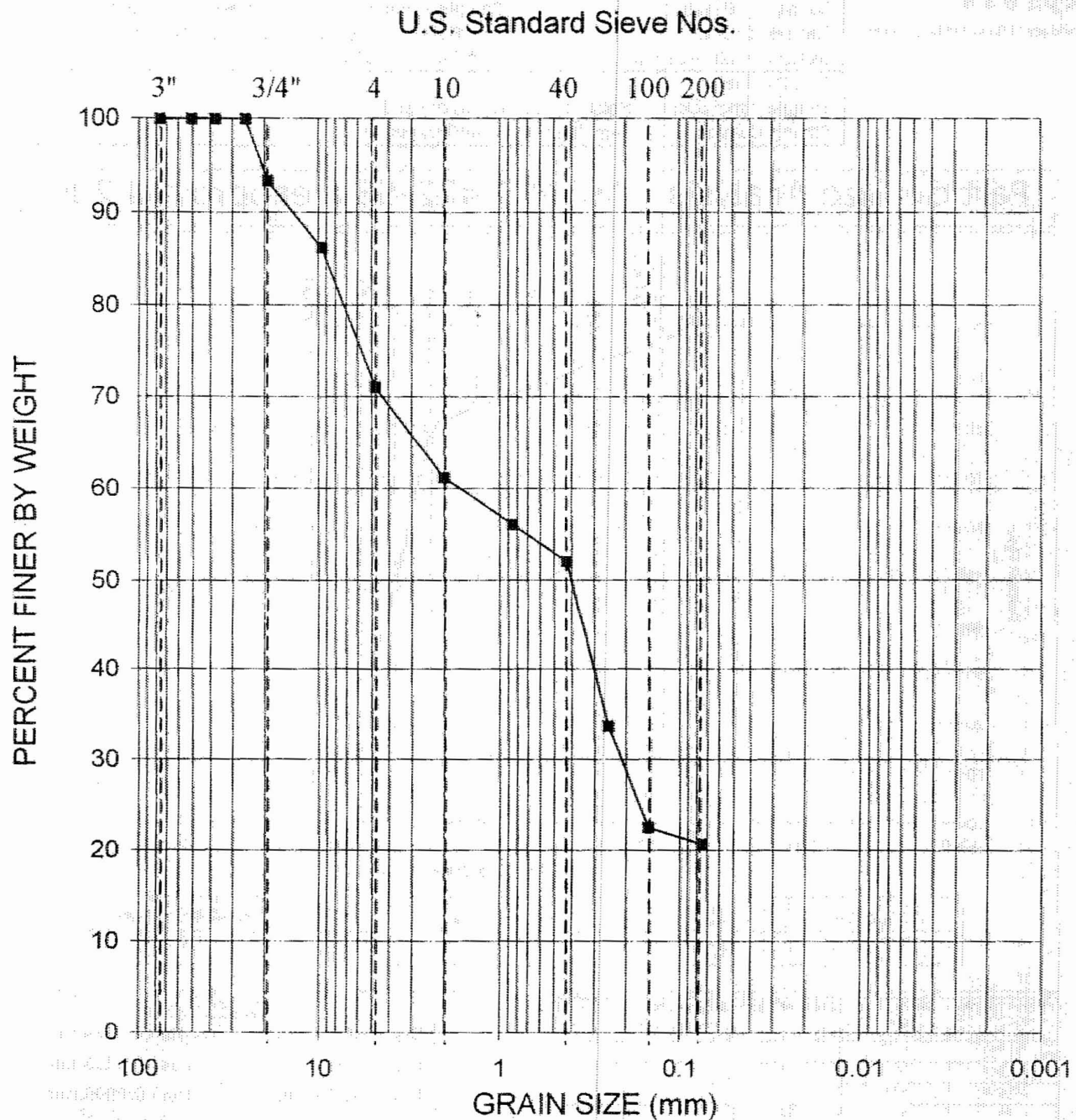
### Classification

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

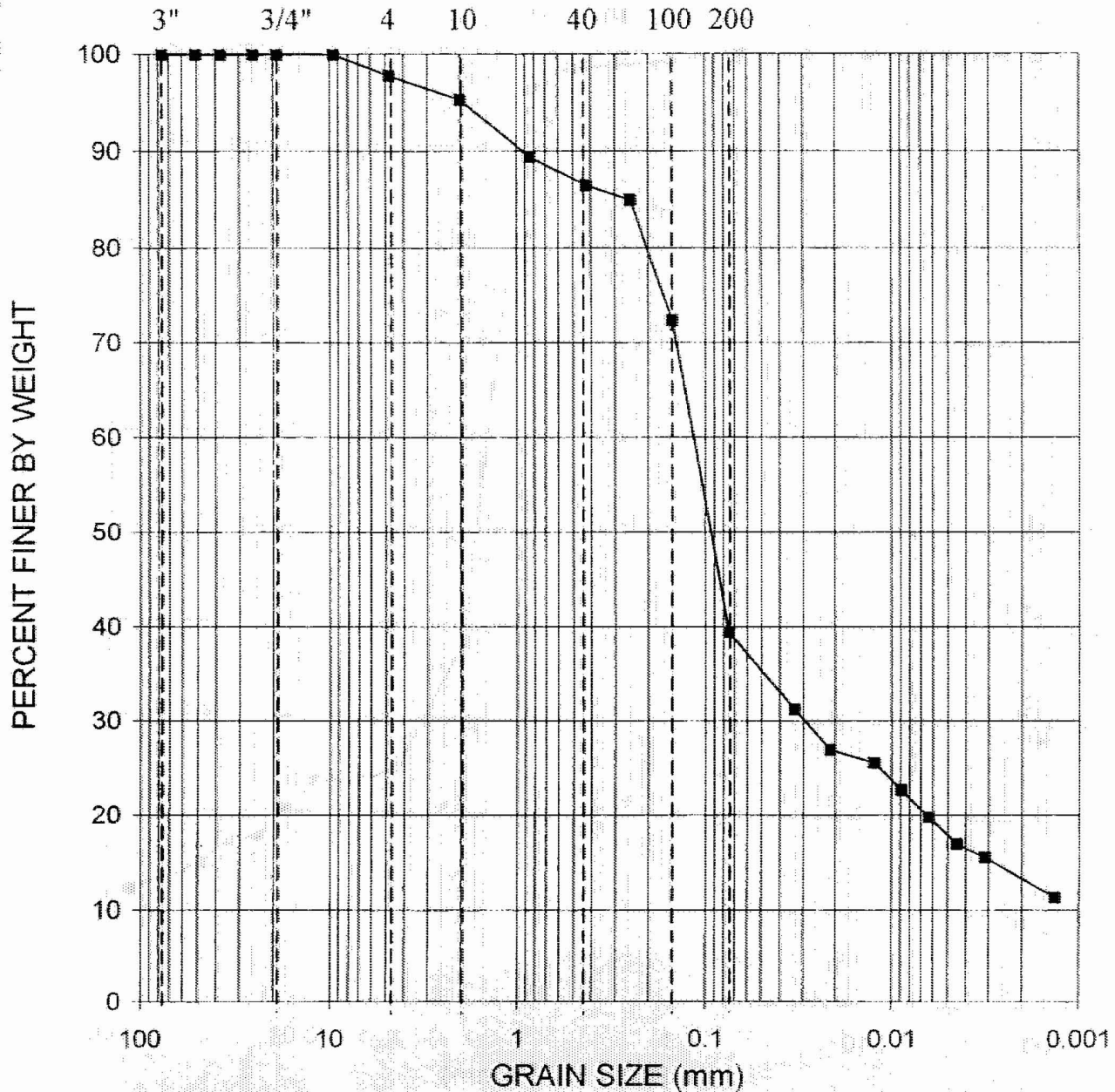


GRAVEL	SAND	SILT OR CLAY
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**GRADATION CURVE**  
ASTM D422

Project:		Constellation Energy Group COLA Project, Calvert Cliffs Nuclear Power 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				


# U.S. Standard Sieve Nos.



GRAVEL	SAND	SILT OR CLAY
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## GRADATION CURVE

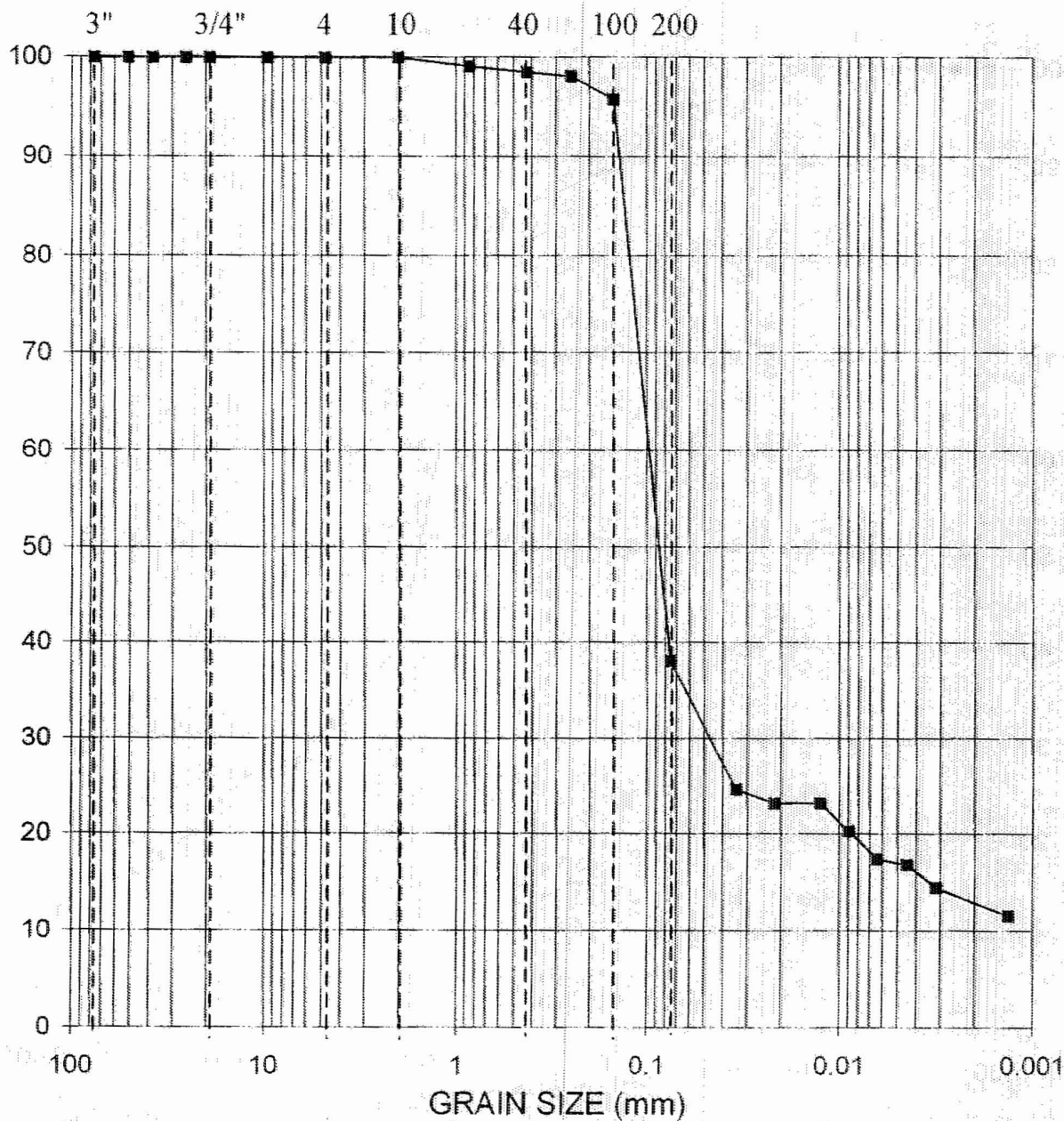
ASTM D422

Project:	Constellation Energy Group COLA Project, Calvert Cliffs Nuclear Power 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		



PERCENT FINER BY WEIGHT

U.S. Standard Sieve Nos.




GRAVEL

SAND

SILT OR CLAY

### GRADATION CURVE

ASTM D422

Project	Constellation Energy Group COLA Project, Calvert Cliffs Nuclear Power 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	