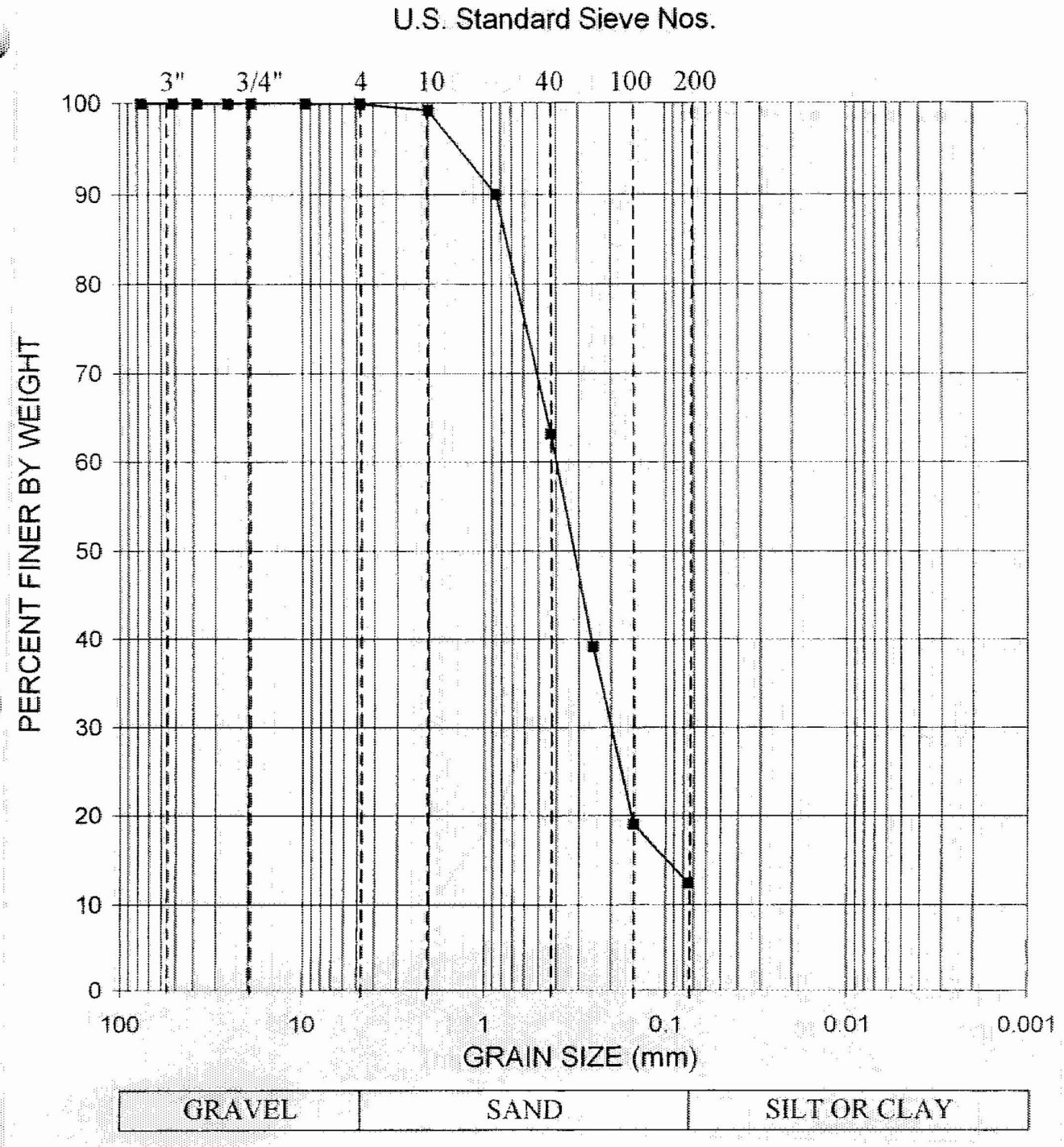


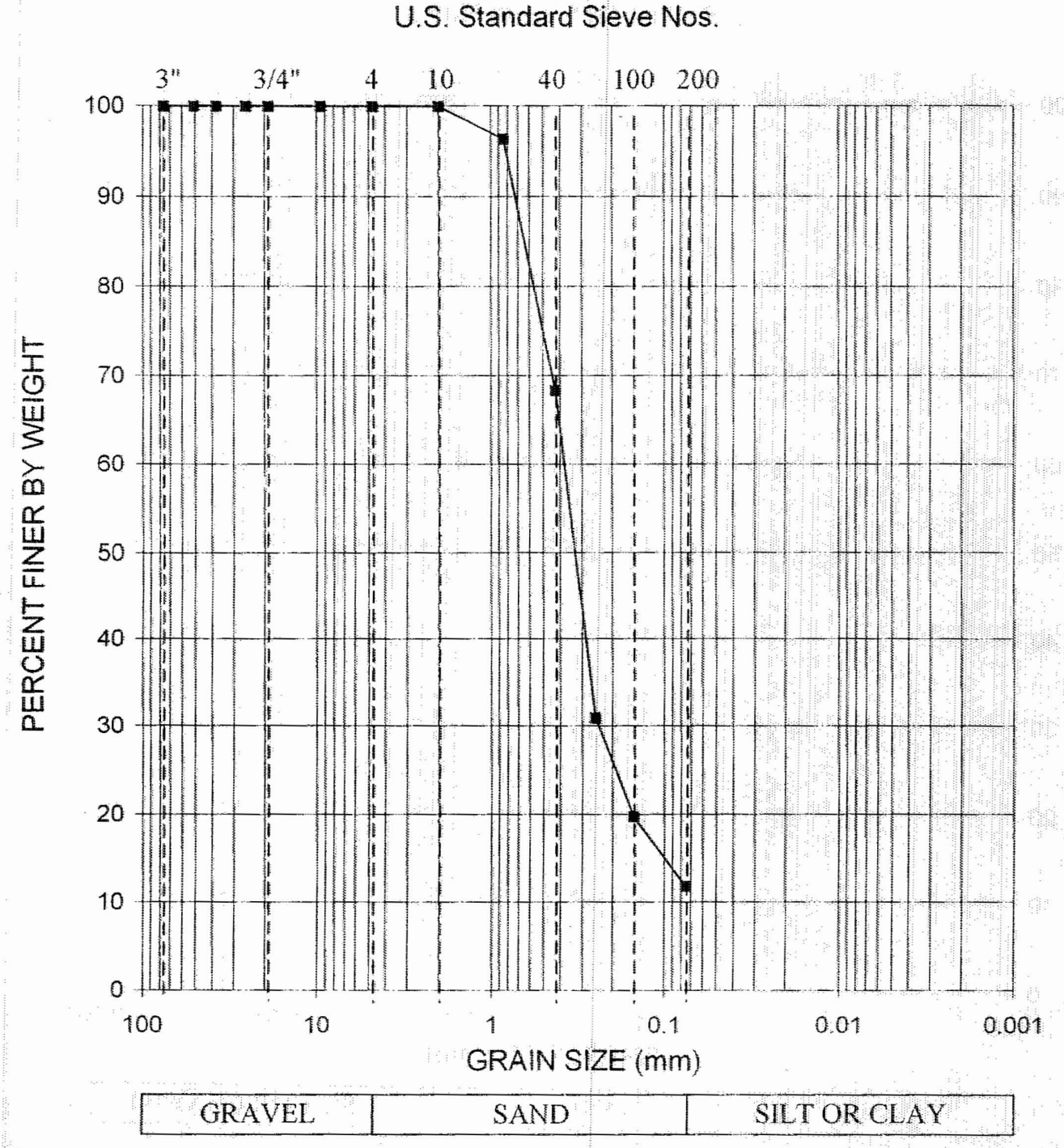

**GRADATION CURVE**

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-423 | 2.5 | Silty SAND, brown | SM | | |

Schnabel Engineering

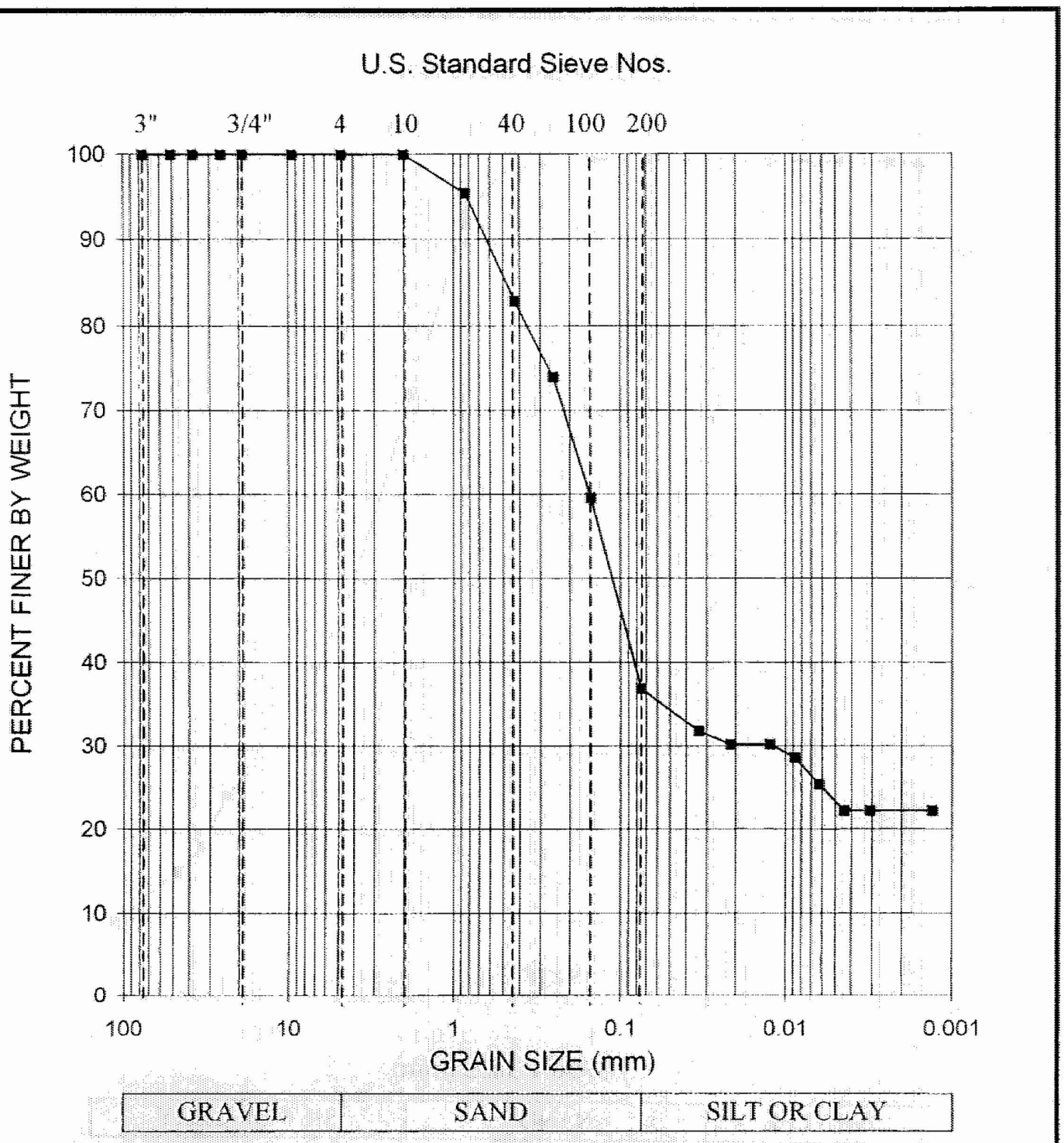



**GRADATION CURVE**

ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | | Contract No.: | 06120048.00 | | Date: | 9/14/2006 |
|---|---|---|---|---|---|---|---|
| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI | | |
| B-423 | 23.5 | Poorly Graded SAND, with silt, brown | SP-SM | | | | |

Schnabel Engineering

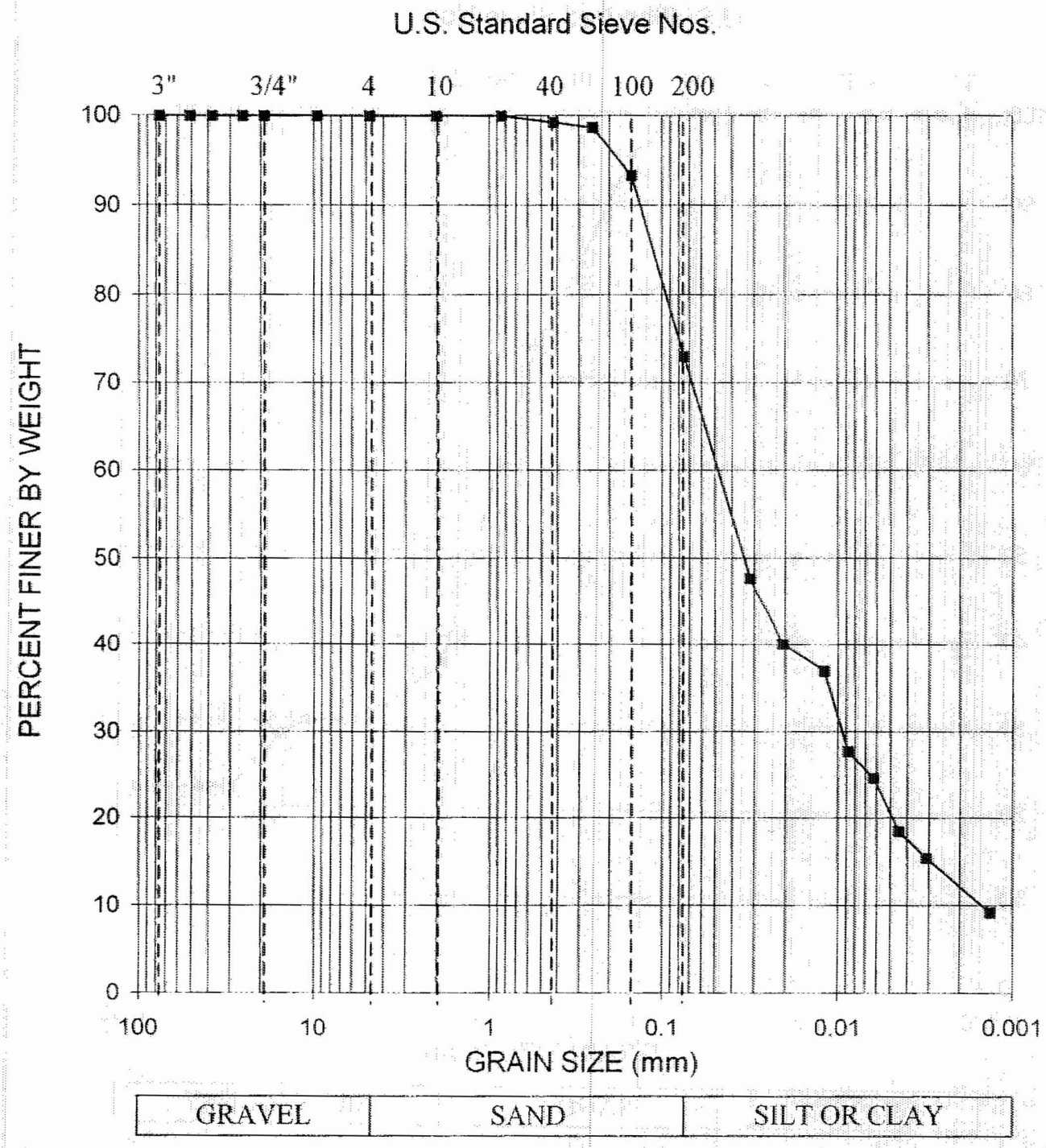



**GRADATION CURVE**

ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | | Contract No. | 06120048.00 | Date: | 9/21/2006 |
|---|---|---|---|---|---|---|
| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI | |
| B-423 | 38.5 | Clayey SAND, light gray-brown | SC | 43 | 28 | |

Schnabel Engineering



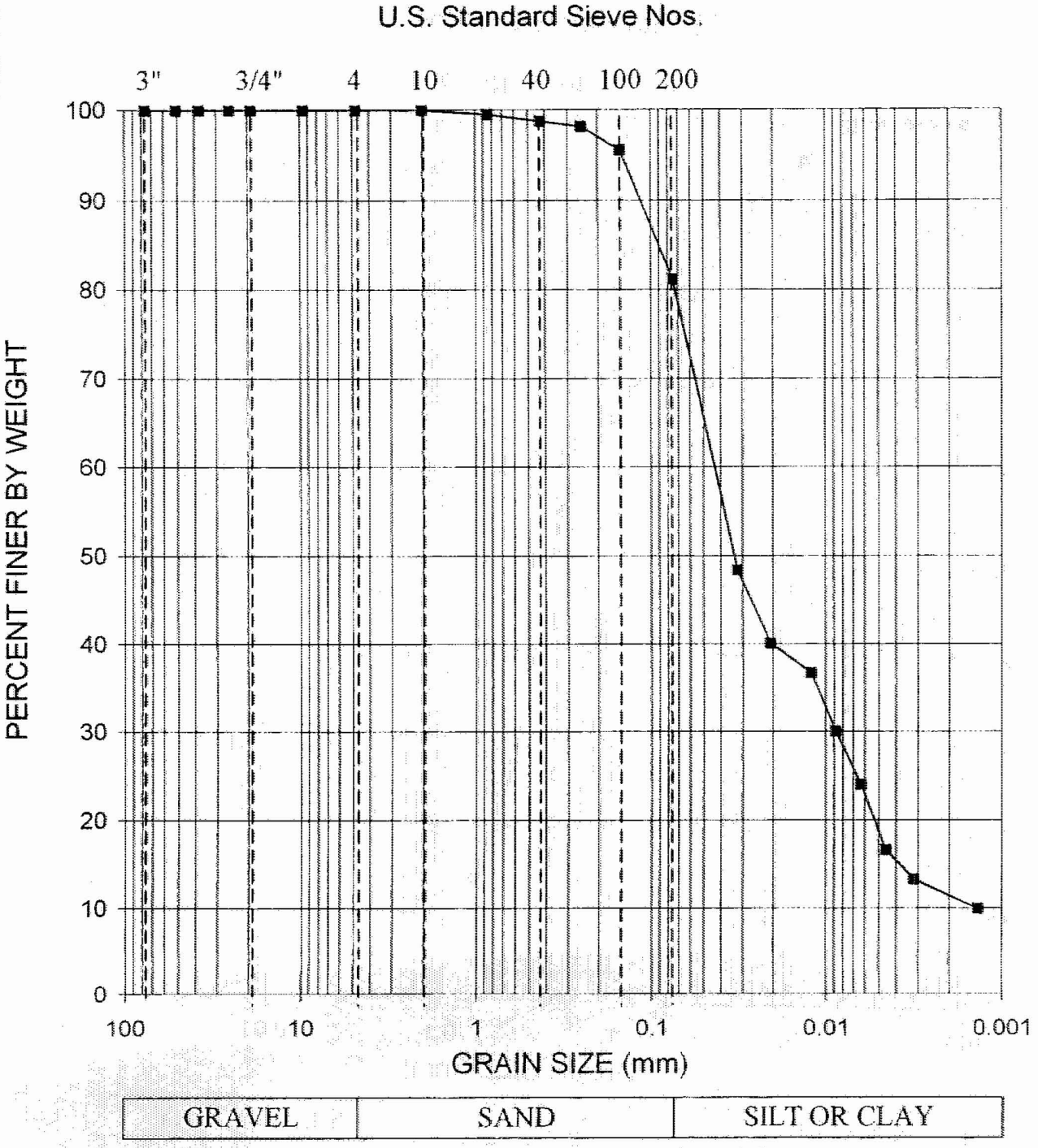

**GRADATION CURVE**

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-423 | 43.5 | FAT CLAY, with sand, gray | CH | 55 | 35 |

Schnabel Engineering



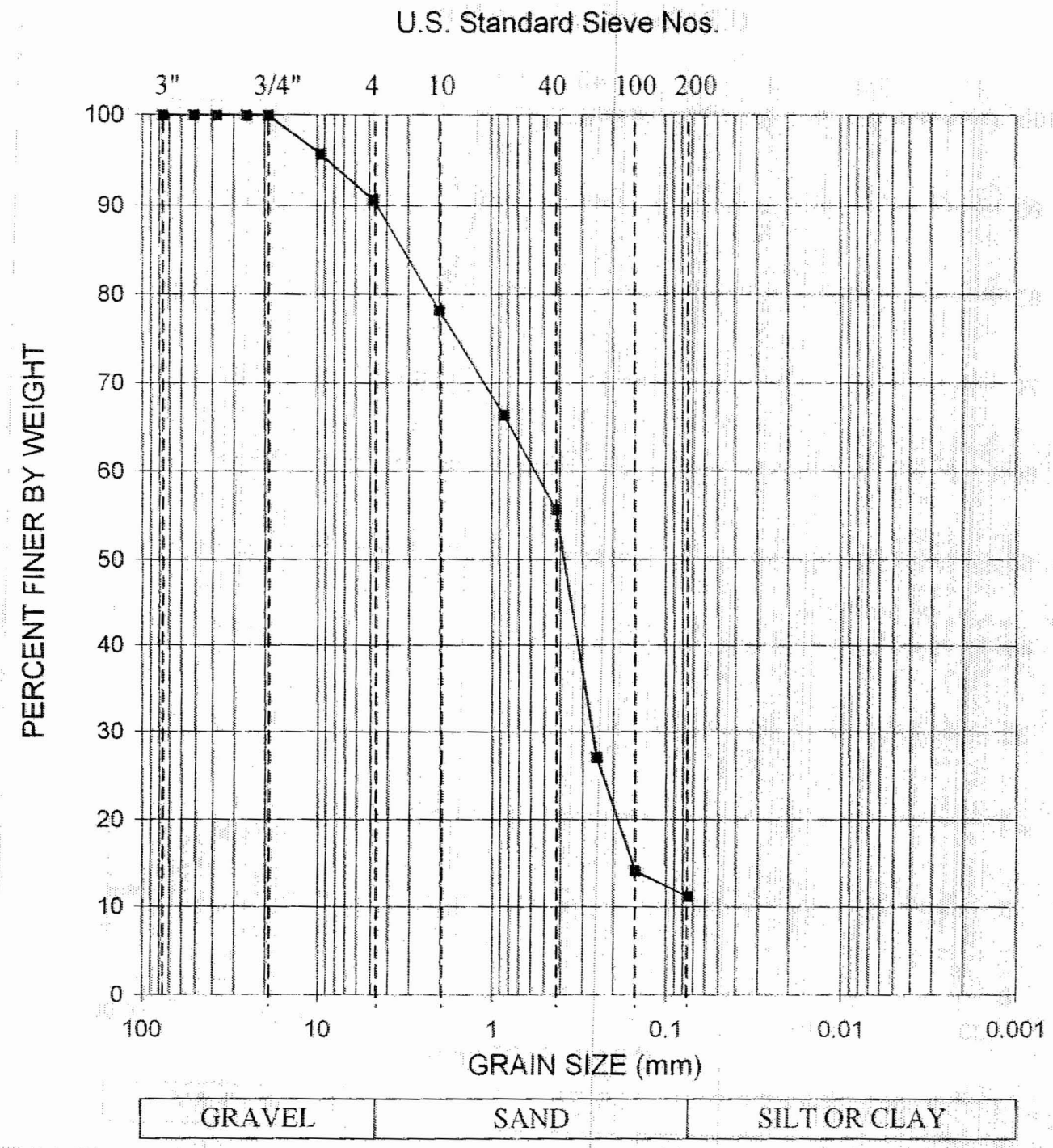

**GRADATION CURVE**

ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | | Contract No. | 06120048.00 | Date: | 9/22/2006 |
|---|---|---|---|---|---|---|

| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI |
|---|---|---|---|---|---|
| B-423 | 53.5 | FAT CLAY, with sand , dark gray | CH | 80 | 46 |

Schnabel Engineering



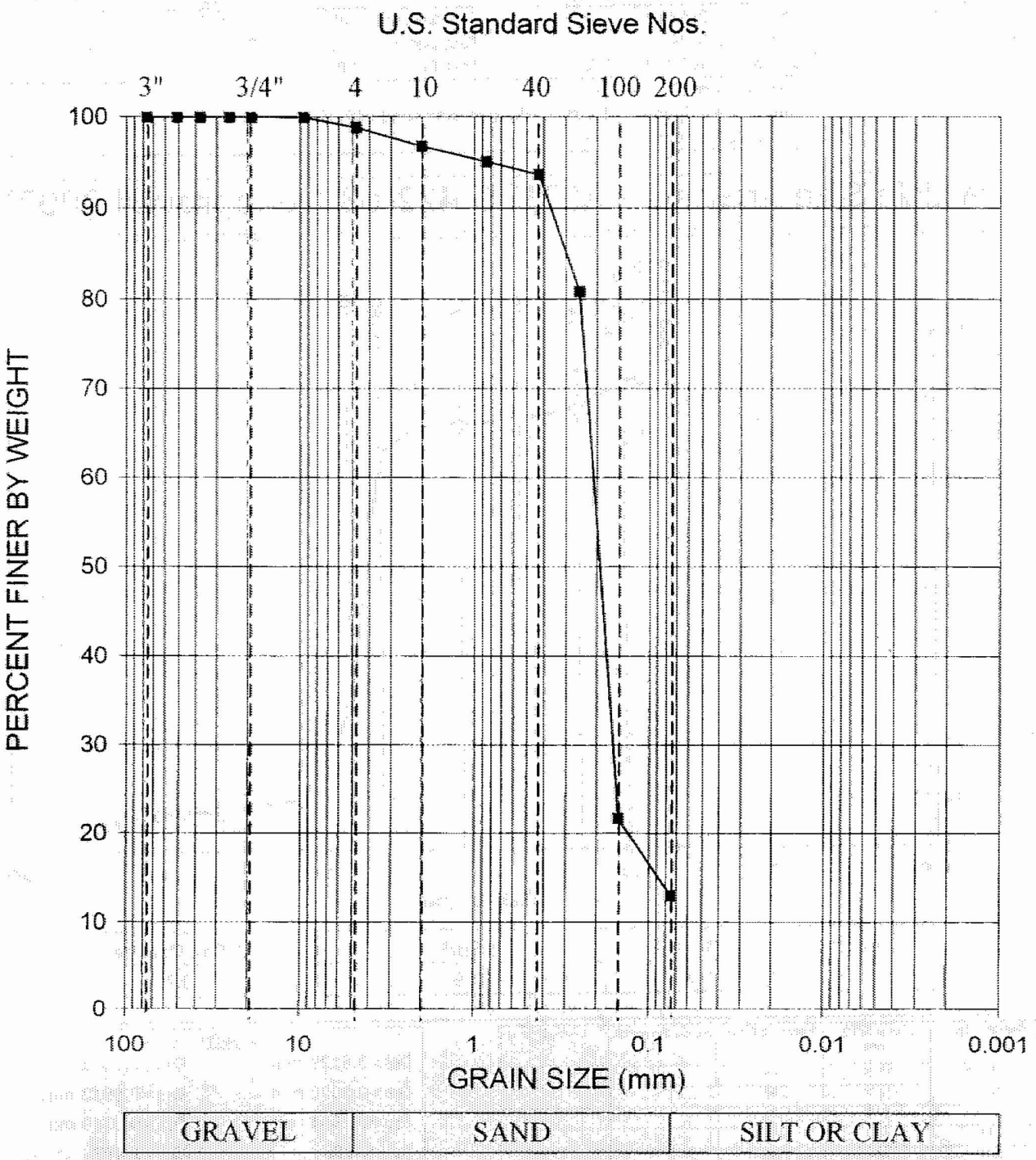

**GRADATION CURVE**

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-423 | 78.5 | Sandy SILT, trace shells, green | ML | | |

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-423 | 93.5 | Silty SAND, trace shells, gray | SM | | |

Schnabel Engineering

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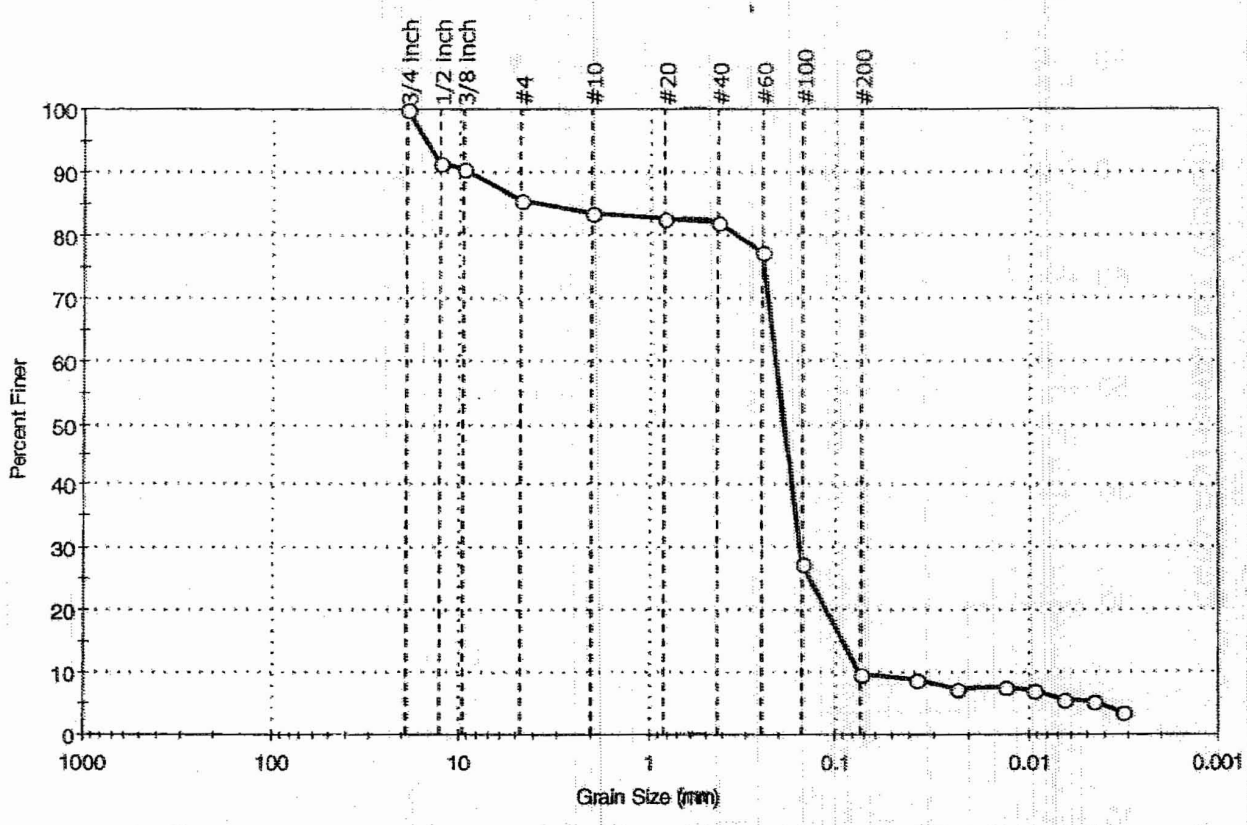
| | | | | | |
|---|---|---|---|---|---|
| Client: | Schnabel Engineering, Inc. | | | | |
| Project: | Subsurface Investigation Calvert Cliffs Nuclear PP | | | | |
| Location: | Calvert County, MD | | | Project No: | GTX-6880 |
| Boring ID: | B-423 | Sample Type: | tube | Tested By: | sam |
| Sample ID: | S-24 | Test Date: | 10/25/06 | Checked By: | mcm |
| Depth : | 103.5-105.3 ft | Test Id: | 98379 | | |
| Test Comment: | --- | | | | |
| Sample Description: | Moist, dark olive gray sand with clay | | | | |
| Sample Comment: | --- | | | | |

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




| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|---|---|---|---|
| --- | 14.4 | 75.9 | 9.7 |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|---|---|---|---|---|
| 3/4 inch | 19.00 | 100 | | |
| 1/2 inch | 12.70 | 92 | | |
| 3/8 inch | 9.51 | 91 | | |
| #4 | 4.75 | 86 | | |
| #10 | 2.00 | 84 | | |
| #20 | 0.84 | 83 | | |
| #40 | 0.42 | 82 | | |
| #60 | 0.25 | 77 | | |
| #100 | 0.15 | 27 | | |
| #200 | 0.074 | 10 | | |
| --- | Particle Size (mm) | Percent Finer | Spec. Percent | Complies |
| --- | 0.0373 | 9 | | |
| --- | 0.0231 | 7 | | |
| --- | 0.0132 | 8 | | |
| --- | 0.0093 | 7 | | |
| --- | 0.0066 | 6 | | |
| --- | 0.0046 | 5 | | |
| --- | 0.0032 | 3 | | |
| | | | | |

**Coefficients**

| | |
|---|---|
| $D_{85}$ = 3.6129 mm | $D_{30}$ = 0.1531 mm |
| $D_{60}$ = 0.2090 mm | $D_{15}$ = 0.0913 mm |
| $D_{50}$ = 0.1884 mm | $D_{10}$ = 0.0749 mm |
| $C_u$ = 2.790 | $C_c$ = 1.497 |

**Classification**

ASTM Poorly graded sand with silty clay (SP-SC)

AASHTO Silty Gravel and Sand (A-2-4 (0))

**Sample/Test Description**

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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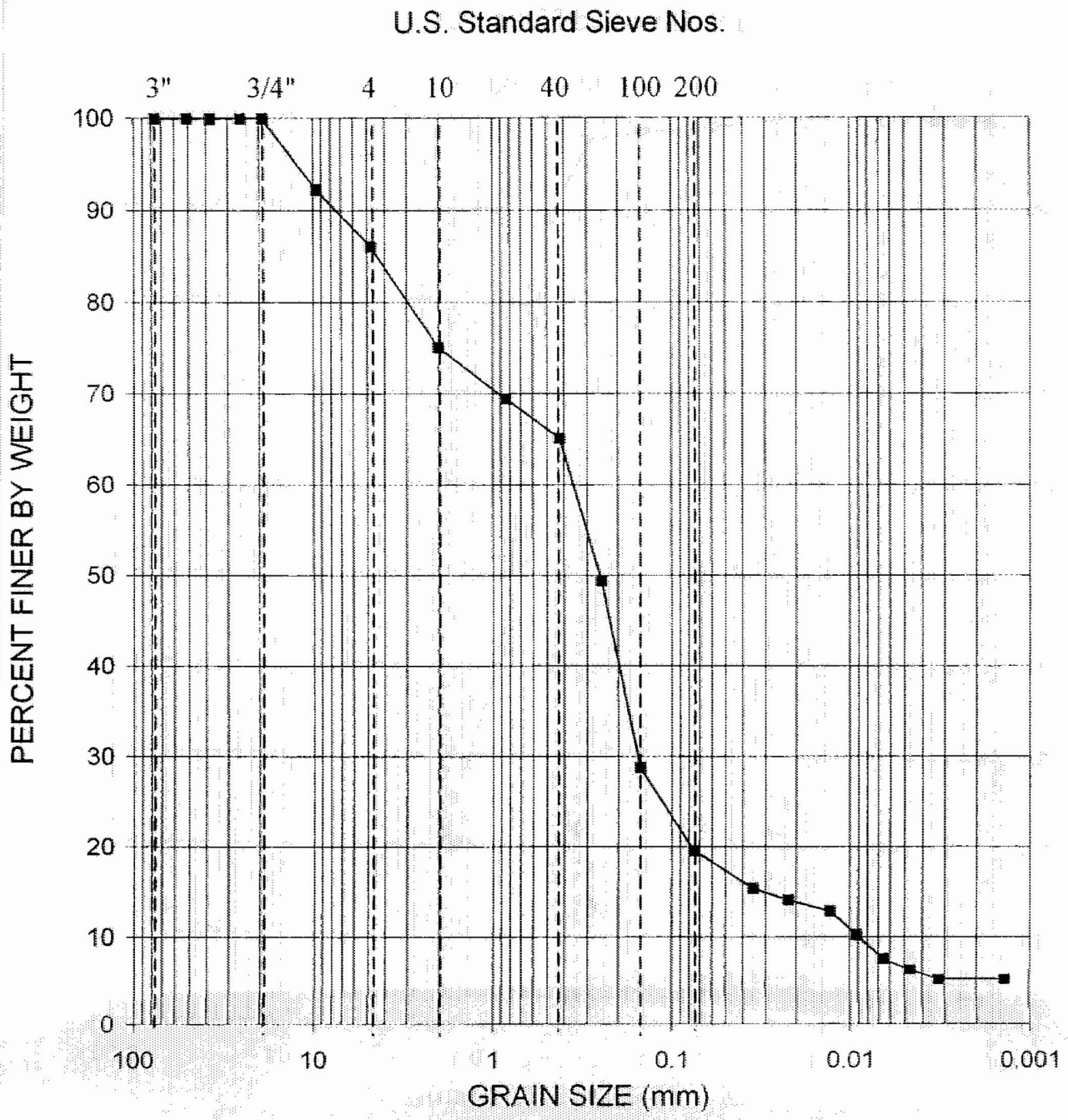


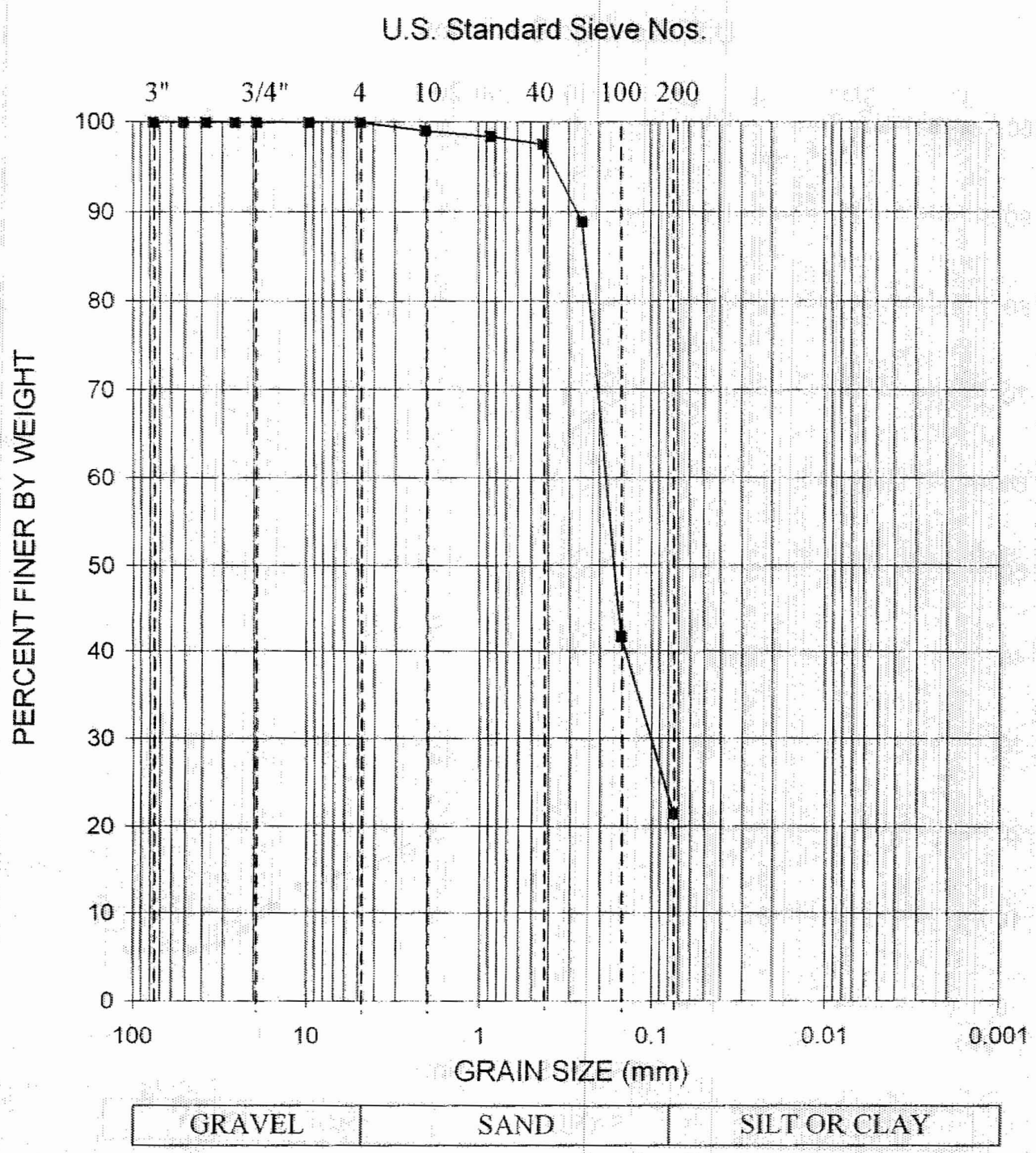

**GRADATION CURVE**

ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | | Contract No.: | 06120048.00 | Date: | 9/22/2006 |
|---|---|---|---|---|---|---|

| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI |
|---|---|---|---|---|---|
| B-423 | 118.5 | Silty SAND, trace shells, green | SM | NP | NP |

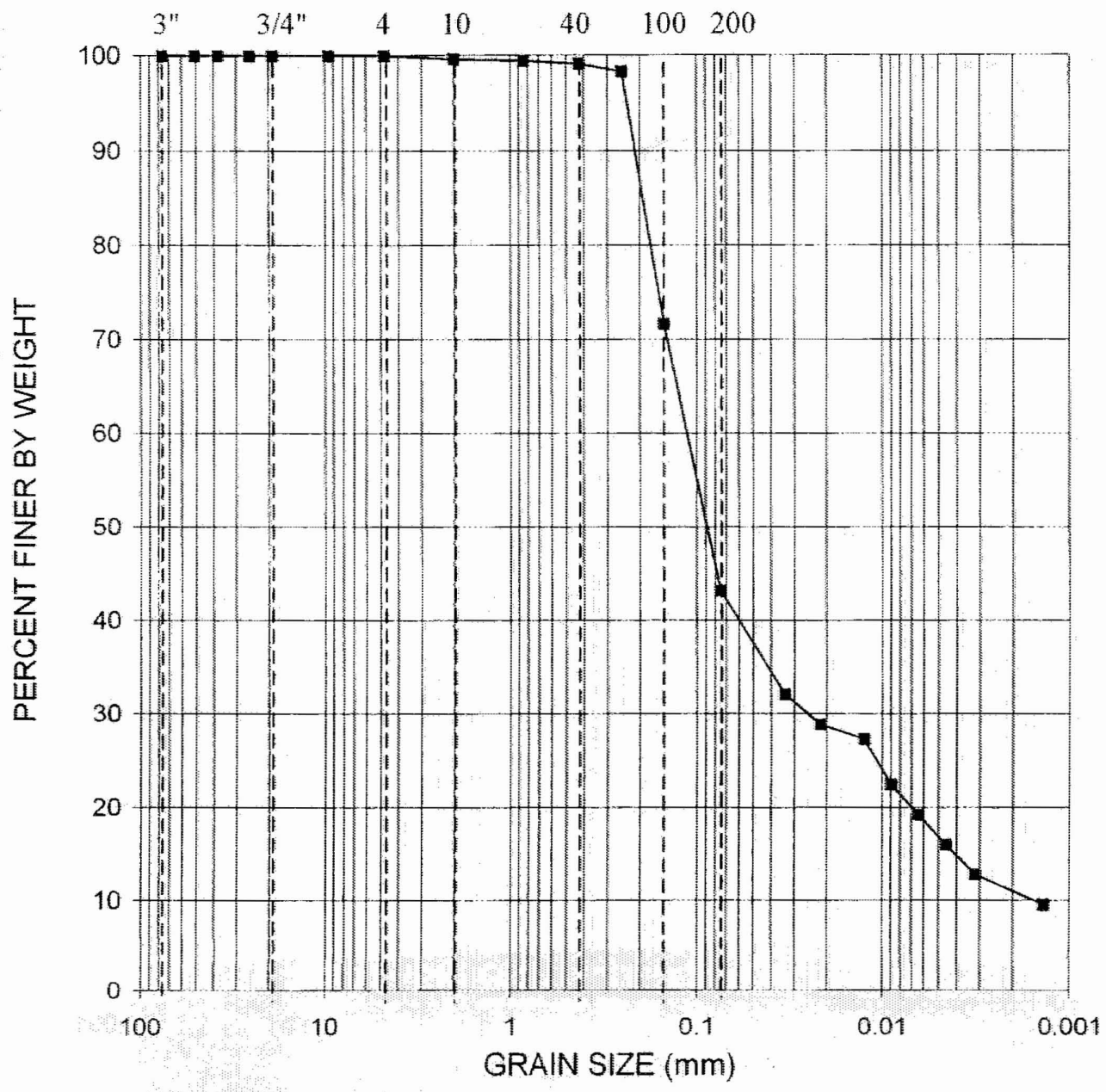
Schnabel Engineering




**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-423 | 128.5 | Silty SAND, contains shells, green | SM | | | Schnabel Engineering |



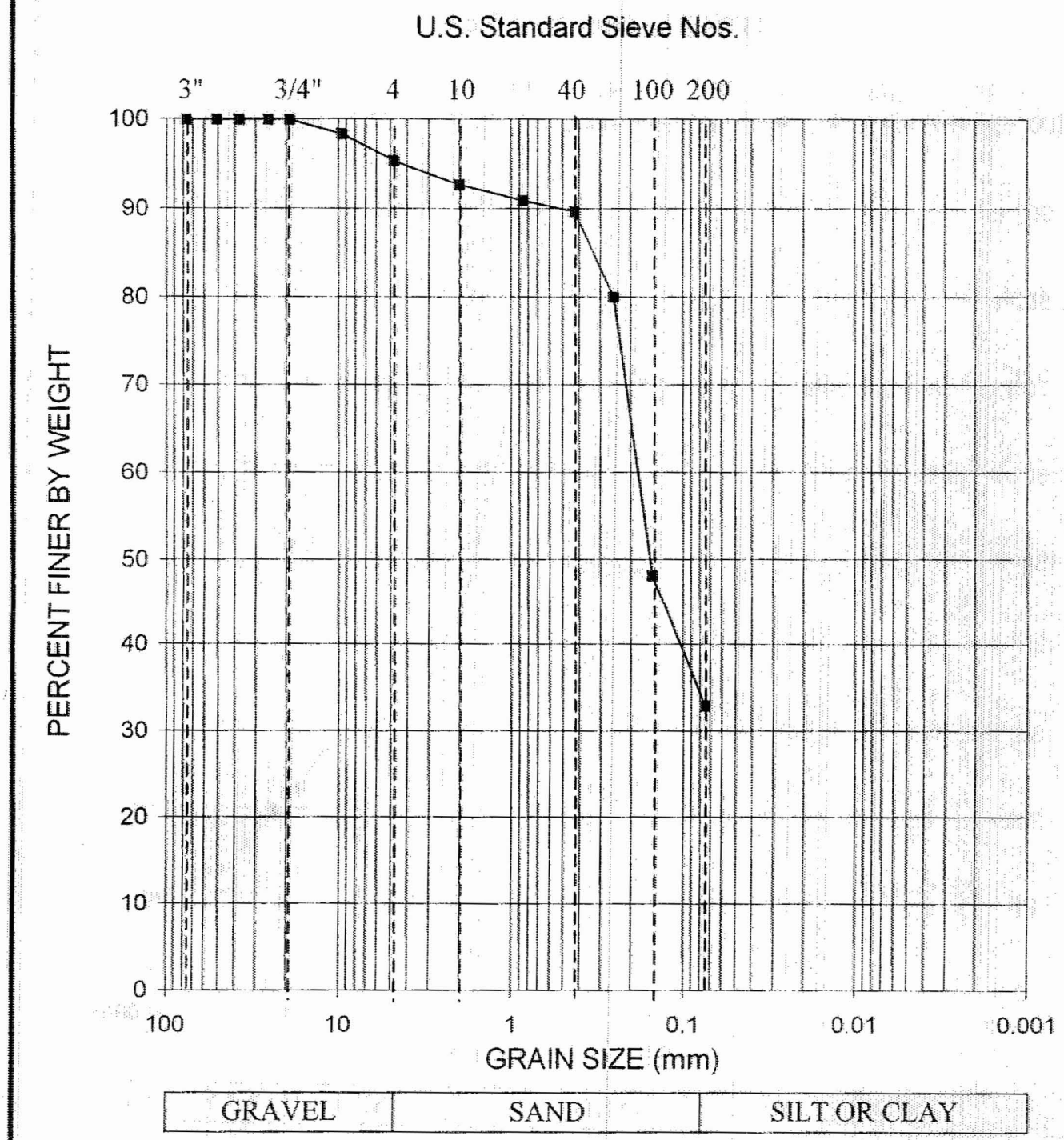

**GRADATION CURVE**

ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | | Contract No.: 06120048.00 | | Date: 9/22/2006 |
|---|---|---|---|---|---|

| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI |
|---|---|---|---|---|---|
| B-423 | 138.5 | Silty SAND, contains shells, 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: 9/14/2006 | |
|---|---|---|---|---|---|---|
| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI | |
| B-423 | 148.5 | Silty SAND, trace shells, green | SM | | | Schnabel Engineering |

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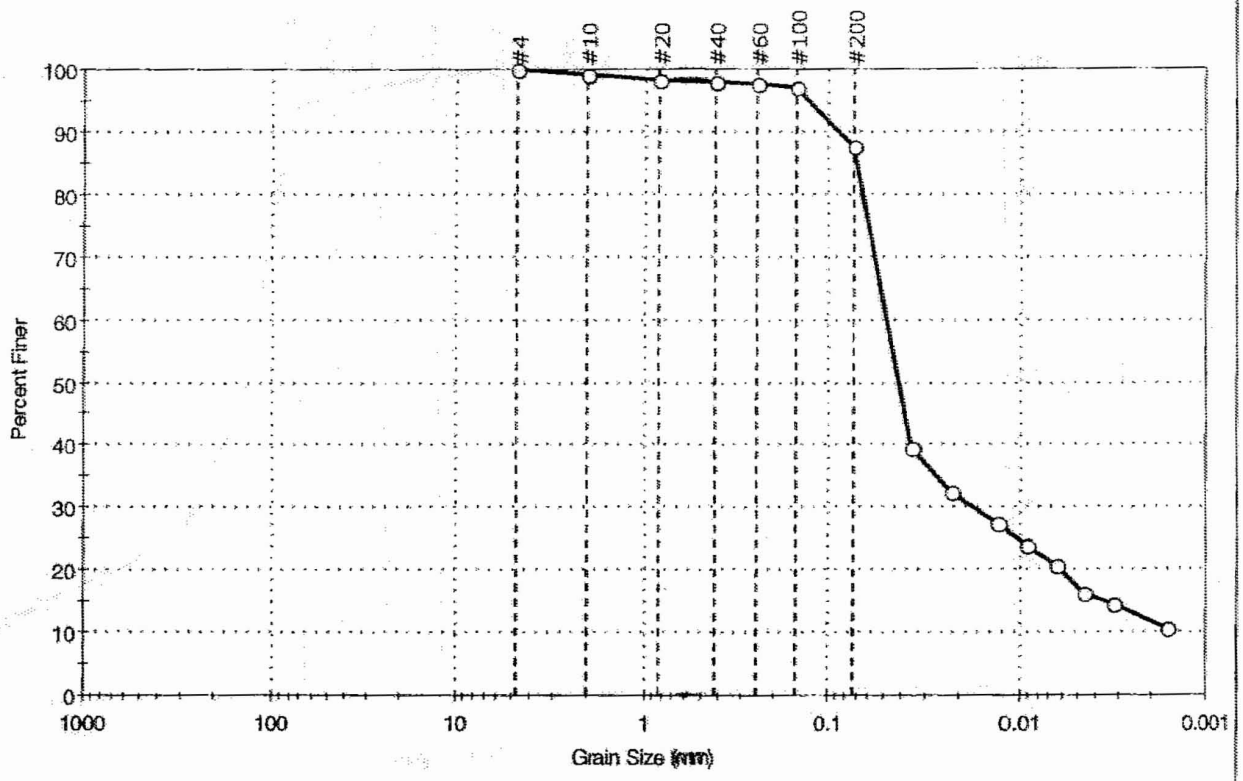
| | | | |
|---|---|---|---|
| Client: | Schnabel Engineering, Inc. | | |
| Project: | Subsurface Investigation Calvert Cliffs Nuclear PP | | |
| Location: | Calvert County, MD | Project No: | GTX-6880 |
| Boring ID: | B-423 | Sample Type: tube | Tested By: sam |
| Sample ID: | S-35 | Test Date: 09/12/06 | Checked By: mcm |
| Depth : | 158.5-160.1 ft | Test Id: 95815 | |
| Test Comment: | --- | | |
| Sample Description: | Moist, olive gray organic clay | | |
| Sample Comment: | --- | | |

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




| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|---|---|---|---|
| — | 0.0 | 12.4 | 87.6 |

| 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 | 98 | | |
| #100 | 0.15 | 97 | | |
| #200 | 0.074 | 88 | | |
| --- | Particle Size (mm) | Percent Finer | Spec. Percent | Complies |
| — | 0.0354 | 39 | | |
| — | 0.0223 | 32 | | |
| --- | 0.0129 | 28 | | |
| — | 0.0092 | 24 | | |
| --- | 0.0065 | 21 | | |
| --- | 0.0046 | 16 | | |
| — | 0.0032 | 14 | | |
| --- | 0.0017 | 11 | | |
| | | | | |

**Coefficients**

| | |
|---|---|
| $D_{85}$ =0.0711 mm | $D_{30}$ =0.0171 mm |
| $D_{60}$ =0.0485 mm | $D_{15}$ =0.0037 mm |
| $D_{50}$ =0.0416 mm | $D_{10}$ =0.0015 mm |
| $C_u$ =N/A | $C_c$ =N/A |

**Classification**

ASTM organic clay (OH)

AASHTO Clayey Soils (A-7-6 (59))

**Sample/Test Description**

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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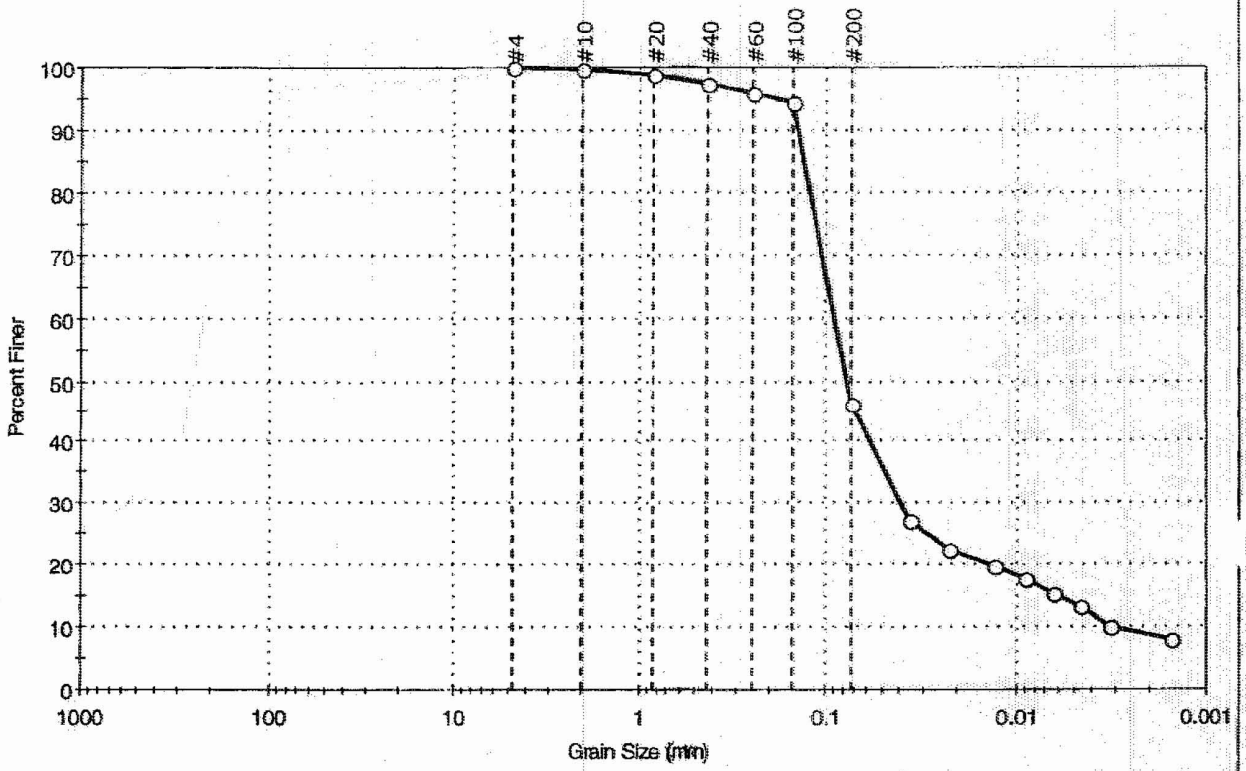
| | | | | | |
|---|---|---|---|---|---|
| Client: | Schnabel Engineering, Inc. | | | | |
| Project: | Subsurface Investigation Calvert Cliffs Nuclear PP | | | | |
| Location: | Calvert County, MD | | | Project No: | GTX-6880 |
| Boring ID: | B-423 | Sample Type: | tube | Tested By: | sam |
| Sample ID: | S-39 | Test Date: | 09/28/06 | Checked By: | mcm |
| Depth : | 178.5-179.8 ft | Test Id: | 95825 | | |
| Test Comment: | --- | | | | |
| Sample Description: | Dry, olive clayey sand | | | | |
| Sample Comment: | --- | | | | |

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




| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|---|---|---|---|
| — | 0.0 | 53.6 | 46.4 |

| 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 | 97 | | |
| #60 | 0.25 | 96 | | |
| #100 | 0.15 | 94 | | |
| #200 | 0.074 | 46 | | |
| --- | Particle Size (mm) | Percent Finer | Spec. Percent | Complies |
| --- | 0.0358 | 27 | | |
| --- | 0.0223 | 22 | | |
| --- | 0.0128 | 20 | | |
| --- | 0.0091 | 18 | | |
| --- | 0.0065 | 15 | | |
| --- | 0.0046 | 13 | | |
| --- | 0.0033 | 10 | | |
| --- | 0.0015 | 8 | | |

**Coefficients**

| | |
|---|---|
| $D_{85}$ = 0.1308 mm | $D_{30}$ = 0.0398 mm |
| $D_{60}$ = 0.0905 mm | $D_{15}$ = 0.0060 mm |
| $D_{50}$ = 0.0781 mm | $D_{10}$ = 0.0031 mm |
| $C_u$ = N/A | $C_c$ = N/A |

**Classification**

ASTM Silty sand (SM)

AASHTO Clayey Soils (A-7-5 (13))

**Sample/Test Description**

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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