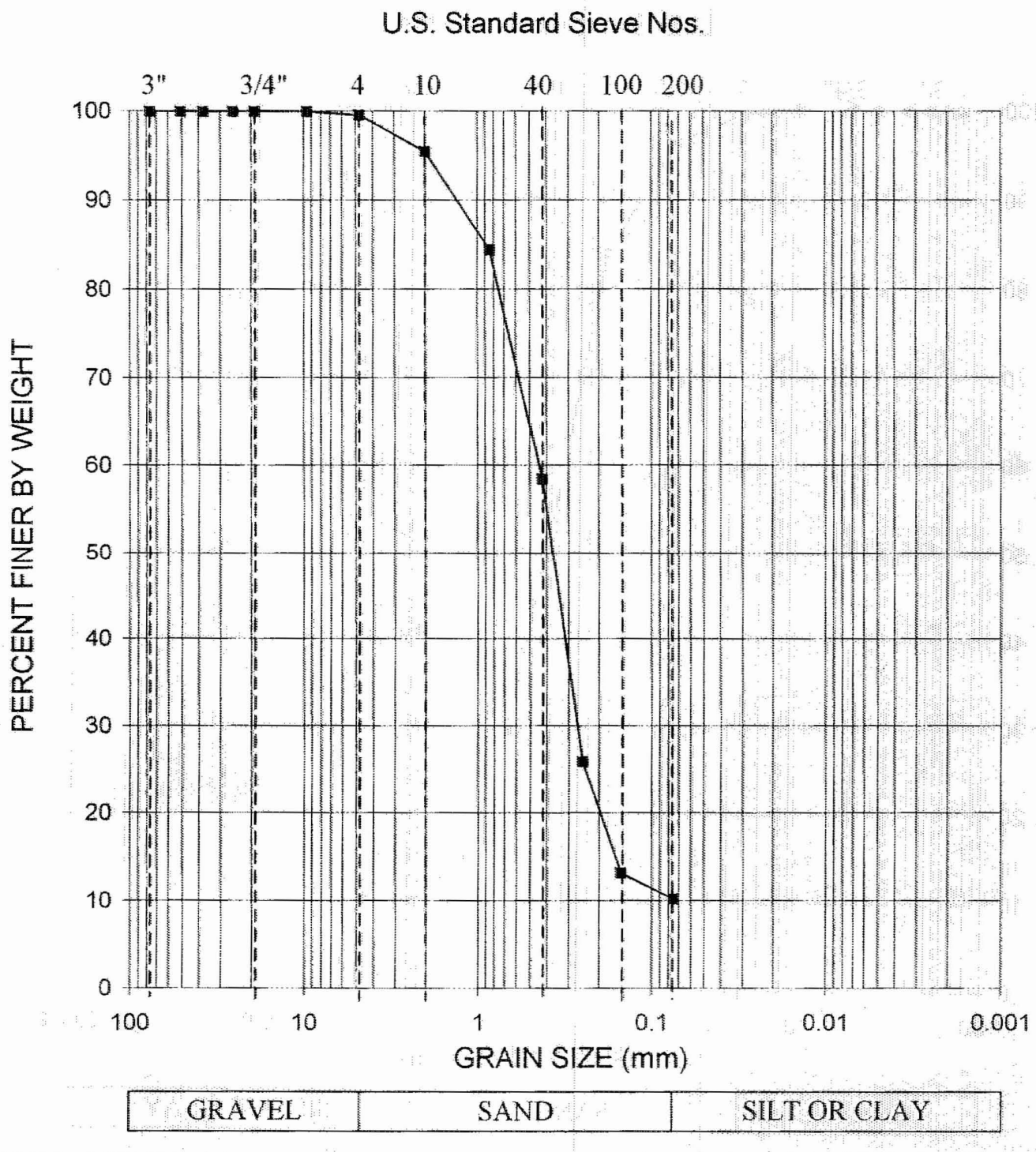



**GRADATION CURVE**

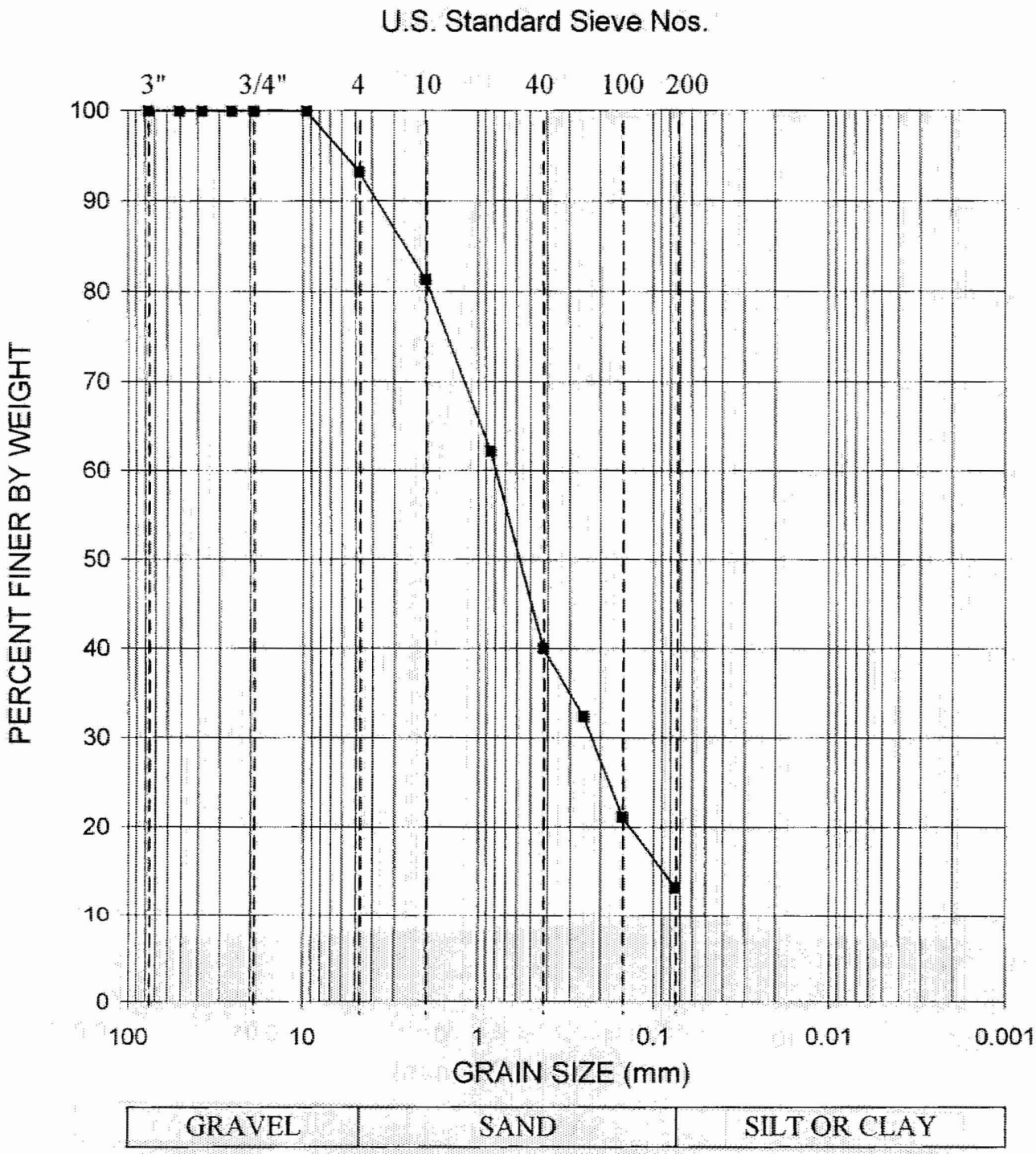
ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | Contract No.: 06120048.00 | Date: 9/27/2006 |
|---|---|---|---|

| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI |
|---|---|---|---|---|---|
| B-752 | 10.5 | Well Graded SAND, with silt, orange | SW-SM | | |

Schnabel

Schnabel Engineering




**GRADATION CURVE**

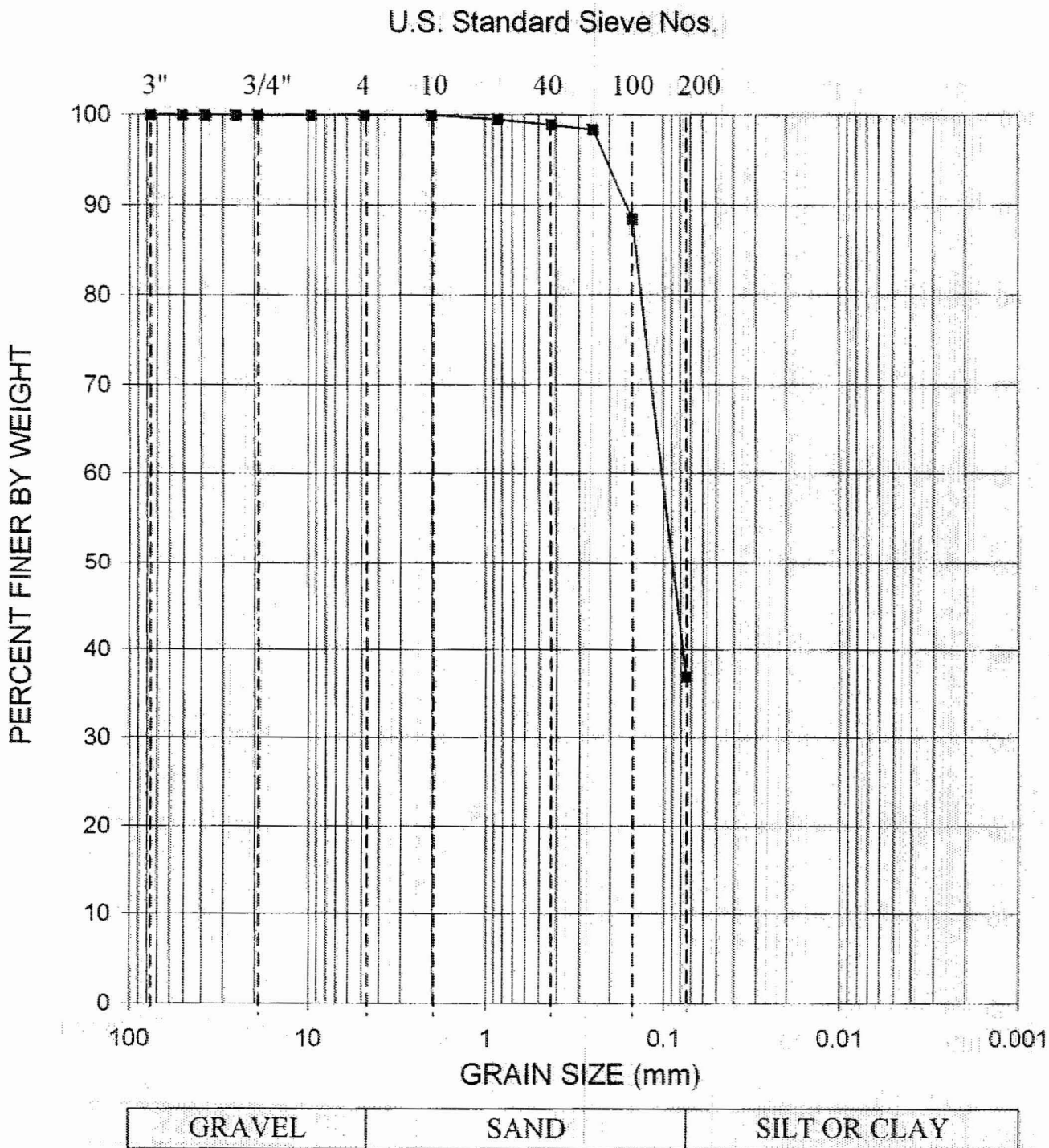
ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | Contract No.: | 06120048.00 | Date: | 9/27/2006 |
|---|---|---|---|---|---|

| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI |
|---|---|---|---|---|---|
| B-752 | 18.5 | Well Graded SAND, with silt, trace gravel, yellow-orange | SW-SM | | |

Schnabel

Schnabel Engineering




**GRADATION CURVE**

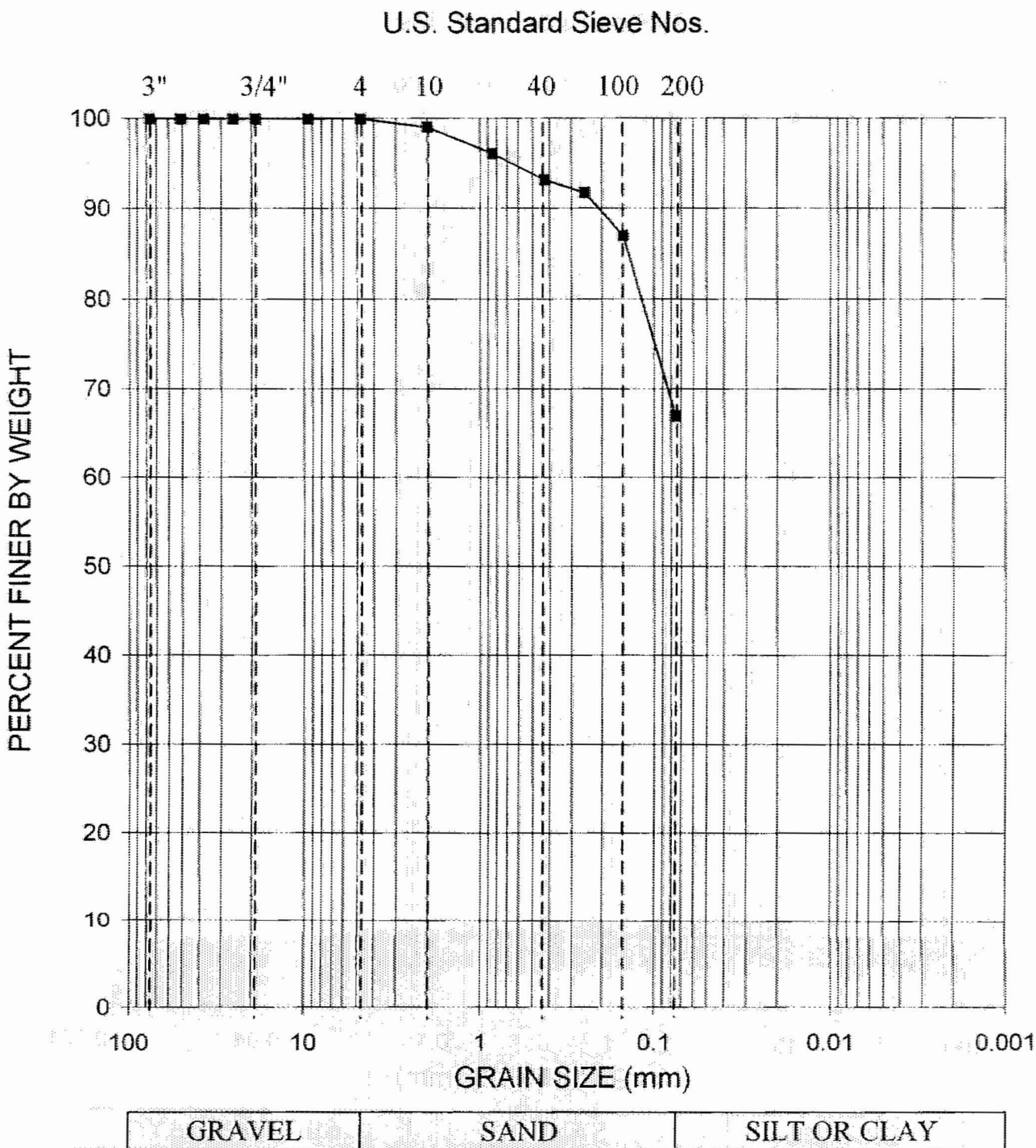
ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | Contract No.: | 06120048.00 | Date: | 9/28/2006 |
|---|---|---|---|---|---|

| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI |
|---|---|---|---|---|---|
| B-752 | 28.5 | Silty SAND, dark gray | SM | | |

Schnabel

Schnabel Engineering




**GRADATION CURVE**

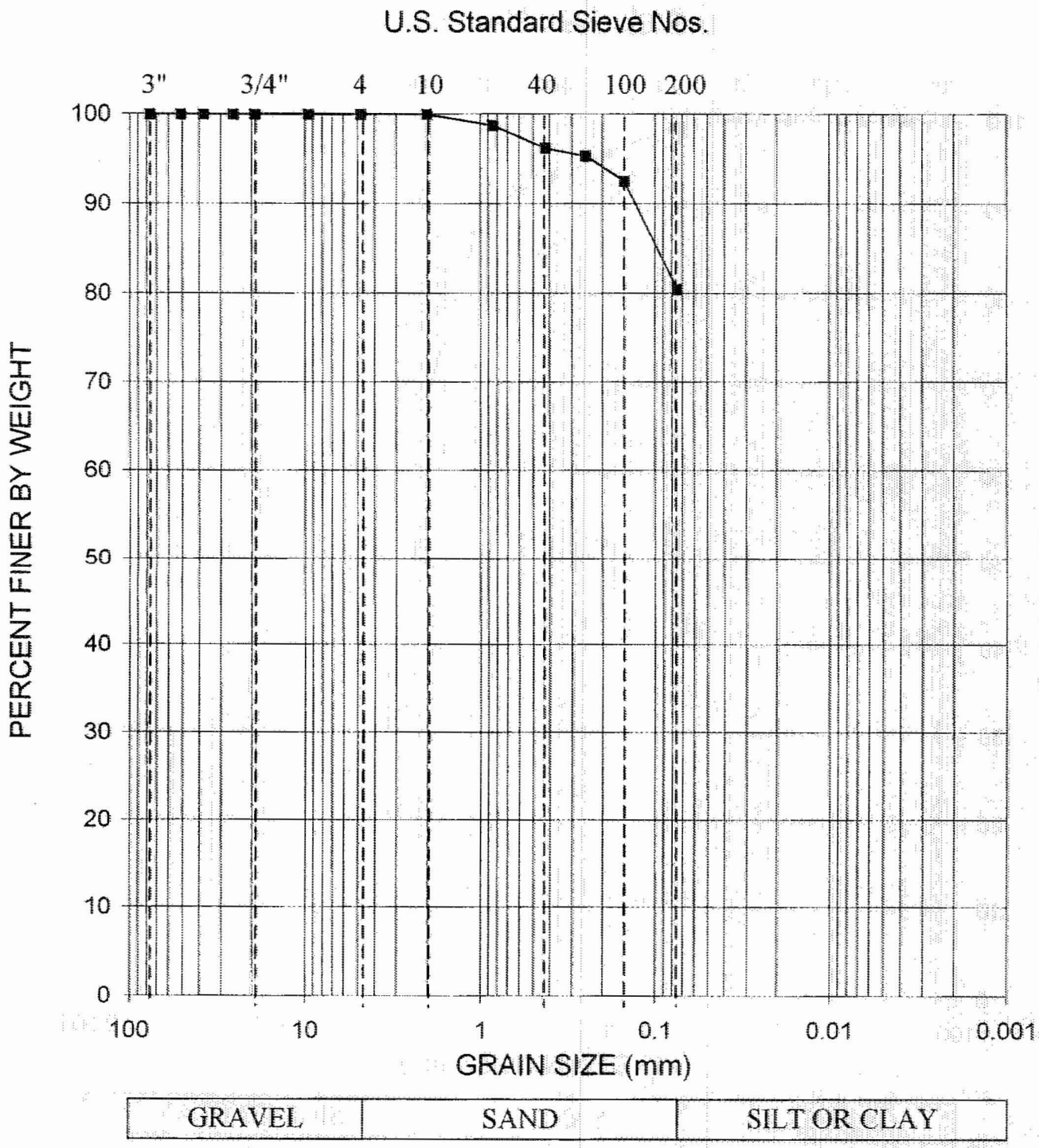
ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | Contract No.: | 06120048.00 | Date: | 9/28/2006 |
|---|---|---|---|---|---|

| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI |
|---|---|---|---|---|---|
| B-752 | 33.5 | Sandy FAT CLAY, gray | CH | 52 | 29 |

Schnabel

Schnabel Engineering



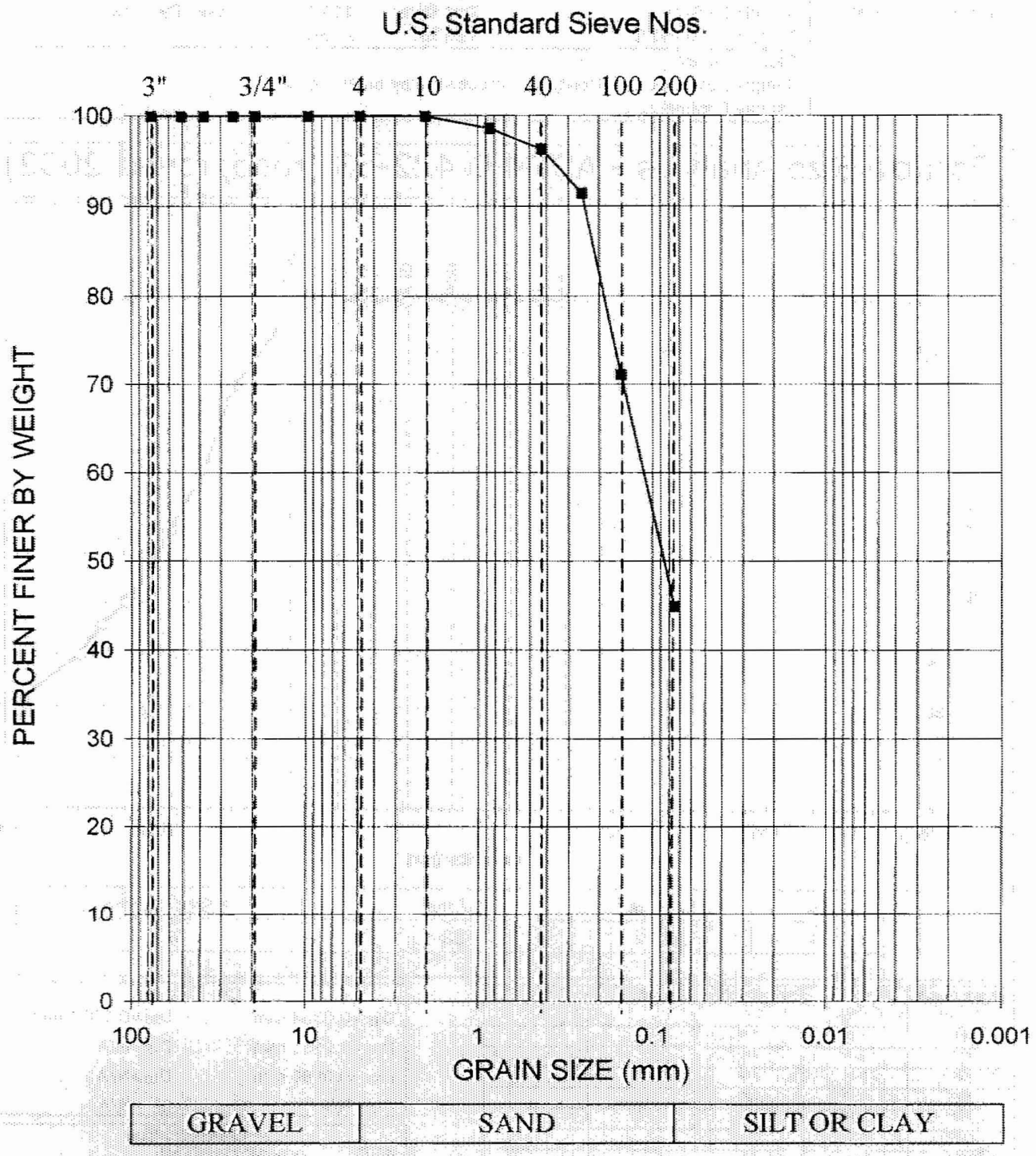

**GRADATION CURVE**

ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | | Contract No.: | 06120048.00 | Date: | 9/26/2006 |
|---|---|---|---|---|---|---|
| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI | |
| B-752 | 38.5 | ELASTIC SILT, with sand, dark gray | MH | 63 | 32 | |

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: | 9/28/2006 |
|---|---|---|---|---|---|

| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI |
|---|---|---|---|---|---|
| B-752 | 53.5 | Silty SAND, yellow-dark gray | SM | 40 | 11 |

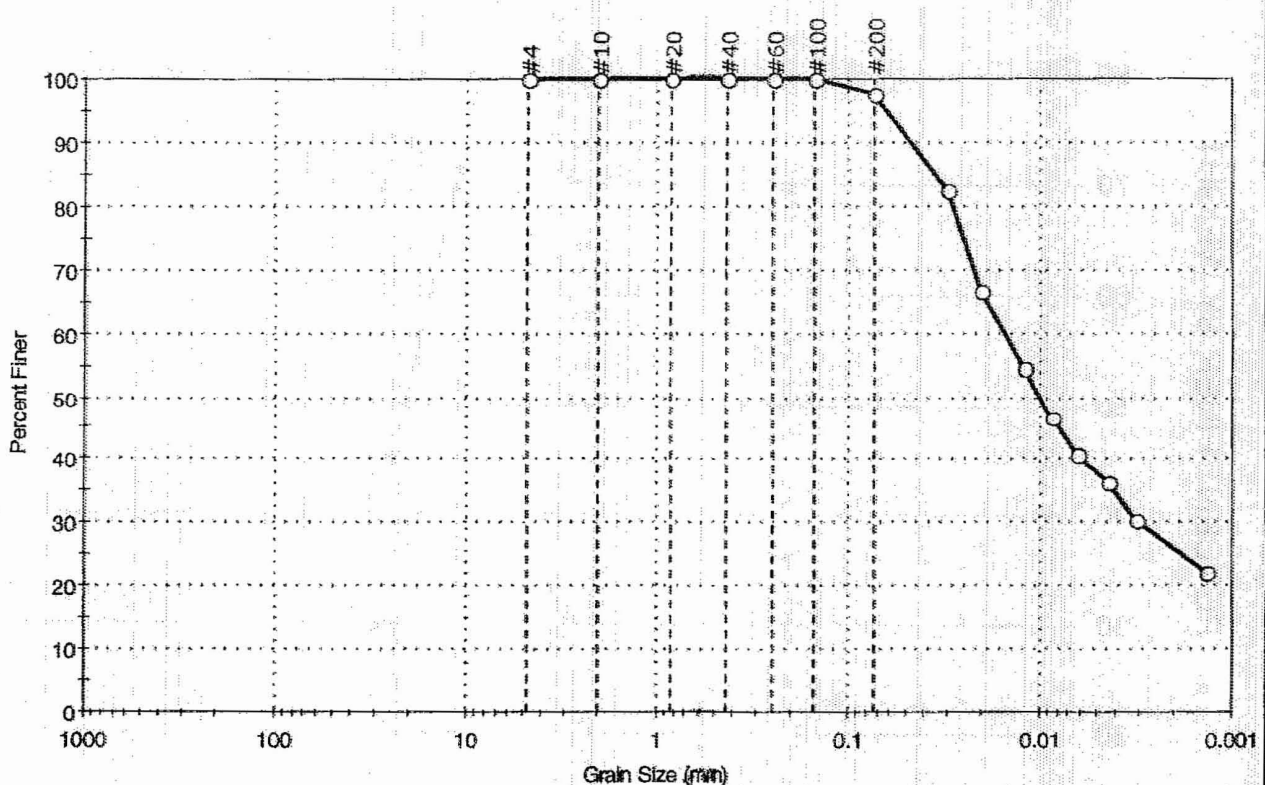
Schnabel

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-752 | Sample Type: tube | Tested By: | sam |
| Sample ID: S-15 | Test Date: 11/01/06 | Checked By: | mcm |
| Depth : 58-60 ft | Test Id: 98042 | | |
| Test Comment: | --- | | |
| Sample Description: | Moist, dark greenish gray organic clay | | |
| Sample Comment: | --- | | |

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




| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|---|---|---|---|
| — | 0.0 | 2.3 | 97.7 |

| 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 |
| — | 0.0307 | 83 | | |
| — | 0.0201 | 67 | | |
| — | 0.0119 | 55 | | |
| — | 0.0087 | 47 | | |
| — | 0.0062 | 41 | | |
| — | 0.0044 | 36 | | |
| — | 0.0032 | 30 | | |
| — | 0.0014 | 22 | | |

**Coefficients**

| | |
|---|---|
| $D_{85}$ = 0.0354 mm | $D_{30}$ = 0.0030 mm |
| $D_{60}$ = 0.0151 mm | $D_{15}$ = N/A |
| $D_{50}$ = 0.0099 mm | $D_{10}$ = N/A |
| $C_u$ = N/A | $C_c$ = N/A |

**Classification**

ASTM organic clay (OH)

AASHTO Clayey Soils (A-7-6 (58))

**Sample/Test Description**

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : HARD

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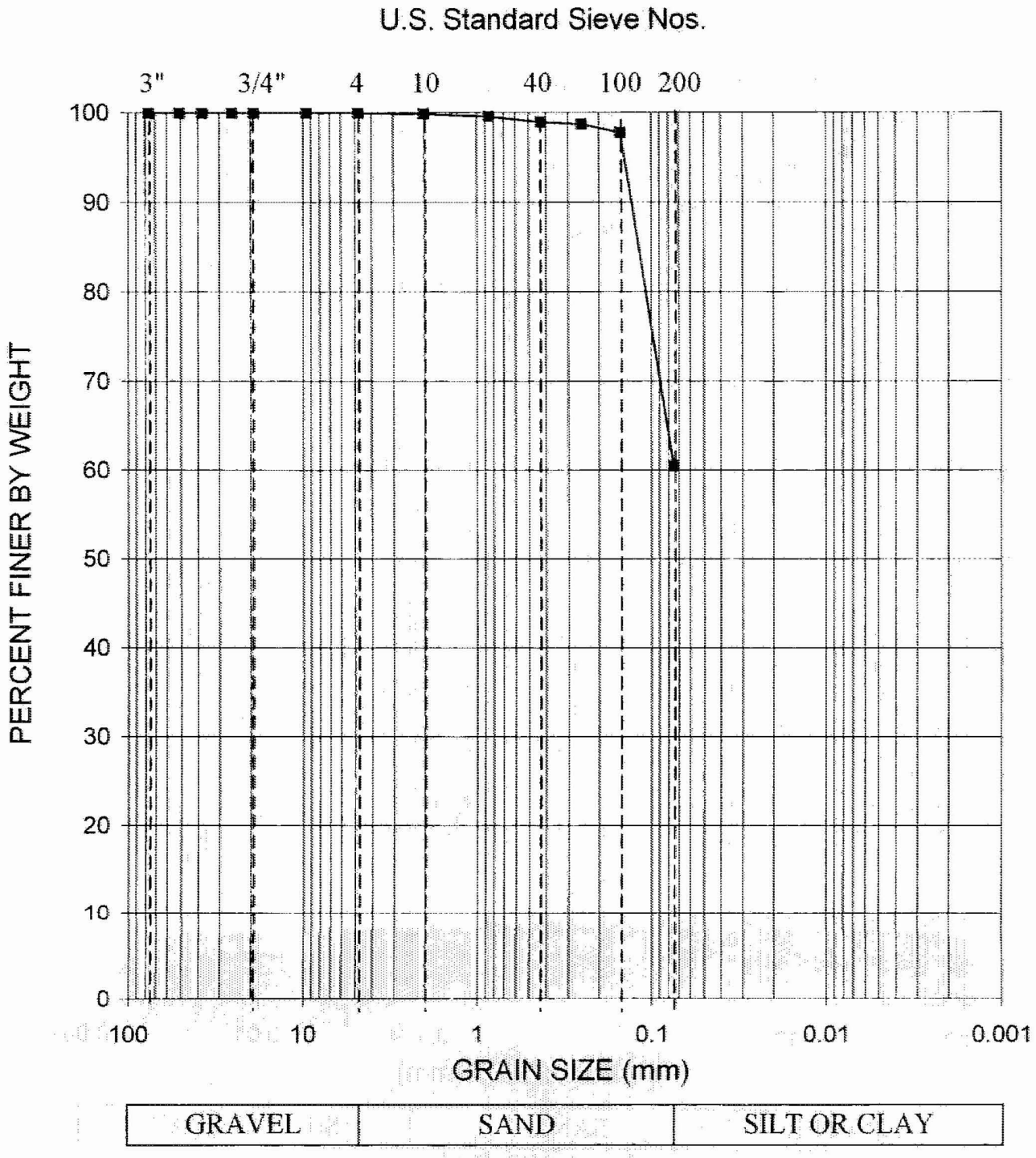
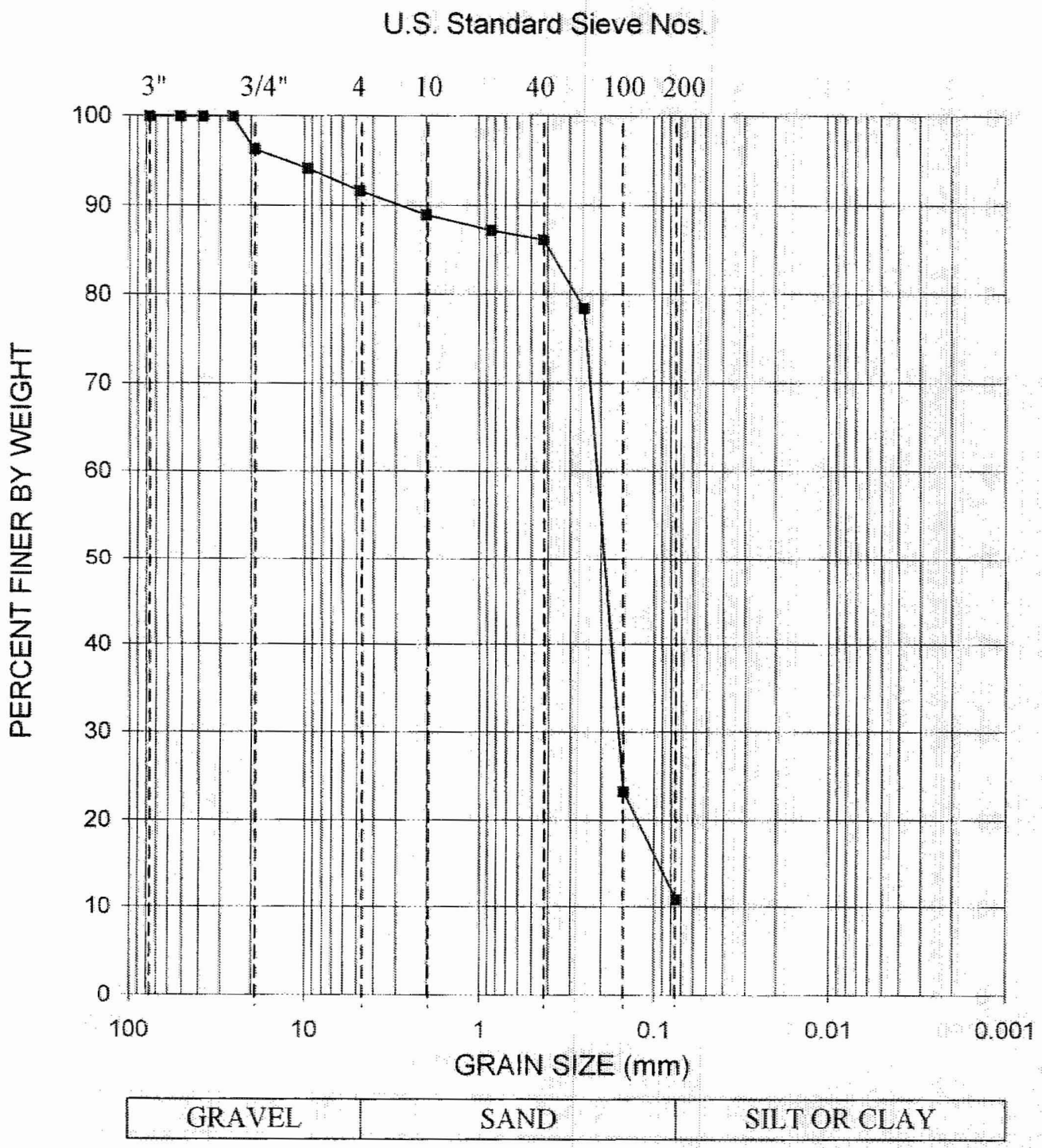



**GRADATION CURVE**

ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | | Contract No.: 06120048.00 | | Date: 9/29/2006 | |
|---|---|---|---|---|---|---|
| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI | Schnabel Engineering |
| B-752 | 68.5 | Sandy SILT, dark green- gray | ML | | | |




**GRADATION CURVE**

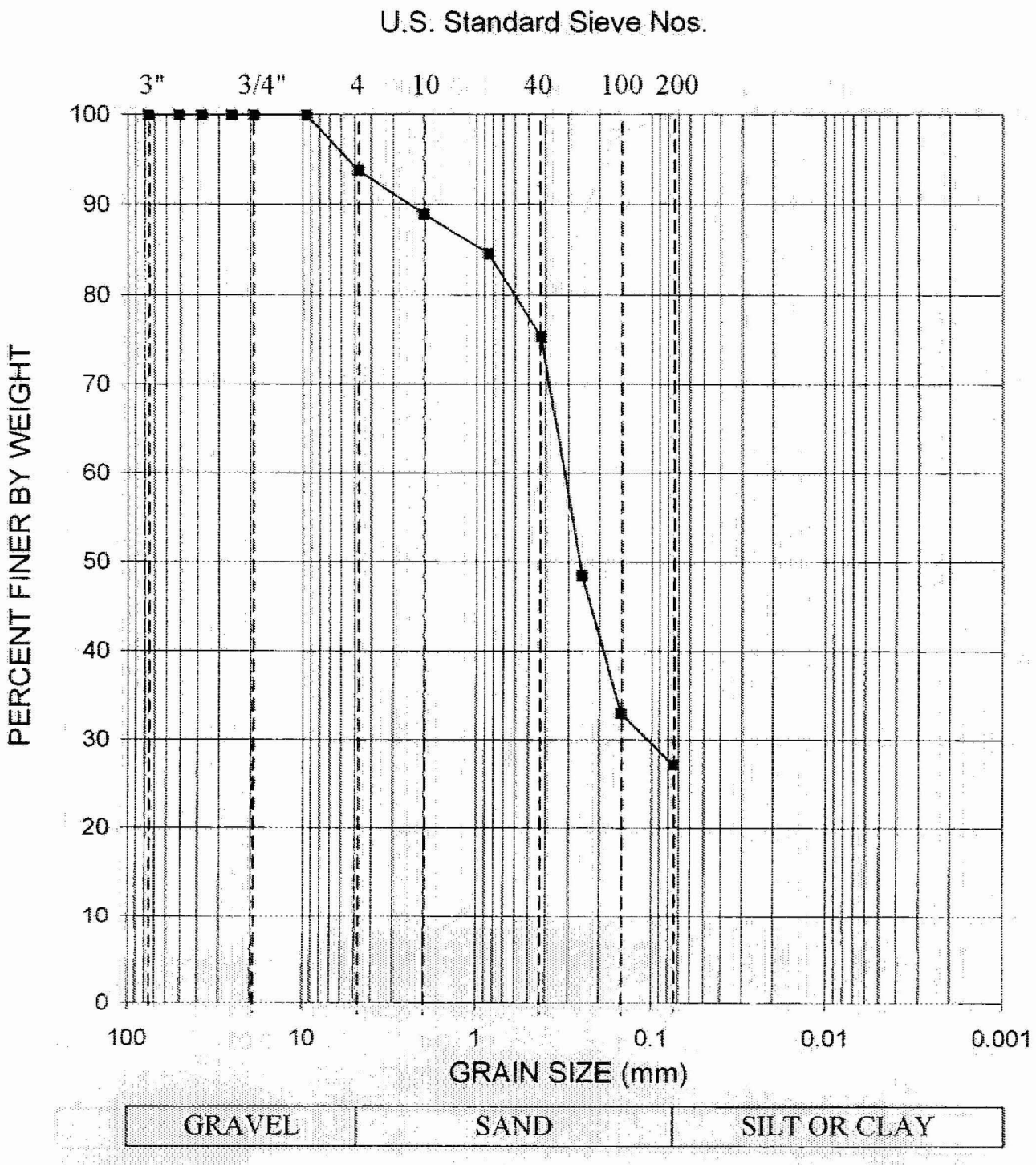
ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | Contract No.: 06120048.00 | Date: 9/28/2006 |
|---|---|---|---|

| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI |
|---|---|---|---|---|---|
| B-752 | 83.5 | Poorly Graded SAND, with silt trace shells, dark green | SP-SM | | |

Schnabel

Schnabel Engineering




**GRADATION CURVE**

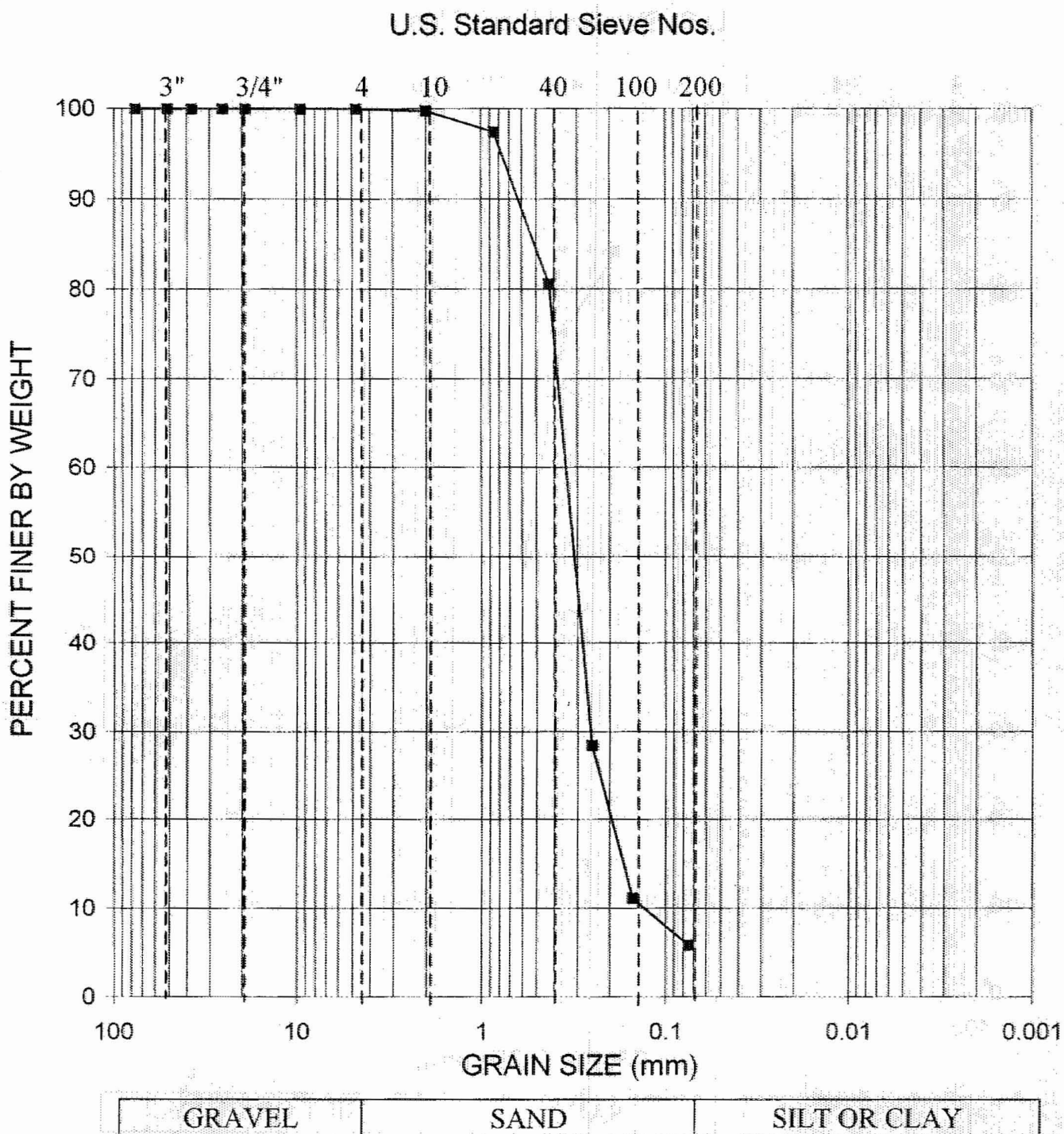
**ASTM D422**

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | Contract No.: 06120048.00 | Date: 9/27/2006 |
|---|---|---|---|

| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI |
|---|---|---|---|---|---|
| B-752 | 98.5 | Clayey SAND, trace shells, dark gray-green | SC | | |

Schnabel

Schnabel Engineering




**GRADATION CURVE**

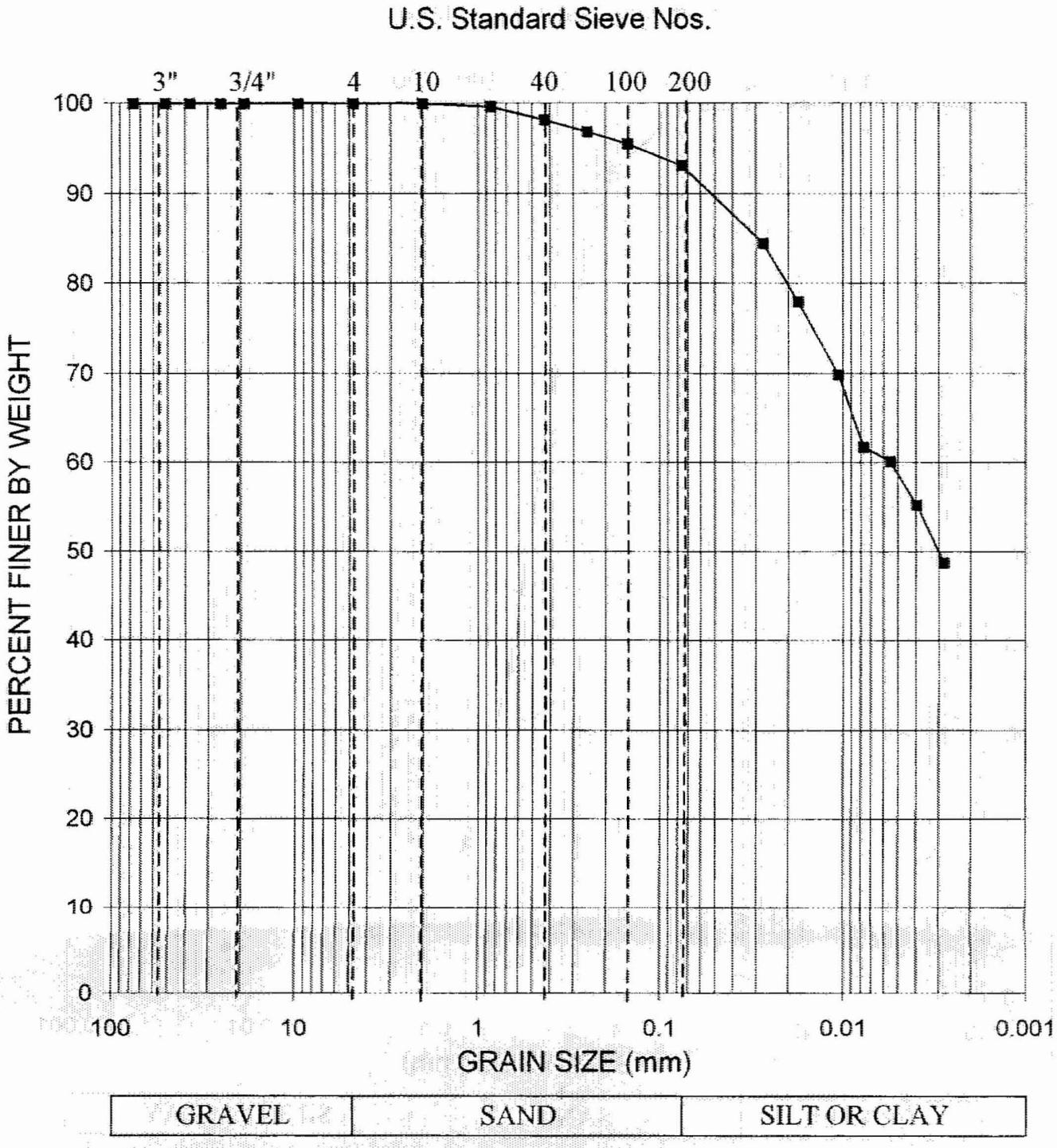
ASTM D422

| 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 |
|---|---|---|---|---|---|
| TP-B-307 | 4.5-5.5 | Poorly Graded SAND, with silt, brown | SP-SM | | |

Schnabel

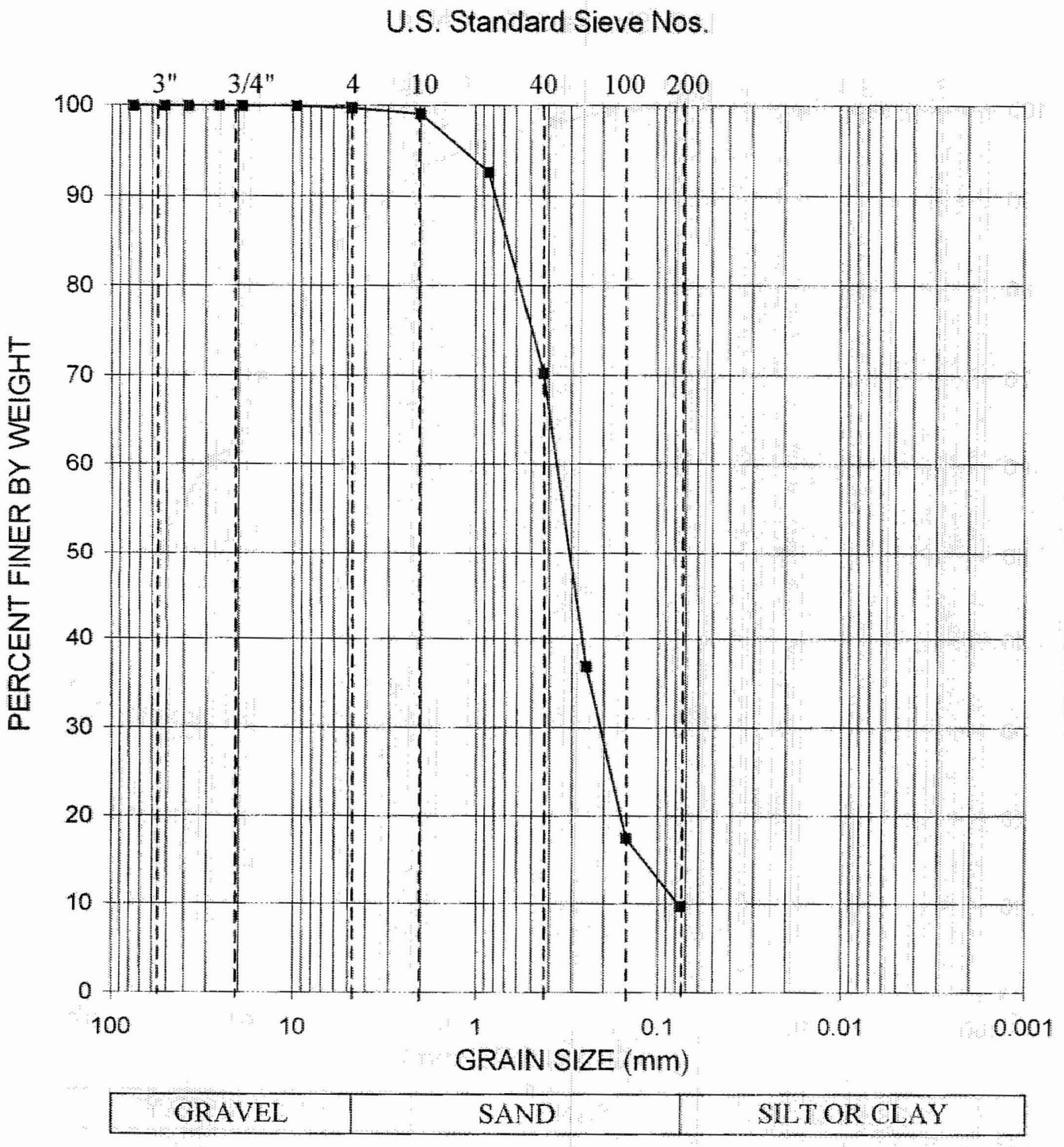
Schnabel Engineering




**GRADATION CURVE**

ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | | Contract No.: | 06120048.00 | Date: | 10/11/2006 |
|---|---|---|---|---|---|---|
| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI | |
| TP-B-314 | 4.0-5.0 | FAT CLAY, trace sand, gray-brown | CH | 71 | 47 | Schnabel Engineering |



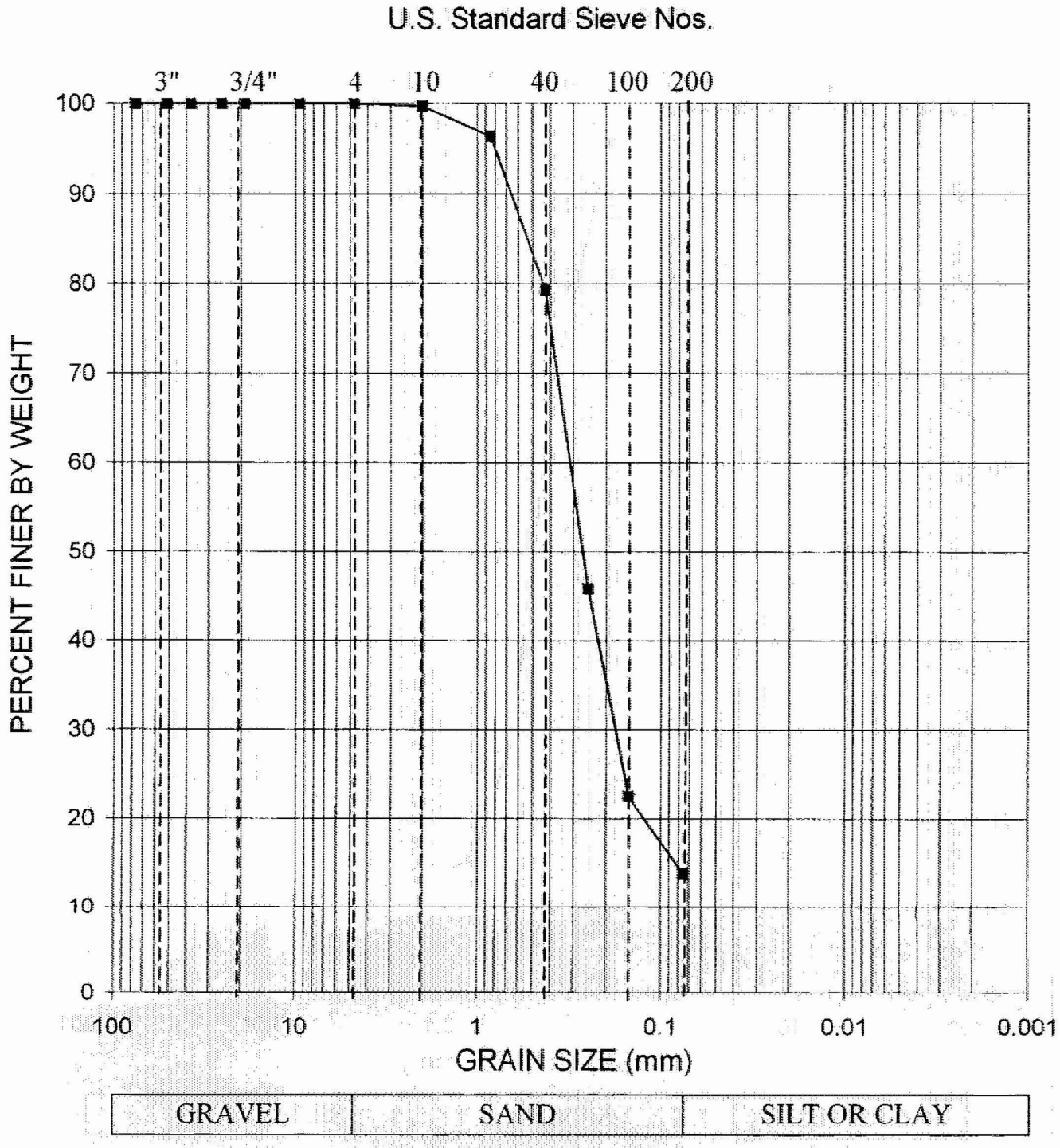

**GRADATION CURVE**

ASTM D422

| Project: | Constellation Energy Group COLA Project, Calvert Cliffs NuclearPower Plant (CCNPP), Calvert County, Maryland | | Contract No.: | 06120048.00 | Date: | 8/29/2006 |
|---|---|---|---|---|---|---|
| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI | |
| TP-B-315 | 6.0-7.0 | 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: | 8/28/2006 |
|---|---|---|---|---|---|

| Boring No. | Depth (ft) | Sample Description | Class. | LL | PI |
|---|---|---|---|---|---|
| TP-B-334 | 3.0-4.0 | Silty SAND, brown | SM | | |

Schnabel

Schnabel Engineering