Washington State Department of Transportation

Memorandum

DATE: June 27, 2005

TO: Linda M. Pierce/ Jeff S. Uhlmeyer MS 47365

FROM: Chris J. Johnson/ Hon Hua MS 29

SUBJECT: SR 20 OL 3678
Sidney St. vicinity to Scenic Heights Rd. Vicinity
MP 27.61 to MP 31.00
Soils and Surfacing Report

RECEIVED
JUN 28 2005
MATERIALS LAB

Transmitted for you review and concurrence is our Pavement Surfacing Report for this project.

Chris J. Johnson, P.E.

CHRISTOPHER JAY JOHNSON
STATE OF WASHINGTON
37891
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES 7/22/06

NW Region Materials Engineer

EEP Materials Lab Concurrence:

7/5/6

Signature and Date

Copies to:

D. Yankauskas	MS 77
J. Cuthbertson	MS 47365
Plans	MS 111
Env. Svcs.	MS 138

File: SR 20, OL-3678

Serial File: 05-083

Washington State Department of Transportation

Memorandum

Date: June 27, 2005

TO: Dawn Yankauskas MS 77

FROM: Chris Johnson/Hon Hua MS 29

SUBJECT: SR 20 0L-3678
Sidney St. Vicinity to Scenic Heights Rd. Vicinity
MP 27.61 to MP 31.00
Soils and Surfacing Report

This memorandum provides geotechnical and surfacing recommendations for the design and construction of the subject project. This project will improve sight distance by improving the horizontal and vertical alignment of SR 20 between MP 27.61 and MP 31.00. The following is the list of improvements included in this project:

1. Channelize the intersection of SR 20 and Sidney St.
2. Channelize the intersection of SR 20 and Mark St.
3. Realign SR 20 between Station 43+00 and Station 51+00
4. Channelize the intersection of SR 20 and Boon Rd.
5. Channelize and realign the intersection of SR 20 and Monroe Landing Rd.
6. Realign SR 20 between the vicinity of Monroe Landing Rd. and Station 111+00
7. Channelize the intersection of SR 20 and Miller Rd.

Also included in this project will be the construction of six (6) water treatment facilities (detention ponds) and the construction of a 10-foot high soldier pile retaining wall between station 177+25 to 179+00. Recommendations for this wall will be addressed by Headquarters Geotechnical Section.

The conclusions and recommendations contained in this memorandum are based upon the project description, site conditions, as they exist at the time of our visit, and subsurface information contained in our files. It is further assumed that the subsurface conditions, as interpreted from the borings are representative of the subsurface conditions throughout the project area. If during construction, subsurface conditions are different from those encountered in the exploratory borings, or appear to be present beneath or beyond the excavations, we should be contacted so we can assist you and the Construction Office and reevaluate our recommendations.

Field Investigation

The field exploration program for this project consisted of drilling fifty-five (55) test borings. Samples were recovered and visually classified in the field. Borings completed for this study utilized a CME 850 track mounted drill rig with the CME patented

automatic hammer, the portable penetrometer method of soil sampling and hand tools. Portable penetrometer values were converted to standard penetrometer values ("N" values) and recorded on the boring logs. The logs of test borings are attached with this report, and should be included in the contract documents.

Channelization of Sidney St. and SR 20

Subsurface Conditions

Soil Conditions within the project limits were interpreted from the exploratory borings. The boring locations are shown on the Boring Location Plan attached to this report. The test borings HH-1-03 through HH-7-03, PP-1-03 and PP-2-03 indicate the site is underlain by medium dense to dense silty SAND and sandy SILT with gravel. Standard penetrometer values derived from two (2) portable penetrometer and seven (7) test holes using hand tools, show the soils penetration resistance ranged between thirteen (13) and twenty-eight (28) blows per foot.

Cut and Fill Construction

This area proposes to lower the existing grade of SR 20 and provide a left turn pocket onto Sidney St. and to dead end Mark St. into a cul-de-sac. The proposed grade revision will require cut and fill to reconstruct and realign of SR 20 between Sta. 10+00 and Sta. 20+00. The cross sections provided by the design office show cuts will vary between 2H:1V to 4H:1V. Embankment fills approximately two (2) feet high will also be required. The current plan shows the work will be completed using 4H:1V side slopes. Based on these geometries, no foundation problems should be encountered in this section of the highway.

Re-alignment of SR 20 between Sta. 39+00 to Sta. 55+00

Subsurface Conditions

The site investigation for this area consisted of drilling four (4) test boring using a CME 850 drill rig, one (1) test boring using the portable penetrometer method of soil sampling and two (2) test borings using hand equipment. Soil Conditions within the project limits were interpreted from the exploratory borings. Test borings HH-8-03, HH-9-03, PP-3-03 and TH-1-03 through TH-4-03 show the soils in the area consist of medium dense to dense silty SAND and sandy SILT. Standard penetrometer values ("N" values) ranged between seven (7) and thirty-six (36) blows per foot.

Cut and Fill Construction

Based on the cross sections supplied by your office, most earthwork required for this section roadway would be cut and fill with proposed slopes of 2H:1V to 4H:1V, reaching maximum height of eight (8) feet between Station 39+00 and Station 55+00. All cuts will leave flatter slopes than are existing and which are stable. The soil in these areas will be stable at the proposed slope ratios.

The proposed cuts should be re-vegetated upon completion of the project. The design office should consult with the Northwest Region Landscape Architect for the appropriate type of plant life suitable for this area.

Channelization of Boon Rd and SR 20.

Subsurface Conditions
The site investigation for this area consisted of drilling one (1) test boring using a CME 850 drill rig, and six (6) test borings using hand equipment. Soil conditions within the project limits were interpreted from the exploratory borings TH-5-03, HH-10-03 through HH-13-03, HH-31-03, and HH-32-03. These borings indicate the site is underlain by medium dense to dense silty SAND and sandy SILT with gravel. Standard penetrometer values ("N" values) average twenty (20) blows per foot.

Cut and Fill Construction
The channelization of this intersection will require minor cuts and fills of approximately one (1) to two (2) feet in height with slopes of 2H:1V to 4H:1V. The cross sections for this area show that the embankment cuts will be 2H:1V. The soil in these areas will be stable at these cut slopes.

Channelization and Realignment of SR 20 at Monroe Landing Rd.

Subsurface Conditions / Cut and Fill Construction
Soil conditions within this portion of the project were interpreted from the exploratory borings performed at various locations within the proposed realignment and channelization. The test borings PP-4-03, PP-6-03, and HH-14-03 through HH-17-03 show the soils in the area consist of medium dense to dense silty SAND and sandy SILT with gravel. Standard penetrometer values derived from two (2) portable penetrometer and four (4) test holes using hand tools, show the soils penetration resistance ranged between six (6) and thirty-six (36) blows per foot.

The channelization and realignment of this intersection will require minor cuts and fills of approximately two (2) to seven (7) feet in height with slopes of 2H:1V and 4H:1V. Based on these geometries, it is our opinion that these cut and fill slopes will be stable.

Channelization of Miller Rd and SR 20 **(Sta. 107+00 to Sta. 126+50)**

Subsurface Conditions / Cut and Fill Construction
Soil conditions within this portion of the project were interpreted from the exploratory borings BF-1-03, BF-2-03, and HH-18-03 through HH-20-03 performed within the proposed channelization. The borings indicate the site is underlain by medium dense to dense silty SAND, sandy SILT, well graded SAND and poorly graded SAND. Portable penetrometer values, converted to standard penetrometer values ranged between eleven (11) and forty-six (46) blows per foot.

The channelization of this intersection will require minor fills of approximately three (3) feet with slopes of 4H:1V. Based on these geometries, it is our opinion that these fill slopes will be stable.

Grade Revision of the Existing Alignment (Sta. 151+00 to Sta. 175+00)

Subsurface Conditions

The existing grade of SR 20 will be lowered a maximum of five (5) feet between Sta. 159+00 and 175+00. Soil conditions within this portion of the project were interpreted from the exploratory borings PP-5-03, TH-6-03, TH-7-03, TH-1-04 through TH-3-04, HH-21-03, and HH-23-03 through HH-30-03 performed within the proposed grade revision. The borings indicate the site is underlain by medium dense to very dense silty SAND with gravel, and poorly graded SAND with gravel. Test boring TH-2-04, drilled on the existing centerline, encountered a possible boulder at three (3) feet below existing grade. The contractor should be made aware, that possible obstructions may be encountered in this area.

Cut Construction

At approximate Sta. 160+00, a cut slope of 1.5H:1V or a rockery wall is proposed. Test boring (TH-3-04) drilled in the vicinity of the area of embankment cut for the proposed grade revision show the soils consist of medium dense to very dense silty SAND with gravel. The soil in this area will be stable at a 1.5H:1V cut slope or rockery wall. The proposed cut should be revegetated upon completion of the project. The design office should consult with the Northwest Region Landscape Architect for the appropriate type of plant life suitable for this area.

Embankment Fill Material

Due to the granular nature of the soil that exists within the project limits, any settlement of the existing soils should occur during construction. The embankment fill area required along SR 20 within the project limits should be constructed on the existing slopes by terracing in accordance with Standard Specification Section 2-03.3(14) using Gravel Borrow or Select Borrow quality material, per Section 9-03.14(1) an 9-03.14(2). Embankment fill compaction should be in accordance with Method B per 2-03.3(14)C of the Standard Specifications.

The Region Landscape Office should be contacted to recommend appropriate erosion control measures for slopes.

Detention Ponds

Test borings P-1-03, P-2-03, P-3-03, P-4-03, P-1-05 and P-2-05 were drilled in the vicinity of the proposed ponds. Lab testing of the soil samples determined the material consists of medium dense to dense silt with sand, and poorly to well graded SAND with gravel. Infiltration rates were calculated based on the gradation analysis performed in

our lab. Based on the results of our analysis, infiltration of the soils should not be expected in this vicinity. Copies of the input/output used in infiltration analysis are attached to this report. We are currently monitoring the piezometer on a monthly basic at the detention pond sites. Future piezometer readings will be transmitted to your office. The following tables give the infiltration rate of the existing soils for Ponds.

Pond 1

Based on the sieve analysis results, the following table gives the anticipated infiltration rates at the various depths.

Boring Number	Stationing	Offset	Depth	Fine Content (%)	Infiltration Rate (inches/hour)
P-1-03	59+01	100' Lt.	0'-1.5'	78.1	N/A
			4.0'-5.5'	92.3	N/A
			7'-8.5'	95.2	N/A
			9'-10.5'	80.3	N/A
			14'-15.5'	94.3	N/A
			19'-20.5'	63.3	N/A
			24'-25.5'	60.6	N/A

Standing screened pipe piezometer was installed at the proposed detention pond location. The proposed bottom of pond will be approximately 6 ft below the existing ground elevation. Upon completion of the excavation, no ground water is anticipated in the detention facility. This was determined from water elevation readings from 11/5/03 to 3/23/05 indicating water is present at 15.60 ft below the existing grade elevation. The proposed pond side slopes should not be greater than 3H: 1V.

Pond 2

Based on the sieve analysis results, the following table gives the anticipated infiltration rates at the various depths.

Boring Number	Stationing	Offset	Depth	Fine Content (%)	Infiltration Rate (inches/hour)
P-2-03	71+00	80' Rt.	0'-1.5'	50.6	N/A
			4.0'-5.5'	83.7	N/A
			7'-8.5'	51.5	N/A
			9'-10.5'	10.9	1.1
			12.0'-13.5'	6.8	1.8
			14'-15.5'	6.0	2.2
			17.0'-18.5'	6.6	1.8
			19'-20.5'	32.4	N/A
			24'-25.5'	5.6	2.8

Standing screened pipe piezometer was installed at the proposed detention pond location. The proposed bottom of pond will be approximately 6 ft below the existing ground

elevation. Upon completion of the excavation, no ground water is anticipated in the detention facility. This was determined from water elevation readings from 11/5/03 to 3/23/05 indicating water is present at 10.40 ft below the existing grade elevation. The proposed pond side slopes should not be greater than 3H: 1V.

Pond 3

Based on the sieve analysis results, the following table gives the anticipated infiltration rates at the various depths.

Boring Number	Stationing	Offset	Depth	Fine Content (%)	Infiltration Rate (inches/hour)
P-3-03	100+00	100' Lt.	0'-1.5'	33.7	N/A
			4.0'-5.5'	28.9	N/A
			7'-8.5'	37.2	N/A
			9'-10.5'	31.5	N/A
			12.0'-13.5'	35.3	N/A
			14'-15.5'	22.3	N/A
			17.0'-18.5'	23.9	N/A
			19'-20.5'	20.9	N/A
			24'-25.5'	54.5	N/A

Standing screened pipe piezometer was installed at the proposed detention pond location. The proposed bottom of pond will be approximately 5 ft below the existing ground elevation. Upon completion of the excavation, no ground water is anticipated in the detention facility. This was determined from water elevation readings from 11/5/03 to 3/23/05 indicating water is present at 14.90 ft below the existing grade elevation. The proposed pond side slopes should not be greater than 3H: 1V.

Pond 4

Based on the sieve analysis results, the following table gives the anticipated infiltration rates at the various depths.

Boring Number	Stationing	Offset	Depth	Fine Content (%)	Infiltration Rate (inches/hour)
P-4-03	154+40	80' Lt.	0'-1.5'	21.2	N/A
			4.0'-5.5'	37.7	N/A
			7'-8.5'	12.1	N/A
			9'-10.5'	9.0	1.6
			12.0'-13.5'	8.0	2.0
			14'-15.5'	7.6	2.5
			17.0'-18.5'	7.5	2.2
			19'-20.5'	7.0	2.3
			24'-25.5'	9.0	1.4

Standing screened pipe piezometer was installed at the proposed detention pond location. The proposed bottom of pond will be approximately 15 ft below the existing ground

elevation. Upon completion of the excavation, no ground water is anticipated in the detention facility. This was determined from water elevation readings from 11/5/03 to 3/23/05 indicating no ground water. The proposed pond side slopes should not be greater than 3H: 1V.

Pond 5

Based on the sieve analysis results, the following table gives the anticipated infiltration rates at the various depths.

Boring Number	Stationing	Offset	Depth	Fine Content (%)	Infiltration Rate (inches/hour)
P-1-05	123+95	130'Rt.	1.5'-2.5'	21.8	N/A
			4.0'-5.5'	53.0	N/A
			7'-8.5'	53.7	N/A
			9'-10.5'	55.7	N/A
			12.0'-13.5'	18.9	N/A
			14'-15.5'	8.6	2.2
			17.0'-18.5'	5.6	3.6
			19'-20.5'	8.6	1.6
			24'-25.5'	5.4	5.0

Standing screened pipe piezometer was installed at the proposed detention pond location. The proposed bottom of pond will be approximately 5 ft below the existing ground elevation. Upon completion of the excavation, no ground water is anticipated in the detention facility. This was determined from water elevation readings from 1/26/03 to 3/23/05 indicating no ground water. The proposed pond side slopes should not be greater than 3H: 1V.

Pond 6

Based on the sieve analysis results, the following table gives the anticipated infiltration rates at the various depths.

Boring Number	Stationing	Offset	Depth	Fine Content (%)	Infiltration Rate (inches/hour)
P-2-05	124+00	300' Rt.	1.5'-2.5'	46.1	N/A
			4.0'-5.5'	70.2	N/A
			7'-8.5'	76.3	N/A
			9'-10.5'	67.1	N/A
			12.0'-13.5'	51.9	N/A
			14'-15.5'	54.4	N/A
			17.0'-18.5'	27.5	N/A
			19'-20.5'	36.0	N/A
			24'-25.5'	5.9	2.5

Standing screened pipe piezometer was installed at the proposed detention pond location. The proposed bottom of pond will be approximately 5 ft below the existing ground elevation. Upon completion of the excavation, no ground water is anticipated in the detention facility. This was determined from water elevation readings from 11/5/03 to 3/23/05 indicating no ground water. The proposed pond side slopes should not be greater than 3H: 1V.

Pavement Sections:

We submitted a surfacing report for the subject project located on SR 20, OL 3675 – Sidney Street Vicinity to Scenic Heights Road Vicinity (MP. 27.61 to 31.00) in February 6, 2003. These recommendations were reviewed by Headquarters Pavement Section and approved in their concurrence letter dated March 19, 2003. The 2003 memo recommends reconstruction of portions of SR 20 and county roadways.

1. MP 27.53 to 27.71, MP 28.06 to 28.56, MP 29.16 to 29.40 and MP 30.32 to 30.69 inclusive of the shoulders and intersections, to the radius returns, or state R/W line, whichever is farther, with the following:
   0.65' ACP Class Superpave ½", PG 58-22
   0.35' CSBC
   1.00' Total
2. Reconstruct the intersecting county roadways from the radius return or state R/W line, whichever is farther, to the point where they tie into the existing pavement and build the cul-de-sac on Mark Street with the following:
   0.35' ACP Class Superpave ½", PG 58-22
   0.35' CSBC
   0.70' Total

These recommendations should be updated to include the use of HMA Class ½", PG 58-22 instead of ACP Class Superpave ½", PG 58-22. All cracks along the alignment should be crack sealed per Standard Specifications Section 5-04.3(5)C. The recommended pavement section for SR 20 mainline assumes that all the settlement would have occurred before the pavement section is constructed.

SR 20 Mainline, Sidney Street to Boon Road

Transverse butt joints should be provided at the paving limits to accommodate the new overlay. These butt joints should taper from 0.15' to 0.00' in a length of 30'. Overlay the roadway inclusive of the shoulders and intersections, to the radius returns, with 0.15' HMA Class ½", PG 58-22.

The pavement rehabilitation of this roadway section is also scheduled took place during reconstruction phase as requested by design office.

HMA Test Requirements
The 15-year calculated design ESALs of 3.4 million should be used for HMA test requirements per Section 9-03.8(2) of the 2004 Standard Specifications and for the fill-in special provision as in GSP 03082.FR9.

HMA Construction Requirements
Include GSP 040310B1.GR5, "Cyclic Density" in the special provisions for this project.

Other
In the special provisions for this project revise the first sentence of Standard Specification 5-04.3(10)B Control with the following:

"HMA used in traffic lanes, including lanes for ramps, truck climbing, weaving, speed change, and all shoulders, and having a specified compacted course thickness greater than 0.10 foot, shall be compacted to a specified level of relative density."

In addition, the contractor should be required to submit sources for all material used on this project.

We trust this information is sufficient at this time. If you have any questions regarding this Memorandum, please call Nabil Dbaibo at (206)- 768-5905 or Hon Hua at (206) 768-5921.

HTH/CJJ/NTD:hth

Attachment:

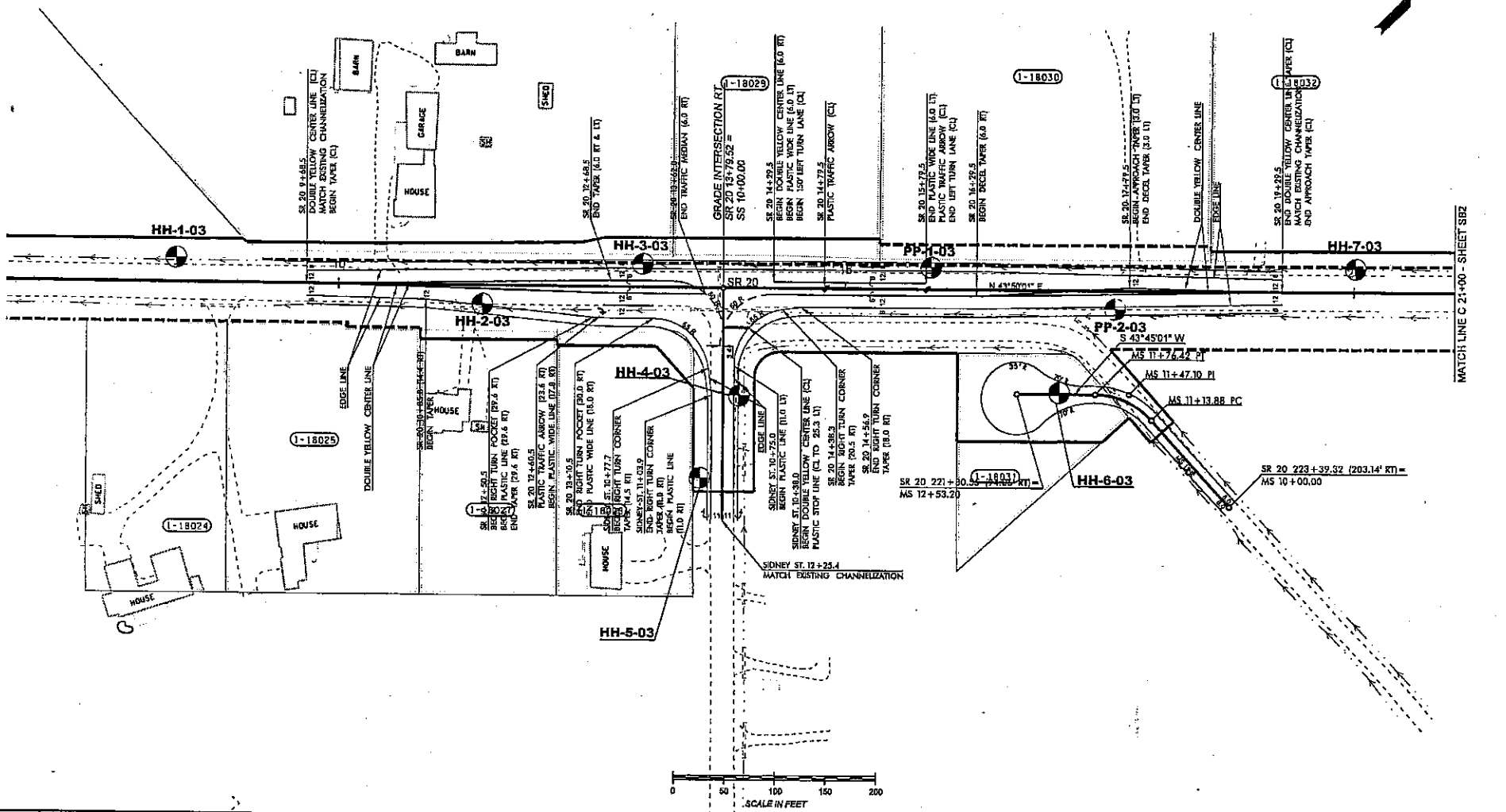
Serial File: 05-083

cc: Jim Cuthbertson/HQ Mats Lab/MS-47365

Plan Sheets

SR 20, Sidney St. Vic. to Scenic Heights Rd. Vic, MP 27.61 to MP 31.00

T.32N. R1E. W.M.



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ENTERED BY	SCHUERHOFF				
CHECKED BY	P. FERRIER				
PROJ. ENGR.	R. SIMONSEN				
REGIONAL ADM.	L. ENG				
	DATE	DATE	REVISION	BY	

REGION NO.	STATE	FED. AID PROJ. NO.
10	WASH	

JOB NUMBER

CONTRACT NO.

HANS R. SIMONSEN — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 4-12-94

Washington State Department of Transportation

SIDNEY STREET VICINITY TO SCENIC HEIGHTS ROAD VICINITY

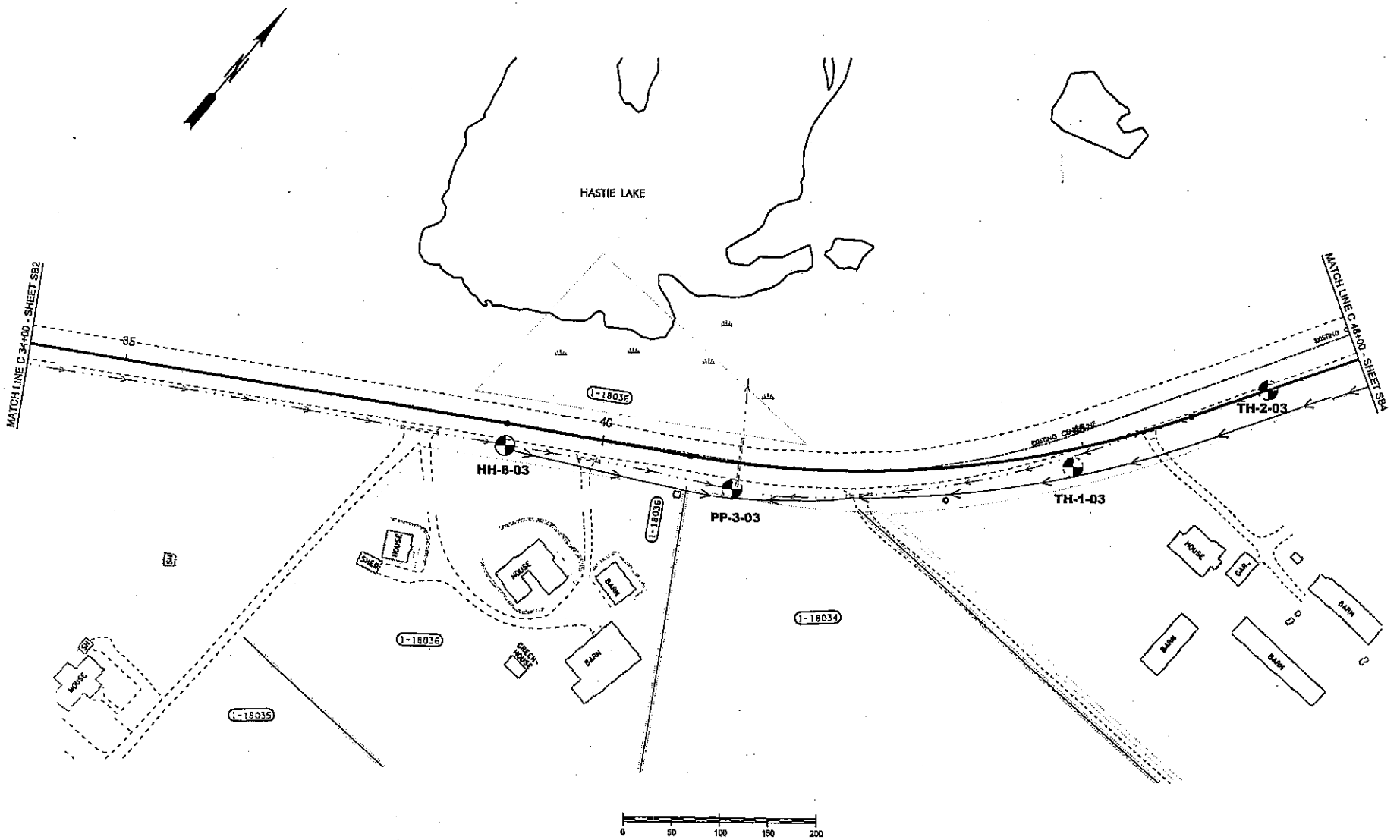
BORING LOCATION

BL1

SHEET 1 OF 10 SHEETS

CURVE DATA					
P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH	S
C 43+59.86	28°36'14" LT	1050.00'	267.88'	574.19'	

T.32N. R1E. W.M.



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PROJ. ENGR.	R. SIMONSEN				
REGIONAL ADM.	L. ENG				
		DATE	DATE	REVISION	BY

REGION NO.	STATE	FED. AID PROJ. NO.
10	WASH	
JOB NUMBER		
CONTRACT NO.		

LARS R. SIMONSEN — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 4-22-04

Washington State Department of Transportation

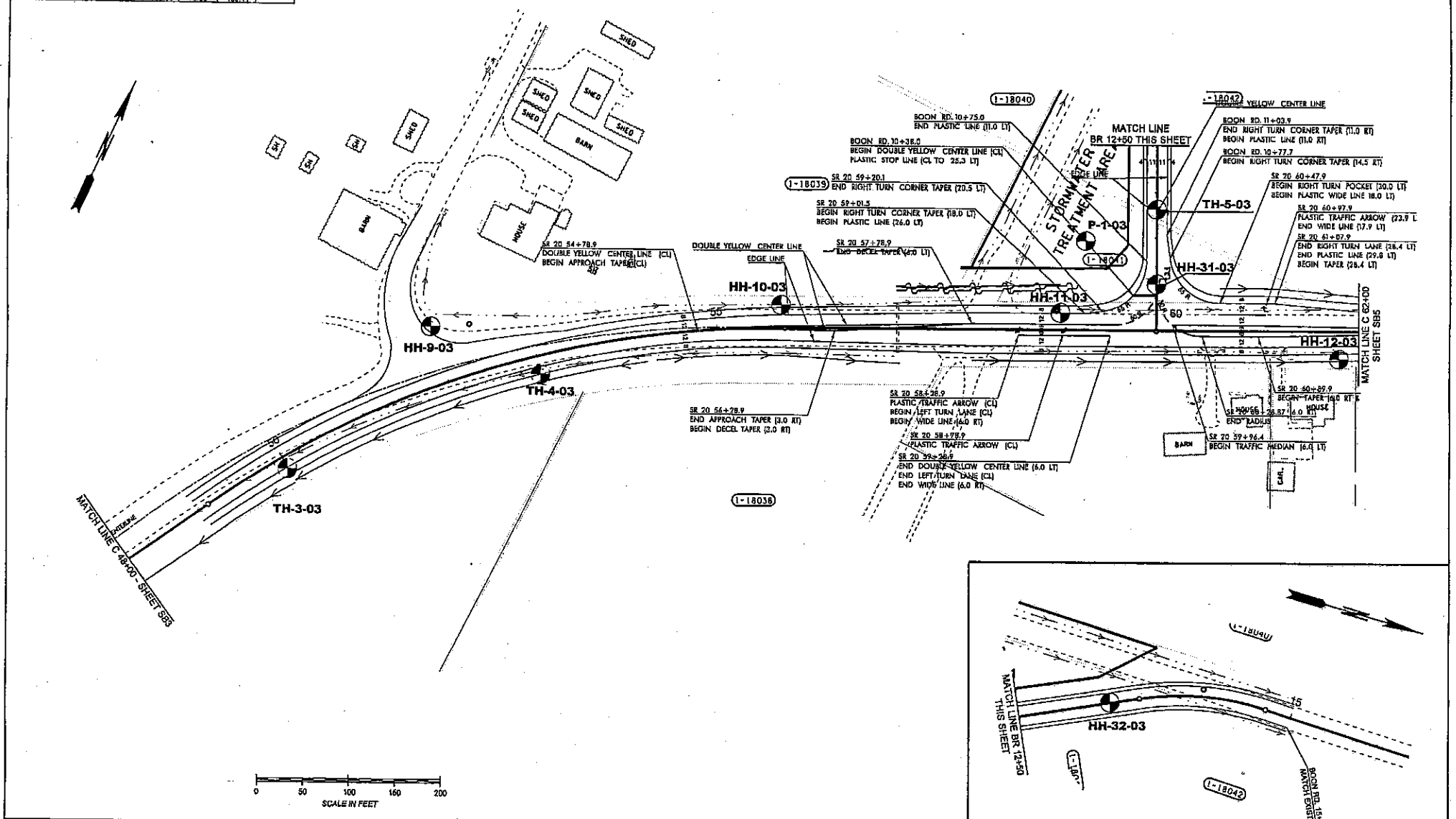
SIDNEY STREET VICINITY TO SCENIC HEIGHTS ROAD VICINITY

BORING LOCATION

BL2

SHEET 2 OF 10 SHEETS

CURVE DATA					
P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH	S
C 52+50.37	34°52'59" RT	1100.00'	345.80'	669.71'	
HL 11+12.62	49°01'11" RT	120.00'	54.71'	102.67'	
BR 14+03.04	26°34'07" RT	300.00'	70.63'	139.11'	



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CHECKED BY	P. FERRIER				JOB NUMBER		
PROJ. ENGR.	R. SIMONSEN				CONTRACT NO.		
REGIONAL ADM.	L. ENG						
		DATE	DATE	REVISION	BY		

Washington State Department of Transportation

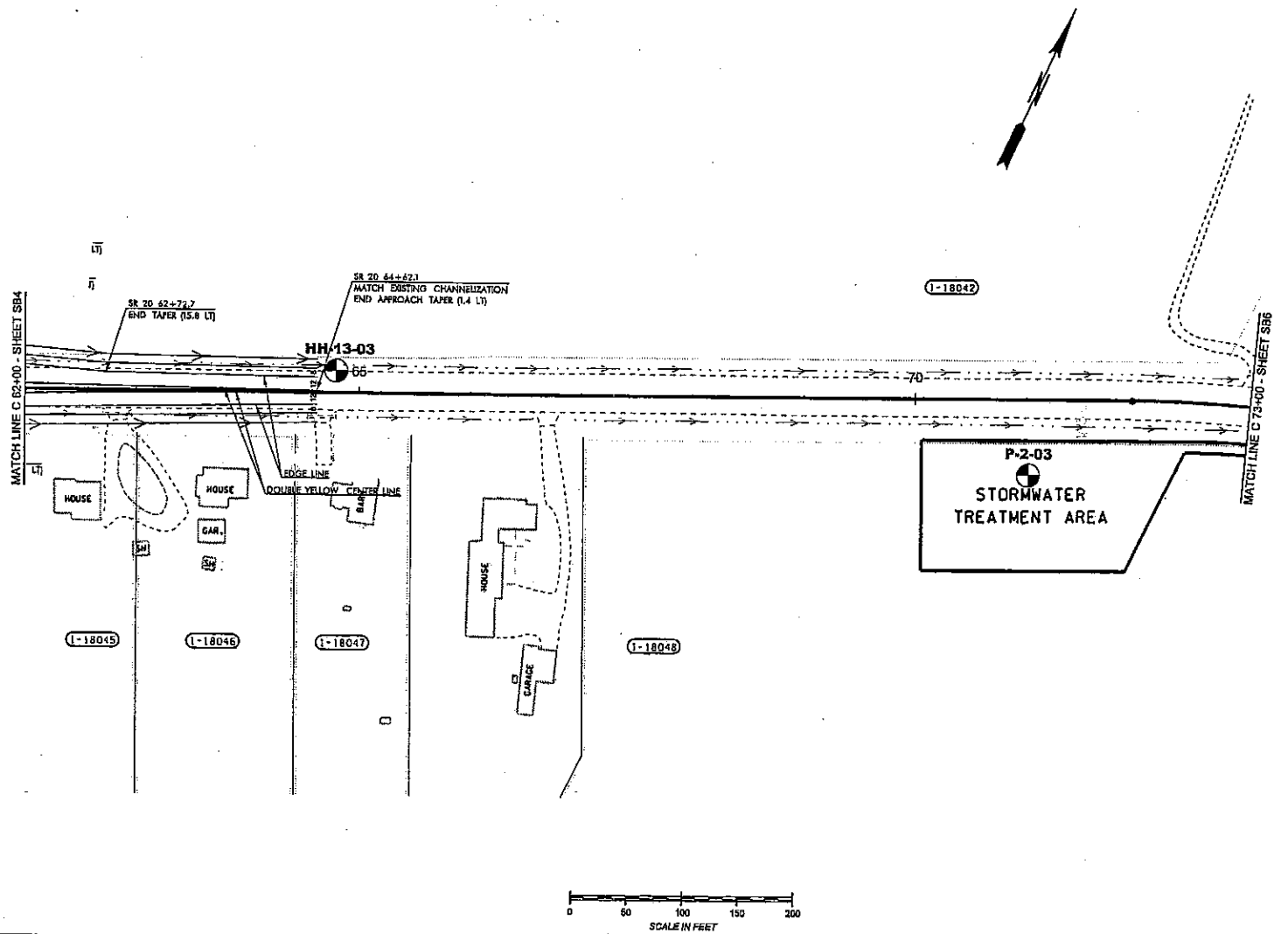
SIDNEY STREET VICINITY TO SCENIC HEIGHTS ROAD VICINITY

BORING LOCATION

BL3

SHEET 3 OF 10 SHEETS

T.32N. R1E. W.M.



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REGIONAL ADM.	L. ENG			CONTRACT NO.			
	DATE	DATE	REVISION	BY			

Washington State Department of Transportation

SIDNEY STREET VICINITY
TO SCENIC HEIGHTS
ROAD VICINITY

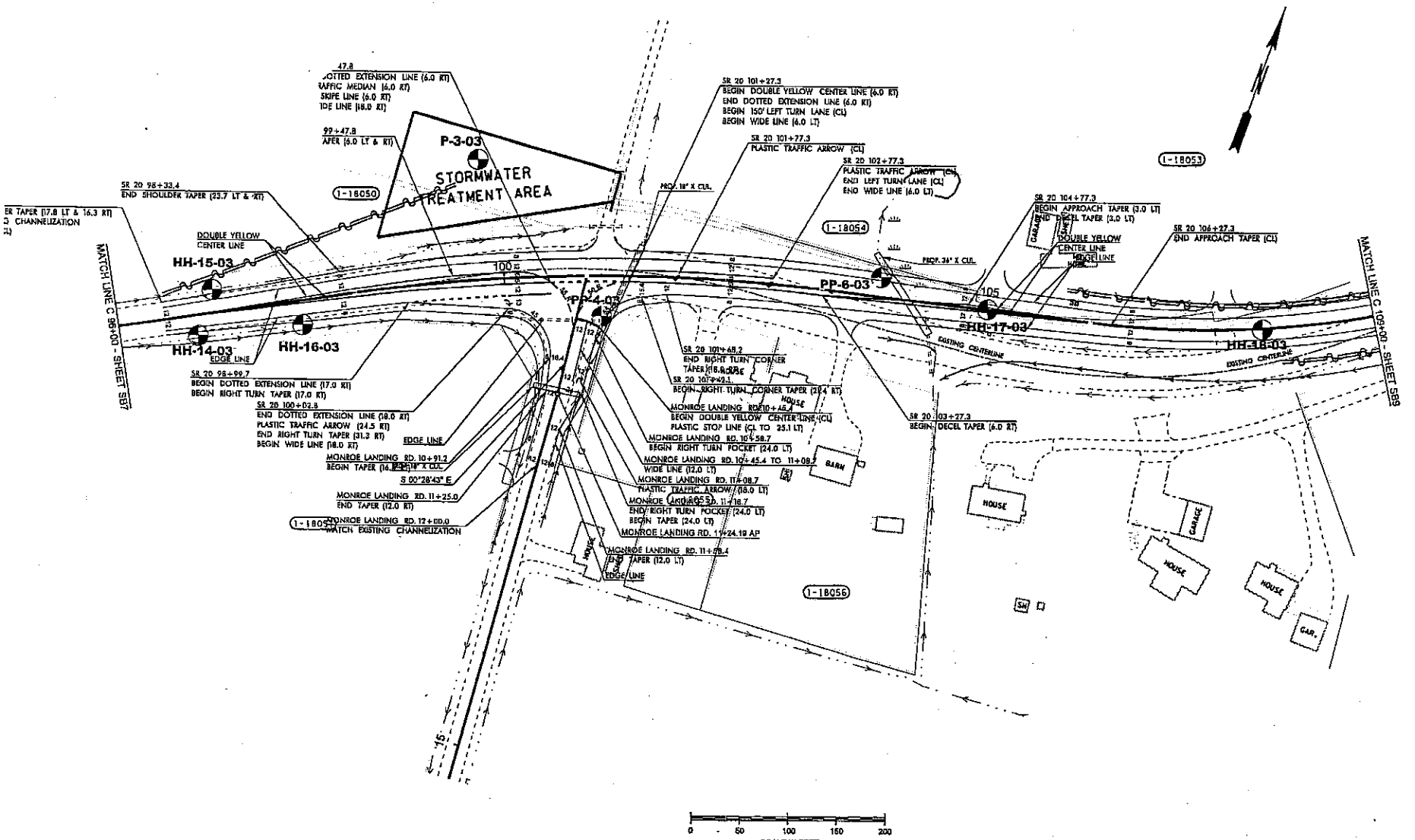
BORING LOCATION

BL4

SHEET 4 OF 10 SHEETS

CURVE DATA					
P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH	S
C 100+88.32	15°22'25" RT	1000.00	134.97	268.32	
C 108+44.08	28°35'05" LT	1000.00	256.25	494.32	

T.32N. R1E. W.M.



DESIGNED BY G. GURULE				REGION NO. 10	STATE WASH	FED. AID PROJ. NO.
ENTERED BY GURULE/SCHUERHOFF				JOB NUMBER		
CHECKED BY P. FERRIER				CONTRACT NO.		
PROJ. ENGR. R. SIMONSEN						
REGIONAL ADM. L. ENG						
	DATE	DATE	REVISION	BY		

Washington State Department of Transportation

SIDNEY STREET VICINITY TO SCENIC HEIGHTS ROAD VICINITY

BORING LOCATION

BL5

SHEET 5 OF 10 SHEETS

CURVE DATA					
P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH	S
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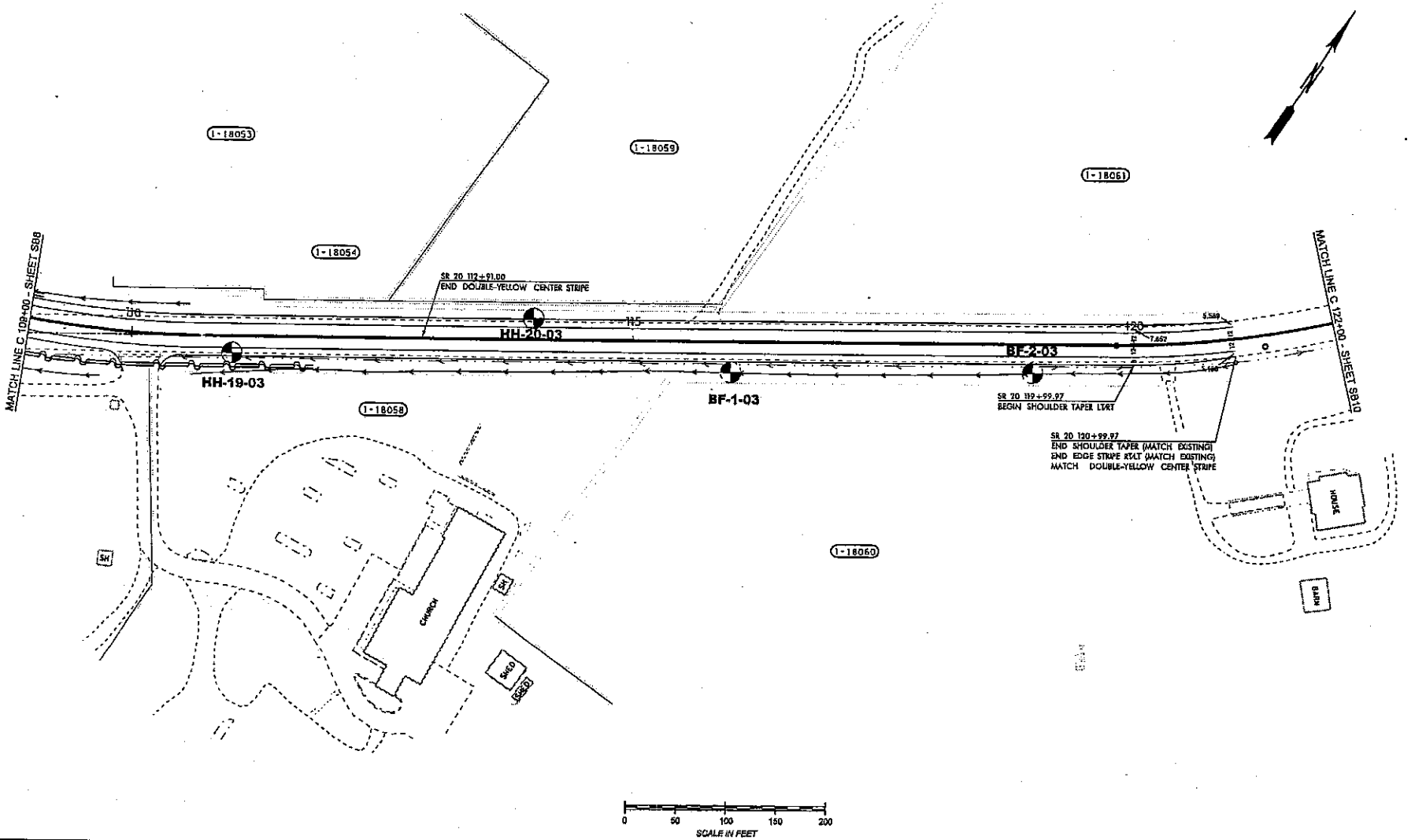
T.32N. R1E. W.M.



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REGIONAL ADM. L. ENG					
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FED. AID PROJ. NO.

Washington State Department of Transportation

SIDNEY STREET VICINITY TO SCENIC HEIGHTS ROAD VICINITY

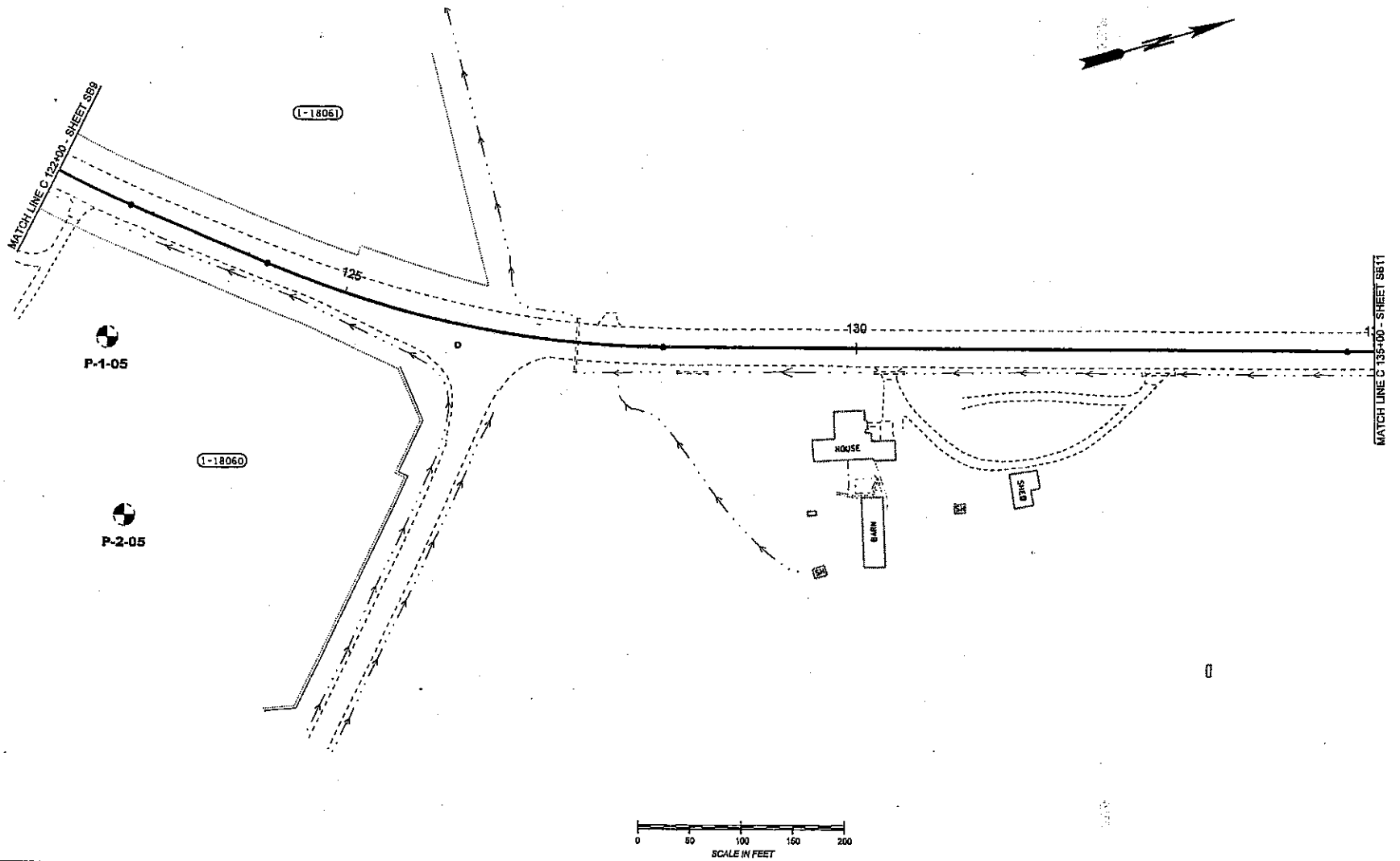
BORING LOCATION

BL6

SHEET 6 OF 10 SHEETS

CURVE DATA					
P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH	S
C 128+16.80	22°30'35" LT	1000.00'	199.00'	392.87'	

T.32N. R1E. W.M.



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REGION NO.	STATE	FED. AID PROJ. NO.
10	WASH	
JOB NUMBER		
CONTRACT NO.		

Washington State Department of Transportation

SIDNEY STREET VICINITY TO SCENIC HEIGHTS ROAD VICINITY

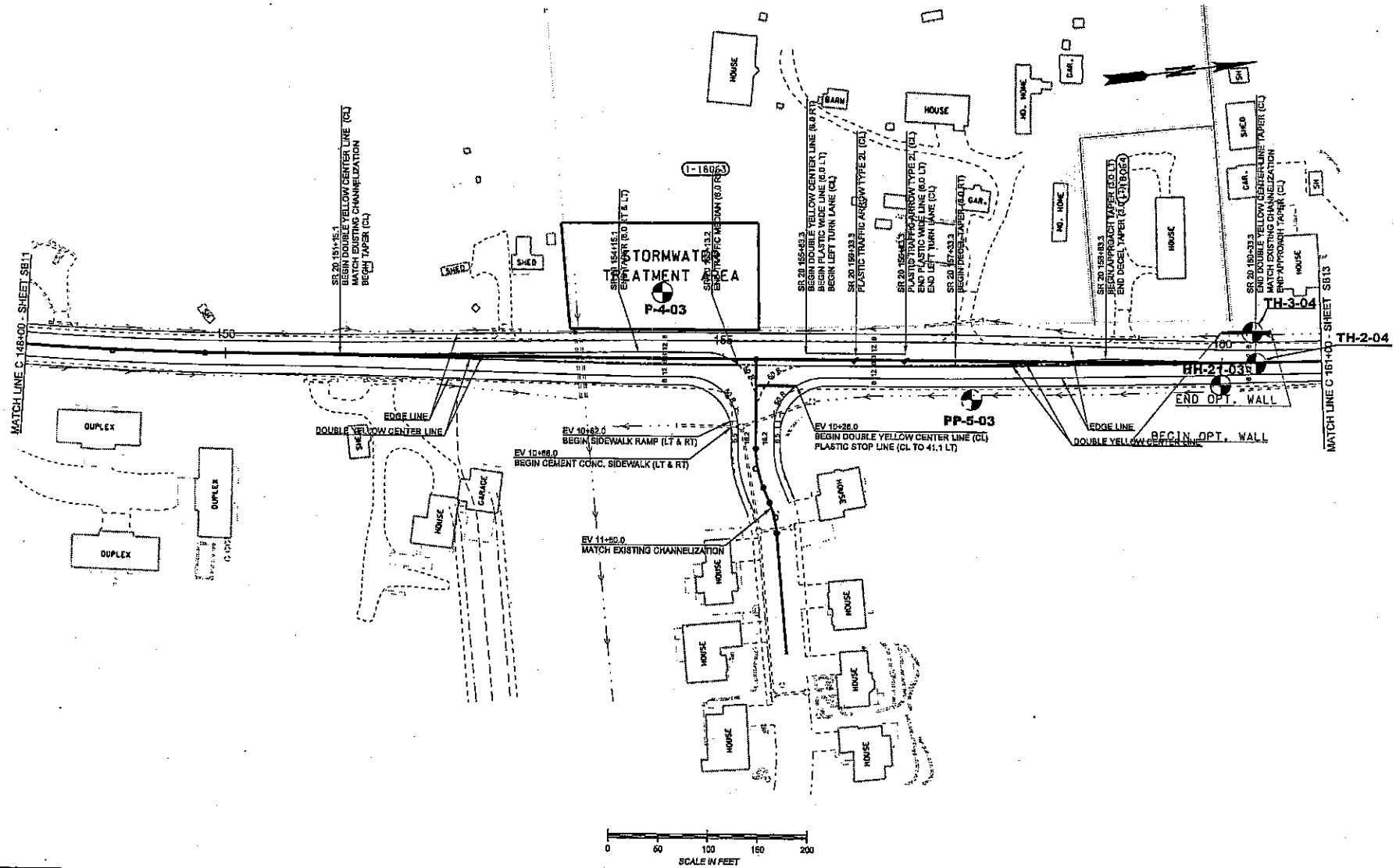
BORING LOCATION

BL7

SHEET 7 OF 10 SHEETS

CURVE DATA					
P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH	S
C 149+17.09	03°47'16" LT	4000.00'	132.27'	264.44'	

T.32N. R1E. W.M.



DESIGNED BY	G. GURULE				
ENTERED BY	G. GURULOFF				
CHECKED BY	P. FERRIER				
PROJ. ENGR.	R. SIMONSEN				
REGIONAL ADM.	L. ENG				
	DATE	DATE	REVISION	BY	

REGION NO.	STATE	FED. AID PROJ. NO.
10	WASH	
JOB NUMBER		
CONTRACT NO.		

Washington State Department of Transportation

SIDNEY STREET VICINITY TO SCENIC HEIGHTS ROAD VICINITY

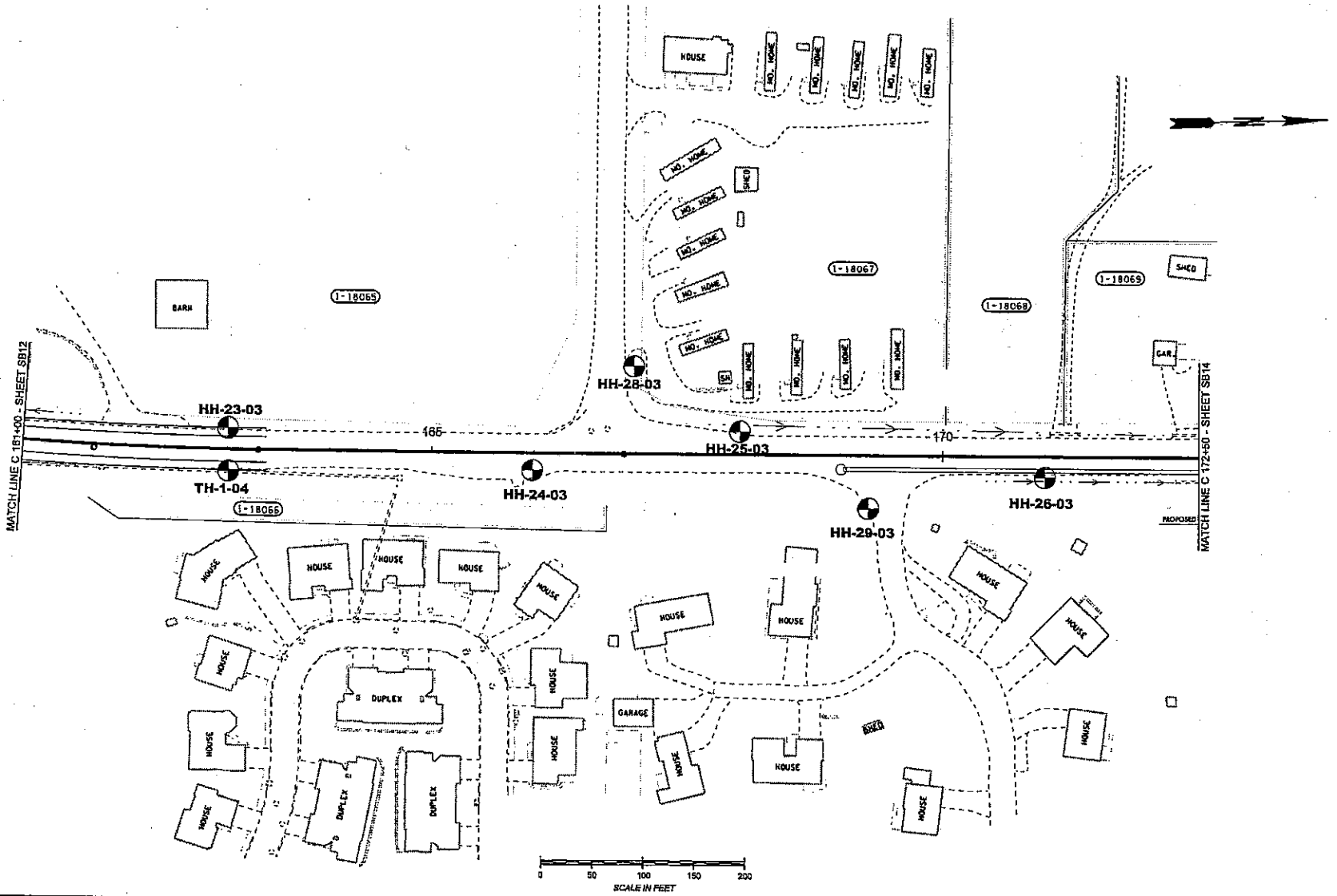
BORING LOCATION

BL8

SHEET 8 OF 10 SHEETS

CURVE DATA					
P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH	S
C 161+64.60	05°27'30" LT	4000.00'	190.87'	381.06'	
CP 11+58.66	61°09'25" LT	100.00'	59.09'	106.74'	
CP 12+75.49	61°38'27" RT	113.33'	67.61'	121.92'	

T.32N. R1E. W.M.



DESIGNED BY	G. GURULE				
ENTERED BY	SCBURKHOFF				
CHECKED BY	P. FERRIER				
PROJ. ENGR.	R. SIMONSEN				
REGIONAL ADM.	L. ENG				
	DATE	DATE	REVISION	BY	

REGION NO.	STATE	FED. AID PROJ. NO.
10	WASH	
JOB NUMBER		
CONTRACT NO.		

Washington State Department of Transportation

SIDNEY STREET VICINITY TO SCENIC HEIGHTS ROAD VICINITY

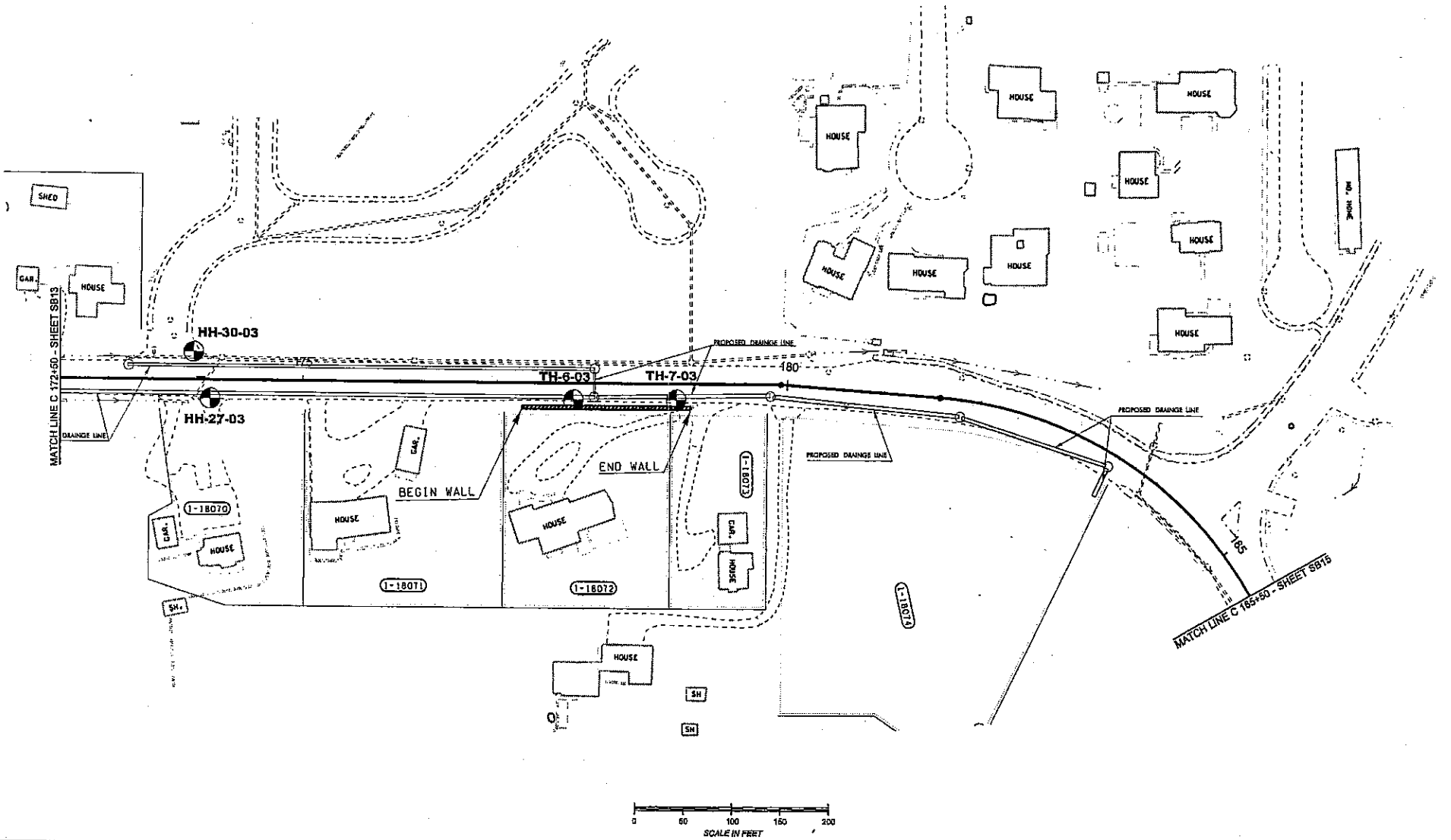
BORING LOCATION

BL9

SHEET 9 OF 10 SHEETS

CURVE DATA					
P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH	S
C 185+19.15	64°15'15" RT.	400.00'	381.77'	598.21'	

T.32N. R1E. W.M.



DESIGNED BY G. GURULE				REGION NO.	STATE	FED.AID PROJ.NO.	
ENTERED BY SCHUERHOFF				10	WASH		
CHECKED BY P. FERRIER				JOB NUMBER			
PROJ. ENGR. R. SIMONSEN							
REGIONAL ADM. L. ENG				CONTRACT NO.			
	DATE	DATE	REVISION	BY			

Washington State Department of Transportation

SIDNEY STREET VICINITY TO SCENIC HEIGHTS ROAD VICINITY

BORING LOCATION

BL10

SHEET 10 OF 10 SHEETS

Boring Logs

SR 20, Sidney St. Vic. to Scenic Heights Rd. Vic, MP 27.61 to MP 31.00

Washington State Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-1-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 127.0 ft (38.7 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand tools

Station 8 + 40 Offset 25' Lt. Casing None Method Open hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
					B	SS#1		Silty SAND with gravel, medium dense, brown, moist, Homogeneous,		
					B	SS#2		Sandy SILT with gravel, medium dense, gray and brown, moist, Homogeneous,		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water.		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:35:16 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-2-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 127.0 ft (38.7 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station 11+40 Offset 36' Rt. Casing Hole Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, loose, brown, moist, Homogeneous, Similar to SS#1.		
								Sandy SILT with gravel, medium dense, gray and brown, moist, Laminated, Similar to SS#2		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water.		
5	1									
	2									
10	3									
	4									
15	5									
20	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-3-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 127.5 ft (38.9 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station 13+00 Offset 22' Lt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
						SS#3		Well graded SAND with gravel, and cobbles, medium dense, gray, moist, Homogeneous,		
								Sandy SILT with gravel, medium dense, gray, wet, Laminated, Similar to SS#2		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water.		
5	1									
	2									
10	3									
	4									
15	5									
20	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-4-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 129.0 ft (39.3 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station SS 10 + 80 Offset 19' Lt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, loose, brown, moist, Homogeneous, Similar to SS#1. Sandy SILT with gravel and cobbles, medium dense, gray and brown, moist, Laminated, Similar to SS#2		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water.		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-5-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 130.0 ft (39.6 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station SS 11+ 80 Offset 17' Rt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, cobbles and pieces of concrete, medium dense, brown, dry, Homogeneous, Similar to SS#1		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

SOIL OL-3678.GPJ SOIL-GDT 6/21/05,12:35:58 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-6-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation ft (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station MS 12+00 Offset C/L Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater ▼	Instrument
								Silty SAND with gravel, medium dense, brown, dry, Homogeneous, Similar to SS#1		
								Sandy SILT with gravel, dense, brown and gray, moist, Laminated, Similar to SS#2		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-7-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 134.0 ft (40.8 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station 20+00 Offset 18' Lt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, and cobbles, medium dense, brown, moist, Homogeneous, Similar to SS#1		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

SOIL OL-3678.GPJ SOIL-GDT 6/21/05,12:36:01 P6

Washington State Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-8-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 136.0 ft (41.5 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station C 39+60 Offset 22.5' Rt Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, loose, gray, dry, Homogeneous, Similar to SS#1		
								Sandy SILT with gravel, medium dense, gray, moist, Homogeneous, Similar to SS#2		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
								No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-9-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 153.0 ft (46.6 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station HL 10+50 Offset 25' Rt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, dense, brown, dry, Homogeneous, Similar to SS#1		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
	2									
10	3									
	4									
15	5									
20	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:36:05 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-10-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 150.0 ft (45.7 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station C 55+75 Offset 26' Lt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater ▼	Instrument
								Silty SAND with gravel, dense, brown, dry, Homogeneous, Similar to SS#1		
								Sandy SILT with gravel, dense, gray, moist, Homogeneous, Similar to SS#2		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
								No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-11-03

Job No. OL-3678 SR SR-20 Elevation 148.0 ft (45.1 m)

Sheet 1 of 1

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station C 58+75 Offset 23' Lt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, very dense, gray and brown, moist, Laminated, Similar to SS#1		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

SOIL 0L-3678.GPJ SOIL.GDT 6/21/05 12:35:18 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-12-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 151.0 ft (46.0 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station C 61+75 Offset 33' Rt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, very dense, brown, moist, Homogeneous, Similar to SS#1		
								Sandy SILT with gravel, medium dense, gray, moist, Homogeneous, Similar to SS#2		
	1							End of test hole boring at 3 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
5								No free Water		
	2									
10	3									
	4									
15	5									
20	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-13-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 147.5 ft (45.0 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station C 64+75 Offset 24' Lt Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, dense, brown, moist, Homogeneous, Similar to SS#1		
								Sandy SILT with gravel, dense, gray and brown, moist, Laminated, Similar to SS#2		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
1	1							No Free Water		
5	2									
10	3									
	4									
15	5									
20	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:35:22 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-14-03

Job No. OL-3678 SR SR-20 Elevation ft (m)

Sheet 1 of 1

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 17, 2003 Completion September 17, 2003 Well ID# _____ Equipment Hand Tools

Station C 96+60 Offset 24' Rt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, medium dense, brown, dry, Homogeneous, Similar to SS#1		
								Sandy SILT with gravel, dense, gray, dry, Homogeneous, Similar to SS#2		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-15-03

Job No. OL-3678 SR SR-20 Elevation 138.0 ft (42.1 m)

Sheet 1 of 1

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 17, 2003 Completion September 17, 2003 Well ID# _____ Equipment Hand Tools

Station 97+00 Offset 24' Lt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, medium dense, brown, dry, Homogeneous, Similar to SS#1		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:35:25 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-16-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 137.5 ft (41.9 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 17, 2003 Completion September 17, 2003 Well ID# _____ Equipment Hand Tools

Station 97+80 Offset 25' Rt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater ▼	Instrument
								Silty SAND with gravel, medium dense, brown, dry, Homogeneous, Similar to SS#1		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-17-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 134.0 ft (40.8 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 17, 2003 Completion September 17, 2003 Well ID# _____ Equipment Hand Tools

Station 105+00 Offset C/L Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, medium dense, brown, dry, Homogeneous, Similar to SS#1		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:35:28 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

Job No. OL-3678 SR SR-20 Elevation 138.0 ft (42.1 m)

HOLE No. HH-18-03

Sheet 1 of 1

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 17, 2003 Completion September 17, 2003 Well ID# _____ Equipment Hand Tools

Station 107+80 Offset C/L Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, medium dense, brown, dry, Homogeneous, Similar to SS#1		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-19-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 137.0 ft (41.8 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 17, 2003 Completion September 17, 2003 Well ID# _____ Equipment Hand Tools

Station 111+00 Offset 21' Rt. Casing None Method Wet Rotary

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, medium dense, brown, dry, Homogeneous, Similar to SS#1		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:35:31 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-20-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 142.0 ft (43.3 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 17, 2003 Completion September 17, 2003 Well ID# _____ Equipment Hand Tools

Station 114+00 Offset 23' Lt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater ▼	Instrument
								Silty SAND with gravel, medium dense, brown, moist, Homogeneous, Similar to SS#1		
								Sandy SILT with gravel, medium dense, gray, moist, Homogeneous, Similar to SS#2		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
1	1							No Free Water		
5	2									
10	3									
	4									
15	5									
20	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-21-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 166.0 ft (50.6 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 17, 2003 Completion September 17, 2003 Well ID# _____ Equipment Hand Tools

Station C 160+00 Offset 27' Rt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater ▼	Instrument
					B	SS#6		Poorly graded SAND with gravel, very dense, gray, moist, Homogeneous,		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:35:36 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-23-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 173.0 ft (52.7 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 17, 2003 Completion September 17, 2003 Well ID# _____ Equipment Hand Tools

Station 163+00 Offset 18' Lt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Well graded SAND with gravel, medium dense, brown, moist, Homogeneous, Similar to SS#3		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:35:38 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-24-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 173.0 ft (52.7 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 17, 2003 Completion September 17, 2003 Well ID# _____ Equipment Hand Tools

Station 166+00 Offset 25' Rt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, medium dense, brown, moist, Homogeneous, Similar to SS#1		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:35:40 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-25-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 173.0 ft (52.7 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 18, 2003 Completion September 18, 2003 Well ID# _____ Equipment Hand Tools

Station 168+00 Offset 20' Lt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, medium dense, gray, dry, Homogeneous, Similar to SS#1		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05 12:35:41 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-26-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 169.0 ft (51.5 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 18, 2003 Completion September 18, 2003 Well ID# _____ Equipment Hand Tools

Station 171+00 Offset 20' Rt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Well graded GRAVEL with sand, subangular, loose, gray, moist, Homogeneous,		
								Well graded SAND with gravel, medium dense, brown, moist, Homogeneous,		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
								No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

SOIL 0L-3678.GPJ SOIL.GDT 6/21/05,12:35:43 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-27-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 156.0 ft (47.5 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 18, 2003 Completion September 18, 2003 Well ID# _____ Equipment Hand Tools

Station 174+00 Offset 20' Rt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
						SS#7		Silty SAND with gravel, dense, gray, dry, Homogeneous,		
								End of test hole boring at 2.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
	2									
10	3									
	4									
15	5									
20	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:35:45 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-28-03

Job No. OL-3678 SR SR-20 Elevation 173.0 ft (52.7 m)

Sheet 1 of 1

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 18, 2003 Completion September 18, 2003 Well ID# _____ Equipment Hand Tools

Station HG 10+90 Offset 20' Rt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Well graded SAND with gravel, medium dense, brown, moist, Homogeneous, Similar to SS#7		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		

Depth (ft): 5, 10, 15, 20
Meters (m): 1, 2, 3, 4, 5, 6

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:35:46 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-29-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 171.0 ft (52.1 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 18, 2003 Completion September 18, 2003 Well ID# _____ Equipment Hand Tools

Station CP 10+70 Offset 20' Rt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater ▼	Instrument
								Poorly graded SAND with gravel, loose, brown, moist, Homogeneous, Similar to SS#6		
								Silty SAND with gravel, medium dense, brown, moist, Homogeneous, Similar to SS#5		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
	1							No Free Water		
5										
	2									
10	3									
	4									
15										
	5									
20	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-30-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 168.0 ft (51.2 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 18, 2003 Completion September 18, 2003 Well ID# _____ Equipment Hand Tools

Station 173+75 Offset 15' Lt. Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, dense, gray, dry, Homogeneous, Similar to SS#5		
	1							End of test hole boring at 3 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
5								No Free Water		
	2									
10	3									
	4									
15	5									
20	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

Job No. OL-3678 SR SR-20 Elevation 151.0 ft (46.0 m)

HOLE No. HH-31-03

Sheet 1 of 1

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 22, 2003 Completion September 22, 2003 Well ID# _____ Equipment Hand Tools

Station BR 10+50 Offset C/L Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Sandy SILT with gravel, medium dense, brown, dry, Homogeneous, Similar to SS#2		
								Silty SAND, dense, gray, dry, Homogeneous, Simular to SS#1 (No Gravel See Test Hole TH-5-03)		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
5	1									
	2									
10	3									
	4									
15	5									
20	6									

SOIL 0L-3678.GPJ SOIL.GDT 6/21/05,12:35:53 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. HH-32-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 147.0 ft (44.8 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 22, 2003 Completion September 22, 2003 Well ID# _____ Equipment Hand Tools

Station BR 13+00 Offset C/L Casing None Method Open Hole

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Sandy SILT with gravel, dense, brown, dry, Homogeneous, Similar to SS#1		
								Sandy SILT, dense, gray, dry, Homogeneous, Similar to SS#2 (No gravel - See Test hole TH-5-03)		
								End of test hole boring at 2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
								No Free Water		
5	1									
10	2									
15	3									
20	4									
	5									
	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:35:55 PS

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. BF-1-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 154.0 ft (46.9 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 22, 2003 Completion September 22, 2003 Well ID# _____ Equipment Hand tools

Station 116+00 Offset 35' Rt. Casing None Method Bank Face

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Silty SAND with gravel, medium dense, gray, moist, Homogeneous, Similar to SS#1		
5	1									
10	2									
	3									
								End of test hole boring at 11 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
15	4									
20	5									
	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:43:37 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. BF-2-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 152.0 ft (46.3 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 22, 2003 Completion September 22, 2003 Well ID# _____ Equipment Hand Tools

Station 119+00 Offset 30' Rt. Casing None Method Bank Face

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Sandy SILT with gravel, and cobbles, medium dense, gray, moist, Homogeneous, Similar to SS#2		
5	1, 2							Sandy SILT with gravel, medium dense, gray, moist, Homogeneous,		
10, 15, 20	3, 4, 5, 6							End of test hole boring at 7 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water.		

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:43:39 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. PP-1-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 127.0 ft (38.7 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station 15+60 Offset 24' Lt. Casing None Method Portable Penetrometer

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				3 6 7 (13)		D - 1		Poorly graded SAND with gravel, medium dense, gray, moist, Homogeneous, Obtained Sack Sample - SS#4		
	1			6 11 14 (25)		D - 2		Sandy SILT with gravel, dense, gray and brown, moist, Homogeneous, Similar to SS#2		
5	2							End of test hole boring at 4.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
10	3									
	4									
15	5									
20	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:44:32 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. PP-2-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation ft (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station 17+40 Offset 23' Rt. Casing None Method Portable Penetrometer

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				6 11 14 (25)		D - 1		Sandy SILT with gravel, dense, gray and brown, moist, Laminated, Similar to SS#2		
	1			7 12 16 (28)		D - 2		Sandy SILT with gravel, dense, gray, moist, Homogeneous, Similar to SS#2		
5								End of test hole boring at 4.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
	2							No Free Water		
10	3									
	4									
15	5									
20	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:44:34 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. PP-3-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation ft (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand tools

Station 41+60 Offset 24' Rt. Casing None Method Portable Penetrometer

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				6 13 17 (30)		D - 1		Silty SAND with gravel, dense, dark brown, moist, Homogeneous,Obtianed Sack Sample - SS#5 Also obtained PH&RES same Stationing 30' Lt. (existing culvert)		
	1			14 14 22 (36)		D - 2		Silty SAND with gravel, dense, brown, moist, Homogeneous		
5								End of test hole boring at 4.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
	2							No Free Water		
10	3									
	4									
15	5									
20	6									

SOIL 01-3678.GPJ SOIL.GDT 6/21/05,12:44:36 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. PP-4-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 132.5 ft (40.4 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station 101+ 00 Offset 38' Rt. Casing None Method Portable Penetrometer

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				2 2 2 (6)		D - 1		Silty SAND with gravel, very loose, brown, wet, Homogeneous, Similar to SS#5 09/16/2003	▽	
	1			10 12 12 (24)		D - 2		Silty SAND with gravel, medium dense, brown, wet, Homogeneous, Similar to SS#5		
5	2							End of test hole boring at 4.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
10	3									
	4									
15	5									
20	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05,12:44:37 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. PP-5-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 148.0 ft (45.1 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start September 16, 2003 Completion September 16, 2003 Well ID# _____ Equipment Hand Tools

Station 157+50 Offset 38' Rt. Casing None Method Portable Penetrometer

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				2 3 8 (11)		D - 1		Silty SAND with gravel, medium dense, brown, dry, Homogeneous, Similar to SS#1	▽ 09/16/2003	
	1			4 18 28 (46)		D - 2		Well graded SAND with gravel, dense, gray, wet, Homogeneous, Similar to SS#3		
5	2							End of test hole boring at 4.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
10	3									
	4									
15	5									
20	6									

SOIL OL-3678.GPJ SOIL.GDT 6/21/05 12:44:39 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. PP-6-03

Job No. OL-3678 SR SR-20 Elevation 127.0 ft (38.7 m)

Sheet 1 of 1

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start October 16, 2003 Completion October 16, 2003 Well ID# _____ Equipment Hand Tools

Station 103+80 Offset 50' Lt. Casing None Method Portable Penetrometer

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				6 12 4 (16)		D - 1		Silty SAND with gravel, medium dense, brown, dry, Homogeneous, Similar to SS#1		
	1			7 14 22 (36)		D - 2		Silty SAND with gravel, medium dense, brown, moist, Homogeneous, Similar to SS#1		
5				7 14 22 (36)		D - 3		Silty SAND with gravel, dense, gray, moist, Homogeneous, Similar to SS#1		
	2							End of test hole boring at 6.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
								NOTE- This is for a Fill and Culvert.		
								No Free Water		
10	3									
	4									
15										
	5									
20	6									

SOIL OL-3678.GPJ SOIL-GDT 6/21/05 12:44:41 P6

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. TH-1-03

Job No. OL-3678 SR SR-20 Elevation 143.0 (43.6 m)

Sheet 1 of 1

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address SR-20 / Oakharbor

Inspector Brian M Breck

Start September 22, 2003 Completion September 22, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station 44+80 Offset 28' Rt. Casing Augers x 10 Method Auger

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				5 9 15 (24)		D - 1		Sandy SILT, medium dense, gray, dry, Homogeneous, no HCl reaction Length Recovered 0.6 ft		
5	1			6 7 9 (16)		D - 2		Sandy SILT, medium dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
	2			5 4 5 (9)		D - 3		Sandy SILT, loose, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.6 ft		
10	3			4 4 6 (10)		D - 4		Sandy SILT, loose, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.7 ft		
								End of test hole boring at 10.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water.		
15	4									
	5									
20	6									

SOIL OL-3678.GPJ SDT 12/2/03,8:44:40 A12

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. TH-2-03

Job No. OL-3678 SR SR-20 Elevation 145.0 (44.2 m)

Sheet 1 of 1

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address SR-20 / Oakharbor

Inspector Brian M Breck

Start September 23, 2003 Completion September 23, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station 47+00 Offset 28' Rt. Casing Augers x 10 Method Auger

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				3 8 14 (22)		D - 1		Sandy SILT, medium dense, gray, dry, Homogeneous, no HCl reaction Length Recovered 0.7 ft		
	1									
5				6 5 6 (11)		D - 2		Sandy SILT, medium dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.6 ft		
	2									
				2 3 4 (7)		D - 3		Sandy SILT, loose, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
10	3			2 3 5 (8)		D - 4		Sandy SILT, loose, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
								End of test hole boring at 10.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water.		
	4									
15										
	5									
20	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. TH-3-03

Job No. OL-3678 SR SR-20 Elevation 147.0 (44.8 m)

Sheet 1 of 1

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address SR-20 / Oakharbor

Inspector Brian M Breck

Start September 23, 2003 Completion September 23, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station 50+00 Offset 30' Rt. Casing Augers x 15 Method Wet Rotary

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				2 9 10 (19)		D-1		Silty SAND, medium dense, brown, dry, Homogeneous, no HCl reaction Length Recovered 0.9 ft		
5	1			3 6 6 (12)		D-2		Sandy SILT, medium dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.9 ft		
	2			2 3 4 (7)		D-3		Sandy SILT, medium dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
10	3			2 2 6 (8)		D-4		Sandy SILT, loose, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
	4			3 3 7 (11)		D-5		Sandy SILT, with sand layers, medium dense, gray, moist, Stratified, no HCl reaction Length Recovered 1.5 ft		
15	5							End of test hole boring at 13.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
20	6									

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. TH-4-03

Job No. OL-3678 SR SR-20 Elevation 152.5 (46.5 m)

Sheet 1 of 1

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address SR-20 / Oakharbor

Inspector Brian M Breck

Start September 23, 2003 Completion September 23, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station 53+00 Offset 30' Rt. Casing Augers x 10 Method Auger

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				5 10 12 (22)		D - 1		Silty SAND with gravel, medium dense, gray, dry, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
	1					SS#8		Sandy SILT, medium dense, brown, moist, Homogeneous, no HCl reaction		
5	2			4 5 8 (13)		D - 2		Sandy SILT, medium dense, gray and brown, moist, Laminated, no HCl reaction Length Recovered 1.5 ft		
				1 2 3 (5)		D - 3		Sandy SILT, loose, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
10	3			1 2 3 (5)		D - 4		Sandy SILT, loose, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
	4							End of test hole boring at 10.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water.		
15	5									
20	6									

SOIL OL-3678.GPJ WSDOT 10/30/03,1:16:29 P10

Washington State Department of Transportation

LOG OF TEST BORING

Start Card _____

HOLE No. TH-5-03

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation 148.5 (45.3 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address SR-20 / Oakharbor

Inspector Brian M Breck

Start September 29, 2003 Completion September 29, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station BR 11+50 Offset C/L Casing Augers x 15 Method Auger

Northing _____ Easting _____ Latitude _____ Longitude _____

County Island Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				5 10 8 (18)		D - 1		Sandy SILT, medium dense, brown, dry, Homogeneous, no HCl reaction Length Recovered 1.1 ft		
5	1			3 7 5 (12)		D - 2		Sandy SILT, medium dense, gray, dry, Homogeneous, no HCl reaction Length Recovered 0.9 ft		
	2			3 4 4 (8)		D - 3		Sandy SILT, loose, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
10	3			2 3 3 (6)		D - 4		SILT, loose, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
15	4			2 18 22 (40)		D - 5		Silty SAND with gravel, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.6 ft		
	5							End of test hole boring at 15.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
20	6									

SOIL OL-3678.GPJ DT 10/30/03 1:16:30 P10

Washington State Department of Transportation

LOG OF TEST BORING

Start Card SE00645

HOLE No. TH-6-03

Sheet 1 of 2

Job No. OL-3678 SR SR-20 Elevation 136.0 (41.5 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address SR-20 / Oakharbor

Inspector Brian M Breck

Start November 5, 2003 Completion November 5, 2003 Well ID#

Equipment CME 45 w/ autohammer

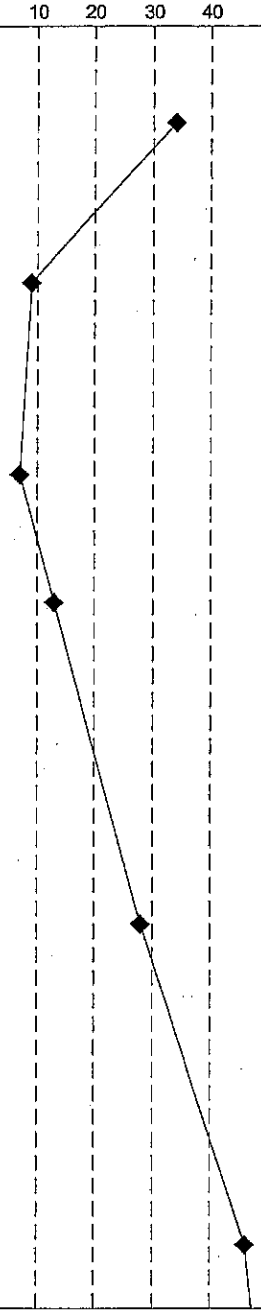
Station 177+80 Offset 15' Rt. Casing HQ x 42

Method Wet Rotary

Northing Easting Latitude Longitude

County Island Subsection SE 1/4 of the SW 1/4 Section 3 Range 1E Township 32

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								ASPHALT		
								CSTC		
				10 11 23 (34)		D - 1		Silty SAND with gravel, dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 0.6 ft Note - Loss of water return at - 3.0'.		
5	1			3 4 5 (9)		D - 2		Silty SAND with gravel, loose, brown, moist, Homogeneous, no HCl reaction Length Recovered 0.9 ft		
	2			2 3 4 (7)		D - 3		Silty SAND with gravel, loose, brown, moist, Homogeneous, no HCl reaction Length Recovered 0.8 ft		
10	3			5 6 7 (13)		D - 4		Poorly graded SAND, medium dense, brown, dry, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
15	4			8 12 16 (28)		D - 5		Poorly graded SAND, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
20	5			10 18		D - 6		Poorly graded SAND, dense, gray, moist, Homogeneous, no HCl reaction		



SOIL OL-3678.GPJ S[illegible]T 12/2/03,8:44:41 A12

Washington State Department of Transportation

LOG OF TEST BORING

Start Card SE00645

HOLE No. TH-6-03

Sheet 2 of 2

Job No. OL-3678 SR SR-20 Elevation 136.0 (41.5 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				28 (46)				Length Recovered 1.5 ft		
	7									
25			>>	14 22 30 (52)		D - 7		Poorly graded SAND, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
	8									
30	9		>>	15 25 26 (51)		D - 8		Poorly graded SAND, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
	10									
35	11			11 16 17 (33)		D - 9		Poorly graded SAND, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
40	12		>>	21 25 28 (53)		D - 10		Poorly graded SAND, very dense, gray, wet, Homogeneous, no HCl reaction Length Recovered 1.5 ft 11/05/2003	▽	
	13							End of test hole boring at 40.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
45										

SOIL OL-3678.GPJ SC T 12/2/03,8:44:41 A12

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card SE00645

HOLE No. TH-7-03

Sheet 1 of 2

Job No. OL-3678 SR SR-20 Elevation 122.5 (37.3 m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address SR-20 / Oakharbor

Inspector Brian M Breck

Start November 6, 2003 Completion November 7, 2003 Well ID# Equipment CME 45 w/ autohammer

Station 178+75 Offset 30' Rt Casing HQ x 32 Method Wet Rotary

Northing Easting Latitude Longitude

County Island Subsection SE 1/4 of the SW 1/4 Section 3 Range 1E Township 32

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				5 8 8 (16)		D - 1		Silty SAND with gravel, medium dense, brown, dry, Homogeneous, no HCl reaction Length Recovered 1.2 ft		
5	1			11 15 18 (33)		D - 2		Silty SAND with gravel, dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
	2			25 50 (50)		D - 3		Silty SAND with gravel, very dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
10	3			12 15 16 (31)		D - 4		Poorly graded SAND, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
15	4			14 22 23 (45)		D - 5		Poorly graded SAND, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
	5									
20	6			12 17		D - 6		Poorly graded SAND, dense, gray, moist, Homogeneous, no HCl reaction		

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card SE00645

HOLE No. TH-7-03

Job No. OL-3678 SR SR-20 Elevation 122.5 (37.3 m)

Sheet 2 of 2

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				20 (37)				Length Recovered 1.5 ft		
	7									
25			>>	16 26 37 (58)		D-7		Poorly graded SAND, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
	8									
30	9		>>	17 27 32 (59)		D-8		Poorly graded SAND, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
								End of test hole boring at 30.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
	10							No Free Water.		
35	11									
40	12									
	13									
45										

SOIL OL-3678.GPJ SDOT 10/30/03,1:16:36 P10

Washington State Department of Transportation

LOG OF TEST BORING

Start Card SE00723

HOLE No. TH-1-04

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation ft (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address

Inspector Brian M Breck

Start March 25, 2004 Completion March 25, 2004 Well ID#

Equipment CME 45 w/ autohammer

Station C Line 163+00 Offset 20' Rt. Casing HQ x 12 Method Wet Rotary

Northing Easting Latitude Longitude

County Island Subsection SE 1/4 of the NW 1/4 Section 10 Range 1E Township 32

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				4 4 3 (7)		D - 1		Silty SAND with gravel, loose, brown, moist, Homogeneous. Length Recovered 1.2 ft Note - Became dense at - 2.5'.		
5	1			25 50 (50)		D - 2		Silty SAND with embeddeed gravel, very dense, gray, moist, Homogeneous. Length Recovered 0.9 ft		
	2			36 50 (50)		D - 3		Silty SAND with embeddeed gravel, very dense, gray, moist, Homogeneous. Length Recovered 1.0 ft		
10	3			50 (50)		D - 4		Poorly graded SAND with gravel, very dense, gray, moist, Homogeneous. Length Recovered 0.1 ft End of test hole boring at 9.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
15	4									
20	5									
	6									

SOIL 01-3678.GPJ S DT 4/22/05,8:09:13 A4

Washington State Department of Transportation

LOG OF TEST BORING

Start Card SE00723

HOLE No. TH-2-04

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation ft (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address

Inspector Brian M Breck

Start March 25, 2004 Completion March 25, 2004 Well ID#

Equipment CME 45 w/ autohammer

Station C Line 160+25 Offset C/L Casing HQ x 12 Method Wet Rotary

Northing Easting Latitude Longitude

County Island Subsection SE 1/4 of the NE 1/4 Section 10 Range 1E Township 32

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				16 50 (50)		D - 1		Silty SAND with embedded gravel, very dense, gray, moist, Homogeneous. Length Recovered 0.2 ft.		
	1							Note - Encountered a possible boulder at - 3.0' below the roadway. Had to move hole.		
5			>>	17 28 43 (71)		D - 2		Silty SAND with embedded gravel and some sand layers, very dense, gray, moist, Stratified. Length Recovered 1.5 ft		
	2			36 50 (50)		D - 3		Poorly graded SAND with gravel, very dense, gray, moist, Homogeneous. Length Recovered 1.0 ft		
10	3			29 50 (50)		D - 4		Poorly graded SAND with gravel, very dense, gray, moist, Homogeneous. Length Recovered 1.0 ft		
								End of test hole boring at 10 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
								No Free Water		
15	4									
	5									
20	6									

SOIL OL-3678.GPJ SC DT 4/22/05 8:09:28 A4

Washington State Department of Transportation

LOG OF TEST BORING

Start Card SE00723

HOLE No. TH-3-04

Sheet 1 of 1

Job No. OL-3678 SR SR-20 Elevation ft (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address

Inspector Brian M Breck

Start March 25, 2004 Completion March 25, 2004 Well ID#

Equipment CME 45 w/ autohammer

Station C Line 160+25 Offset 20' Lt. Casing HQ x 17

Method Wet Rotary

Northing Easting Latitude Longitude

County Island Subsection SE 1/4 of the NW 1/4 Section 10 Range 1E Township 32

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				4 4 4 (8)		D - 1		Silty SAND with gravel, loose, brown`, moist, Homogeneous. Length Recovered 0.3 ft Note - became dense at - 3.0'.		
5	1			30 50 (50)		D - 2		Silty SAND with embedded gravel, very dense, gray, moist, Homogeneous. Length Recovered 0.3 ft		
	2			50 (50)		D - 3		Silty SAND with embedded gravel, very dense, gray, moist, Homogeneous. Length Recovered 0.5 ft		
10	3			32 50 (50)		D - 4		Silty SAND with embedded gravel, very dense, gray, moist, Homogeneous. Length Recovered 0.7 ft		
	4			50 (50)		D - 5		Silty SAND with embedded gravel, very dense, gray, moist, Homogeneous. Length Recovered 0.5 ft		
15	5			50 (50)		D - 6		Silty SAND with embedded gravel, very dense, gray, moist, Homogeneous. Length Recovered 0.5 ft End of test hole boring at 14.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. No Free Water		
20	6									

SOIL OL-3678.GPJ SR DT 4/22/05 8:09:42 A4

Infiltration Analyses

SR 20, Sidney St. Vic. to Scenic Heights Rd. Vic, MP 27.61 to MP 31.00

Washington State Department of Transportation

LOG OF TEST BORING

Start Card RE00703

HOLE No. P-1-03

Sheet 1 of 2

Job No. OL-3678 SR SR-20 Elevation (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address SR-20 / Oakharbor

Inspector Brian M Breck

Start November 10, 2003 Completion November 11, 2003 Well ID# AHB-970

Equipment CME 850 w/ autohammer

Station 59+01 Offset 100' Left Casing HQ x 27

Method Wet Rotary

Northing Easting Latitude Longitude

County Island Subsection NW 1/4 of the SW 1/4 Section 16 Range 1E Township 32

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				8 10 11 (21)		D - 1		SILT with SAND, medium dense, brown, dry, Homogeneous, Length Recovered 1.0 ft		
5	1			6 10 9 (19)		D - 2		SILT, medium dense, gray, dry, Homogeneous, Length Recovered 1.5 ft		
	2			4 8 6 (14)		D - 3		SILT, medium dense, gray, moist, Homogeneous, Length Recovered 1.5 ft		
10	3			2 3 4 (7)		D - 4		SILT with SAND, loose, gray, moist, Homogeneous, Length Recovered 1.5 ft		
15	4			2 3 8 (11)		D - 5		SILT, medium dense, gray , moist, Homogeneous, Note - Wet sand in tip of sample. Length Recovered 1.5 ft	09/25/2003	
20	5			4 10		D - 6		Sandy SILT with gravel, dense, gray, moist, Homogeneous,		
	6									

SOIL OL-3678.GPJ SCOT 12/2/03,8:44:38 A12

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card RE00703

HOLE No. P-1-03

Job No. OL-3678 SR SR-20 Elevation (m)

Sheet 2 of 2

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				21 (31)				Length Recovered 1.5 ft		
	7									
25				12 18 32 (50)		D-7		Sandy SILT with gravel, dense, gray, moist, Homogeneous, Length Recovered 1.5 ft		
	8							End of test hole boring at 25.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
30	9									
	10									
35	11									
40	12									
	13									
45										

Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-1-03		
Sample No.	D-1	depth	0'-1.5'
Station	59+01	Offset	100' Lt

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	100
4	4.75	98
10	2	98
20	0.85	97
40	0.425	96
80	0.18	89
200	0.075	78.1

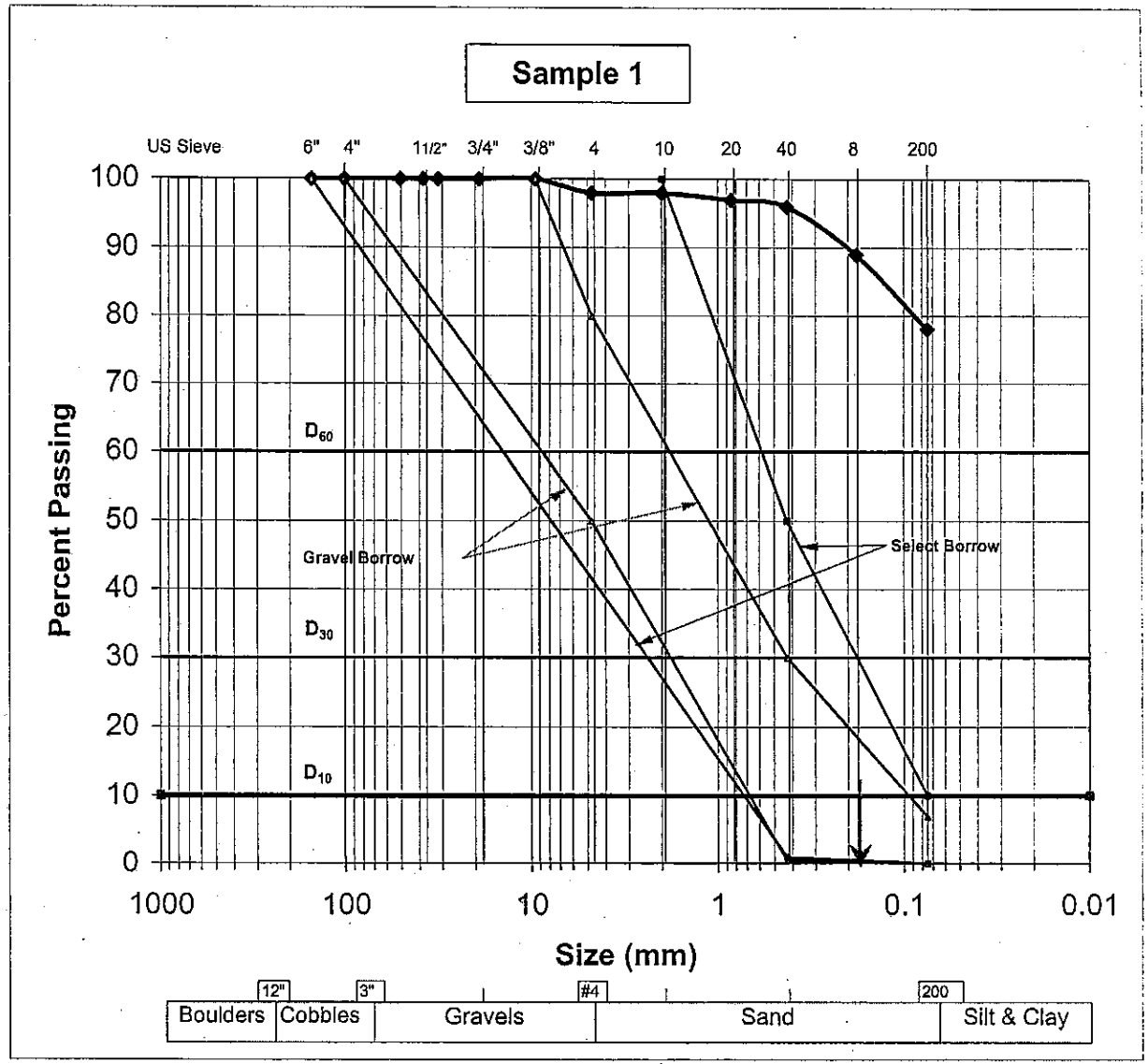
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.00
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-1-03		
Sample No.	D-2	depth	4'-5.5'
Station	59+01	Offset	100' Lt

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	100
4	4.75	100
10	2	100
20	0.85	100
40	0.425	99
80	0.18	97
200	0.075	92.3

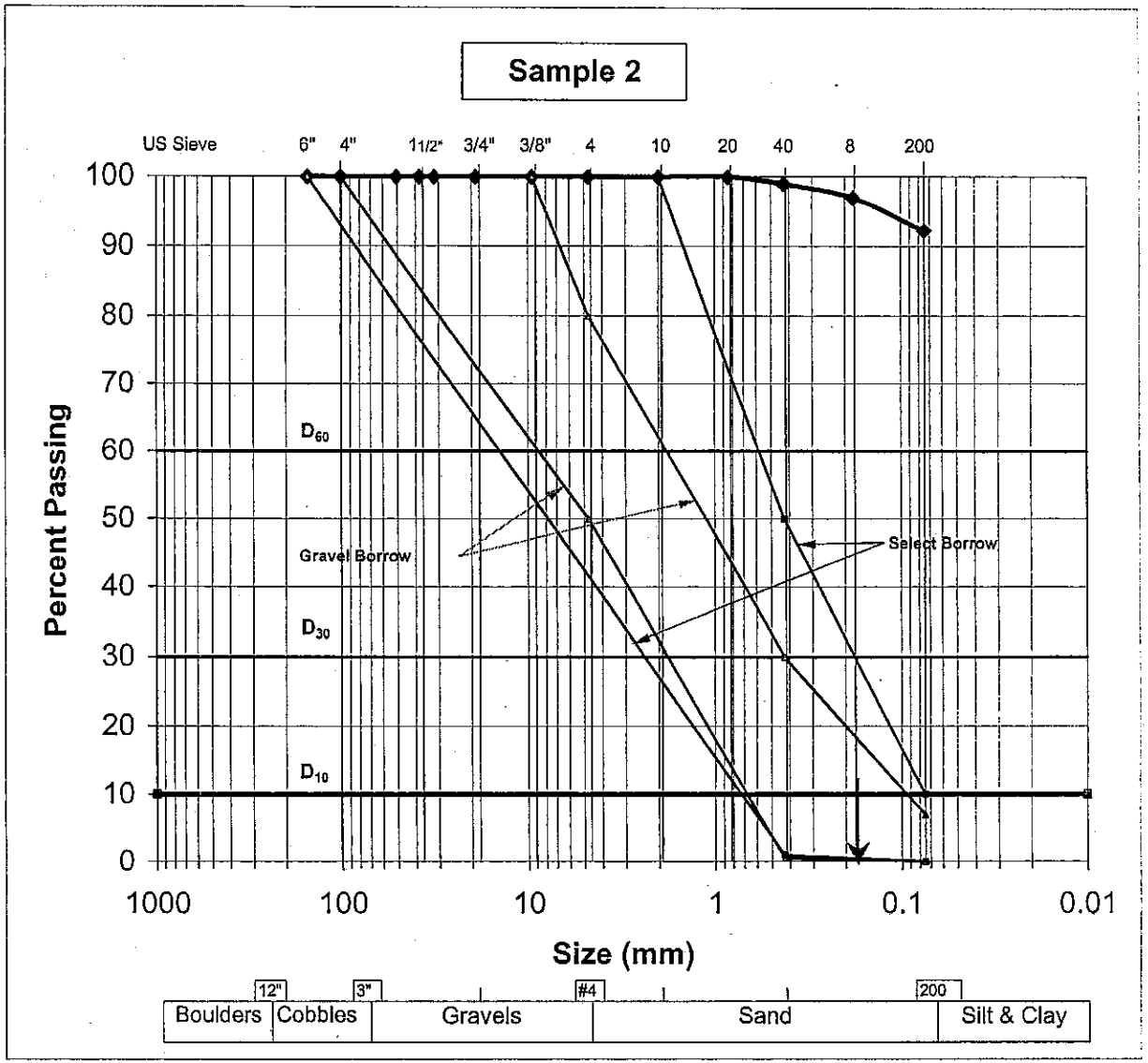
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.00
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-1-03		
Sample No.	D-3	depth	7'-8.5'
Station	59+01	Offset	100' Lt

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	100
4	4.75	100
10	2	100
20	0.85	100
40	0.425	99
80	0.18	97
200	0.075	95.2

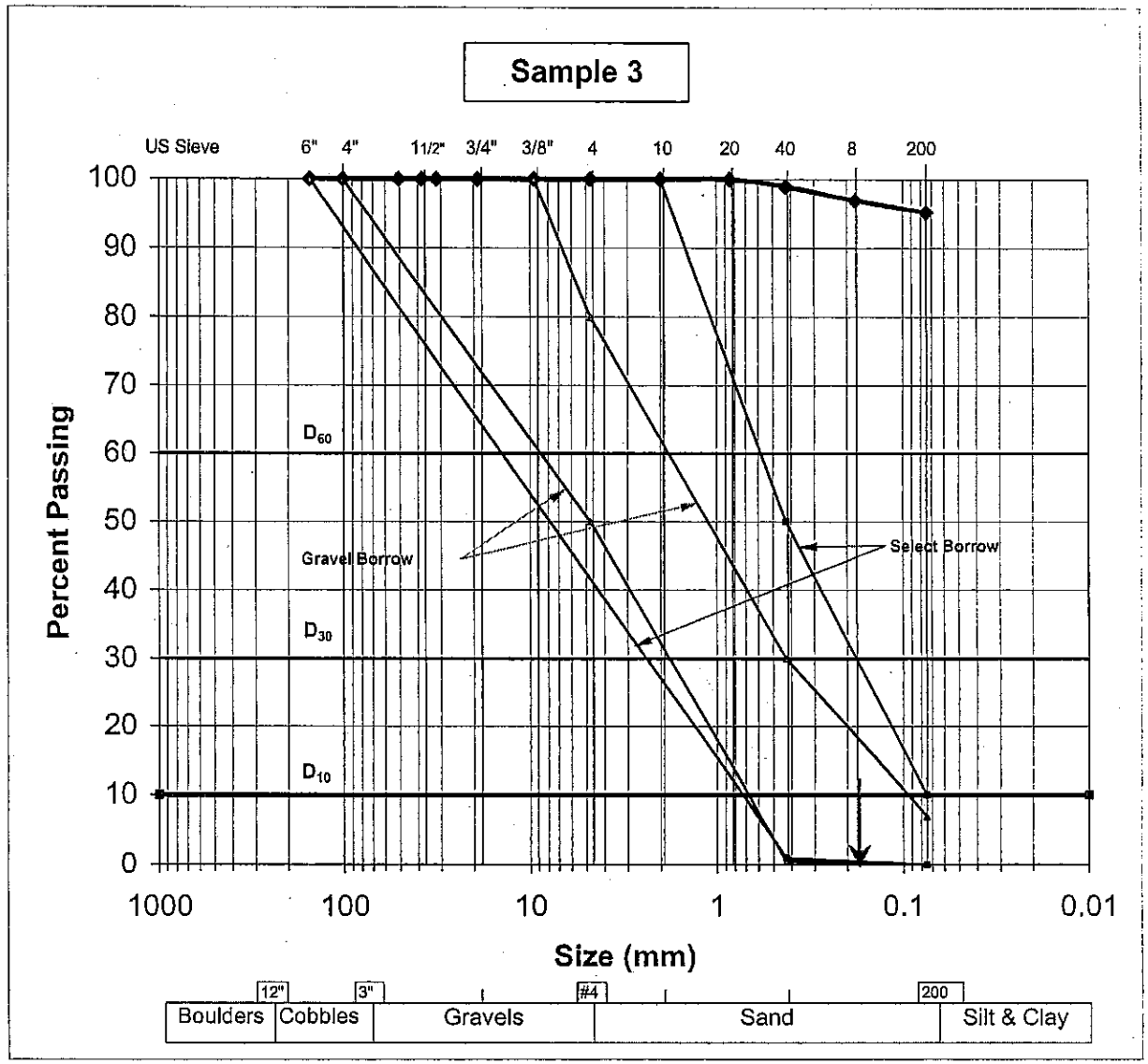
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.00
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-1-03		
Sample No.	D-4	depth	9'-10.5'
Station	59+01	Offset	100' Lt

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	100
4	4.75	100
10	2	99
20	0.85	99
40	0.425	98
80	0.18	94
200	0.075	80.3

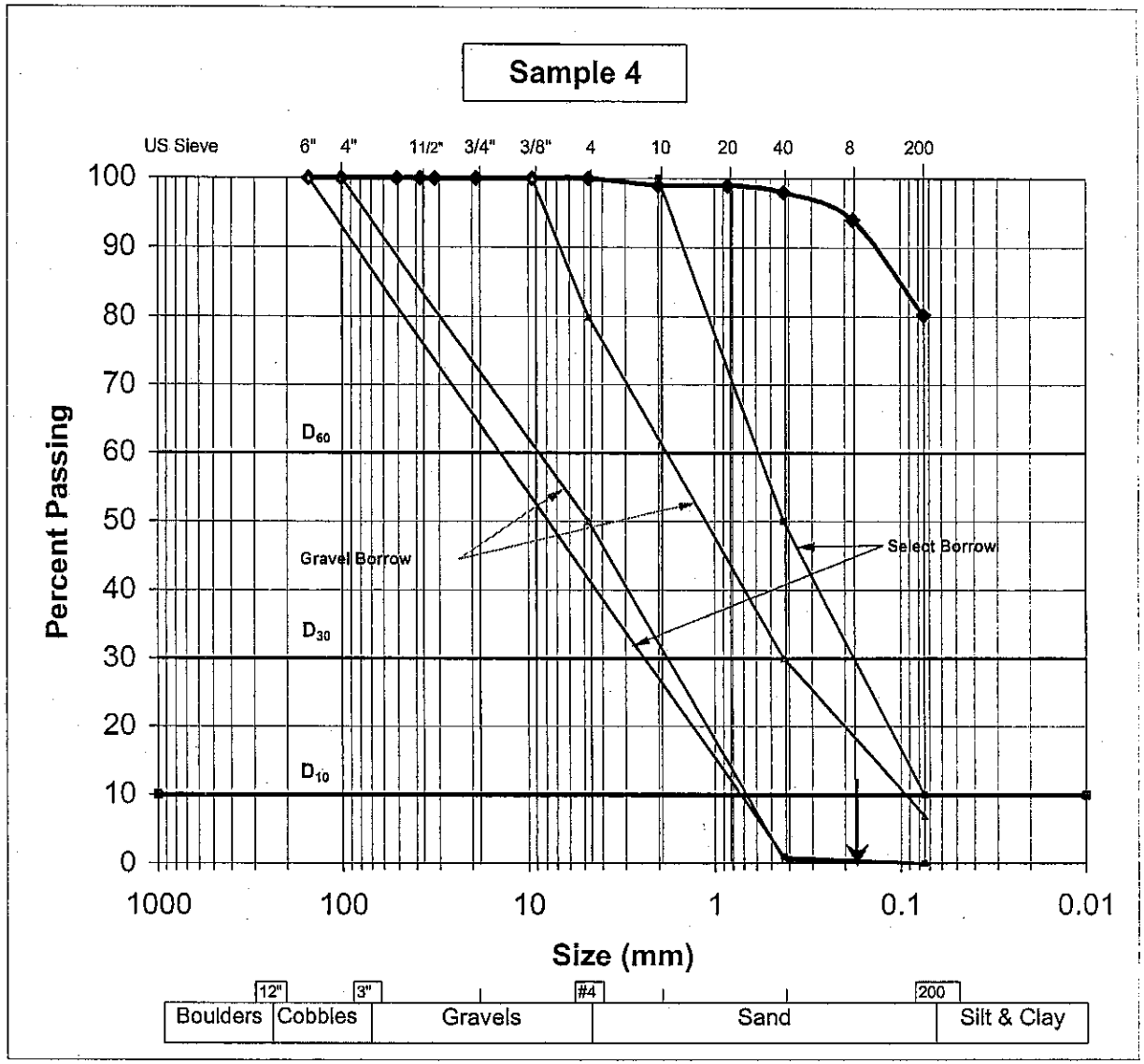
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.00
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-1-03		
Sample No.	D-5	depth	14'-15.5'
Station	59+01	Offset	100' Lt

US Sieve (In / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	100
4	4.75	100
10	2	100
20	0.85	100
40	0.425	100
80	0.18	98
200	0.075	94.3

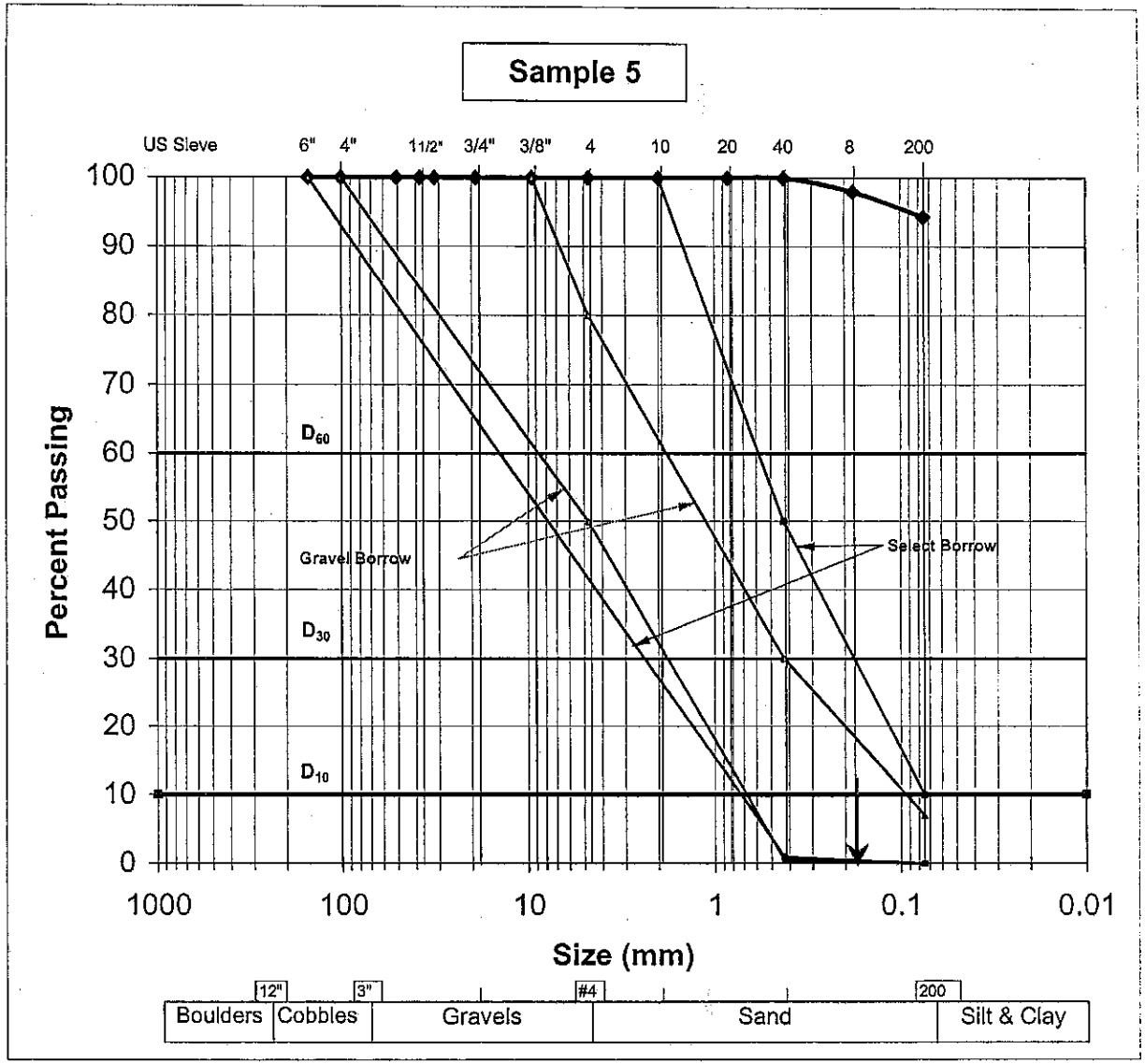
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.00
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-1-03		
Sample No.	D-6	depth	19'-20'5'
Station	59+01	Offset	100' Lt

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	97
3/8	9.5	96
4	4.75	94
10	2	91
20	0.85	88
40	0.425	85
80	0.18	77
200	0.075	63.3

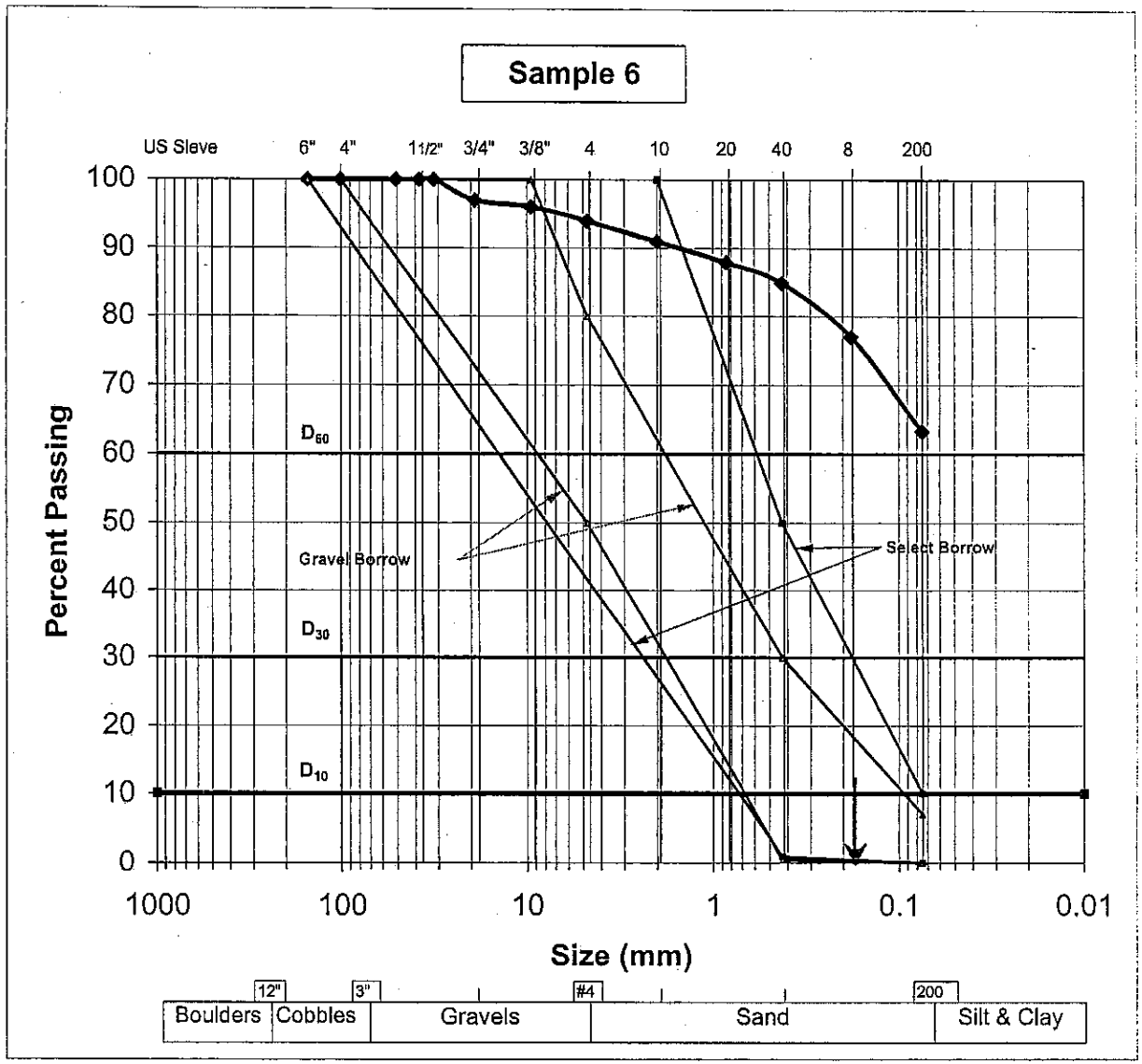
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.00
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-1-03		
Sample No.	D-7	depth	24'-25.5'
Station	59+01	Offset	100' Lt

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	98
3/8	9.5	96
4	4.75	94
10	2	92
20	0.85	89
40	0.425	85
80	0.18	75
200	0.075	60.6

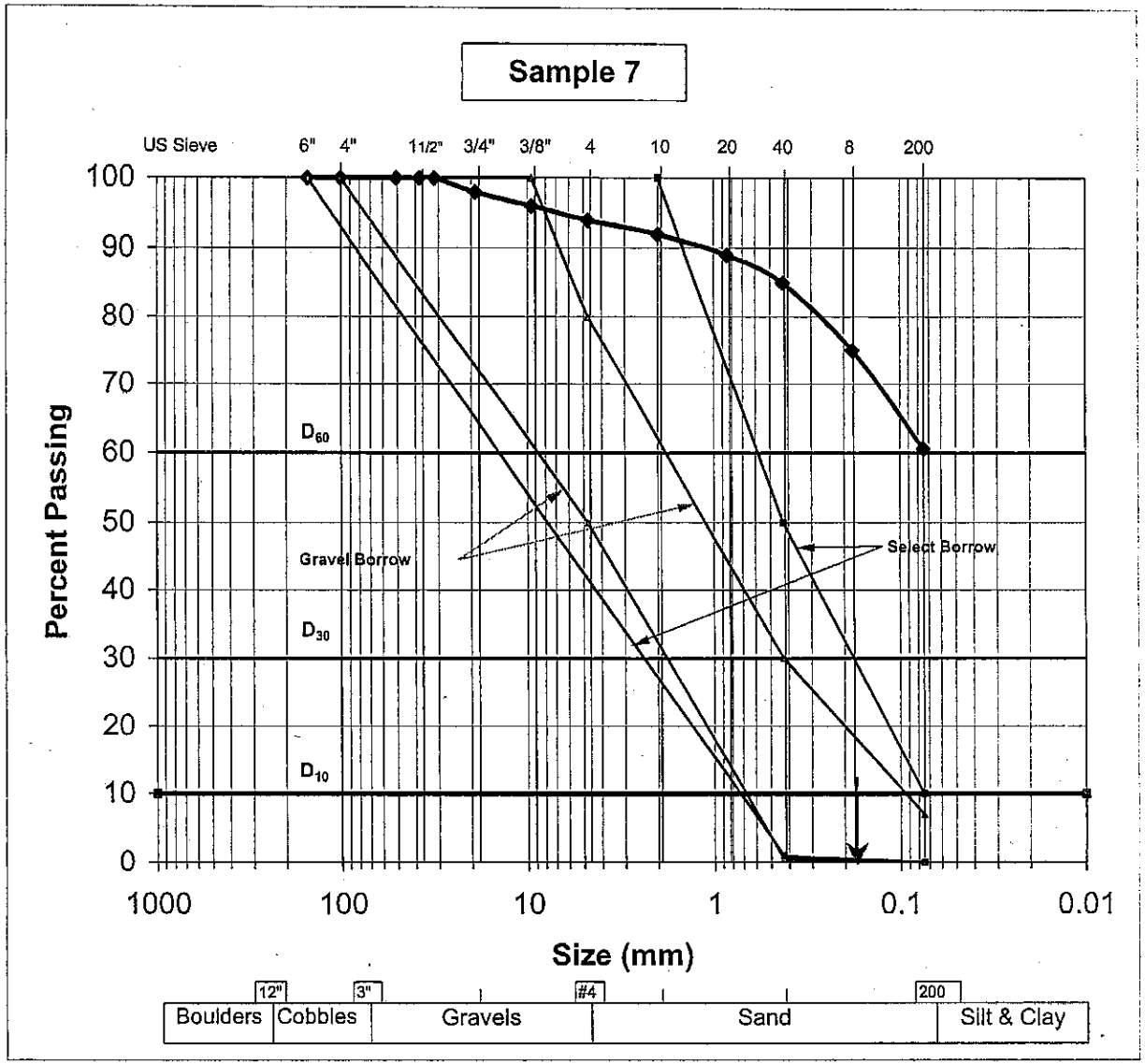
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.00
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card RE00704

HOLE No. P-2-03

Sheet 1 of 2

Job No. OL-3678 SR SR-20 Elevation (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address SR-20 / Oakharbor

Inspector Brian M Breck

Start November 12, 2003 Completion November 12, 2003 Well ID# AHB-975 Equipment CME 45 w/ autohammer

Station 71+00 Offset 80' Rt. Casing HQ x 27 Method Wet Rotary

Northing Easting Latitude Longitude

County Island Subsection NE 1/4 of the SW 1/4 Section 16 Range 1E Township 32

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				4 6 10 (16)		D-1		Sandy SILT, medium dense, brown, dry, Homogeneous, no HCl reaction Length Recovered 1.2 ft		
	1			4 7 8 (15)		D-2		Sandy SILT, medium dense, brown , moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
5										
	2			9 5 30 (35)		D-3		Sandy SILT with gravel, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
				8 11 14 (25)		D-4		Poorly graded SAND, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
10	3									
				10 16 21 (37)		D-5		Poorly graded SAND, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
	4			14 19 25 (44)		D-6		Poorly graded SAND, dense, gray, wet, Homogeneous, no HCl reaction Length Recovered 1.5 ft 11/12/2003	▽	
15										
	5			17 21 24 (45)		D-7		Poorly graded SAND, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
	6			12 20		D-8		Poorly graded SAND, dense, gray, wet, Homogeneous, no HCl reaction		
20										

SOIL OL-3678.GPJ SOIL.GDT 10/30/03 1:17:00 P10

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card RE00704

HOLE No. P-2-03

Job No. OL-3678 SR SR-20 Elevation (m)

Sheet 2 of 2

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				23 (43)				Length Recovered 1.5 ft		
	7									
				31 50 (50)		D - 9		Well graded SAND with gravel, very dense, gray, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
25								End of test hole boring at 25.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
	8									
	9									
30										
	10									
35										
	11									
	12									
40										
	13									
45										

Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-2-03		
Sample No.	D-1	depth	0'-1.5'
Station	71+00	Offset	80' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	100
4	4.75	98
10	2	94
20	0.85	89
40	0.425	81
80	0.18	63
200	0.075	50.6

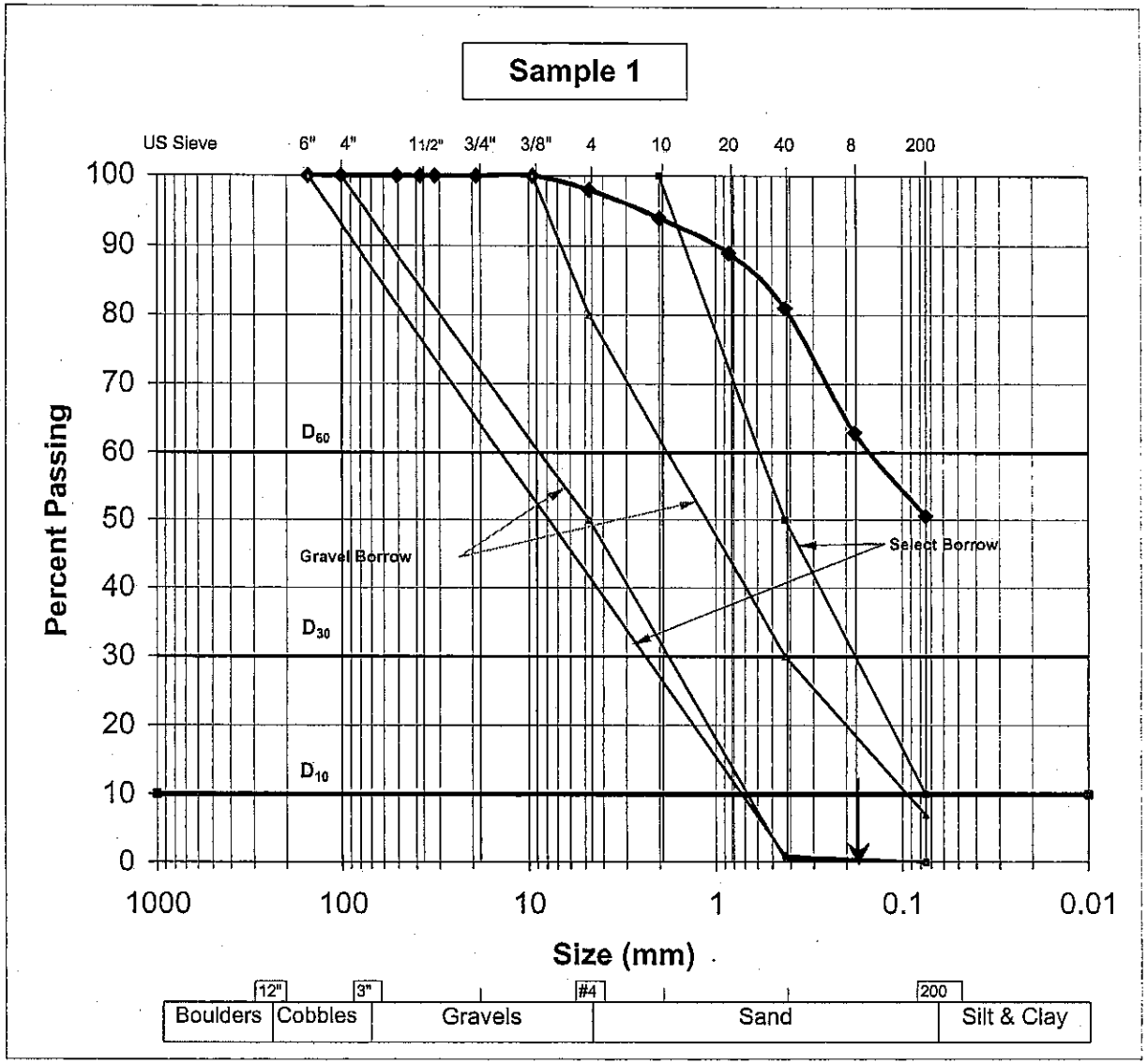
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.15
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	ML



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-2-03		
Sample No.	D-2	depth	4'-5.5'
Station	71+00	Offset	80' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	99
4	4.75	99
10	2	99
20	0.85	98
40	0.425	98
80	0.18	95
200	0.075	83.7

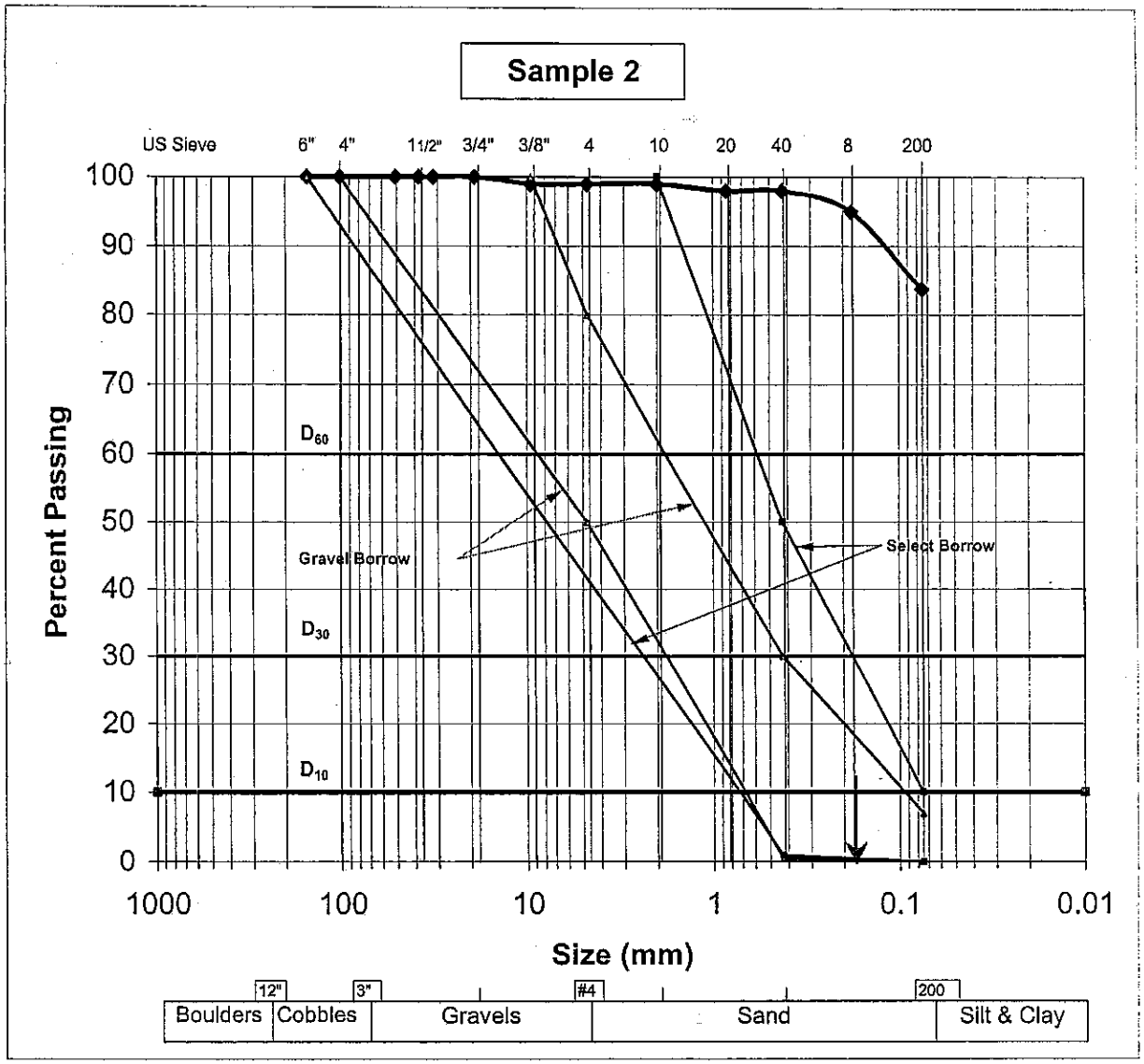
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	N/A	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.00
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	ML



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-2-03		
Sample No.	D-3	depth	7'-8.5'
Station	71+00	Offset	80' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	90
3/8	9.5	83
4	4.75	80
10	2	77
20	0.85	74
40	0.425	70
80	0.18	63
200	0.075	51.5

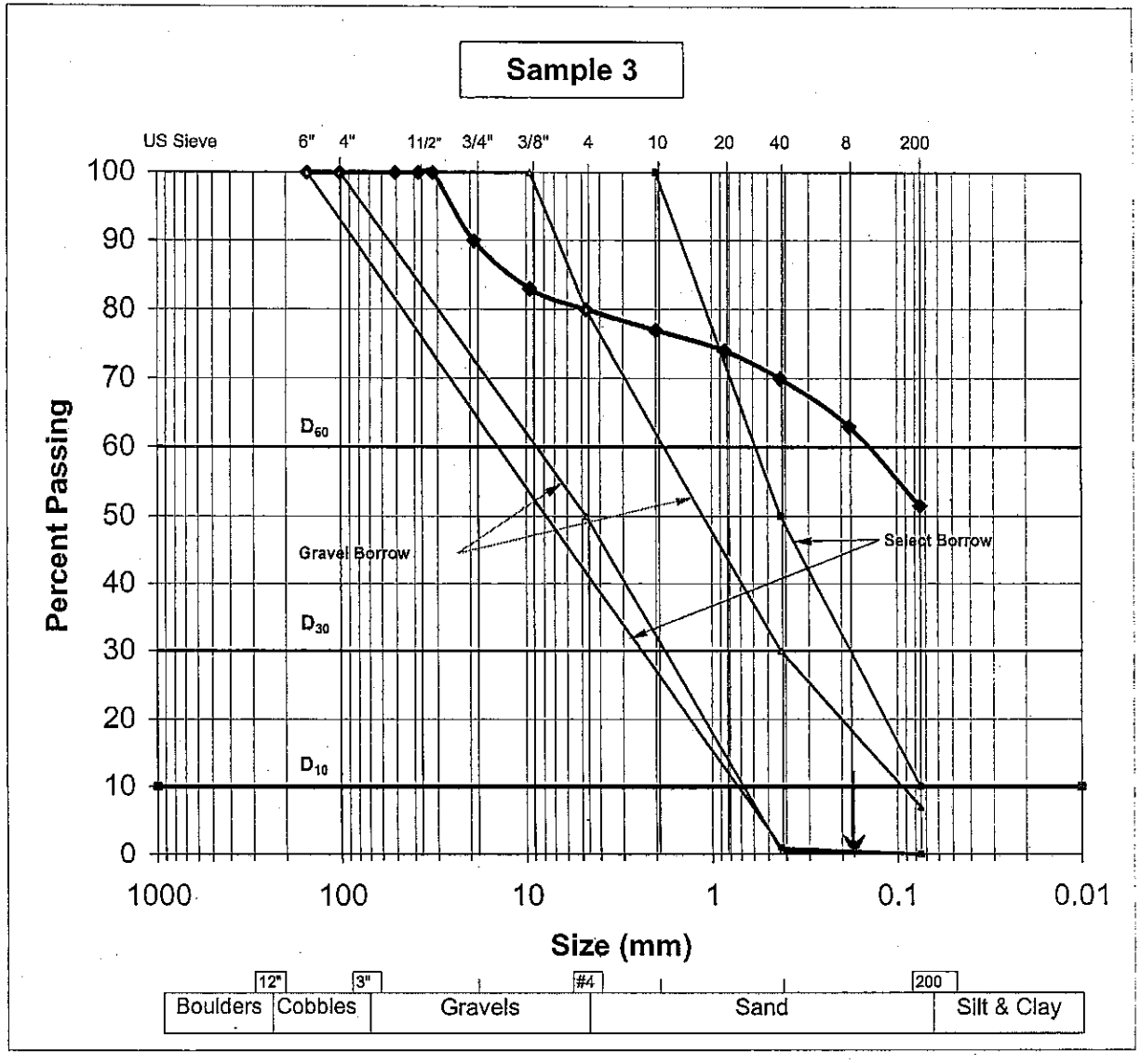
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.14
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	ML



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-2-03		
Sample No.	D-4	depth	9 - 10.5'
Station	71+00	Offset	80' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	99
3/8	9.5	98
4	4.75	96
10	2	95
20	0.85	93
40	0.425	78
80	0.18	22
200	0.075	10.9

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.060	1.1	7.57E-04
Silty Inflow, Lower Bound	0.060	0.3	1.79E-04
Filtered Inflow, Upper Bound	0.060	4.1	2.86E-03
98 WSDOT	0.060	1.5	1.04E-03
Average Value	0.060	1.8	1.26E-03

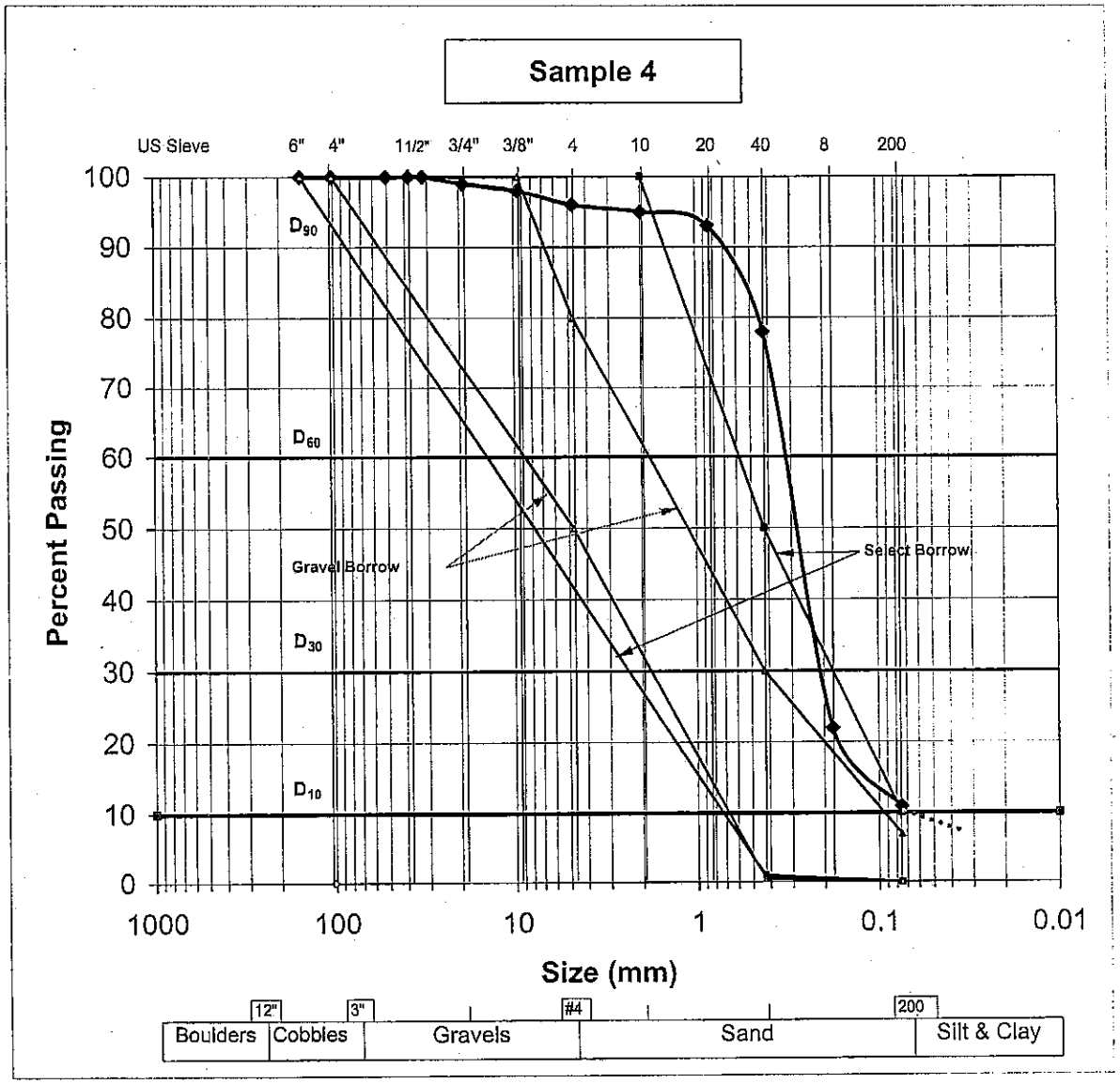
		Hydraulic Conductivity	
		In/hr	cm/sec
2003 WSDOT	K sat=	29.1	2.06E-02

D90 (mm)	0.70
D60 (mm)	0.32
D30 (mm)	0.20
D10 (mm)	0.06

Coefficient of Uniformity	Cu =	5.33
Coefficient of Gradation	Cc =	2.08

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-2-03		
Sample No.	D-5	depth	12'-13-5'
Station	71+00	Offset	80' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	97
3/8	9.5	96
4	4.75	96
10	2	96
20	0.85	95
40	0.425	78
80	0.18	16
200	0.075	6.8

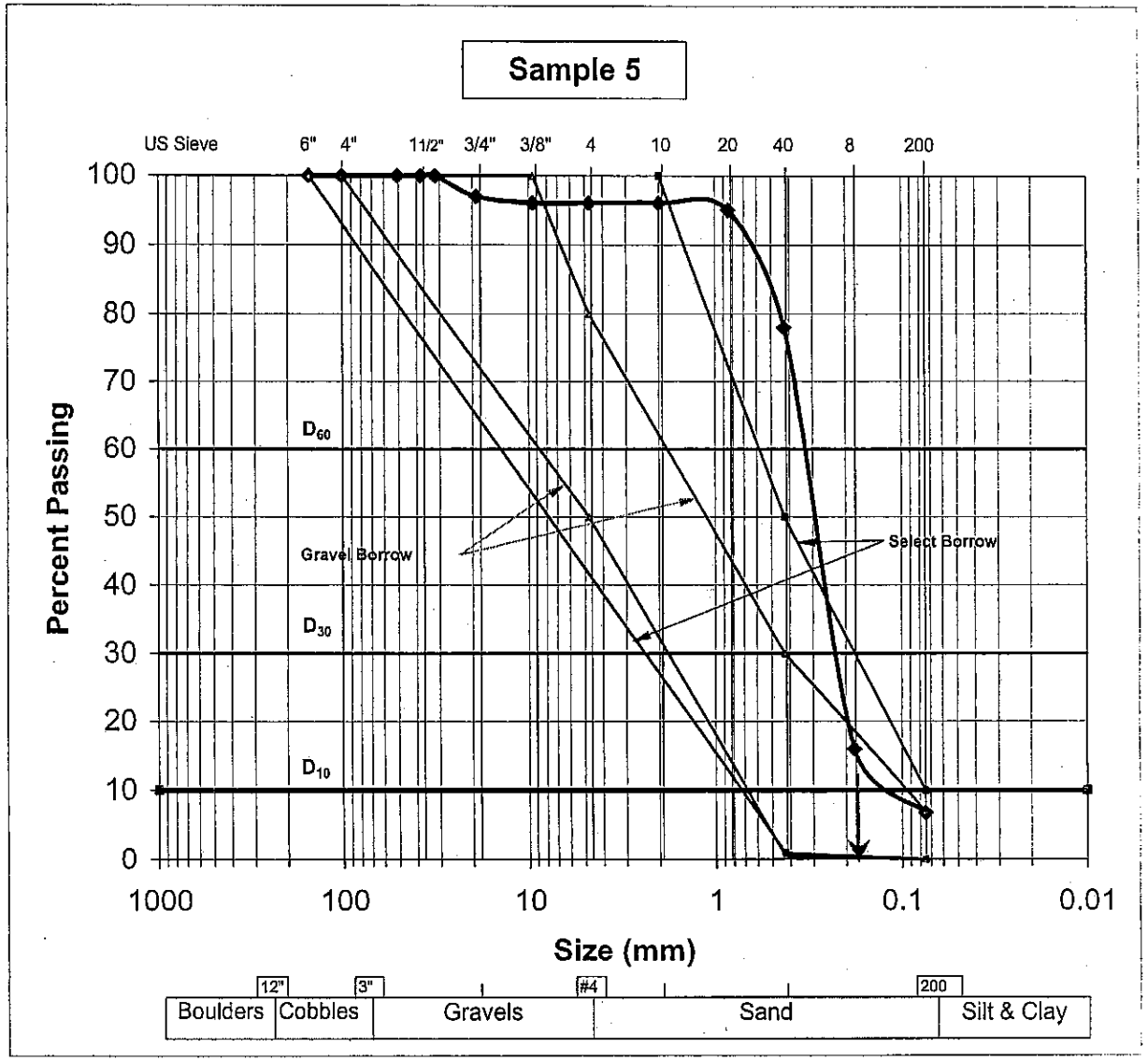
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.102	1.8	1.26E-03
Silty Inflow, Lower Bound	0.102	0.3	2.01E-04
Filtered Inflow, Upper Bound	0.102	6.3	4.47E-03
98 WSDOT	0.102	2.3	1.65E-03
Average Value	0.102	2.8	1.98E-03

D60 (mm)	0.33
D30 (mm)	0.22
D10 (mm)	0.10

Coefficient of Uniformity	Cu =	3.25
Coefficient of Gradation	Cc =	1.43

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SP-SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-2-03		
Sample No.	D-6	depth	14'-15.5'
Station	71+00	Offset	80' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	100
4	4.75	100
10	2	100
20	0.85	98
40	0.425	76
80	0.18	13
200	0.075	6

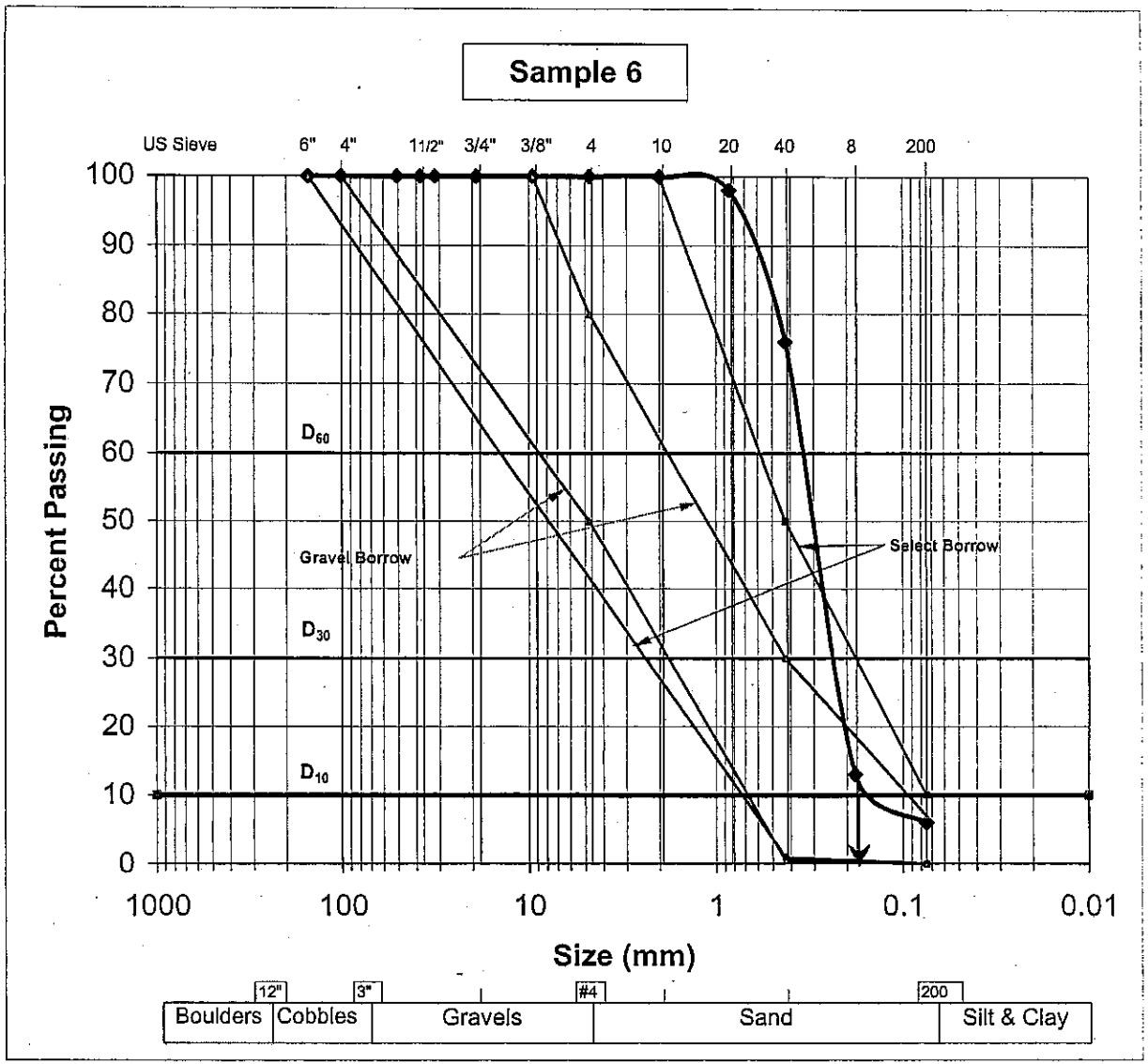
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.124	2.2	1.55E-03
Silty Inflow, Lower Bound	0.124	0.3	2.09E-04
Filtered Inflow, Upper Bound	0.124	7.5	5.27E-03
98 WSDOT	0.124	2.8	1.96E-03
Average Value	0.124	3.3	2.34E-03

D60 (mm)	0.34
D30 (mm)	0.23
D10 (mm)	0.12

Coefficient of Uniformity	Cu =	2.76
Coefficient of Gradation	Cc =	1.25

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SP-SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-2-03		
Sample No.	D-7	depth	17'-18.5'
Station	71+00	Offset	80' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	97
4	4.75	96
10	2	94
20	0.85	92
40	0.425	83
80	0.18	17
200	0.075	6.6

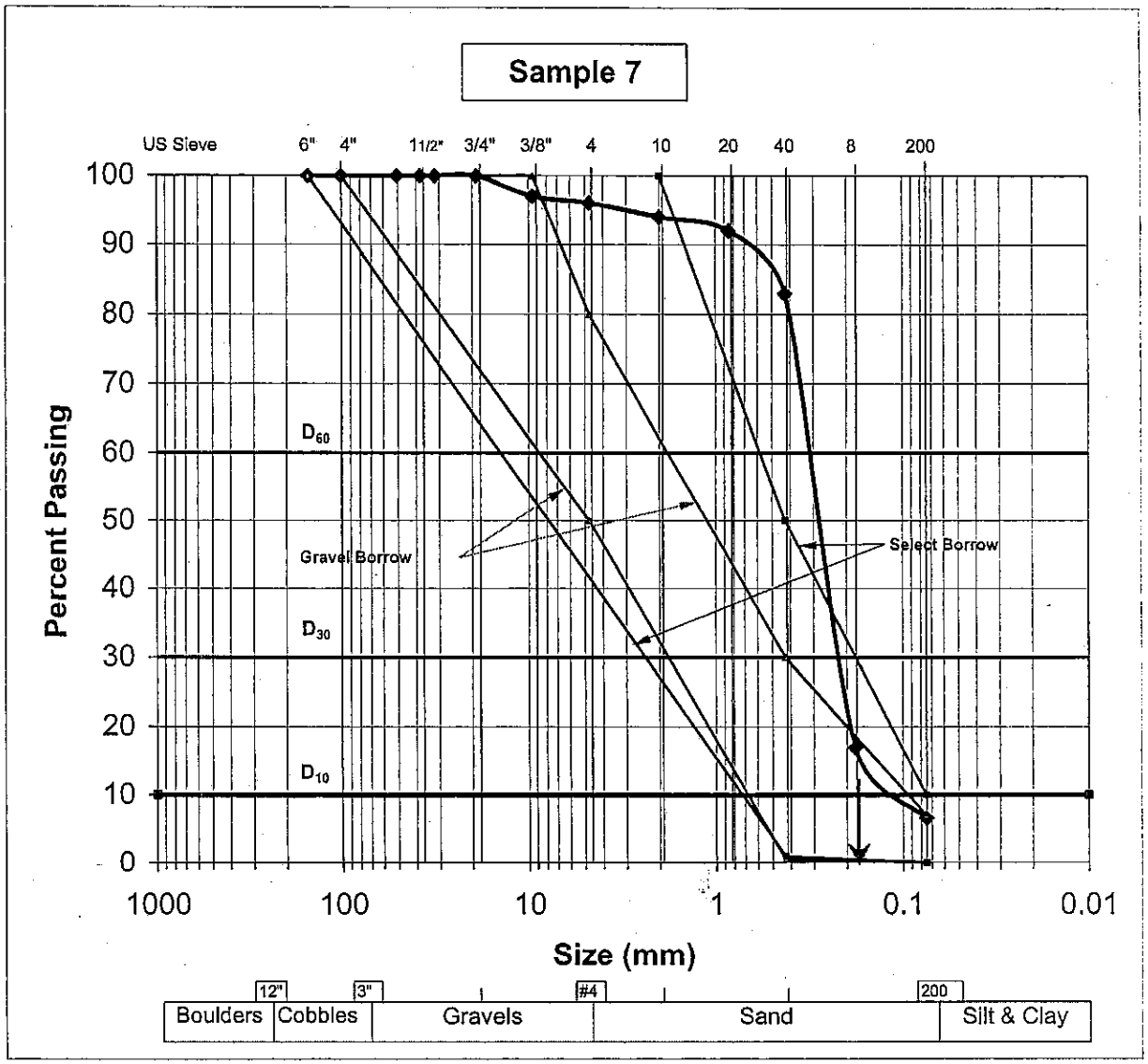
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.100	1.8	1.24E-03
Silty Inflow, Lower Bound	0.100	0.3	2.00E-04
Filtered Inflow, Upper Bound	0.100	6.2	4.39E-03
98 WSDOT	0.100	2.3	1.62E-03
Average Value	0.100	2.8	1.94E-03

D60 (mm)	0.32
D30 (mm)	0.21
D10 (mm)	0.10

Coefficient of Uniformity	Cu =	3.15
Coefficient of Gradation	Cc =	1.40

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SP-SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-2-03		
Sample No.	D-8	depth	19'-20.5'
Station	71+00	Offset	80' Rt.

US Sieve (In / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	100
4	4.75	100
10	2	100
20	0.85	100
40	0.425	96
80	0.18	63
200	0.075	32.4

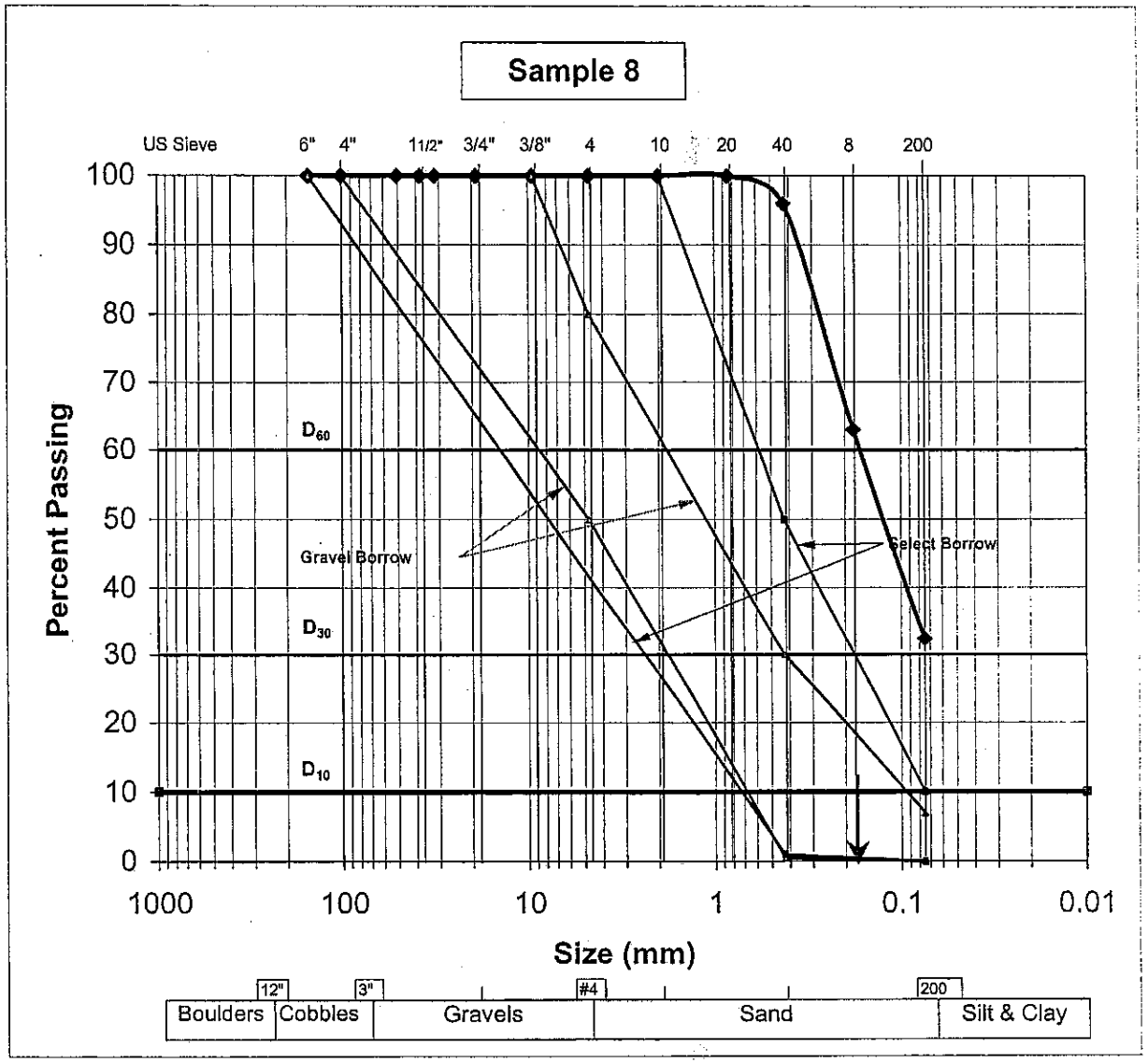
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (In/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.17
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-2-03		
Sample No.	D-9	depth	24'-25.5'
Station	71+00	Offset	80' Rt.

US Sieve (In / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	88
4	4.75	73
10	2	61
20	0.85	50
40	0.425	31
80	0.18	11
200	0.075	5.6

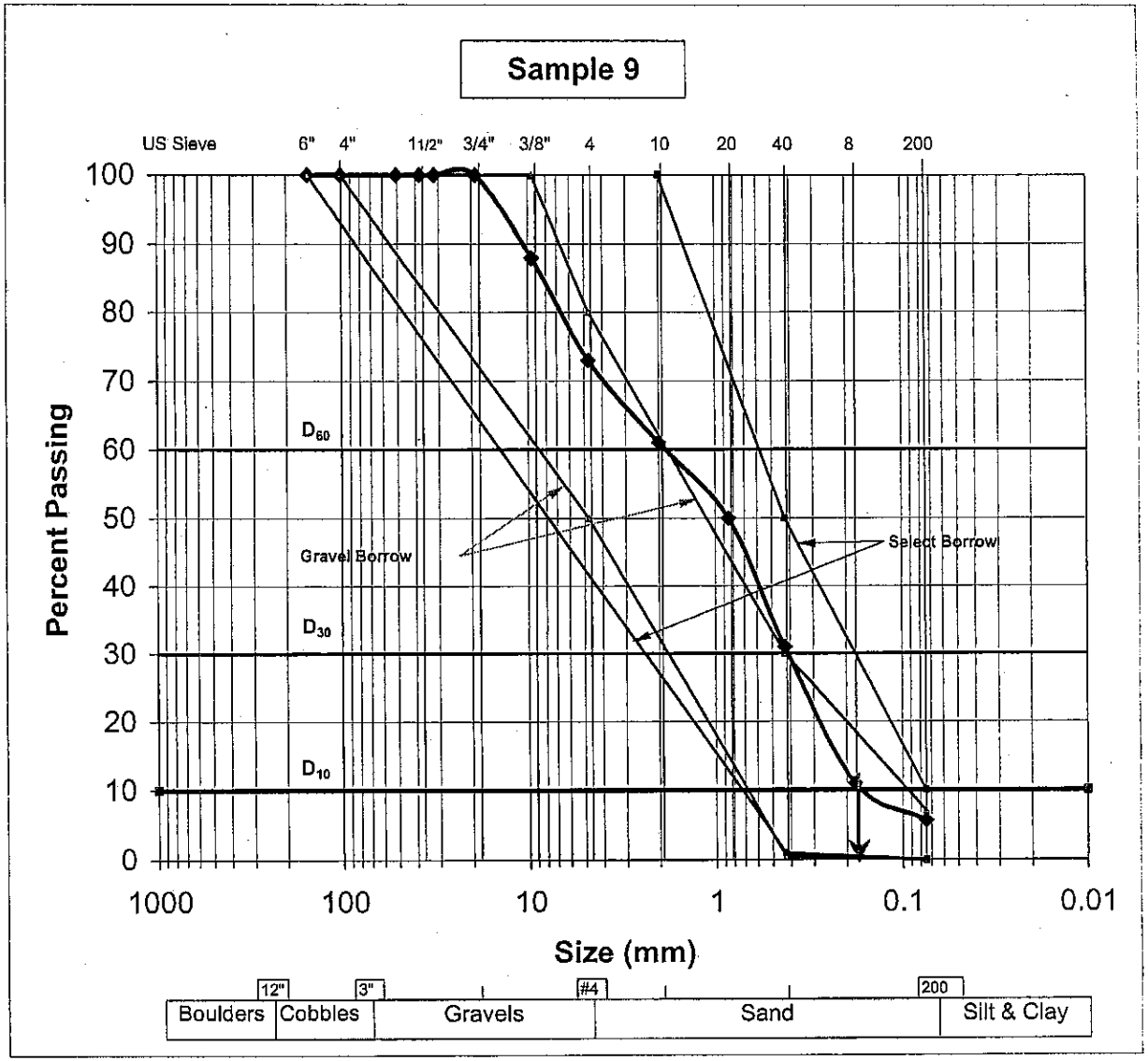
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.153	2.8	1.96E-03
Silty Inflow, Lower Bound	0.153	0.4	3.02E-04
Filtered Inflow, Upper Bound	0.153	8.9	6.28E-03
98 WSDOT	0.153	3.3	2.34E-03
Average Value	0.153	4.0	2.85E-03

D60 (mm)	1.85
D30 (mm)	0.41
D10 (mm)	0.15

Coefficient of Uniformity	Cu =	12.09
Coefficient of Gradation	Cc =	0.59

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SP-SM



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card RE00705

HOLE No. P-3-03

Sheet 1 of 2

Job No. OL-3678 SR SR-20 Elevation (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address SR-20 / Oakharbor

Inspector Brian M Breck

Start November 13, 2003 Completion November 13, 2003 Well ID# AHB-954

Equipment CME 45 w/ autohammer

Station 100+00 Offset 100' Lt Casing HQ x 27

Method Wet Rotary

Northing Easting Latitude Longitude

County Island Subsection NE 1/4 of the NE 1/4 Section 16 Range 1E Township 32

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				4 13 14 (27)		D-1		Sandy SILT with gravel, dense, brown, dry, Homogeneous, no HCl reaction Length Recovered 0.9 ft		
5	1			50 (50)		D-2		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
	2			50 (50)		D-3		Sandy SILT with gravel, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
10	3			50 (50)		D-4		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
	4		>>	20 28 35 (63)		D-5		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
15	5		>>	24 45 50 (95)		D-6		Silty SAND, very dense, gray, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
				40 50 (50)		D-7		Silty SAND, very dense, gray, wet, Homogeneous, no HCl reaction Length Recovered 0.6 ft		
20	6			48 50		D-8		Well graded SAND with gravel, very dense, gray, wet, Homogeneous, no HCl reaction	▽	

SOIL OL-3678.GPJ SOIL-GDT 10/30/03 1:17:03 P10

Washington State Department of Transportation

LOG OF TEST BORING

Start Card RE00705

HOLE No. P-3-03

Sheet 2 of 2

Job No. OL-3678 SR SR-20 Elevation (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				(50)				Length Recovered 0.5 ft 11/14/2003		
	7									
				28 50 (50)		D - 9		Poorly graded SAND, very dense, gray, wet, Homogeneous, no HCl reaction Length Recovered 0.9 ft		
25								End of test hole boring at 25 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
	8									
	9									
30										
	10									
35										
	11									
	12									
40										
	13									
45										

Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-3-03		
Sample No.	D-1	depth	0'-1.5'
Station	100+00	Offset	100' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	94
3/8	9.5	93
4	4.75	86
10	2	79
20	0.85	73
40	0.425	65
80	0.18	45
200	0.075	33.7

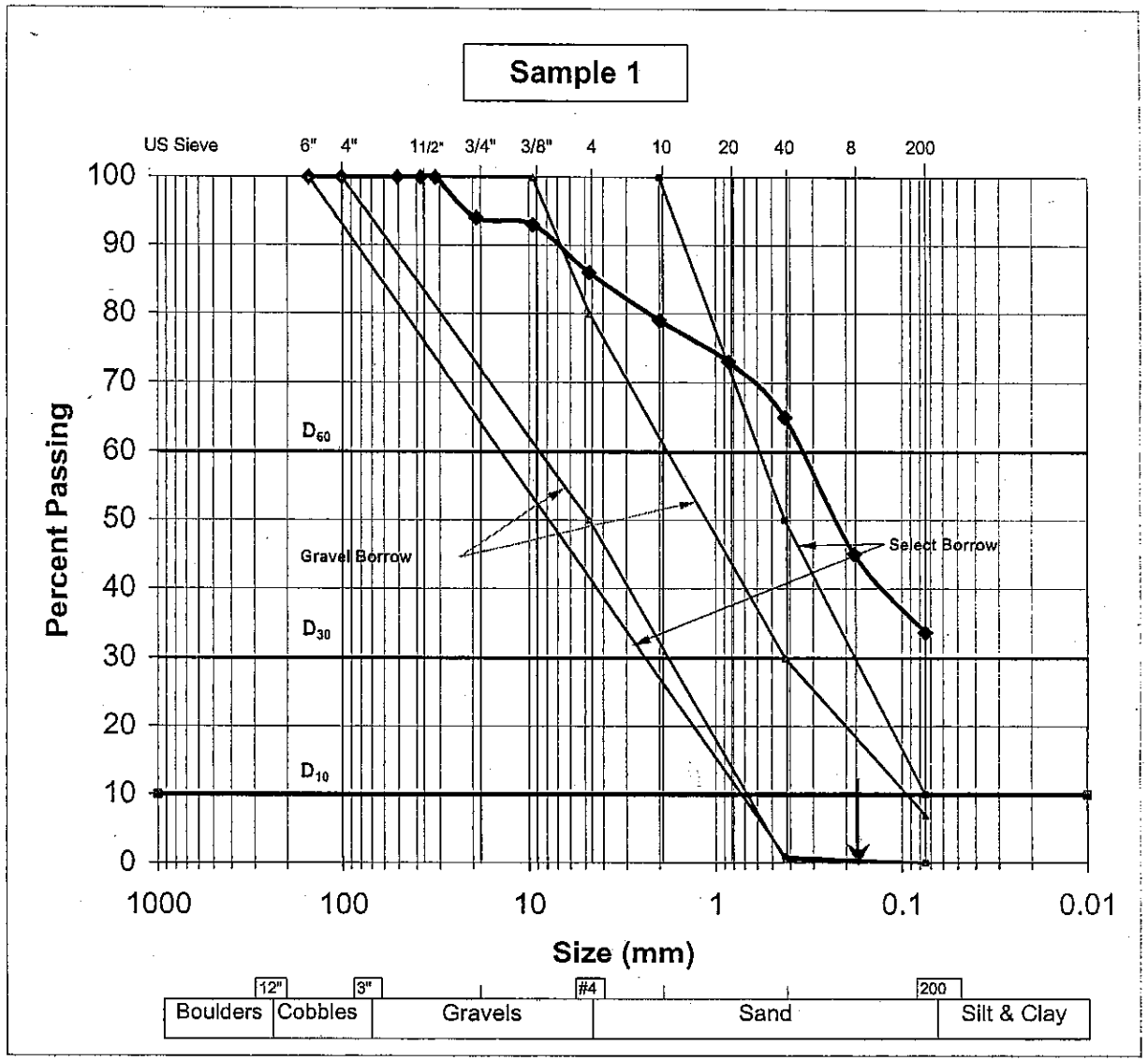
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.34
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-3-03		
Sample No.	D-2	depth	4'-5.5'
Station	100+00	Offset	100' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	95
4	4.75	89
10	2	82
20	0.85	74
40	0.425	65
80	0.18	46
200	0.075	28.9

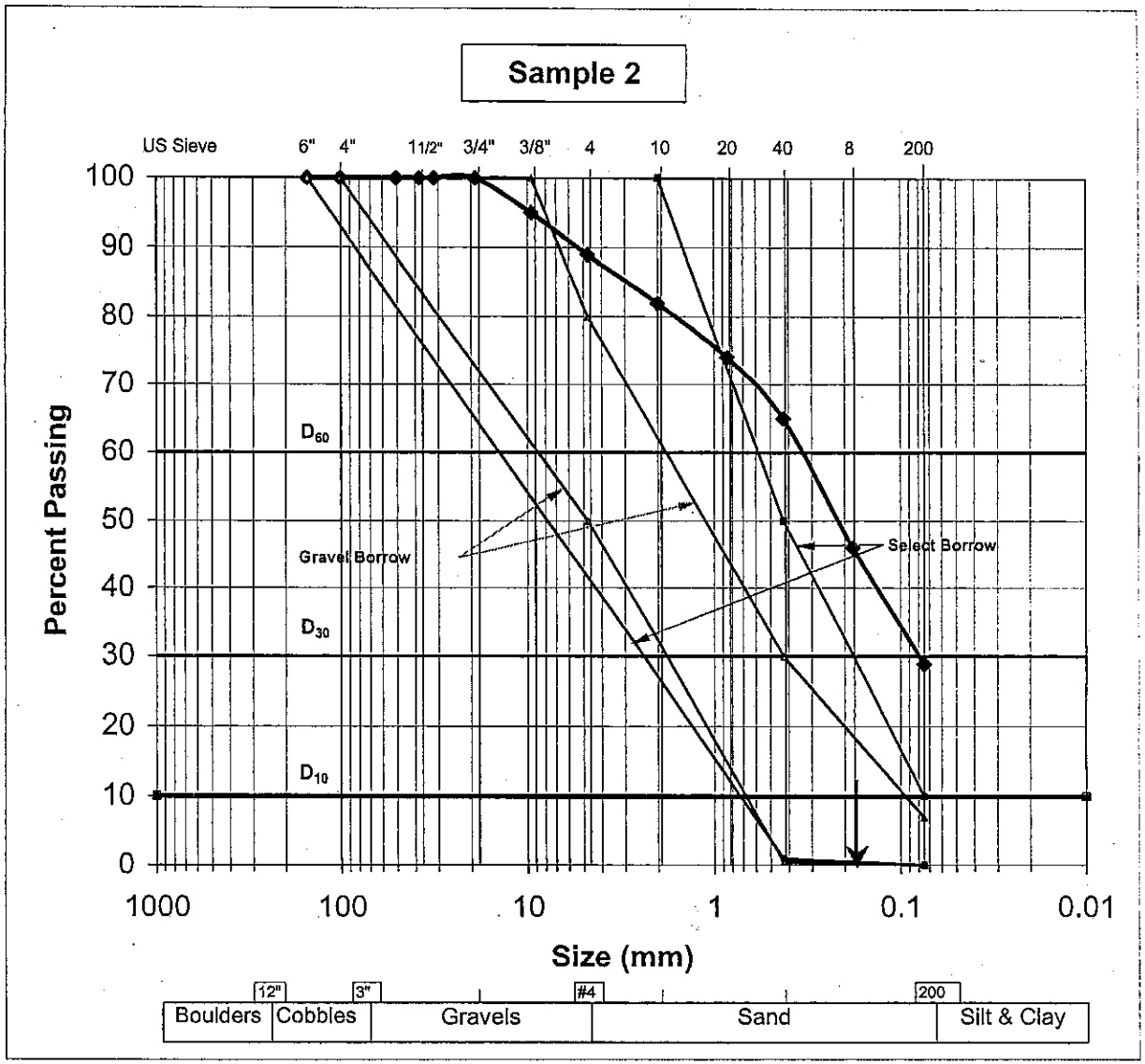
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.34
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-3-03		
Sample No.	D-3	depth	7'-8.5'
Station	100+00	Offset	100' Lt.

US Sieve (In / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	90
4	4.75	82
10	2	75
20	0.85	69
40	0.425	63
80	0.18	50
200	0.075	37.2

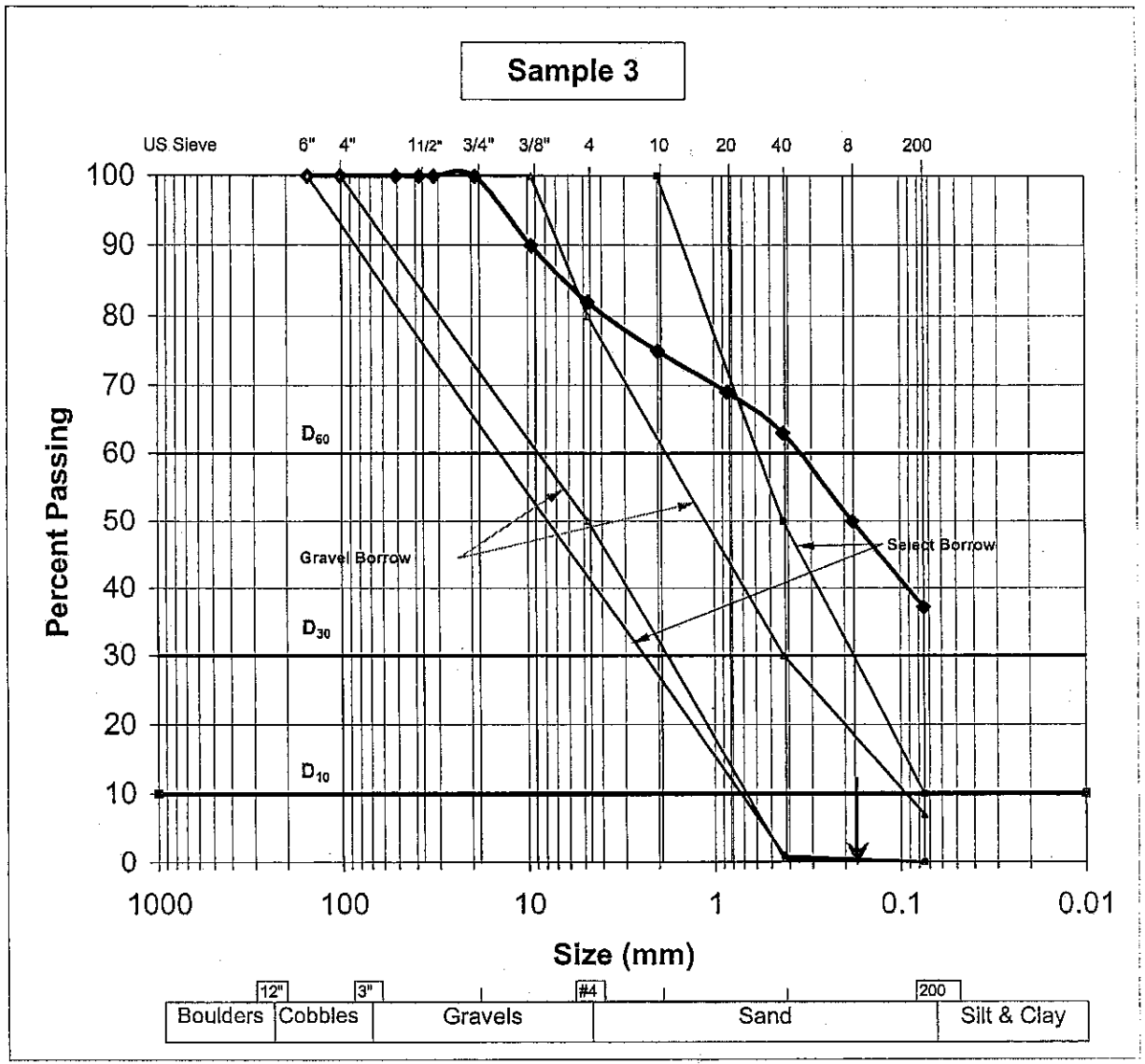
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.35
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-3-03		
Sample No.	D-4	depth	9'-10.5'
Station	100+00	Offset	100' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	91
3/8	9.5	86
4	4.75	80
10	2	73
20	0.85	67
40	0.425	61
80	0.18	45
200	0.075	31.5

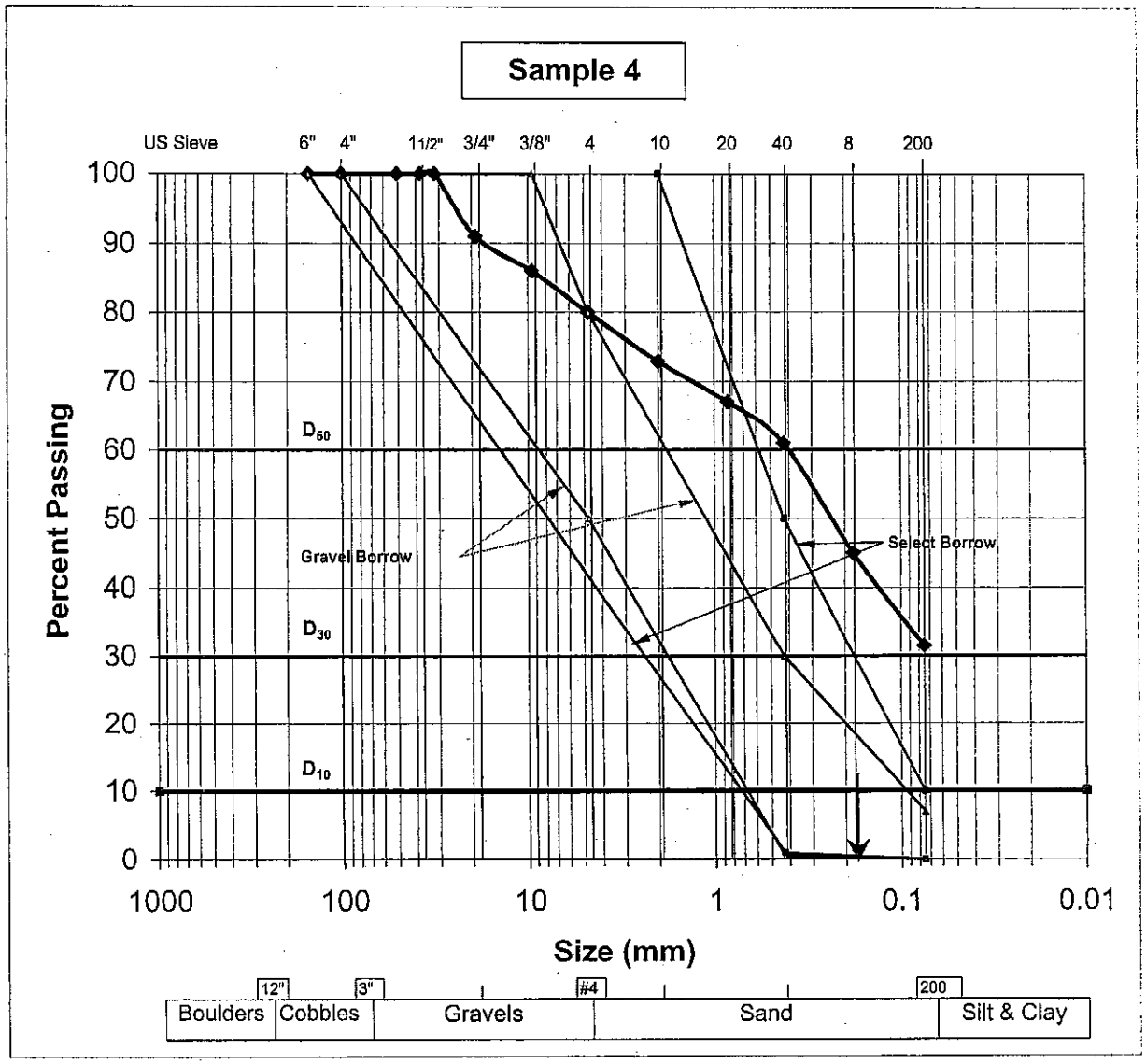
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.40
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-3-03		
Sample No.	D-5	depth	12'-13.5'
Station	100+00	Offset	100' Lt.

US Sieve (In / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	96
3/8	9.5	87
4	4.75	80
10	2	74
20	0.85	69
40	0.425	63
80	0.18	49
200	0.075	35.3

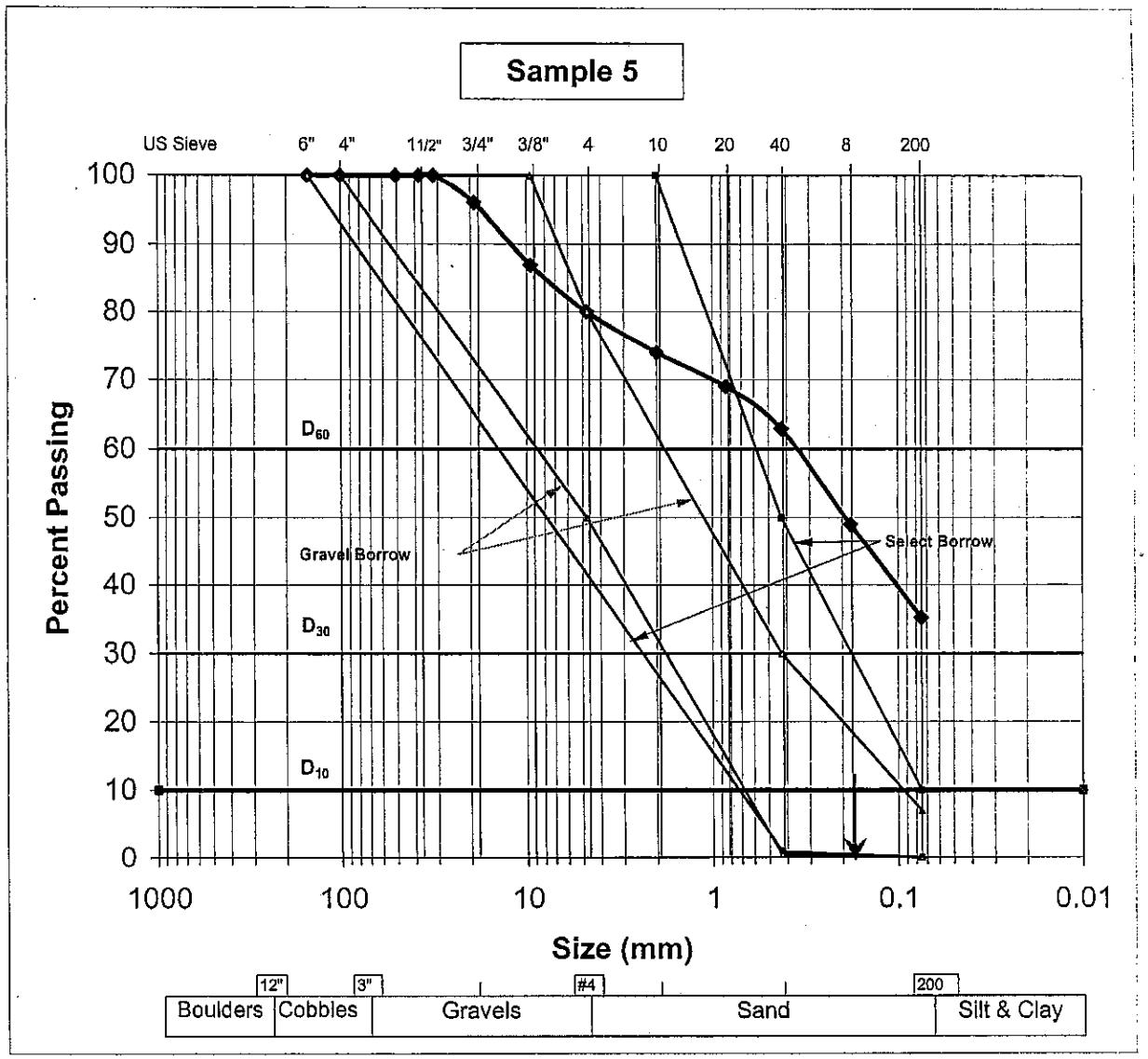
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (In/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.35
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-3-03		
Sample No.	D-6	depth	14'-15.5'
Station	100+00	Offset	100' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	95
3/8	9.5	91
4	4.75	86
10	2	84
20	0.85	80
40	0.425	75
80	0.18	46
200	0.075	22.3

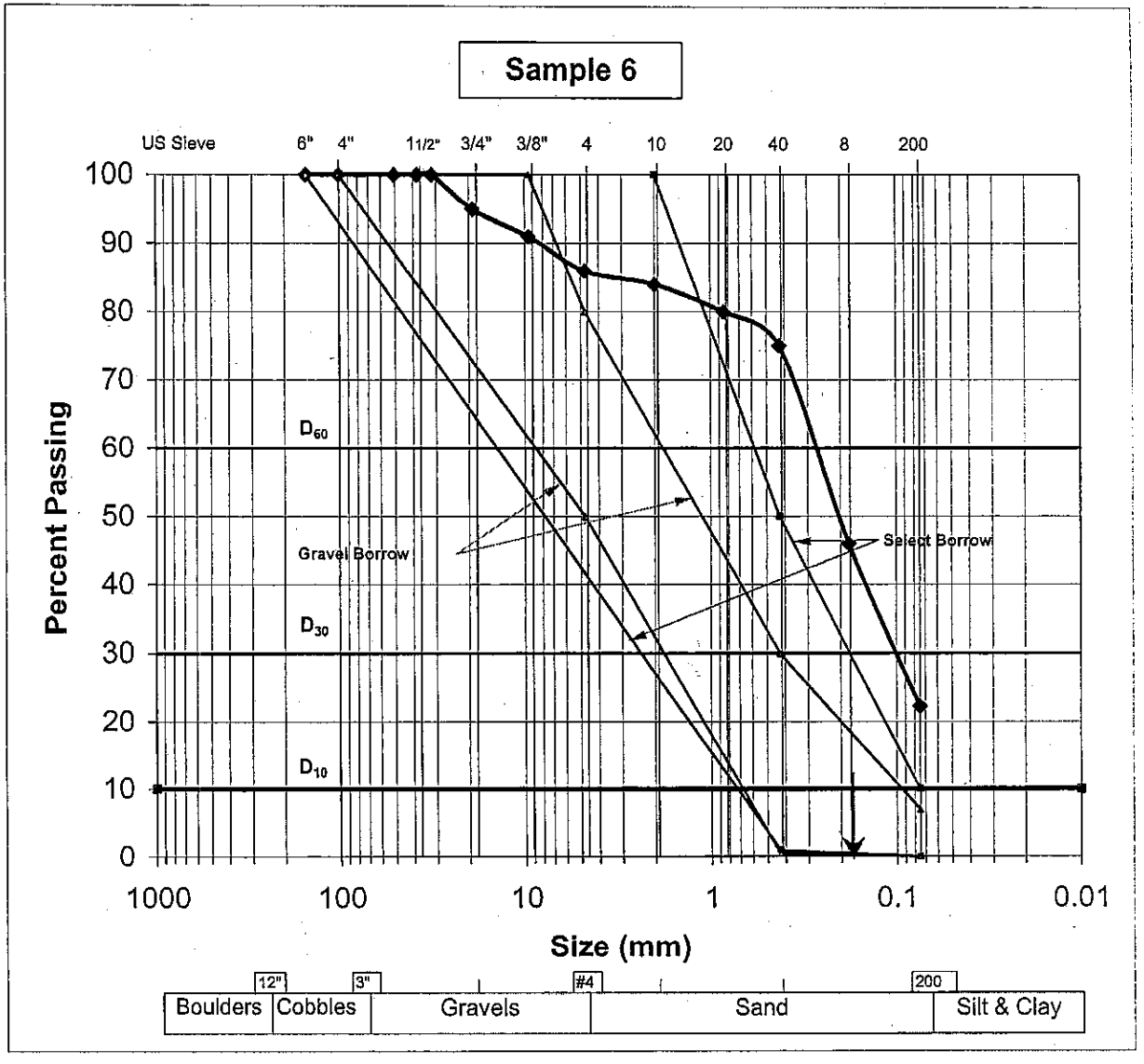
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.27
D30 (mm)	0.10
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-3-03		
Sample No.	D-7	depth	17'-18.5'
Station	100+00	Offset	100' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	91
4	4.75	85
10	2	80
20	0.85	74
40	0.425	67
80	0.18	42
200	0.075	23.9

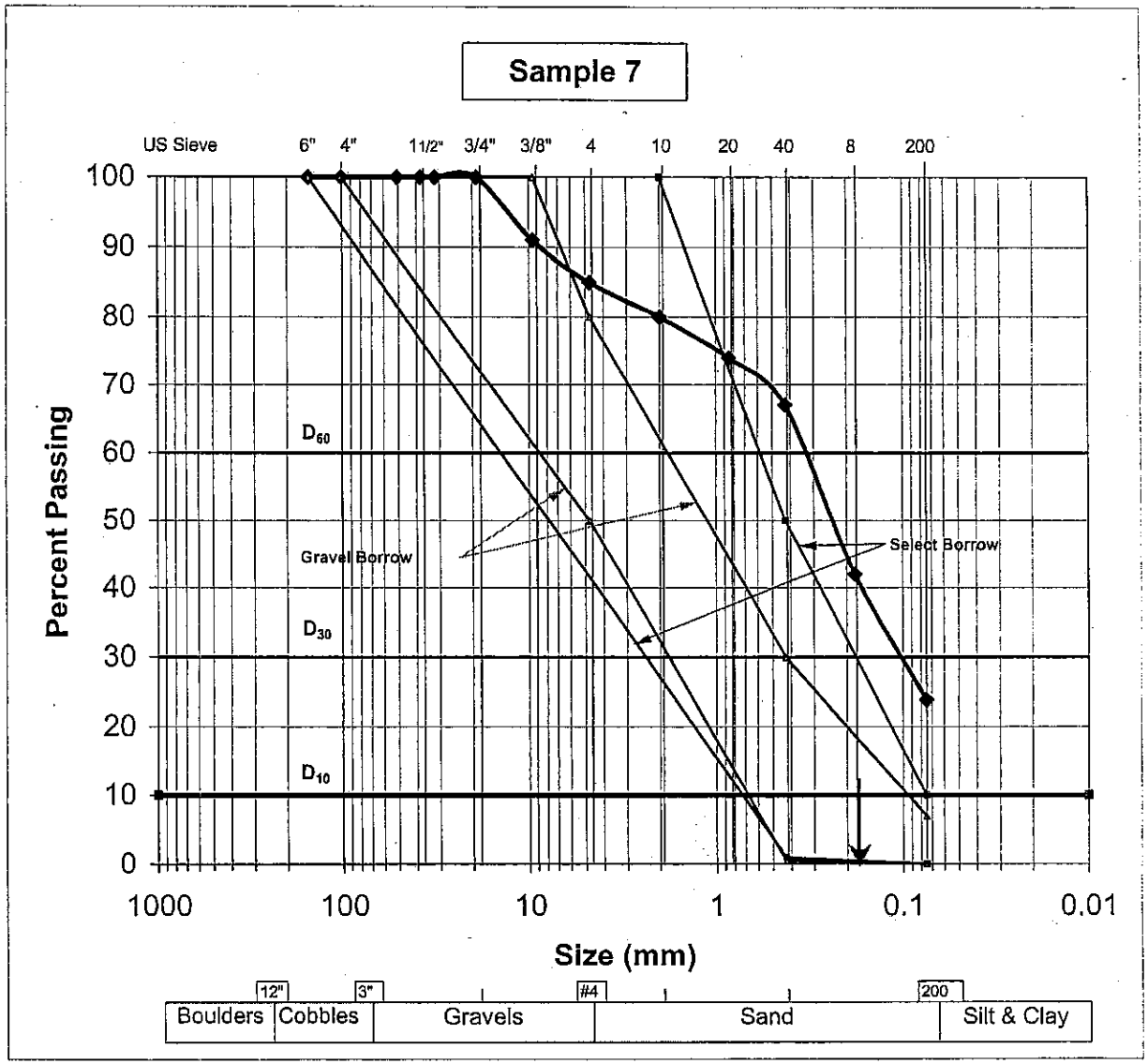
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.33
D30 (mm)	0.10
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-3-03		
Sample No.	D-8	depth	19'-19.8'
Station	100+00	Offset	100' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	96
4	4.75	85
10	2	73
20	0.85	63
40	0.425	53
80	0.18	34
200	0.075	20.9

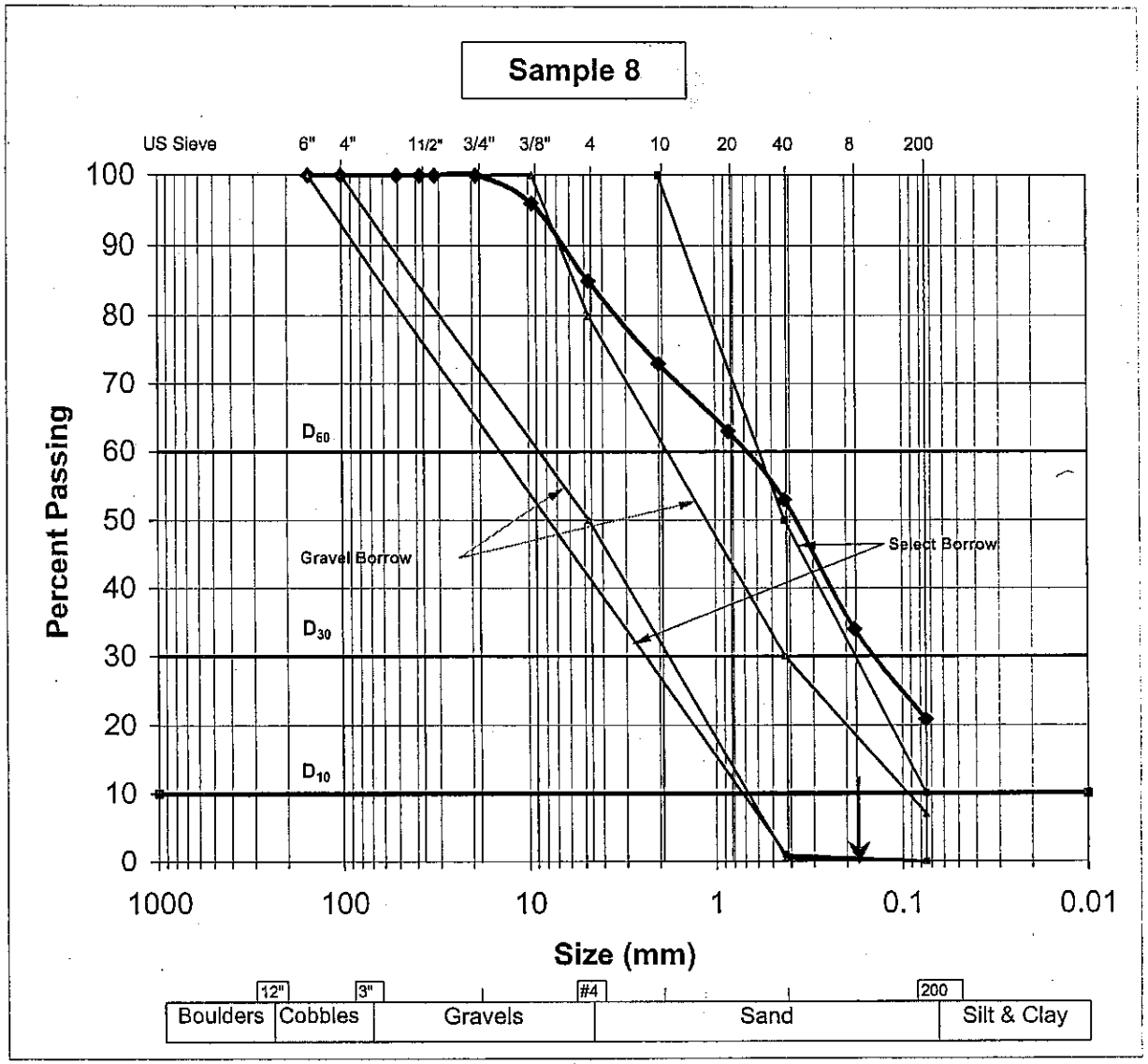
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.69
D30 (mm)	0.14
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-3-03		
Sample No.	D-9	depth	24'-25'
Station	100+00	Offset	100' Lt.

US Sieve (In / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	100
4	4.75	100
10	2	100
20	0.85	99
40	0.425	98
80	0.18	77
200	0.075	54.5

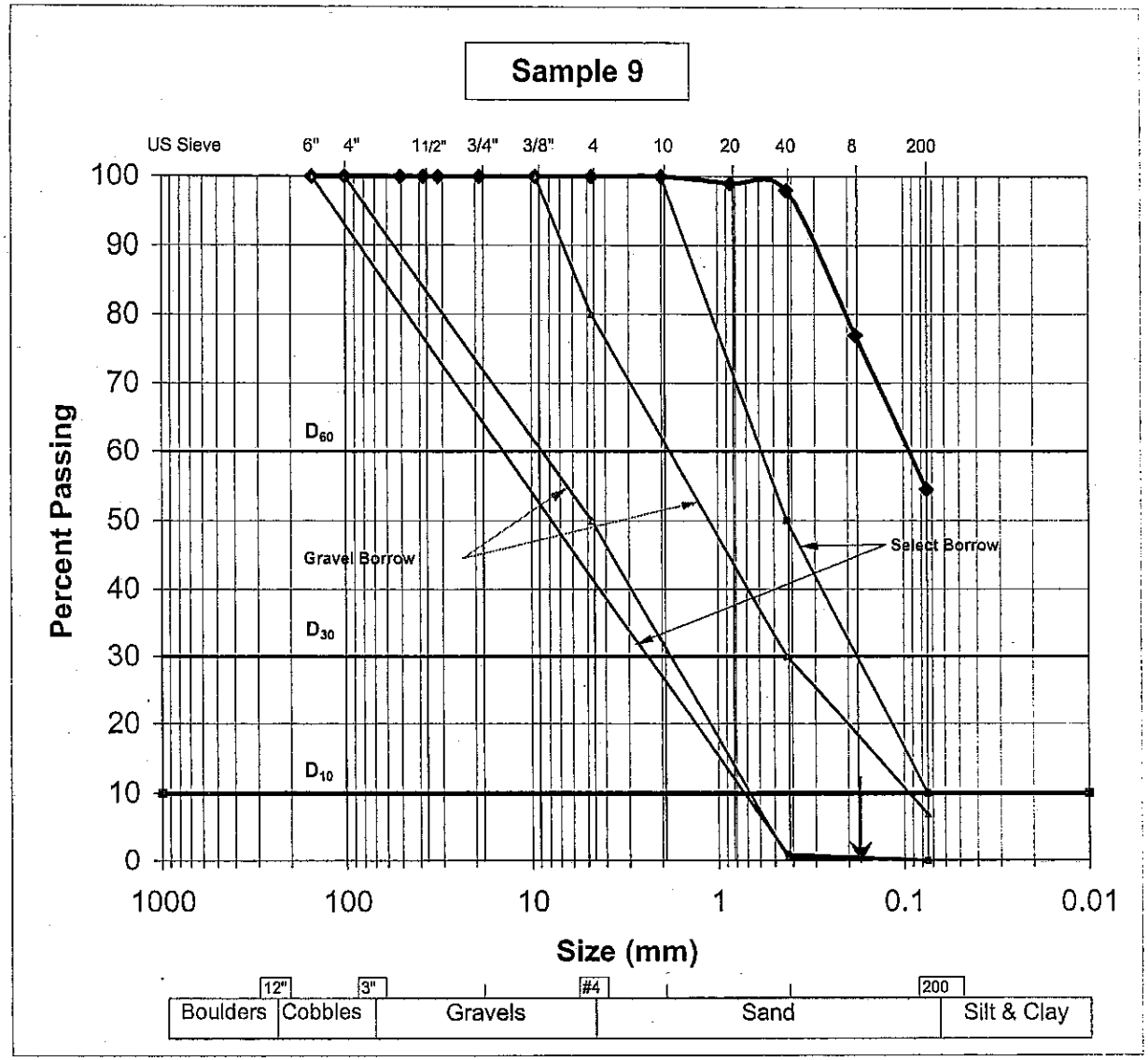
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.09
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	ML



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card RE00706

HOLE No. P-4-03

Sheet 1 of 2

Job No. OL-3678 SR SR-20 Elevation (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Site Address SR-20 / Oakharbor

Inspector Brian M Breck

Start November 14, 2003 Completion November 14, 2003 Well ID# AHX-855 Equipment CME 45 w/ cathead

Station 154+40 Offset 80' Lt. Casing HQ x 27 Method Wet Rotary

Northing Easting Latitude Longitude

County Island Subsection NW 1/4 of the SE 1/4 Section 10 Range 1E Township 32

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			>>	7 29 28 (57)		D - 1		Silty SAND with gravel, very dense, brown, dry, Homogeneous, no HCl reaction Length Recovered 0.7 ft		
	1			50 (50)		D - 2		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.3 ft		
5	2		>>	23 33 28 (61)		D - 3		Poorly graded SAND, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
				12 24 21 (44)		D - 4		Well graded SAND, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
10	3			12 22 25 (47)		D - 5		Well graded SAND, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
	4		>>	13 28 30 (58)		D - 6		Well graded SAND with gravel, dense, gray, wet, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
15	5			14 21 26 (47)		D - 7		Poorly graded SAND, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
	6			12 19		D - 8		Poorly graded SAND, dense, gray, moist, Homogeneous, no HCl reaction		
20										

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card RE00706

HOLE No. P-4-03

Sheet 2 of 2

Job No OL-3678 SR SR-20 Elevation (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637T

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				24 (43)				Length Recovered 1.5 ft		
	7		>>	20 21 31 (52)		D - 9		11/17/2003 Poorly graded SAND, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
25								End of test hole boring at 25.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
	8									
30	9									
	10									
35	11									
40	12									
	13									
45										

Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-4-03		
Sample No.	D-1	depth	0'.1.5'
Station	154+40	Offset	80' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	90
3/8	9.5	75
4	4.75	68
10	2	62
20	0.85	53
40	0.425	43
80	0.18	30
200	0.075	21.2

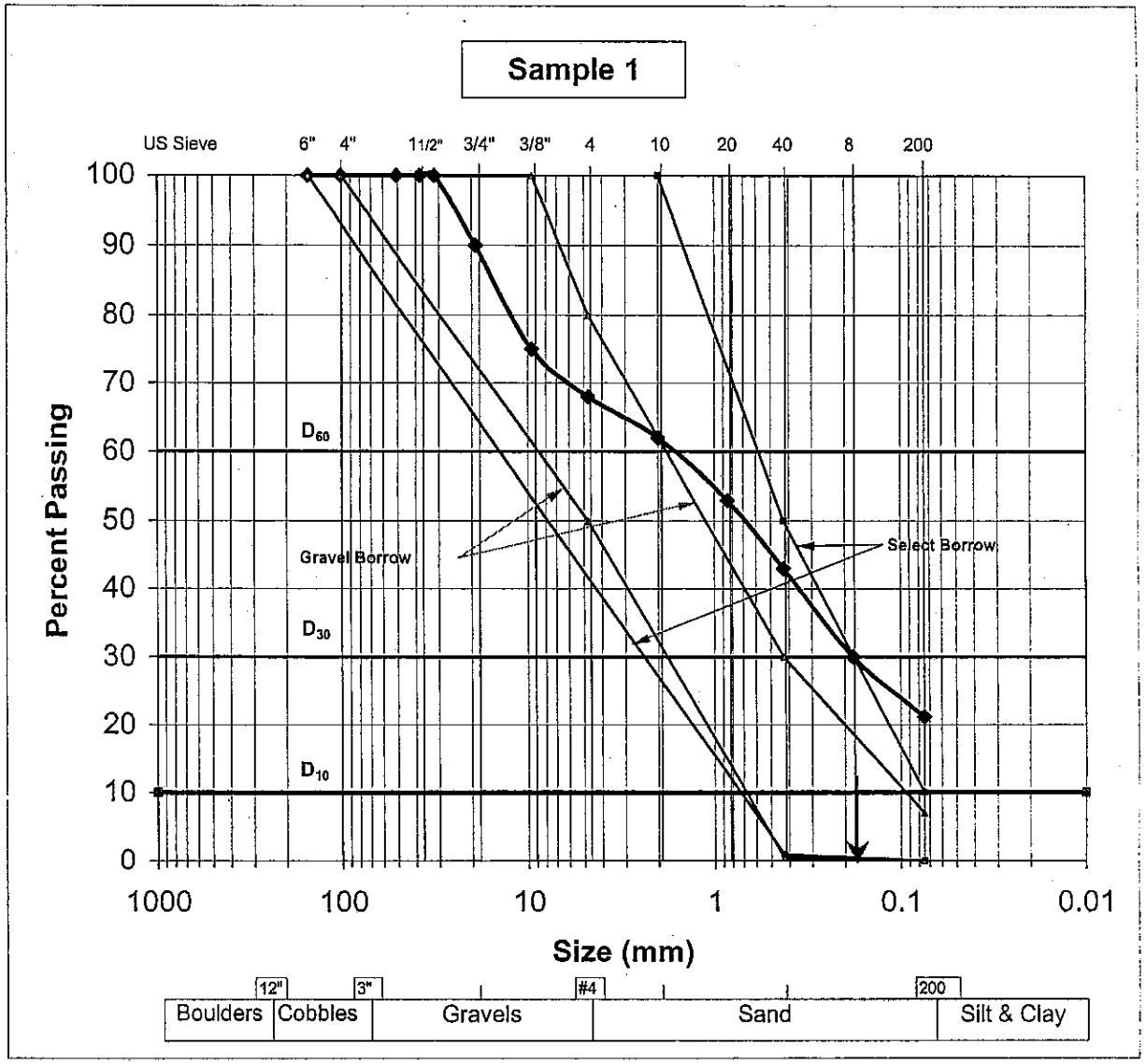
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	1.65
D30 (mm)	0.18
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-4-03		
Sample No.	D-2	depth	4'-5.5'
Station	154+40	Offset	80' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	95
4	4.75	91
10	2	88
20	0.85	83
40	0.425	76
80	0.18	50
200	0.075	31.7

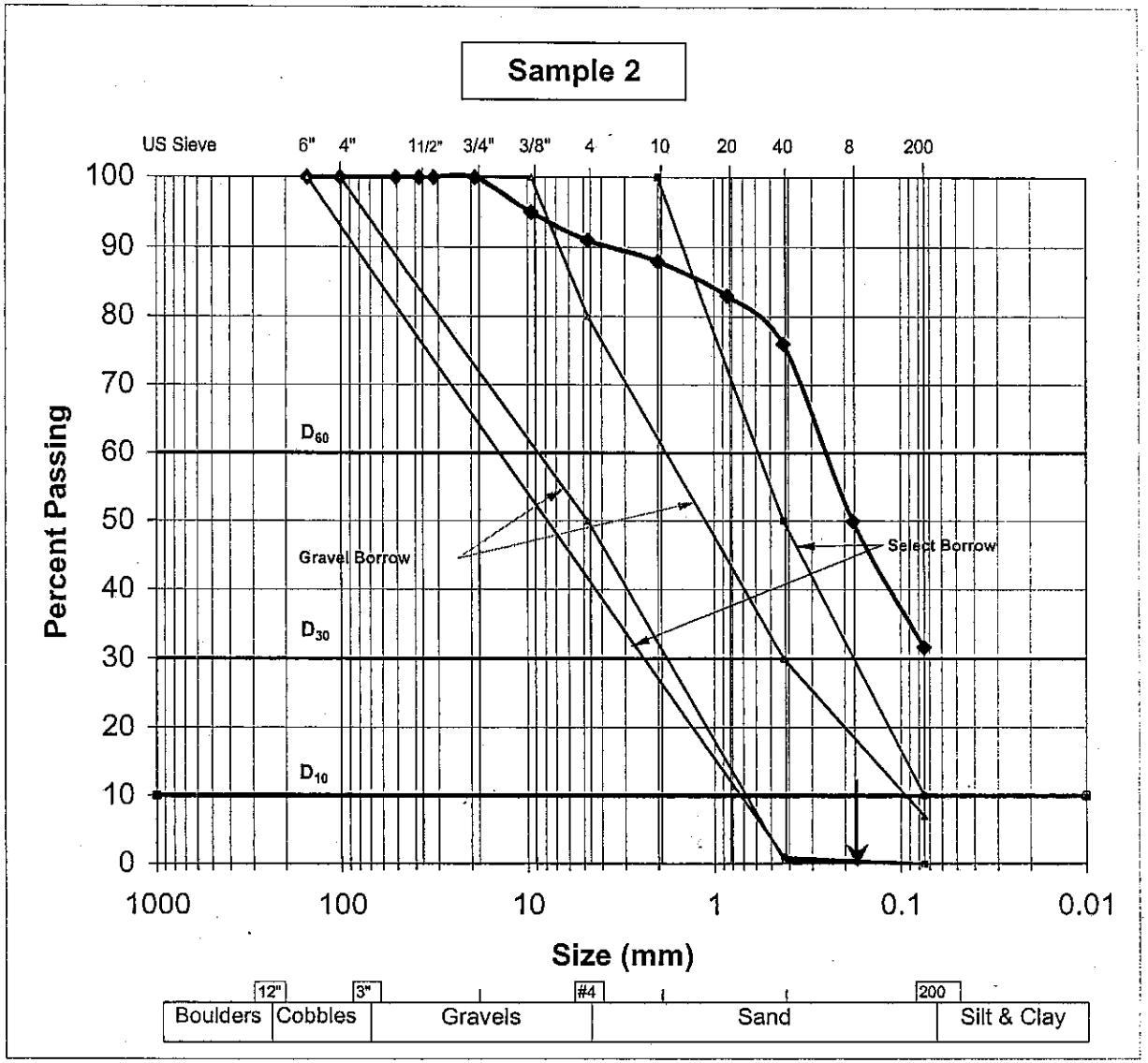
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.25
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-4-03		
Sample No.	D-3	depth	7'-8.5'
Station	154+40	Offset	80' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	98
4	4.75	96
10	2	93
20	0.85	82
40	0.425	56
80	0.18	18
200	0.075	12.1

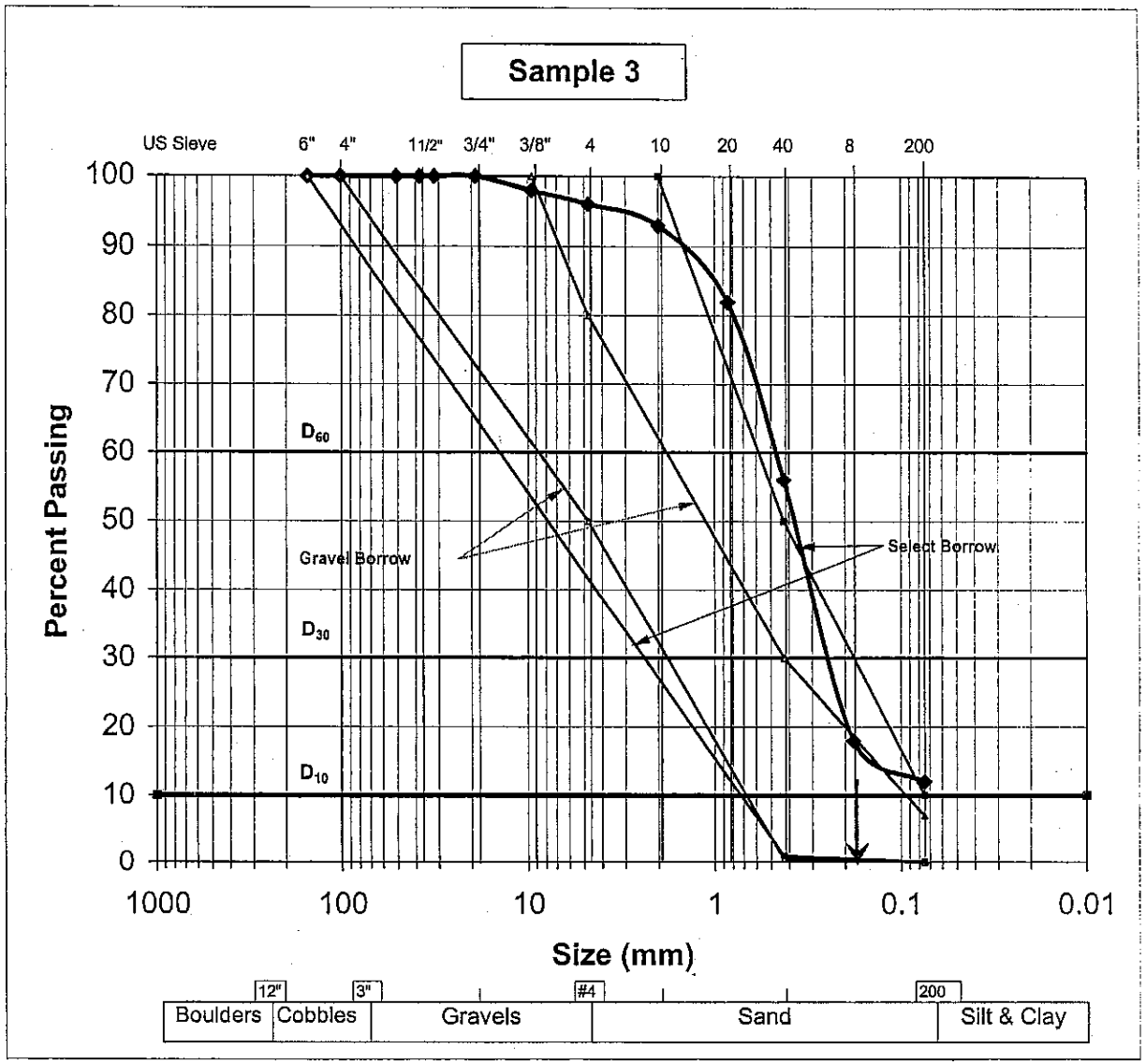
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

D60 (mm)	0.47
D30 (mm)	0.24
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-4-03		
Sample No.	D-4	depth	9'-10.5'
Station	154+40	Offset	80' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	100
4	4.75	98
10	2	94
20	0.85	72
40	0.425	41
80	0.18	14
200	0.075	9

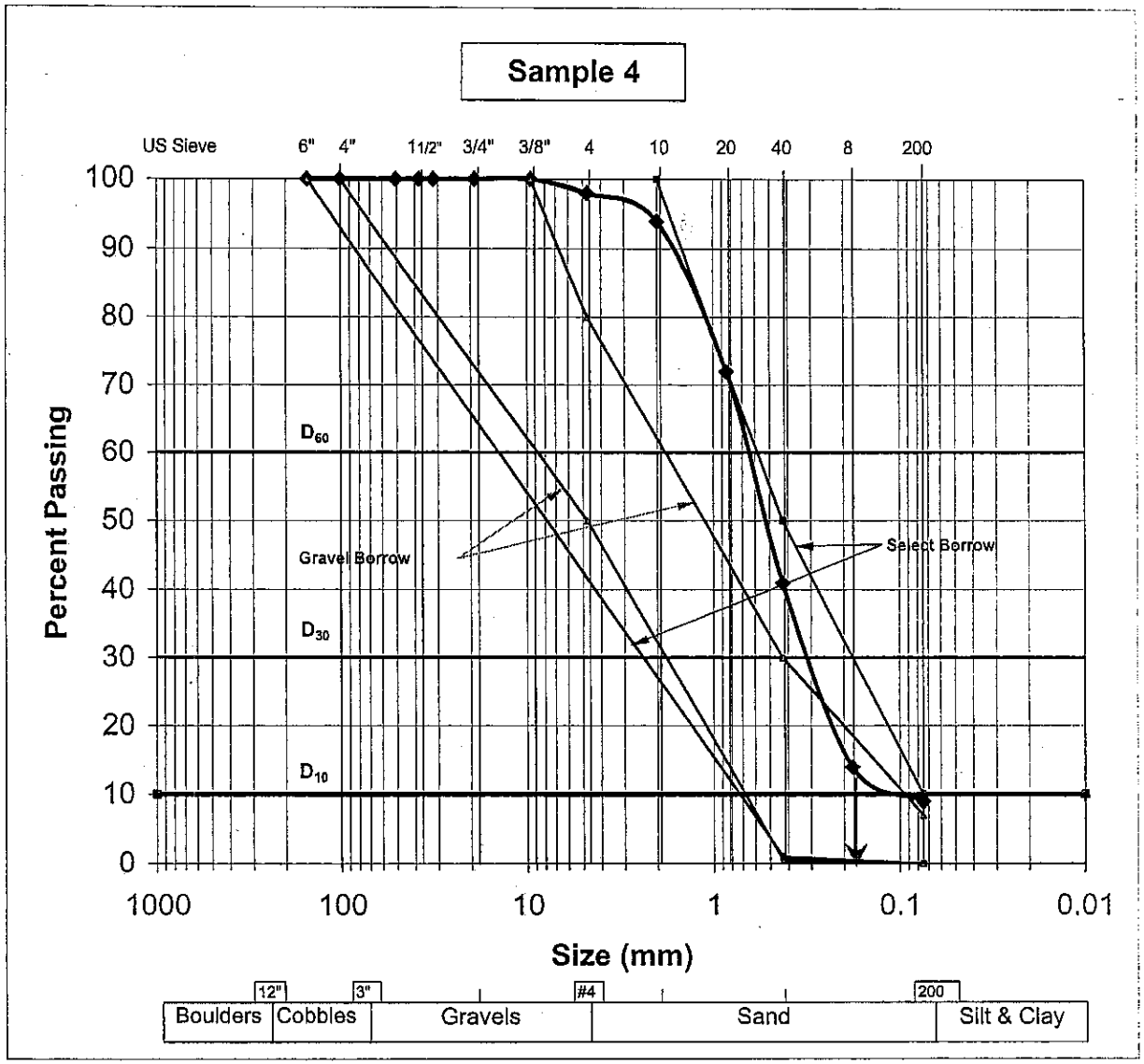
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.089	1.6	1.10E-03
Silty Inflow, Lower Bound	0.089	0.3	1.95E-04
Filtered Inflow, Upper Bound	0.089	5.6	3.98E-03
98 WSDOT	0.089	2.1	1.47E-03
Average Value	0.089	2.5	1.76E-03

D60 (mm)	0.65
D30 (mm)	0.30
D10 (mm)	0.09

Coefficient of Uniformity	Cu =	7.30
Coefficient of Gradation	Cc =	1.56

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SW-SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-4-03		
Sample No.	D-5	depth	12'-13.5'
Station	154+40	Offset	80' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	99
4	4.75	95
10	2	85
20	0.85	58
40	0.425	29
80	0.18	12
200	0.075	8

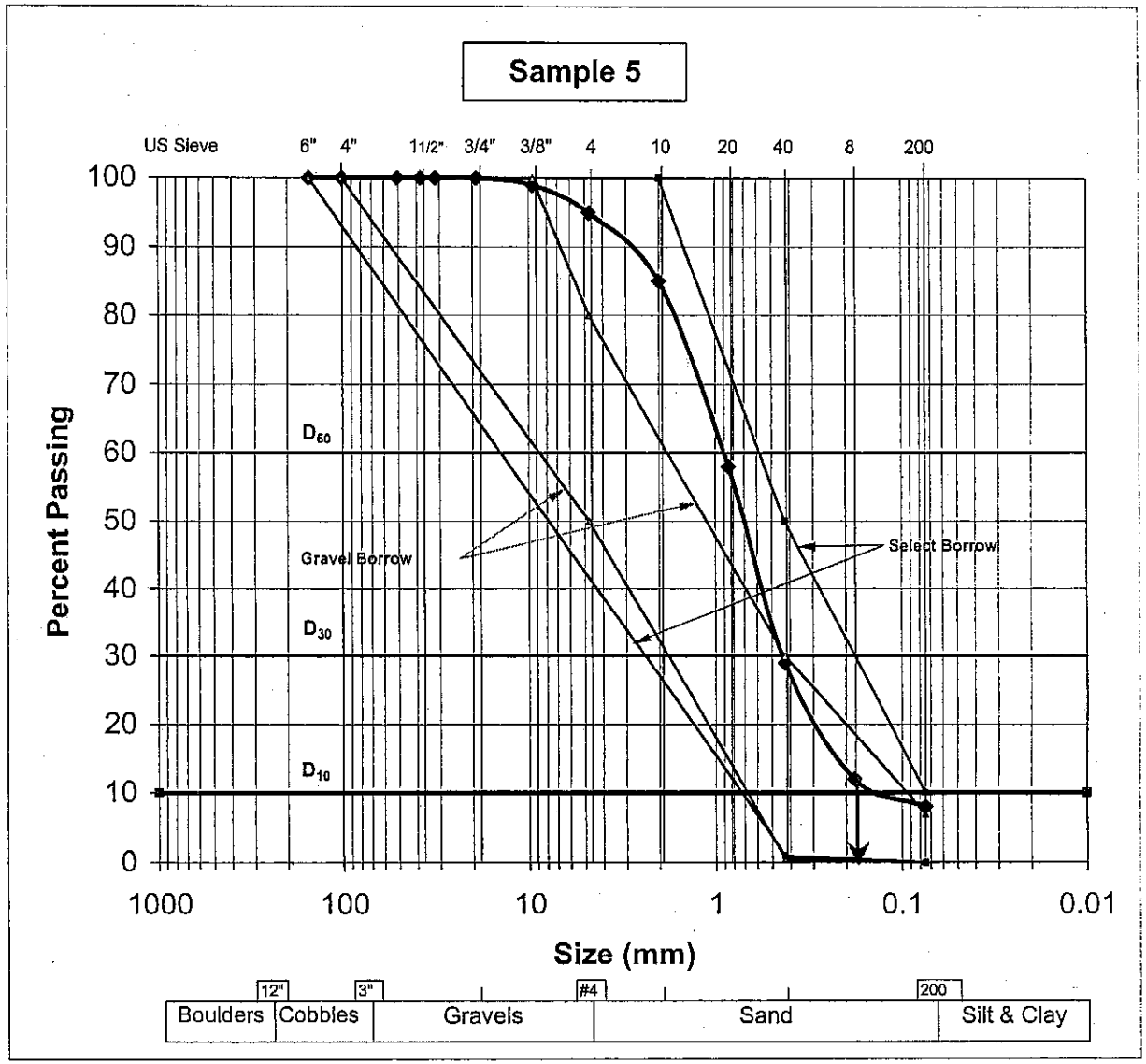
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.116	2.0	1.44E-03
Silty Inflow, Lower Bound	0.116	0.3	2.06E-04
Filtered Inflow, Upper Bound	0.116	7.1	4.98E-03
98 WSDOT	0.116	2.6	1.85E-03
Average Value	0.116	3.1	2.21E-03

D60 (mm)	0.91
D30 (mm)	0.44
D10 (mm)	0.12

Coefficient of Uniformity	Cu =	7.81
Coefficient of Gradation	Cc =	1.84

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SW-SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-4-03		
Sample No.	D-6	depth	14'-15.5'
Station	154+40	Offset	80' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	97
4	4.75	90
10	2	78
20	0.85	54
40	0.425	27
80	0.18	11
200	0.075	7.6

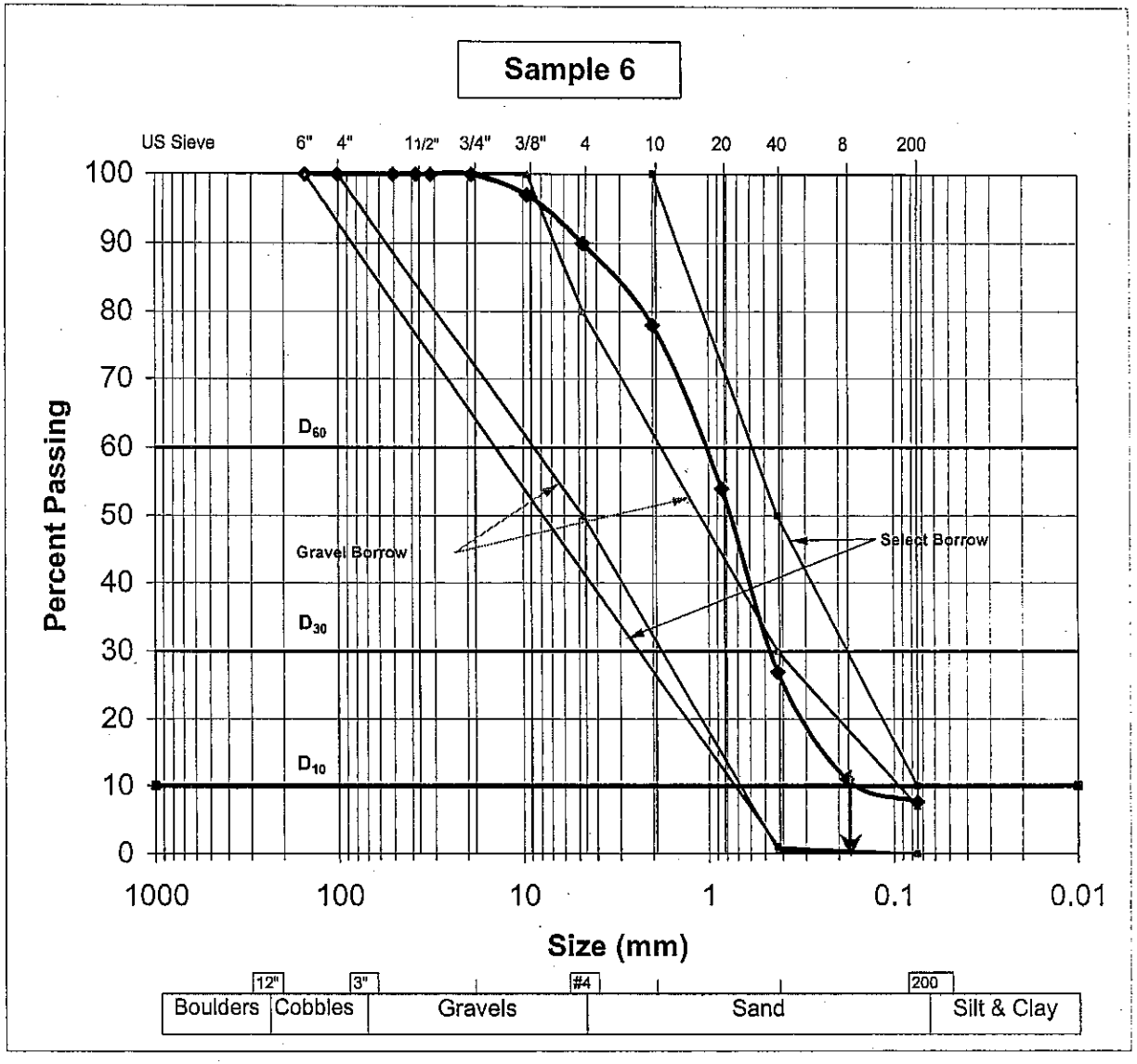
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.139	2.5	1.76E-03
Silty Inflow, Lower Bound	0.139	0.3	2.45E-04
Filtered Inflow, Upper Bound	0.139	8.2	5.80E-03
98 WSDOT	0.139	3.1	2.16E-03
Average Value	0.139	3.7	2.60E-03

D60 (mm)	1.05
D30 (mm)	0.46
D10 (mm)	0.14

Coefficient of Uniformity	Cu =	7.58
Coefficient of Gradation	Cc =	1.45

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SW-SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-4-03		
Sample No.	D-7	depth	17'-18.5'
Station	154+40	Offset	80' Lt.

US Sieve (In / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	100
4	4.75	100
10	2	100
20	0.85	91
40	0.425	47
80	0.18	12
200	0.075	7.5

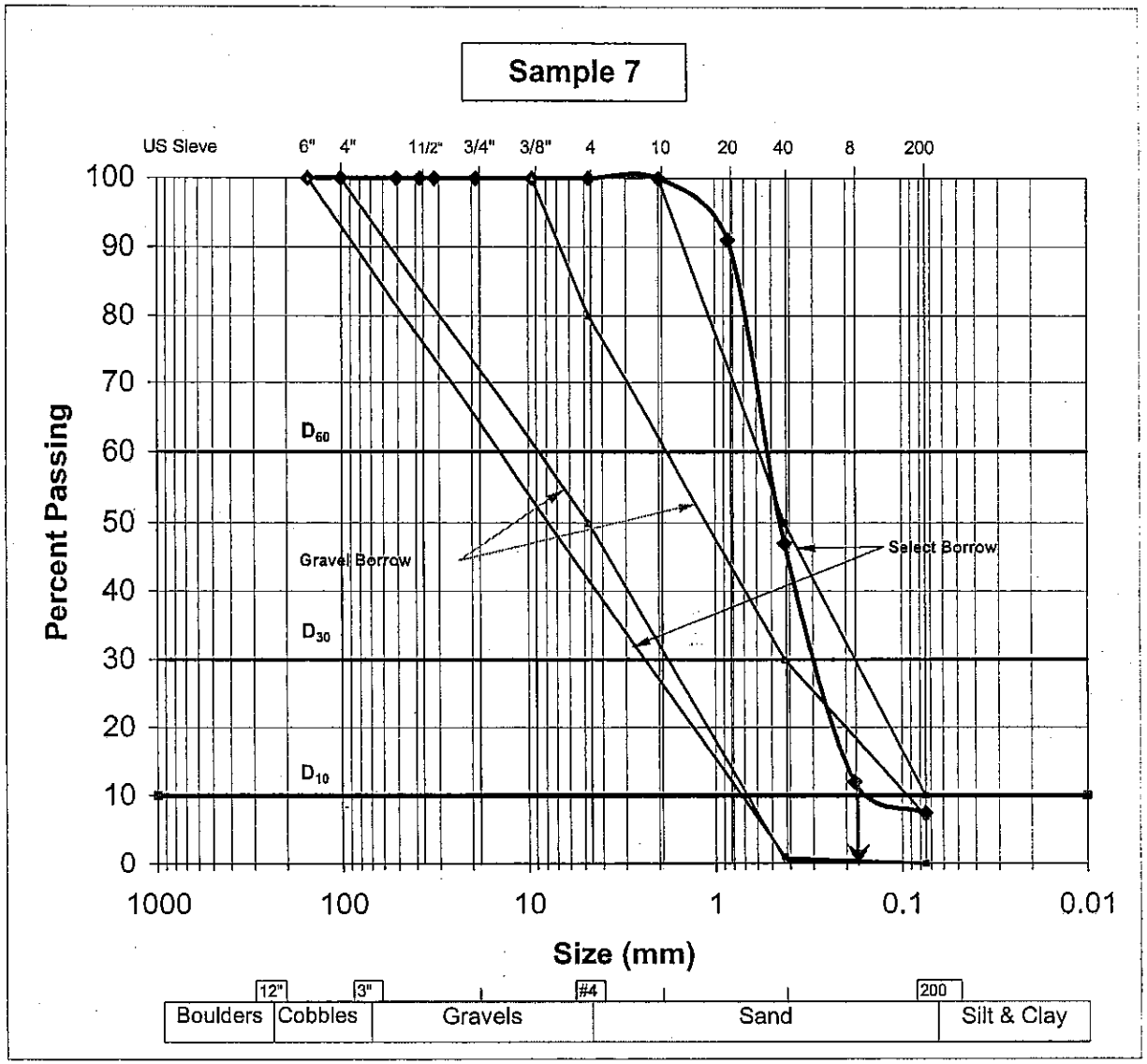
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (In/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.122	2.2	1.53E-03
Silty Inflow, Lower Bound	0.122	0.3	2.09E-04
Filtered Inflow, Upper Bound	0.122	7.4	5.19E-03
98 WSDOT	0.122	2.7	1.93E-03
Average Value	0.122	3.3	2.31E-03

D60 (mm)	0.52
D30 (mm)	0.28
D10 (mm)	0.12

Coefficient of Uniformity	Cu =	4.28
Coefficient of Gradation	Cc =	1.23

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SW-SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-4-03		
Sample No.	D-8	depth	19'-20.5'
Station	154+40	Offset	80' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	100
4	4.75	100
10	2	100
20	0.85	91
40	0.425	50
80	0.18	12
200	0.075	7

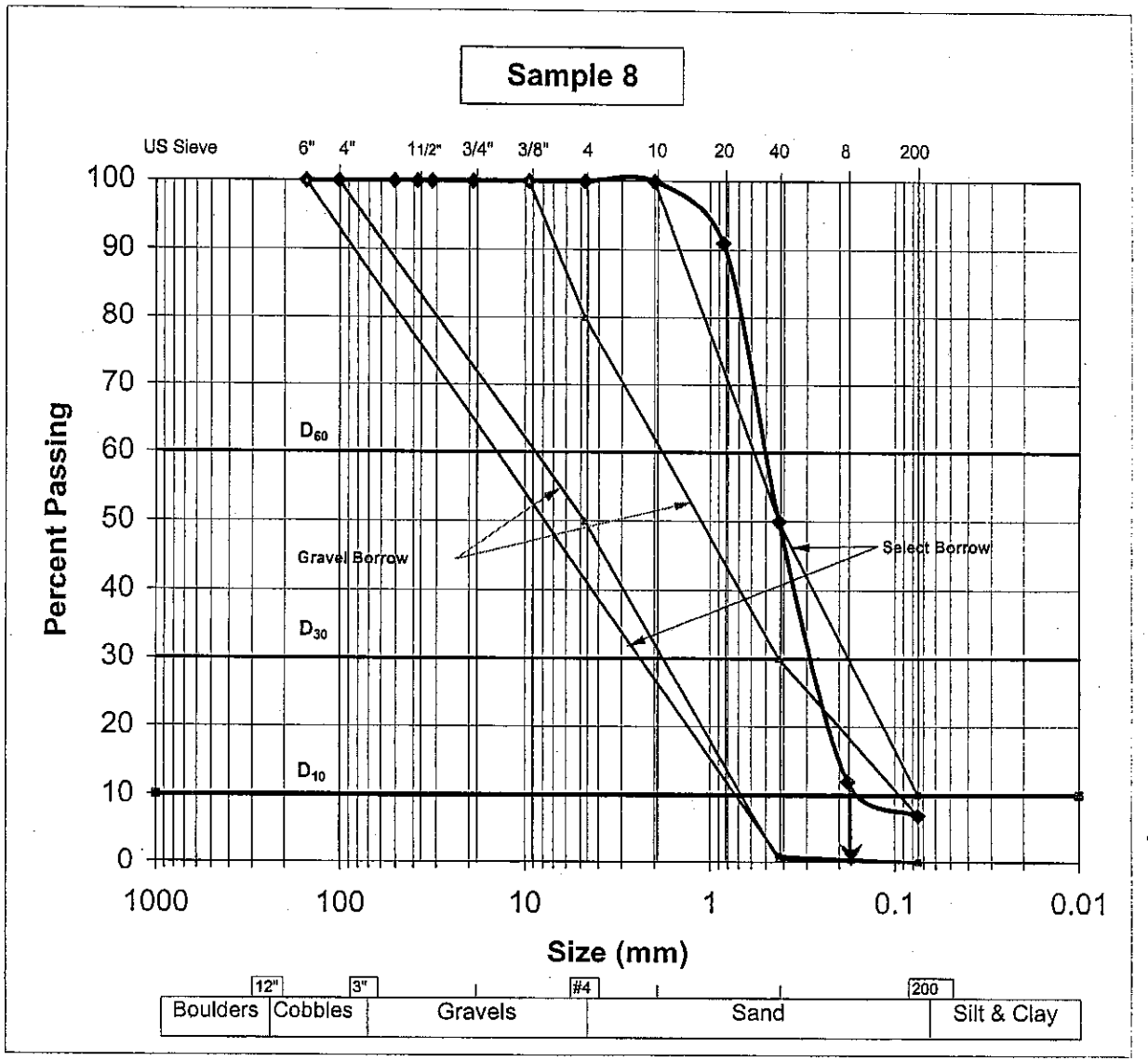
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.127	2.3	1.59E-03
Silty Inflow, Lower Bound	0.127	0.3	2.11E-04
Filtered Inflow, Upper Bound	0.127	7.6	5.37E-03
98 WSDOT	0.127	2.8	2.00E-03
Average Value	0.127	3.4	2.39E-03

D60 (mm)	0.50
D30 (mm)	0.27
D10 (mm)	0.13

Coefficient of Uniformity	Cu =	3.96
Coefficient of Gradation	Cc =	1.14

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SP-SM



Project	Sidney St Vicinity to Scenic Hts. Rd.		
Project No.	0L-3678		
Boring No.	P-4-03		
Sample No.	D-9	depth	24'-25.5'
Station	154+40	Offset	80' Lt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	100
4	4.75	100
10	2	99
20	0.85	91
40	0.425	75
80	0.18	19
200	0.075	9

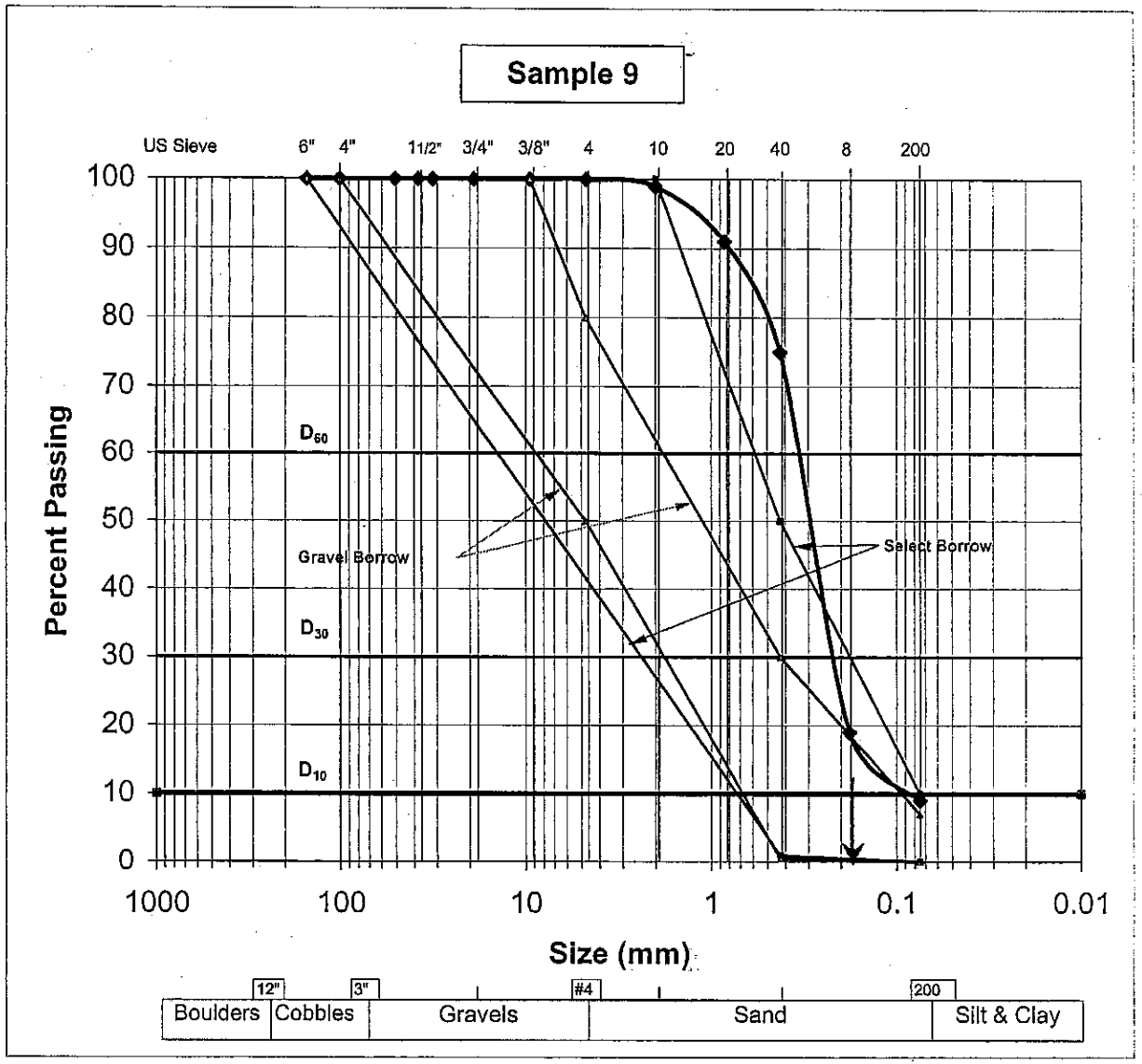
		WSDOT Recommended	
	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.082	1.4	1.01E-03
Silty Inflow, Lower Bound	0.082	0.3	1.91E-04
Filtered Inflow, Upper Bound	0.082	5.3	3.72E-03
98 WSDOT	0.082	1.9	1.36E-03
Average Value	0.082	2.3	1.64E-03

D60 (mm)	0.34
D30 (mm)	0.21
D10 (mm)	0.08

Coefficient of Uniformity	Cu =	4.12
Coefficient of Gradation	Cc =	1.59

Liquid Limit	LL =	
Plastic Limit	PL =	
Plasticity Index	PI =	

Soil Classification	SP-SM



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card RE01112

HOLE No. P-1-05

Sheet 1 of 2

Job No. OL-3678 SR SR-20 Elevation (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637

Site Address SR-20 / Oakharbor

Inspector Brian M Breck

Start January 6, 2005 Completion January 6, 2005 Well ID# AKN-851 Equipment CME 850 w/ autohammer

Station 123+95 Offset 130' Rt. Casing HQ x 27 Method Wet Rotary

Northing Easting Latitude Longitude

County Island Subsection NE 1/4 of the SW 1/4 Section 20 Range 1E Township 32

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								Sod		
								Top Soil		
				6 7 5 (12)		D - 1		Silty SAND with gravel, medium dense, gray, moist, Homogeneous. Length Recovered 1.3 ft		
5	1		>>	17 48 50 (98)		D - 2		Sandy SILT with gravel, very dense, gray, moist, Homogeneous. Length Recovered 1.5 ft		
10	2		>>	15 26 35 (61)		D - 3		Sandy SILT with some gravel, very dense, gray, moist, Homogeneous. Length Recovered 1.5 ft		
	3			8 13 17 (30)		D - 4		Sandy SILT with some gravel, dense, gray, moist, Homogeneous. Length Recovered 1.5 ft		
	4			20 50 (50)		D - 5		Silty SAND with gravel, very dense, gray, wet, Homogeneous. Length Recovered 1.0 ft		
15	5		>>	22 38 35 (73)		D - 6		Well graded SAND with gravel, slightly silty, very dense, gray, moist, Homogeneous. Length Recovered 1.5 ft		
				16 23 28 (50)		D - 7		Well graded SAND with gravel, very dense, gray, wet, Homogeneous. Length Recovered 1.5 ft 01/06/2005	▽	
20	6		>>	19 33		D - 8		Poorly graded SAND with gravel, very dense, gray, moist, Homogeneous.		

SOIL OL-3678.GPJ SOIL.GDT 1/7/05 2:11:25 P1

Washington State
Department of Transportation

LOG OF TEST BORING

Start Card RE01112

HOLE No. P-1-05

Sheet 2 of 2

Job No. OL-3678 SR SR-20 Elevation (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				50 (83)				Length Recovered 1.5 ft		
	7									
				32 50 (50)		D - 9		Well graded GRAVEL with sand, subangular, very dense, gray, wet, Homogeneous. Length Recovered 0.8 ft		
25								End of test hole boring at 25.0 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
	8									
	9									
30										
	10									
35										
	11									
	12									
40										
	13									
45										

Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-1-05		
Sample No.	D-1	depth	1.0 - 2.5'
Station	123+95	Offset	130' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	96
3/8	9.5	84
4	4.75	75
10	2	67
20	0.85	59
40	0.425	49
80	0.18	31
200	0.075	21.8

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

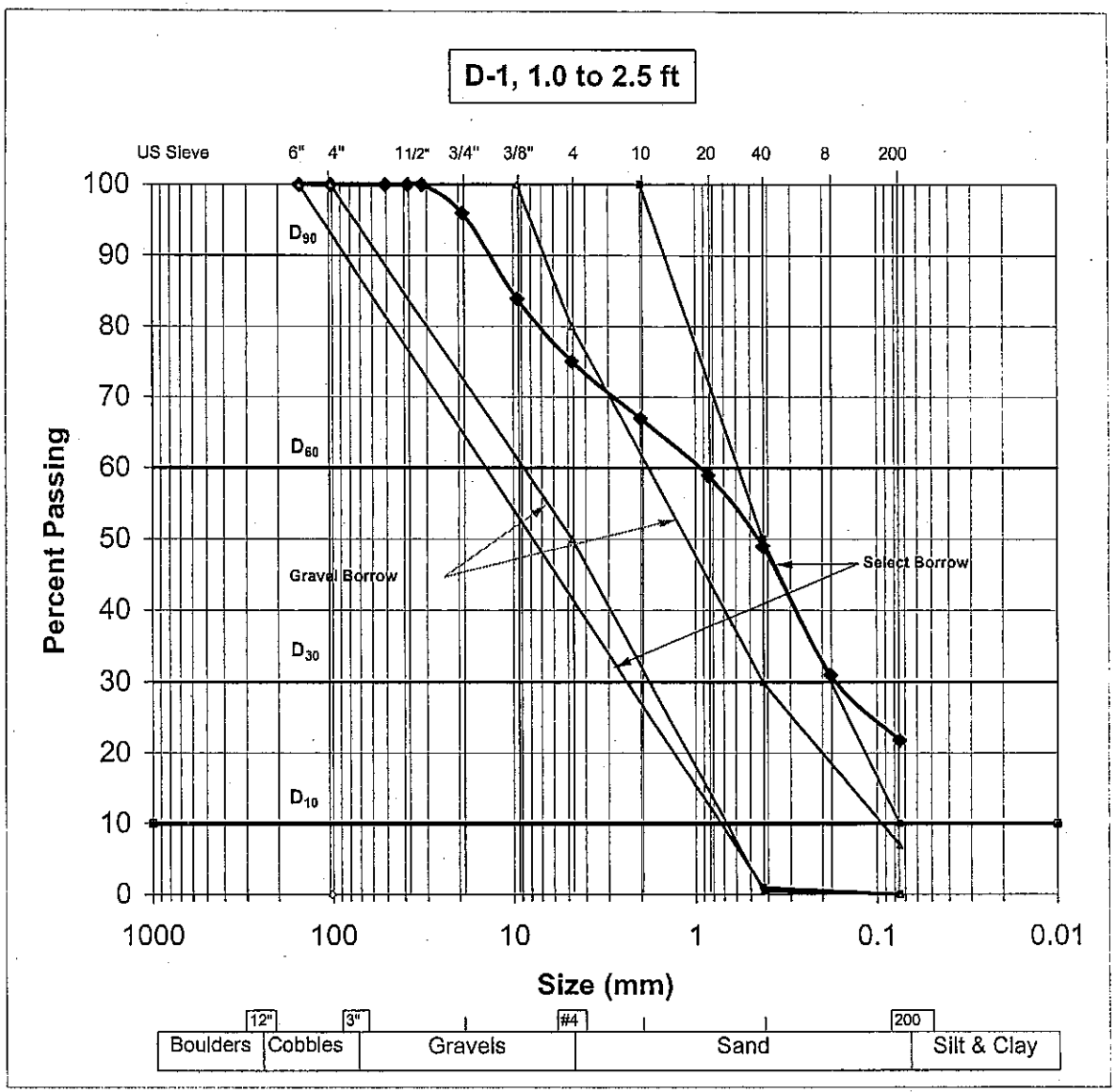
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	8.9	6.25E-03

D90 (mm)	15.00
D60 (mm)	0.96
D30 (mm)	0.18
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-1-05		
Sample No.	D-2	depth	4.0 - 5.5'
Station	123+95	Offset	130' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	96
4	4.75	94
10	2	91
20	0.85	89
40	0.425	86
80	0.18	74
200	0.075	53

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

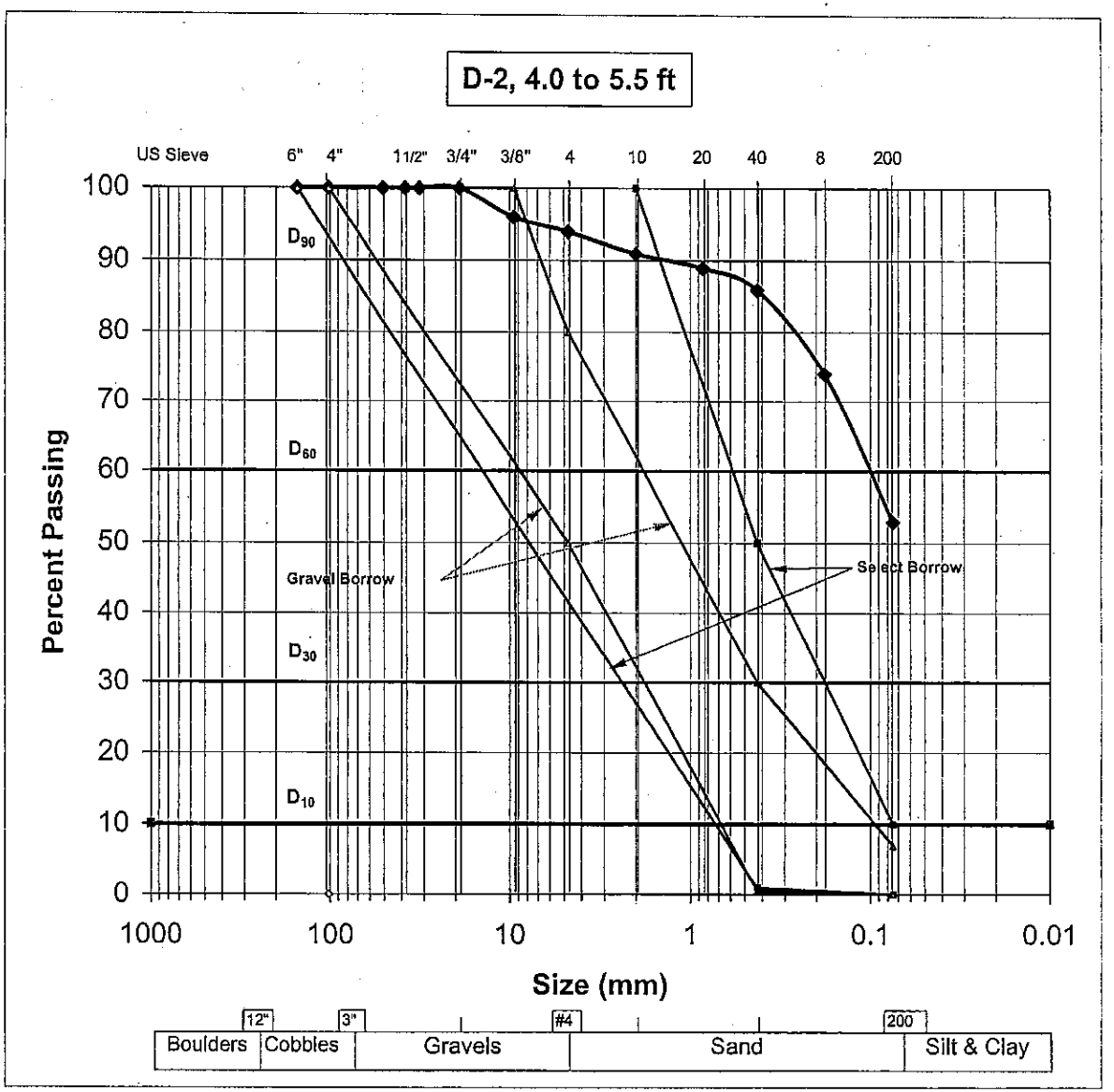
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	2.8	1.95E-03

D90 (mm)	3.00
D60 (mm)	0.10
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-1-05		
Sample No.	D-3	depth	7.0 - 8.5'
Station	123+95	Offset	130' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	99
4	4.75	97
10	2	94
20	0.85	92
40	0.425	88
80	0.18	74
200	0.075	53.7

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

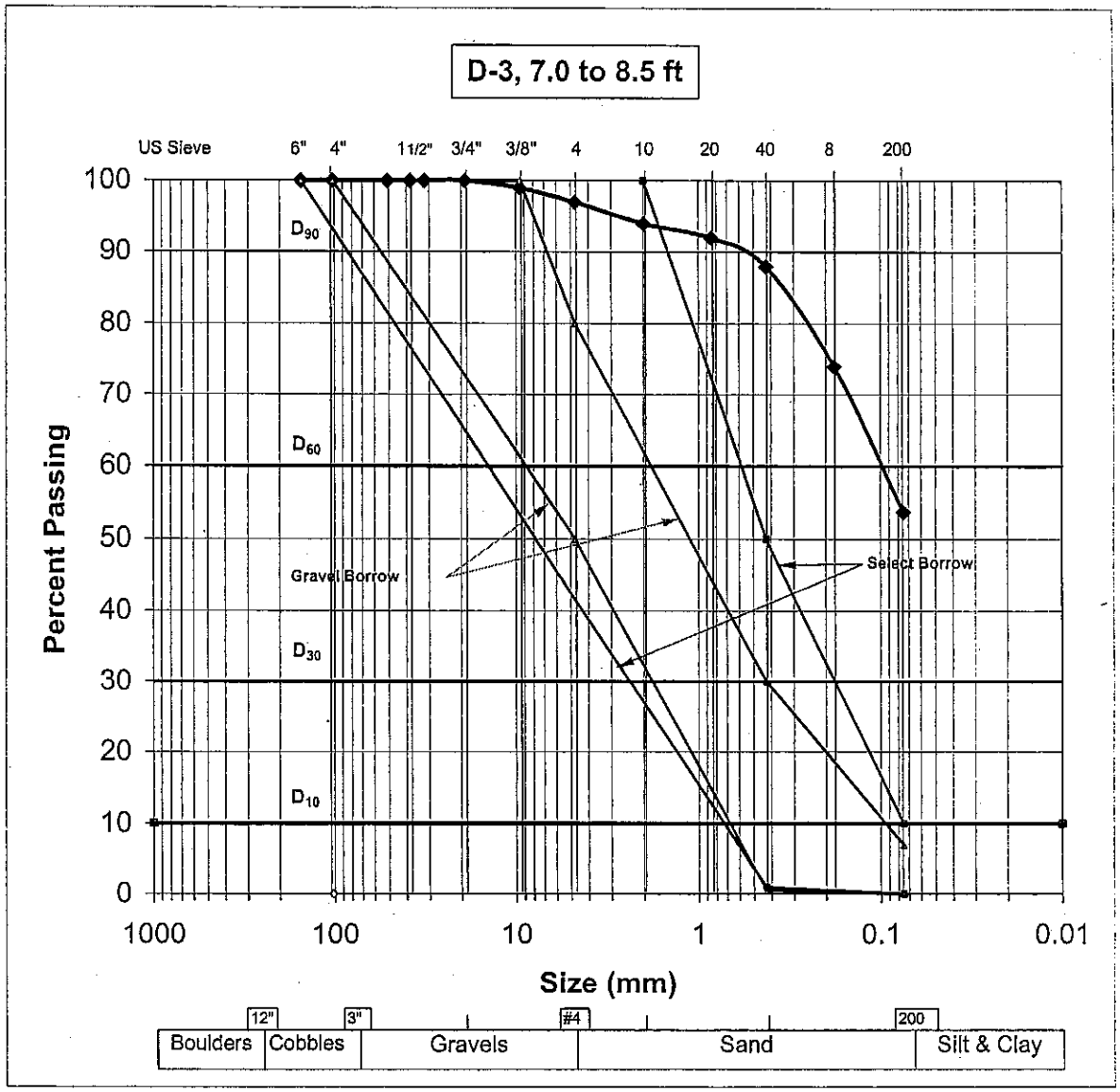
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	2.9	2.03E-03

D90 (mm)	0.50
D60 (mm)	0.10
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-1-05		
Sample No.	D-4	depth	9.0 - 10.5'
Station	123+95	Offset	130' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	98
4	4.75	95
10	2	91
20	0.85	88
40	0.425	83
80	0.18	71
200	0.075	55.7

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

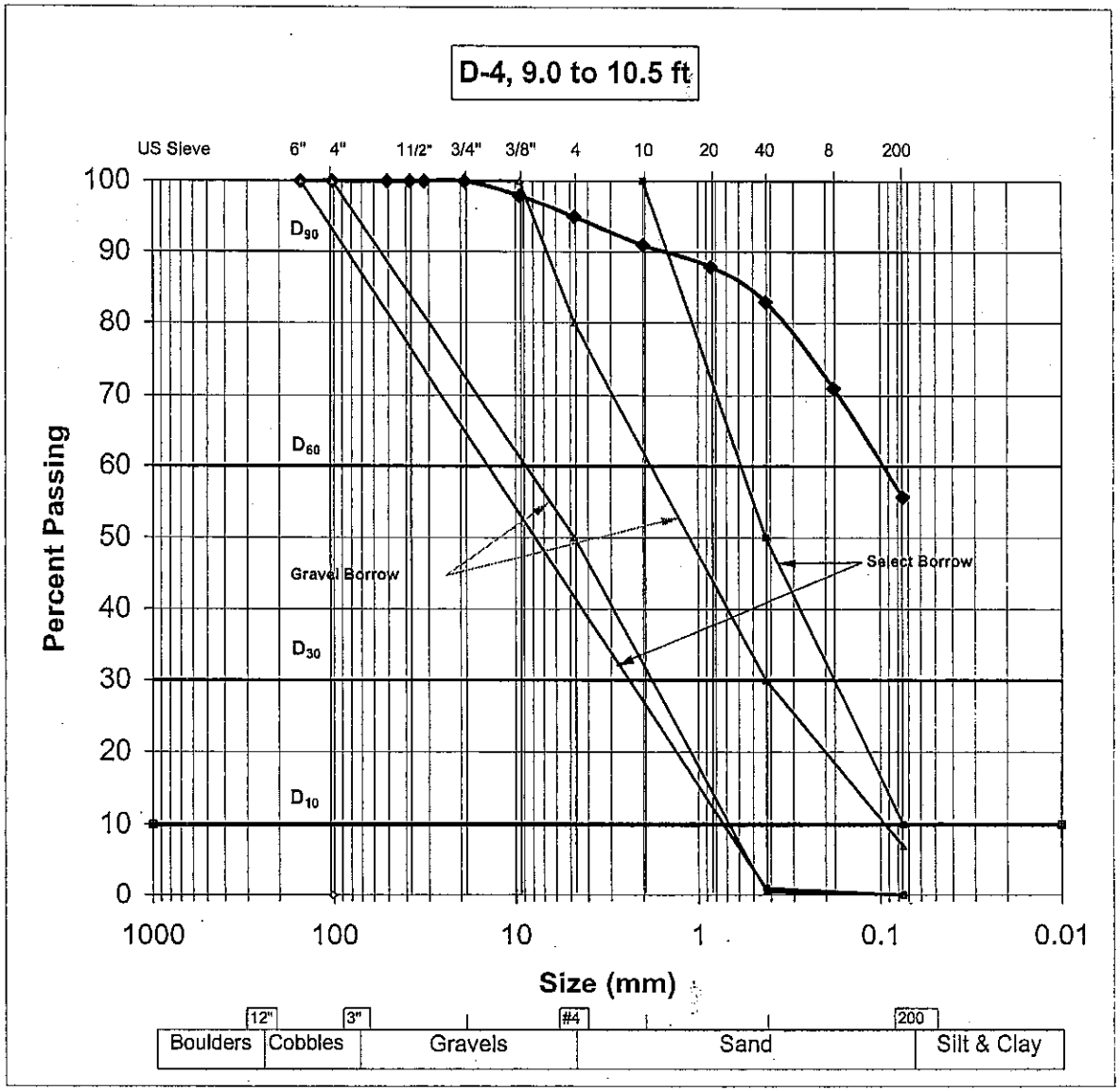
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	2.5	1.79E-03

D90 (mm)	1.50
D60 (mm)	0.10
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-1-05		
Sample No.	D-5	depth	12.0 - 13.5'
Station	123+95	Offset	130' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	83
3/8	9.5	73
4	4.75	65
10	2	55
20	0.85	47
40	0.425	39
80	0.18	26
200	0.075	18.9

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

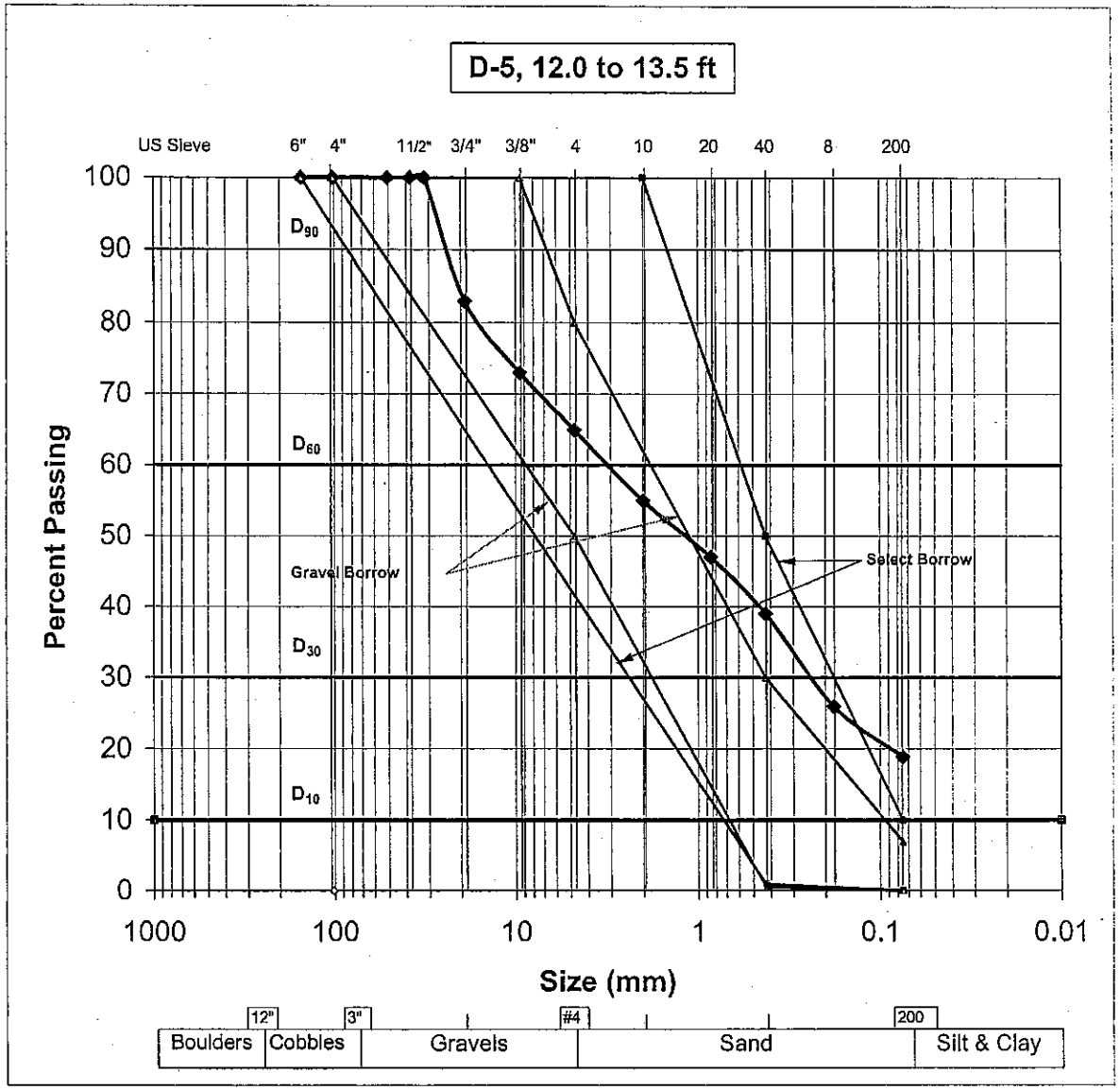
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	8.3	5.89E-03

D90 (mm)	24.00
D60 (mm)	3.00
D30 (mm)	0.24
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-1-05		
Sample No.	D-6	depth	14.0 - 15.5'
Station	123+95	Offset	130' Rt.

US Sieve (In / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	82
4	4.75	61
10	2	41
20	0.85	28
40	0.425	20
80	0.18	12
200	0.075	8.5

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.125	2.2	1.57E-03
Silty Inflow, Lower Bound	0.125	0.3	2.10E-04
Filtered Inflow, Upper Bound	0.125	7.5	5.30E-03
98 WSDOT	0.125	2.8	1.97E-03
Average Value	0.125	3.3	2.36E-03

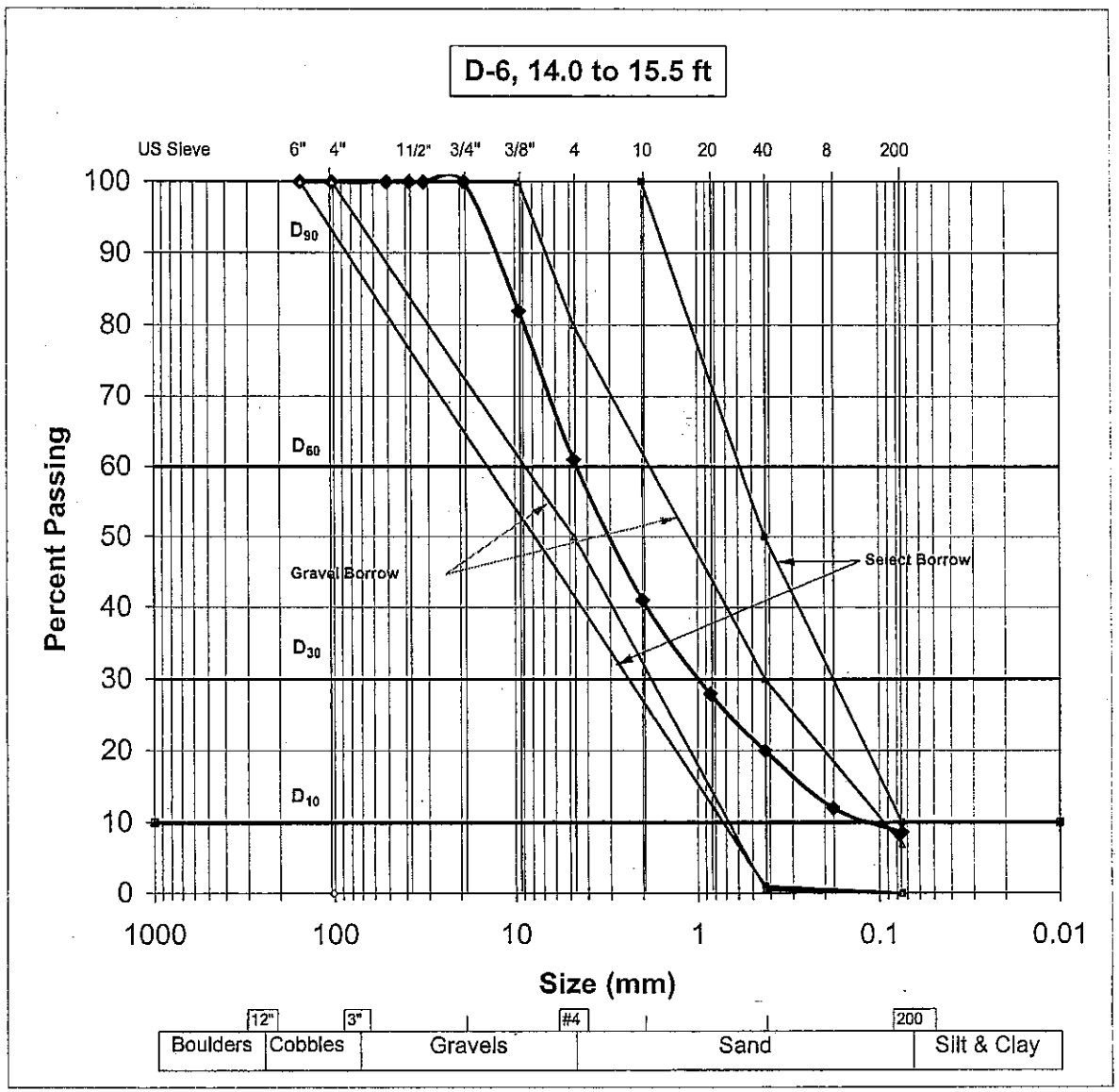
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	34.9	2.46E-02

D90 (mm)	13.00
D60 (mm)	4.80
D30 (mm)	1.00
D10 (mm)	0.13

Coefficient of Uniformity	Cu =	38.40
Coefficient of Gradation	Cc =	1.67

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-1-05		
Sample No.	D-7	depth	17.0 - 18.5'
Station	123+95	Offset	130' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	98
3/8	9.5	96
4	4.75	89
10	2	75
20	0.85	49
40	0.425	26
80	0.18	10
200	0.075	5.6

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.190	3.6	2.53E-03
Silty Inflow, Lower Bound	0.190	0.7	4.85E-04
Filtered Inflow, Upper Bound	0.190	10.7	7.54E-03
98 WSDOT	0.190	4.0	2.79E-03
Average Value	0.190	5.0	3.52E-03

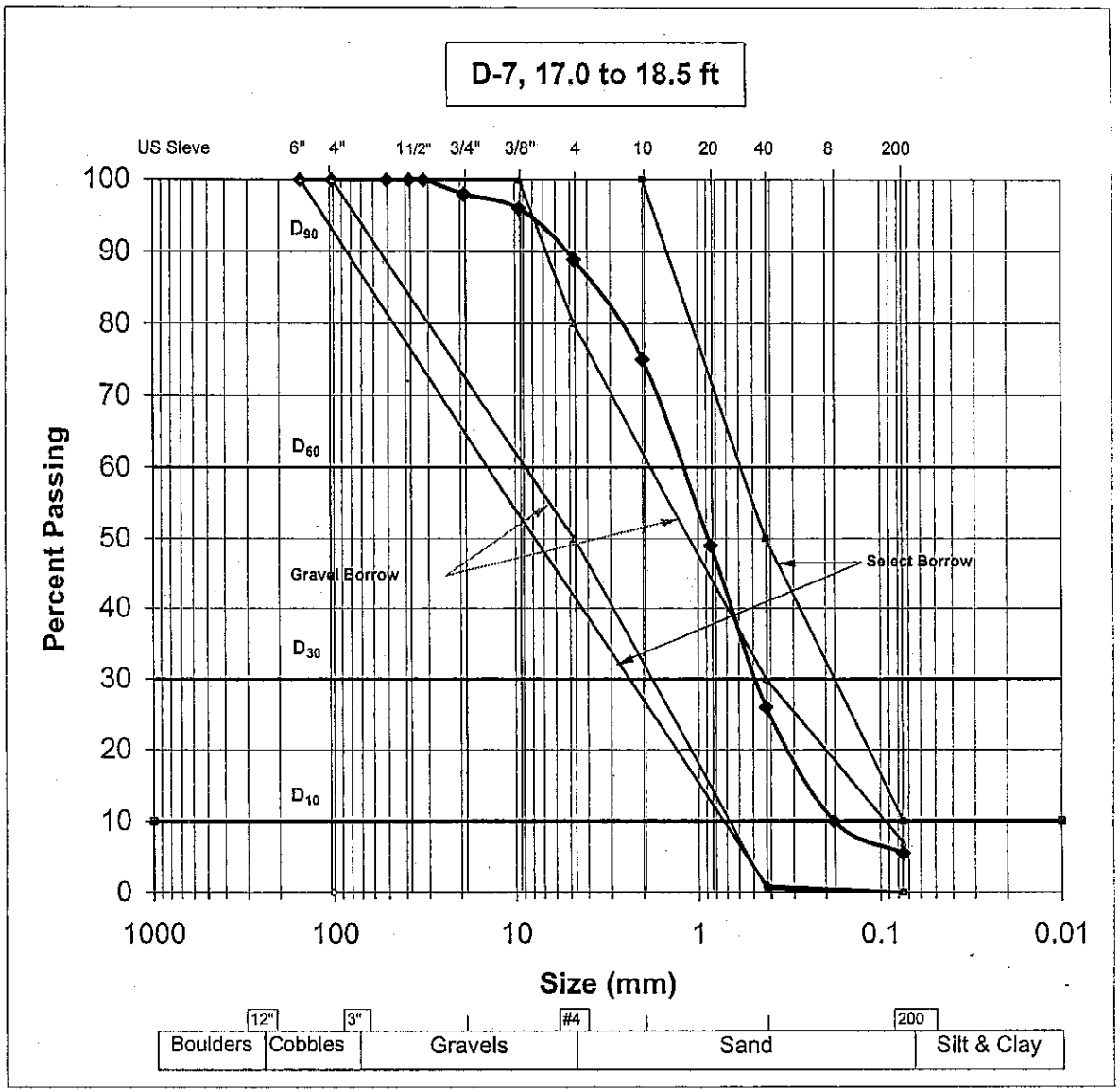
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	60.1	4.24E-02

D90 (mm)	5.00
D60 (mm)	1.20
D30 (mm)	0.50
D10 (mm)	0.19

Coefficient of Uniformity	Cu =	6.32
Coefficient of Gradation	Cc =	1.10

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-1-05		
Sample No.	D-8	depth	19.0 - 20.5'
Station	123+95	Offset	130' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	92
3/8	9.5	78
4	4.75	68
10	2	58
20	0.85	46
40	0.425	31
80	0.18	15
200	0.075	8.6

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.090	1.6	1.11E-03
Silty Inflow, Lower Bound	0.090	0.3	1.95E-04
Filtered Inflow, Upper Bound	0.090	5.7	4.02E-03
98 WSDOT	0.090	2.1	1.48E-03
Average Value	0.090	2.5	1.78E-03

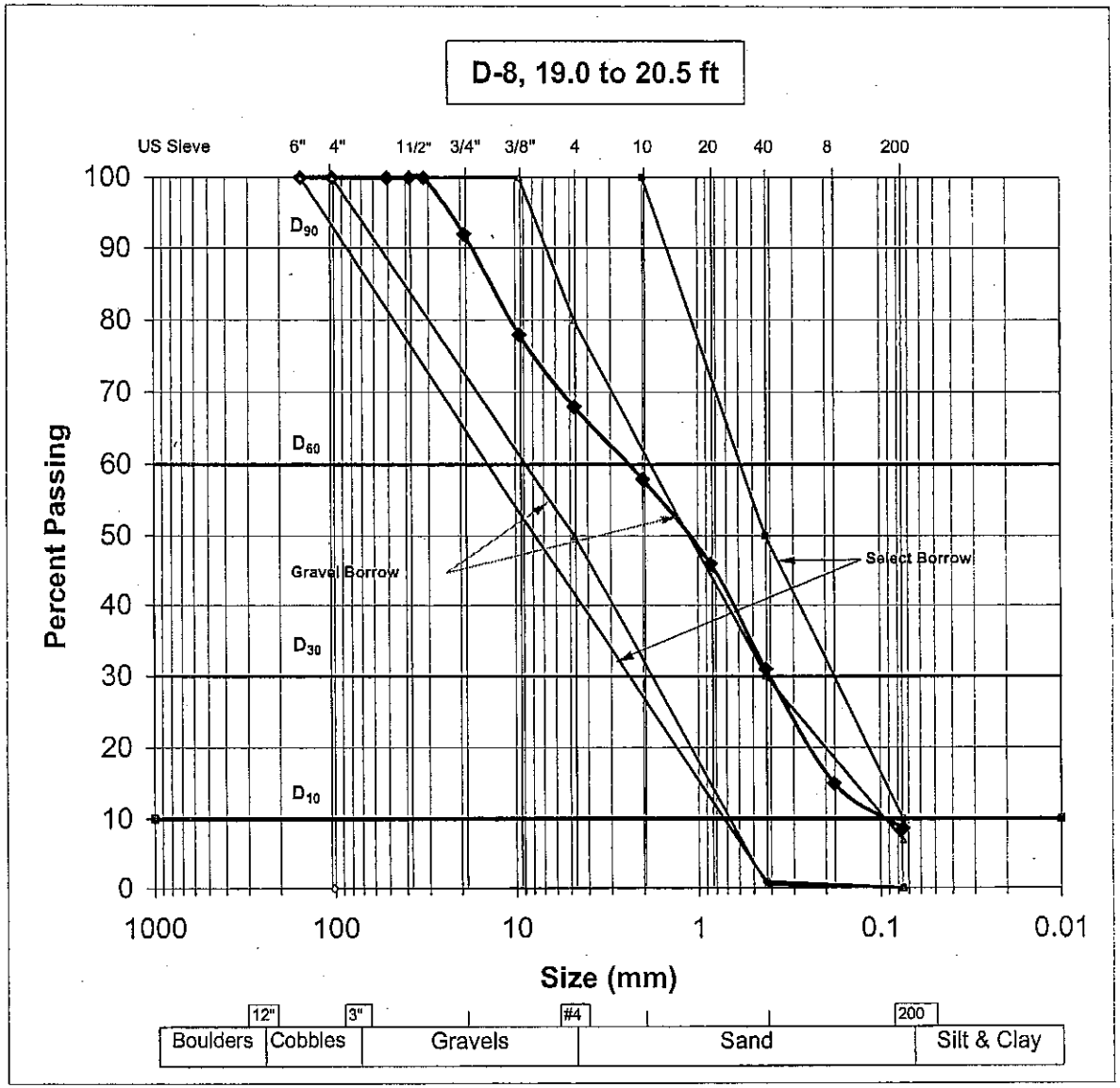
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	23.8	1.68E-02

D90 (mm)	18.00
D60 (mm)	2.50
D30 (mm)	0.41
D10 (mm)	0.09

Coefficient of Uniformity	Cu =	27.78
Coefficient of Gradation	Cc =	0.75

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-1-05		
Sample No.	D-9	depth	24.0 - 25.5'
Station	123+95	Offset	130' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	60
3/8	9.5	49
4	4.75	36
10	2	25
20	0.85	19
40	0.425	14
80	0.18	8
200	0.075	5.4

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.250	5.0	3.52E-03
Silty Inflow, Lower Bound	0.250	1.3	8.84E-04
Filtered Inflow, Upper Bound	0.250	13.5	9.50E-03
98 WSDOT	0.250	4.9	3.47E-03
Average Value	0.250	6.6	4.64E-03

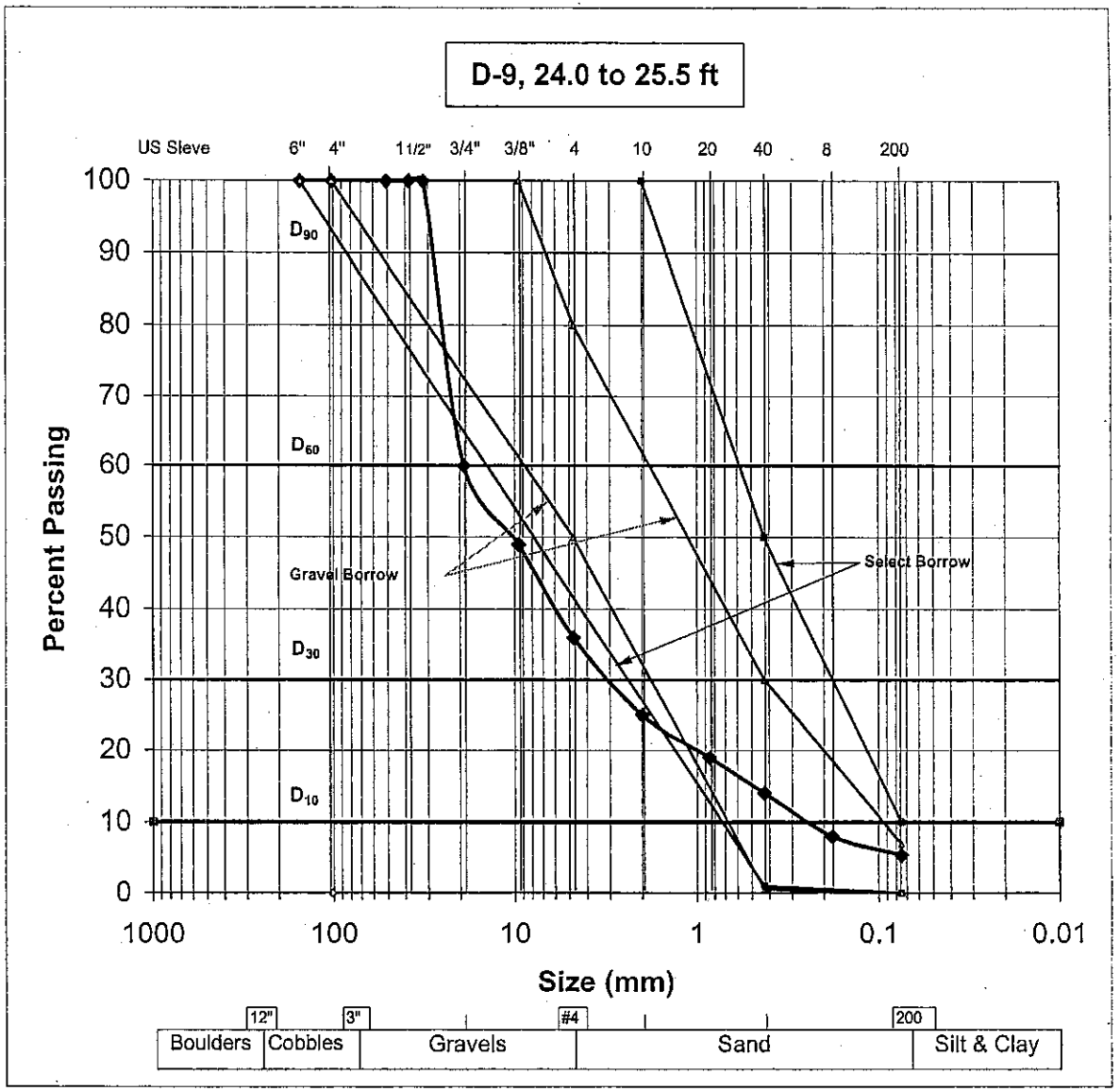
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	72.4	5.11E-02

D90 (mm)	29.00
D60 (mm)	19.50
D30 (mm)	3.00
D10 (mm)	0.25

Coefficient of Uniformity	Cu =	78.00
Coefficient of Gradation	Cc =	1.85

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Washington State Department of Transportation

LOG OF TEST BORING

Start Card RE01112

HOLE No. P-2-05

Sheet 1 of 2

Job No. OL-3678 SR SR-20 Elevation (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637

Site Address SR-20 / Oakharbor

Inspector Brian M Breck

Start January 5, 2005 Completion January 5, 2005 Well ID# AKN-852 Equipment CME 850 w/ autohammer

Station 124+00 Offset 300' Rt Casing HQ x 27 Method Wet Rotary

Northing Easting Latitude Longitude

County Island Subsection NE 1/4 of the SW 1/4 Section 20 Range 1E Township 32

Depth (ft)	Meters (m)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material
						Sod
						Top Soil
		2 2 2 (4)		D - 1		Sandy SILT with some organics, very loose, brown, moist, Homogeneous. Length Recovered 1.5 ft
5	1	6 9 10 (19)		D - 2		Sandy SILT with some gravel, medium dense, gray, moist, Homogeneous. Length Recovered 1.5 ft
	2	7 11 15 (26)		D - 3		Sandy SILT with some gravel, dense, gray, moist, Homogeneous. Length Recovered 1.5 ft
10	3	8 13 17 (30)		D - 4		Sandy SILT with some gravel, dense, gray, moist, Homogeneous. Length Recovered 1.5 ft
	4	7 16 28 (44)		D - 5		Sandy SILT with some gravel, dense, gray, moist, Homogeneous. Length Recovered 1.5 ft
15	5	20 15 17 (32)		D - 6		Silty SAND with gravel, (fine), dense, gray, moist, Homogeneous. Length Recovered 1.5 ft
		16 21 25 (46)		D - 7		Silty SAND with gravel, dense, gray, moist, Homogeneous. Length Recovered 0.2 ft
20	6	26 50		D - 8		Silty SAND with gravel, very dense, gray, moist, Homogeneous.

Standard Penetration Blows/ft: 10 20 30 40

Groundwater

Instrument

Washington State Department of Transportation

LOG OF TEST BORING

Start Card RE01112

HOLE No. P-2-05

Sheet 2 of 2

Job No. OL-3678 SR SR-20 Elevation (m)

Project Sidney St. Vicinity to Scenic Heights Rd. Vicinity.

Driller Jody Dickson Lic# 2637

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				(50)				Length Recovered 1.0 ft		
	7									
25				9 19 20 (39)		D - 9		Poorly graded SAND, dense, gray, moist, Homogeneous. Length Recovered 1.5 ft 01/05/2005	▽	
	8							End of test hole boring at 25.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
30	9									
	10									
35	11									
40	12									
	13									
45										

Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-2-05		
Sample No.	D-1	depth	1.0 - 2.5'
Station	124+00	Offset	300' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	97
4	4.75	93
10	2	90
20	0.85	86
40	0.425	81
80	0.18	64
200	0.075	46.1

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

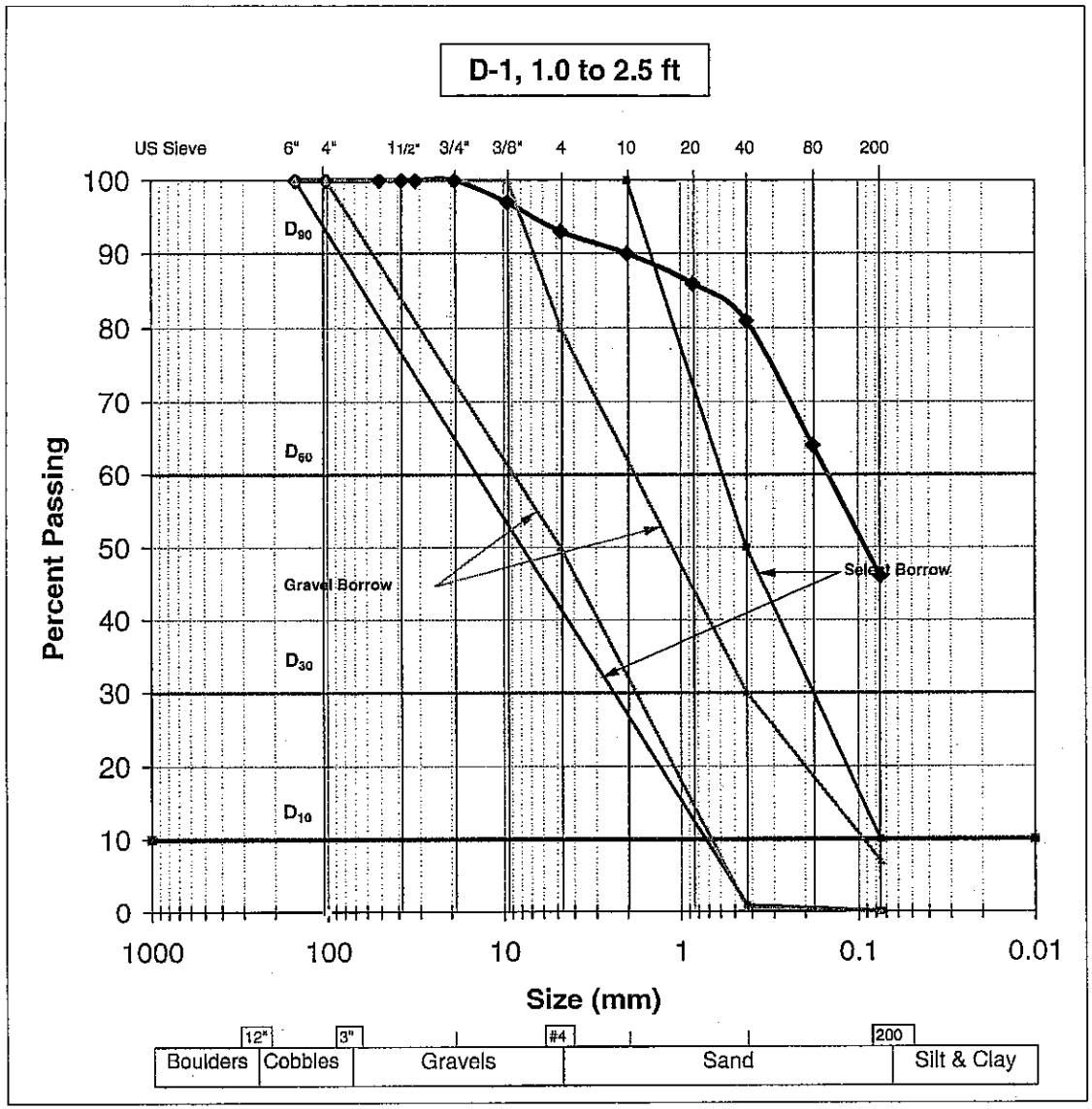
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	4.0	2.80E-03

D90 (mm)	2.00
D60 (mm)	0.16
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-2-05		
Sample No.	D-2	depth	4.0 - 5.5'
Station	124+00	Offset	300' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	95
4	4.75	93
10	2	92
20	0.85	91
40	0.425	89
80	0.18	84
200	0.075	70.2

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

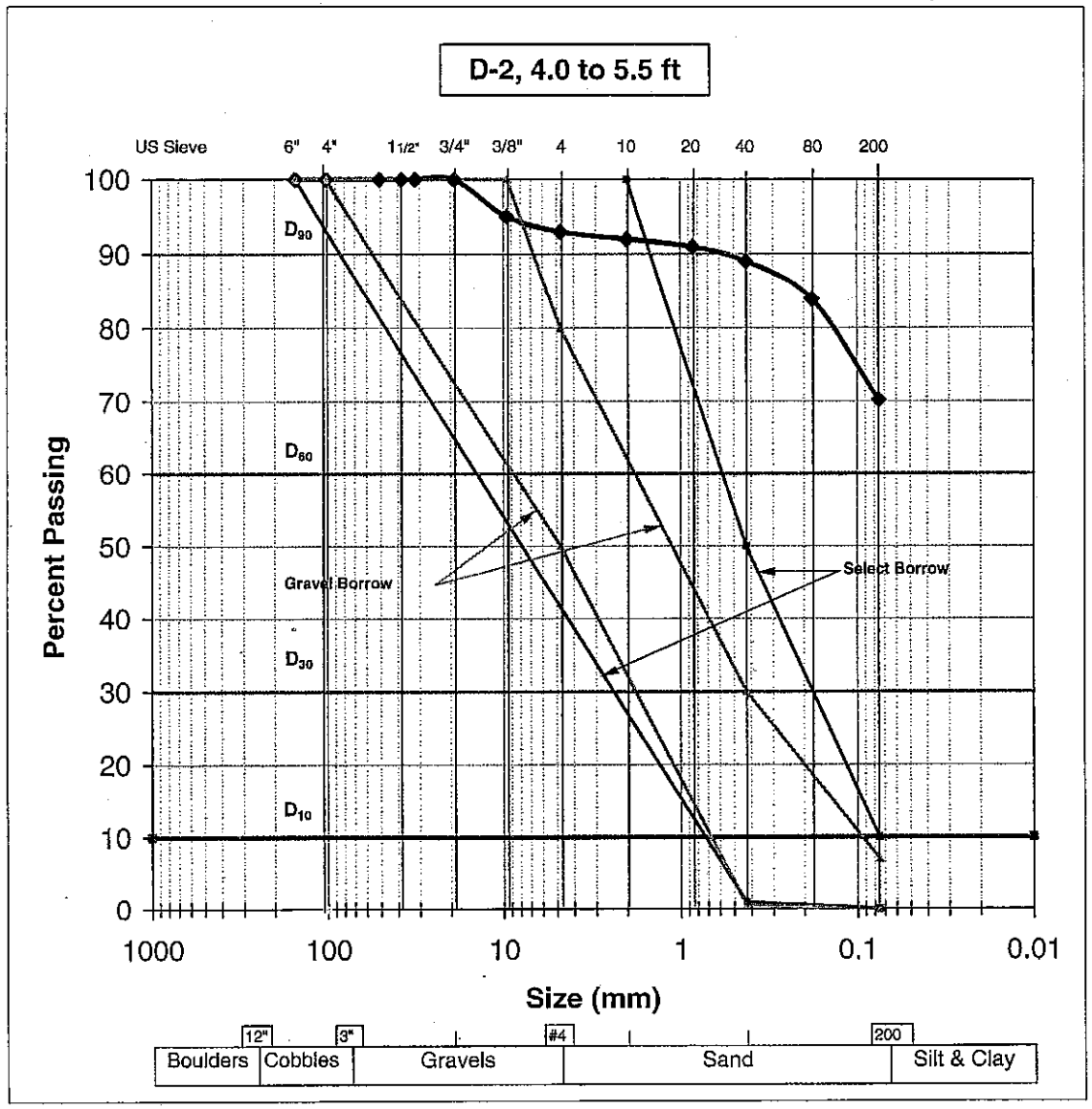
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	1.3	9.18E-04

D90 (mm)	0.53
D60 (mm)	0.00
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-2-05		
Sample No.	D-3	depth	7.0 - 8.5'
Station	124+00	Offset	300' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	98
4	4.75	97
10	2	96
20	0.85	95
40	0.425	93
80	0.18	88
200	0.075	76.3

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

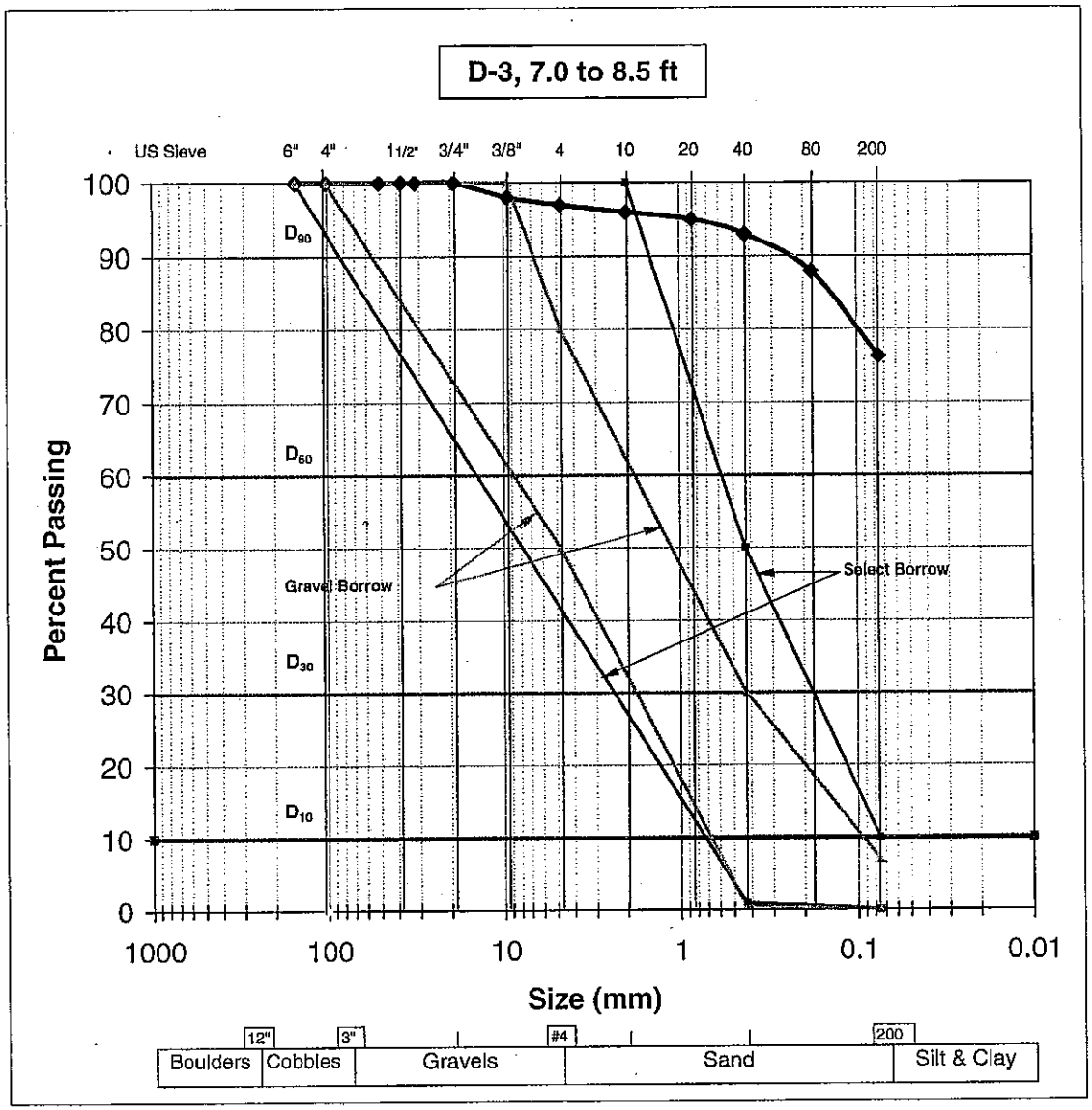
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	1.0	6.91E-04

D90 (mm)	0.25
D60 (mm)	0.00
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-2-05		
Sample No.	D-4	depth	9.0 - 10.5'
Station	124+00	Offset	300' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	99
4	4.75	97
10	2	95
20	0.85	93
40	0.425	91
80	0.18	83
200	0.075	67.1

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	N/A	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

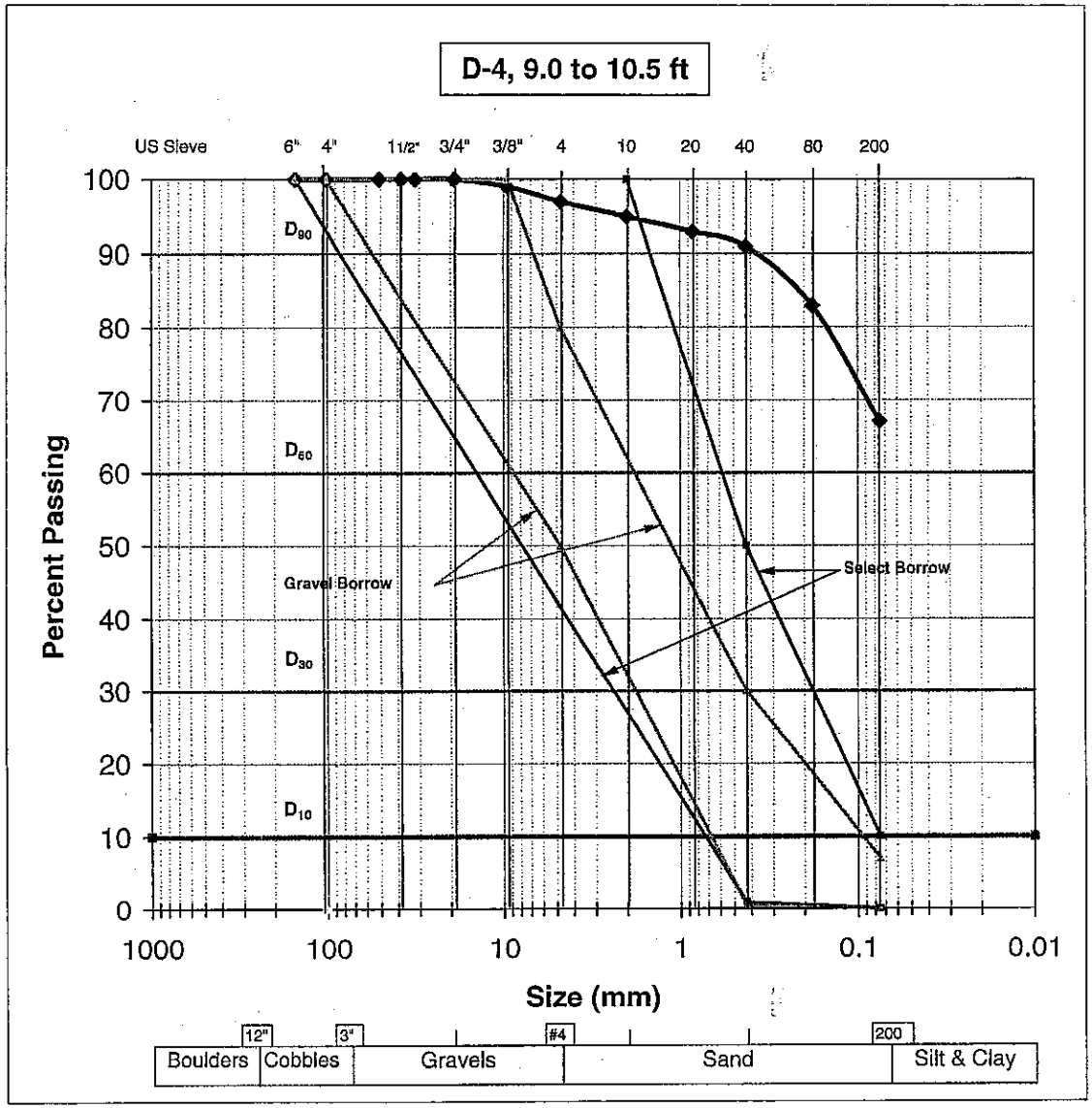
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	1.5	1.07E-03

D90 (mm)	0.38
D60 (mm)	0.00
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-2-05		
Sample No.	D-5	depth	12.0 - 13.5'
Station	124+00	Offset	300' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	95
3/8	9.5	88
4	4.75	87
10	2	84
20	0.85	82
40	0.425	80
80	0.18	68
200	0.075	51.9

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

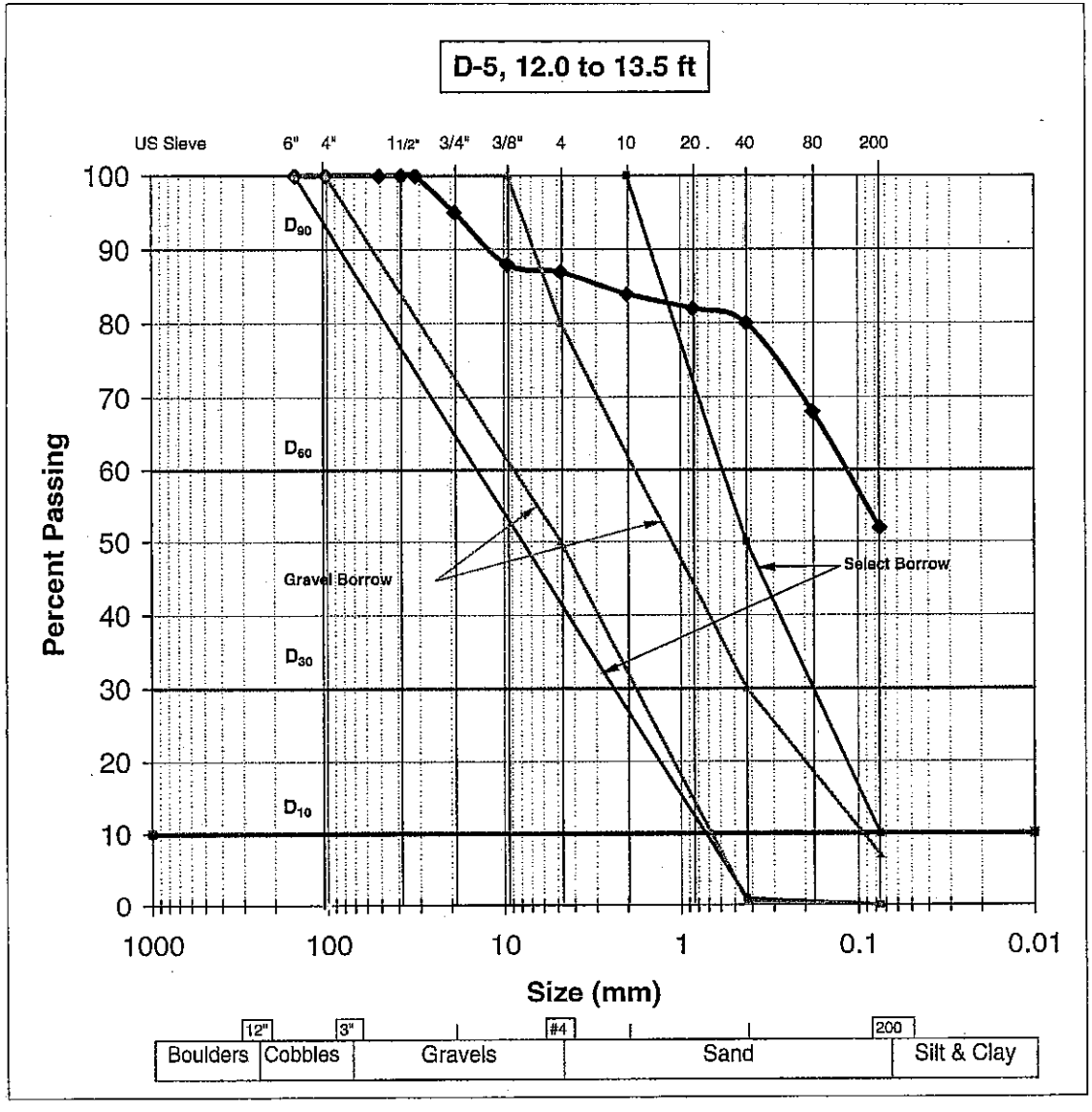
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	2.2	1.57E-03

D90 (mm)	12.00
D60 (mm)	0.12
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-2-05		
Sample No.	D-6	depth	14.0 - 15.5'
Station	124+00	Offset	300' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	96
3/8	9.5	91
4	4.75	89
10	2	87
20	0.85	84
40	0.425	81
80	0.18	70
200	0.075	54.4

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

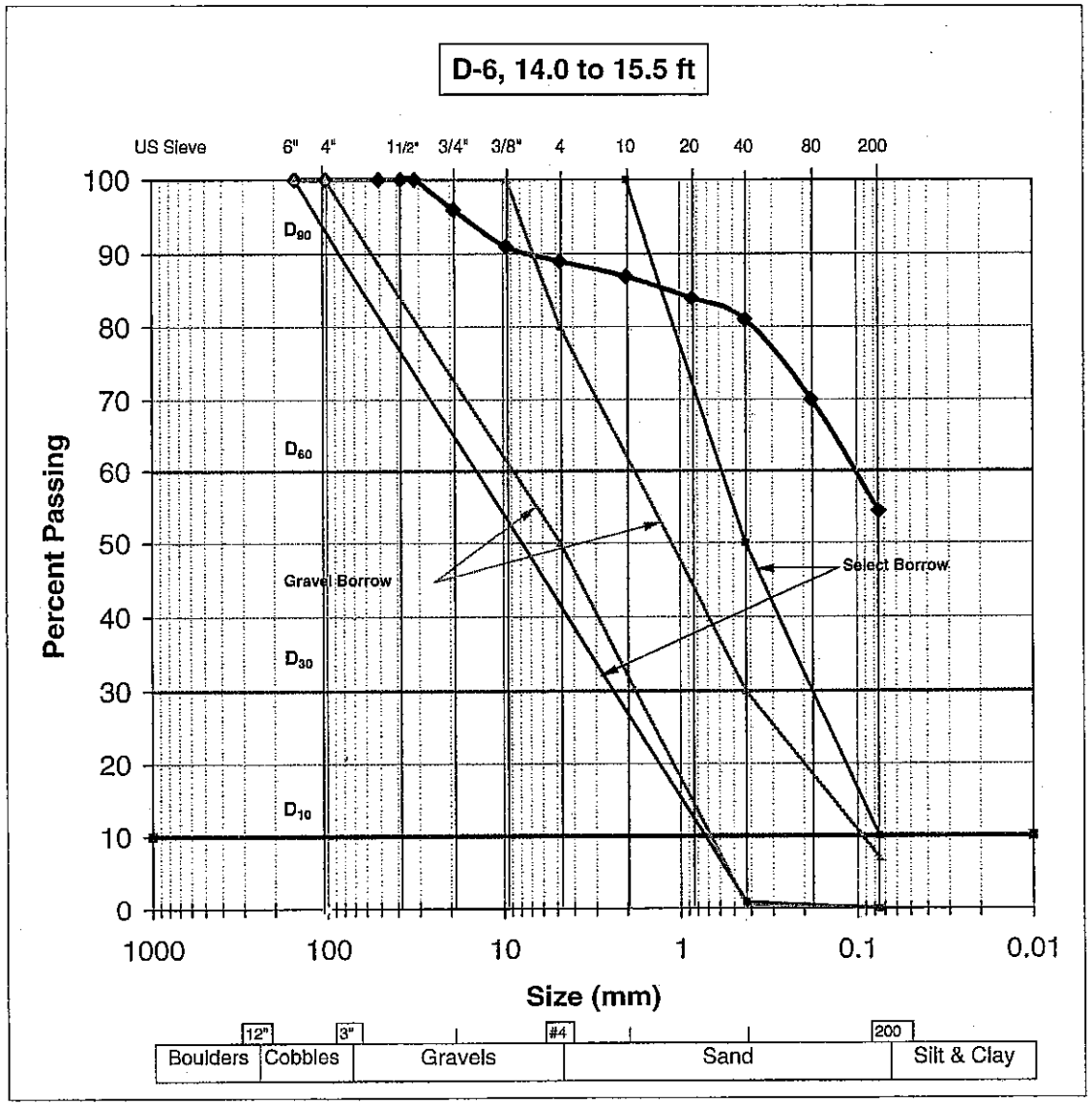
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	2.3	1.59E-03

D90 (mm)	7.50
D60 (mm)	0.10
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-2-05		
Sample No.	D-7	depth	17.0 - 18.5'
Station	124+00	Offset	300' Rt.

US Sieve (In / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	84
3/8	9.5	66
4	4.75	58
10	2	50
20	0.85	46
40	0.425	42
80	0.18	35
200	0.075	27.5

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

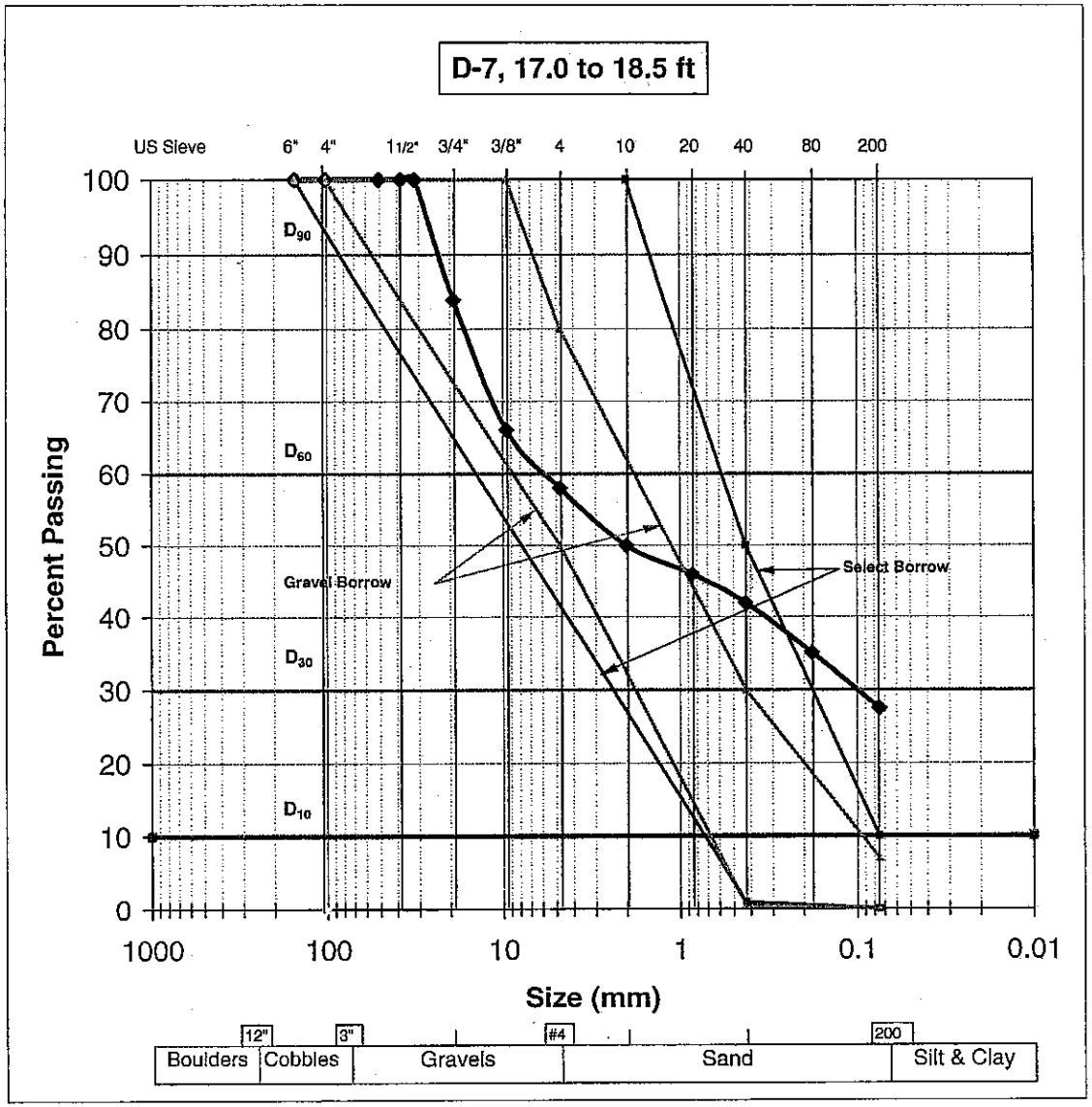
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	6.3	4.46E-03

D90 (mm)	23.00
D60 (mm)	6.00
D30 (mm)	0.10
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-2-05		
Sample No.	D-8	depth	19.0 - 20.5'
Station	124+00	Offset	300' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	97
3/8	9.5	84
4	4.75	77
10	2	70
20	0.85	65
40	0.425	58
80	0.18	46
200	0.075	36

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.000	NA	N/A
Silty Inflow, Lower Bound	0.000	N/A	N/A
Filtered Inflow, Upper Bound	0.000	N/A	N/A
98 WSDOT	0.000	N/A	N/A
Average Value	0.000	N/A	N/A

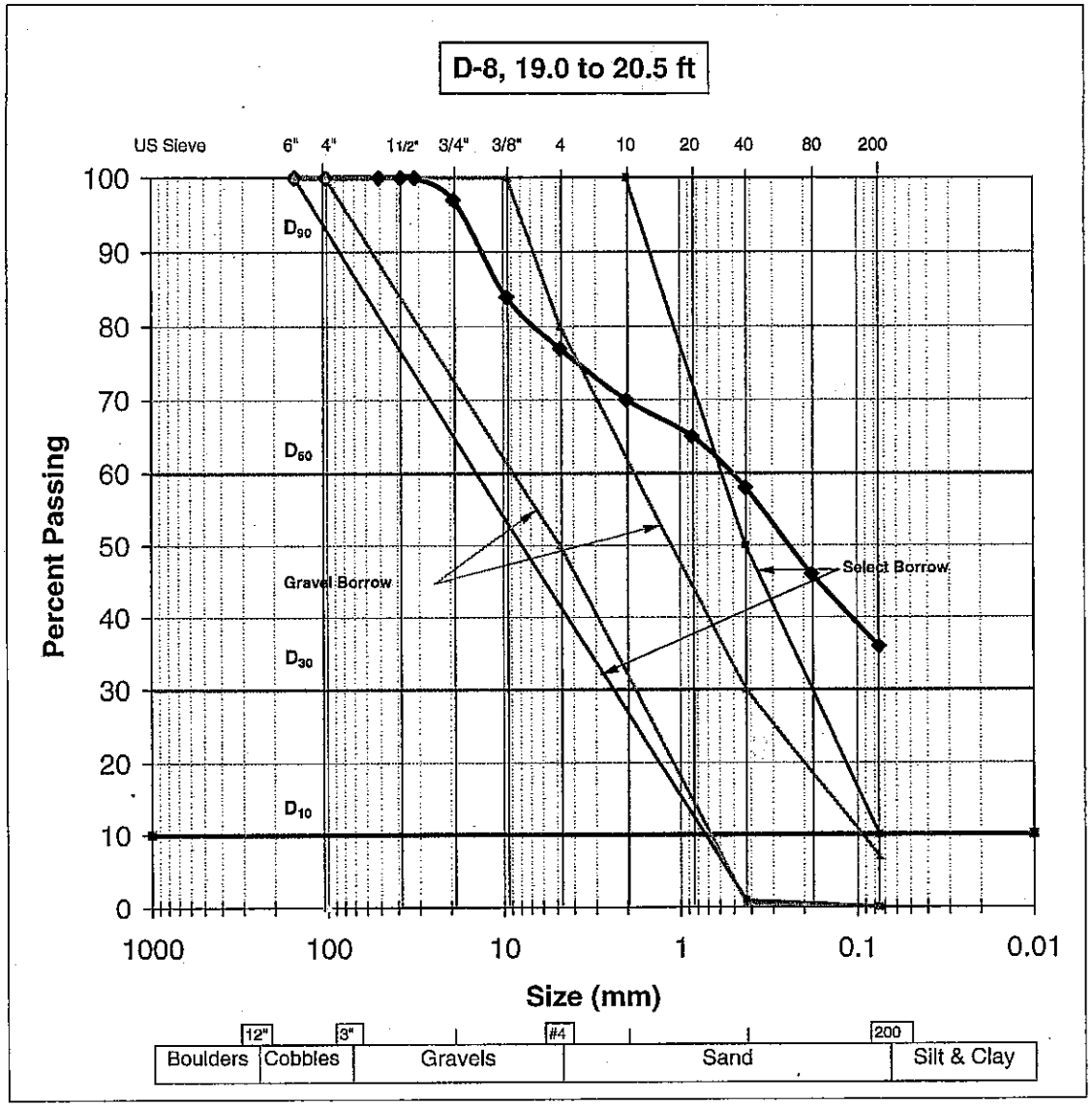
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	4.6	3.21E-03

D90 (mm)	14.00
D60 (mm)	0.50
D30 (mm)	0.00
D10 (mm)	0.00

Coefficient of Uniformity	Cu =	N/A
Coefficient of Gradation	Cc =	N/A

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Project	SR-20, Sidney St., Vic. to Scenic Heights Rd. Vic.		
Project No.	OL-3678		
Boring No.	P-2-05		
Sample No.	D-9	depth	24.0 - 25.5'
Station	124+00	Offset	300' Rt.

US Sieve (in / #)	Metric Sieve (mm)	Percent Passing
6	152.5	100
4	101.6	100
2	50.8	100
1 1/2	38.1	100
1 1/4	31.75	100
3/4	19.05	100
3/8	9.5	99
4	4.75	99
10	2	99
20	0.85	97
40	0.425	73
80	0.18	15
200	0.075	5.9

	D10 (mm)	Infiltration Rate (in/hr)	Infiltration Rate (cm/sec)
2001 DOE	0.140	2.5	1.76E-03
Silty Inflow, Lower Bound	0.140	0.4	2.49E-04
Filtered Inflow, Upper Bound	0.140	8.3	5.83E-03
98 WSDOT	0.140	3.1	2.17E-03
Average Value	0.140	3.7	2.62E-03

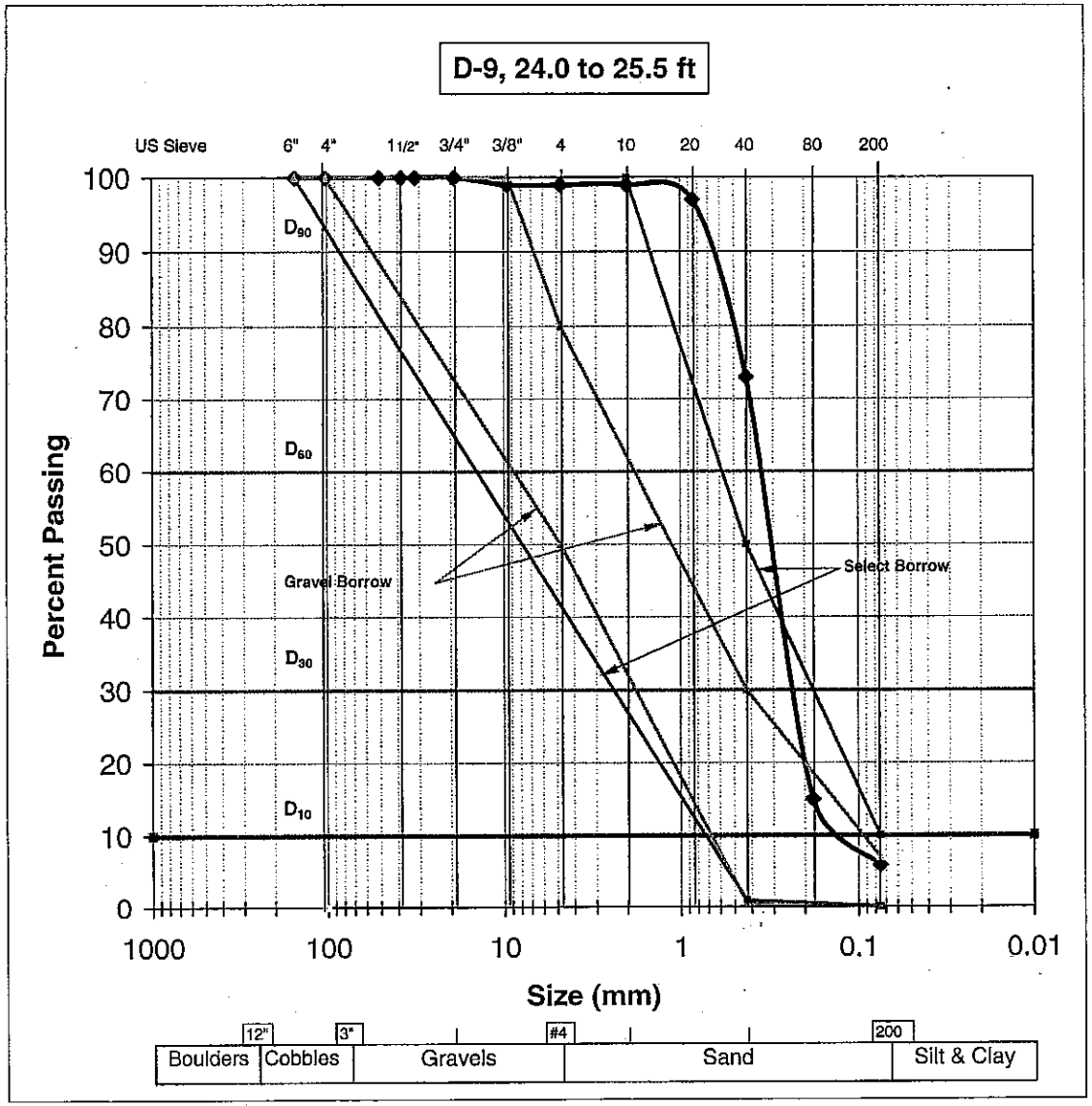
		Hydraulic Conductivity	
		in/hr	cm/sec
2003 WSDOT	K sat=	52.7	3.72E-02

D90 (mm)	0.64
D60 (mm)	0.36
D30 (mm)	0.22
D10 (mm)	0.14

Coefficient of Uniformity	Cu =	2.57
Coefficient of Gradation	Cc =	0.96

Liquid Limit	LL =	0
Plastic Limit	PL =	0
Plasticity Index	PI =	0

Soil Classification	



Piezometers Monitoring Data

SR 20, Sidney St. Vic. to Scenic Heights Rd. Vic, MP 27.61 to MP 31.00

Piezometer Readings

Work Order: **0L-3678** Boring Number: **AHB-970** Hole Number: **P-1-03**

Location: **SR 20 Sidney St. to Scenic Heights Rd.** Total Pipe Length: **28.10**

Elevation of Pipe:

Comments: Ground Elevation:

Station: **59+00** Offset: **100' Lt.** Length of Pipe Above Ground: **3.20**

Readings Taken at top of pipe in feet

Date	Water Reading	Water Level Above or Below Grade	Water Elevation (If known)	Comments
11/5/2003	-24.20	**-21.00**		Initial Reading
11/19/2003	-24.55	**-21.35**		
12/18/2003	-24.40	**-21.20**		
1/27/2004	-24.20	**-21.00**		
2/23/2004	-22.80	**-19.60**		
3/23/2004	-21.80	**-18.60**		
4/22/2004	-20.80	**-17.60**		
5/19/2004	-20.70	**-17.50**		
6/29/2004	-21.00	**-17.80**		
7/22/2004	-21.25	**-18.05**		
8/19/2004	-21.70	**-18.50**		
9/21/2004	-21.75	**-18.55**		
10/26/2004	-21.80	**-18.60**		
11/30/2004	-21.40	**-18.20**		
12/20/2004	-21.20	**-18.00**		
1/26/2005	-20.65	**-17.45**		
3/23/2005	-18.80	**-15.60**		

Piezometer Readings

Work Order: **0L-3678** Boring Number: **AHB-975** Hole Number: **P-2-03**

Location: **SR 20 Sidney St. to Scenic Heights Rd.** Total Pipe Length: **27.50**

Elevation of Pipe:

Comments: Ground Elevation:

Station: **71+00** Offset: **80' Rt.** Length of Pipe Above Ground: **3.00**

Readings Taken at top of pipe in feet

Date	Water Reading	Water Level Above or Below Grade	Water Elevation (If known)	Comments
11/5/2003	-13.63	**-10.63**		Initial Reading
11/19/2003	-13.70	**-10.70**		
12/18/2003	-13.70	**-10.70**		
1/27/2004	-13.60	**-10.60**		
2/23/2004	-13.30	**-10.30**		
3/23/2004	-13.20	**-10.20**		
4/22/2004	-13.35	**-10.35**		
5/19/2004	-13.40	**-10.40**		
6/29/2004	-13.50	**-10.50**		
7/22/2004	-13.50	**-10.50**		
8/19/2004	-13.65	**-10.65**		
9/21/2004	-13.80	**-10.80**		
10/26/2004	-13.85	**-10.85**		
11/30/2004	-13.95	**-10.95**		
12/20/2004	-13.85	**-10.85**		
1/26/2005	-13.50	**-10.50**		
3/23/2005	-13.40	**-10.40**		

Piezometer Readings

Work Order: **0L-3678** Boring Number: **AHB-954** Hole Number: **P-3-03**

Location: **SR 20 Sidney St. to Scenic Heights Rd.** Total Pipe Length: **27.60**

Elevation of Pipe:

Comments: Ground Elevation:

Station: **100+00** Offset: **100' Lt.** Length of Pipe Above Ground: **2.80**

Readings Taken at top of pipe in feet

Date	Water Reading	Water Level Above or Below Grade	Water Elevation (If known)	Comments
11/5/2003	-20.50	**-17.70**		Initial Reading
11/19/2003	-20.55	**-17.75**		
12/18/2003	-20.30	**-17.50**		
1/27/2004	-20.10	**-17.30**		
2/23/2004	-18.80	**-16.00**		
3/23/2004	-18.15	**-15.35**		
4/22/2004	-18.70	**-15.90**		
5/19/2004	-18.80	**-16.00**		
6/29/2004	-19.00	**-16.20**		
7/22/2004	-19.30	**-16.50**		
8/19/2004	-19.70	**-16.90**		
9/21/2004	-19.85	**-17.05**		
10/26/2004	-19.90	**-17.10**		
11/30/2004	-19.75	**-16.95**		
12/20/2004	-19.30	**-16.50**		
1/26/2005	-17.45	**-14.65**		
3/23/2005	-17.70	**-14.90**		

Piezometer Readings

Work Order: **0L-3678** Boring Number: **AHX-855** Hole Number: **P-4-03**

Location: **SR 20 Sidney St. to Scenic Heights Rd.** Total Pipe Length: **28.50**

Elevation of Pipe:

Comments: Ground Elevation:

Station: **154+40** Offset: **80' Lt.** Length of Pipe Above Ground: **2.60**

Readings Taken at top of pipe in feet

Date	Water Reading	Water Level Above or Below Grade	Water Elevation (If known)	Comments
11/5/2003				DRY (Initial Reading)
11/19/2003				DRY
12/18/2003				DRY
1/27/2004				DRY
2/23/2004				DRY
3/23/2004				DRY
4/22/2004				DRY
5/19/2004				DRY
6/29/2004				DRY
7/22/2004				DRY
8/19/2004				DRY
9/21/2004				DRY
10/26/2004				DRY
11/30/2004				DRY
12/20/2004				DRY
1/26/2005				DRY
3/23/2005				DRY

Piezometer Readings

Work Order: **0L-3678** Boring Number: **AKN-851** Hole Number: **P-1-05**

Location: **SR 20 Sidney St. to Scenic Heights Rd.** Total Pipe Length: **27.20**

Elevation of Pipe:

Comments: Ground Elevation:

Station: Offset: Length of Pipe Above Ground: **2.80**

Readings Taken at top of pipe in feet

Date	Water Reading	Water Level Above or Below Grade	Water Elevation (If known)	Comments
1/26/2005				Initial Reading (DRY)
3/23/2005				DRY

Piezometer Readings

Work Order: **0L-3678** Boring Number: **AKN-852** Hole Number: **P-2-05**

Location: **SR 20 Sidney St. to Scenic Heights Rd.** Total Pipe Length: **26.70**

Elevation of Pipe:

Comments: Ground Elevation:

Station: Offset: Length of Pipe Above Ground: **2.60**

Readings Taken at top of pipe in feet

Date	Water Reading	Water Level Above or Below Grade	Water Elevation (If known)	Comments
1/26/2005				Initial Reading (DRY)
3/23/2005				DRY

Laboratory Testing

SR 20, Sidney St. Vic. to Scenic Heights Rd. Vic, MP 27.61 to MP 31.00

Job No. **OL-3678** Date **November 18, 2003**

Hole No. **HH-1-03** Sheet **1** of **1**

Project **Sidney St. Vicinity to Scenic Heights Rd. Vicinity.**

Laboratory Summary

Washington State Department of Transportation

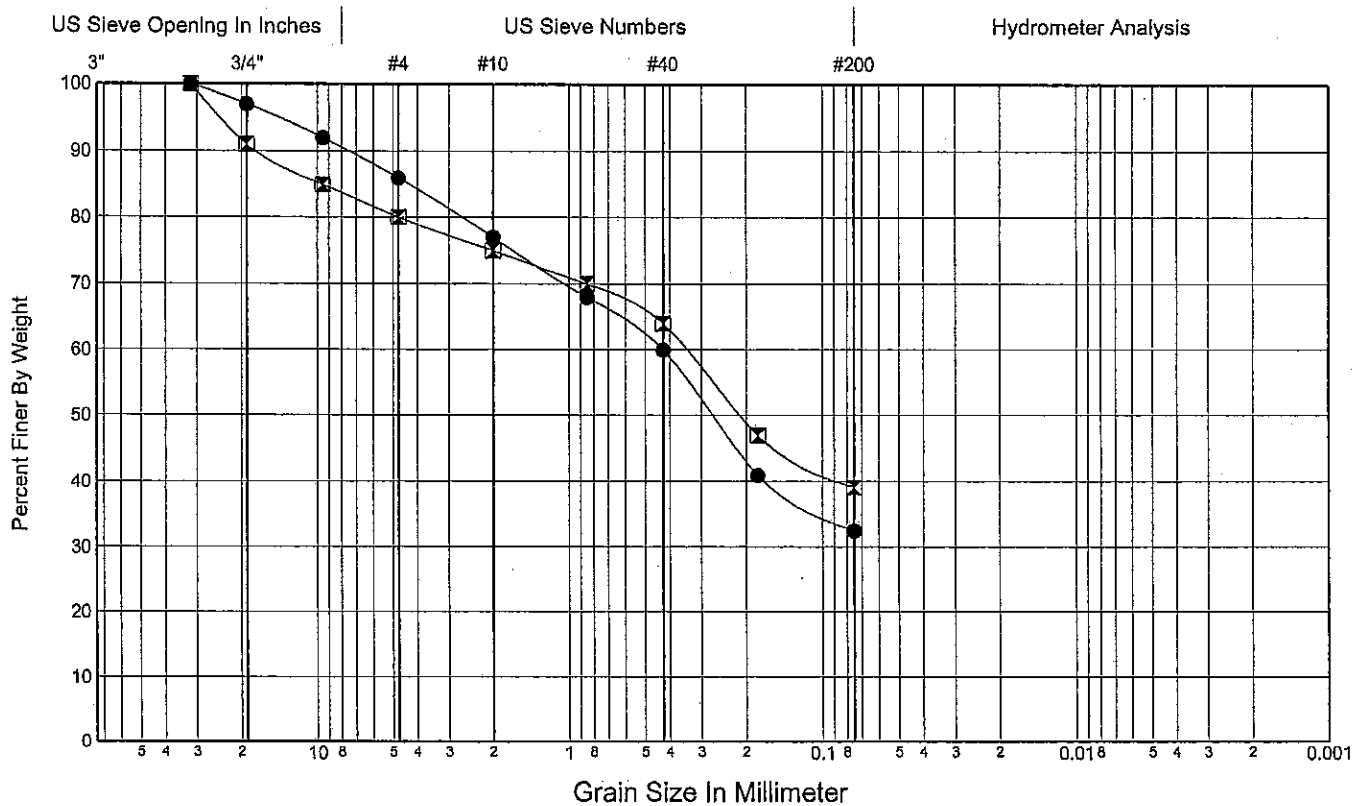
	Depth (ft)	Depth (m)	Sample No.	USCS	Color	Description	MC%	LL	PL	PI
●	0.0	0.00		SM	See Boring Log	SILTY SAND				
⊠	1.2	0.37			See Boring Log					

GRADATION FRACTIONS

	%Gravel	%Sand	%Fines	Cc	Cu
●	14.0	53.5	32.5		
⊠	20.0	40.9	39.1		

GRADATION VALUES

	D60	D50	D30	D20	D10
●	0.425	0.27			
⊠	0.347	0.21			



Job No. **OL-3678** Date **November 18, 2003**

Hole No. **HH-3-03** Sheet **1** of **1**

Project **Sidney St. Vicinity to Scenic Heights Rd. Vicinity.**

Laboratory Summary

Washington State Department of Transportation

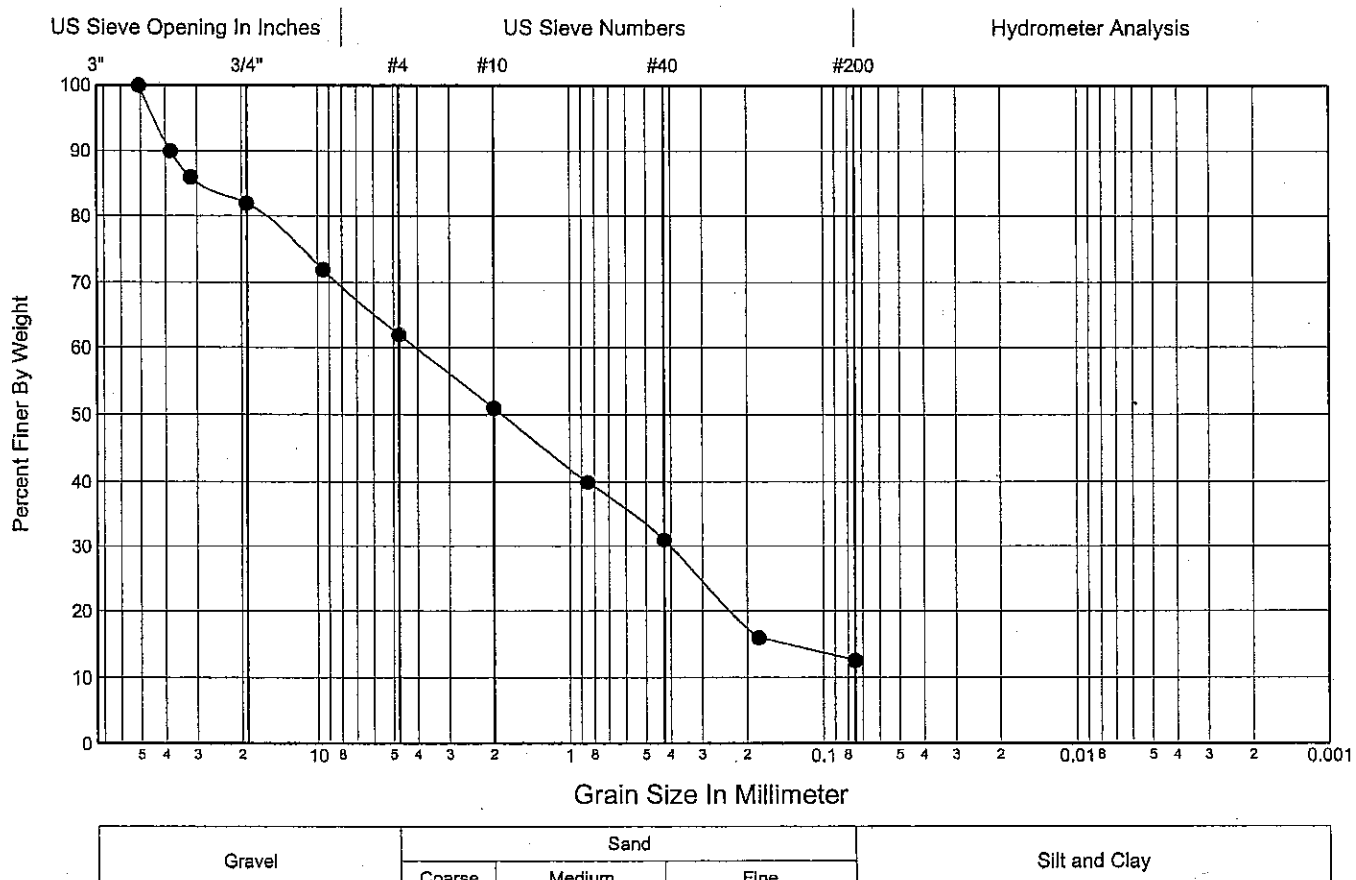
	Depth (ft)	Depth (m)	Sample No.	USCS	Color	Description	MC%	LL	PL	PI
●	0.0	0.00		SM	See Boring Log	SILTY SAND with GRAVEL				

GRADATION FRACTIONS

	%Gravel	%Sand	%Fines	Cc	Cu
●	38.0	49.4	12.6		

GRADATION VALUES

	D60	D50	D30	D20	D10
●	4.059	1.85	0.40	0.23	



Job No. **OL-3678** Date **November 18, 2003**

Hole No. **HH-21-03** Sheet **1** of **1**

Project **Sidney St. Vicinity to Scenic Heights Rd. Vicinity.**

Laboratory Summary

Washington State Department of Transportation

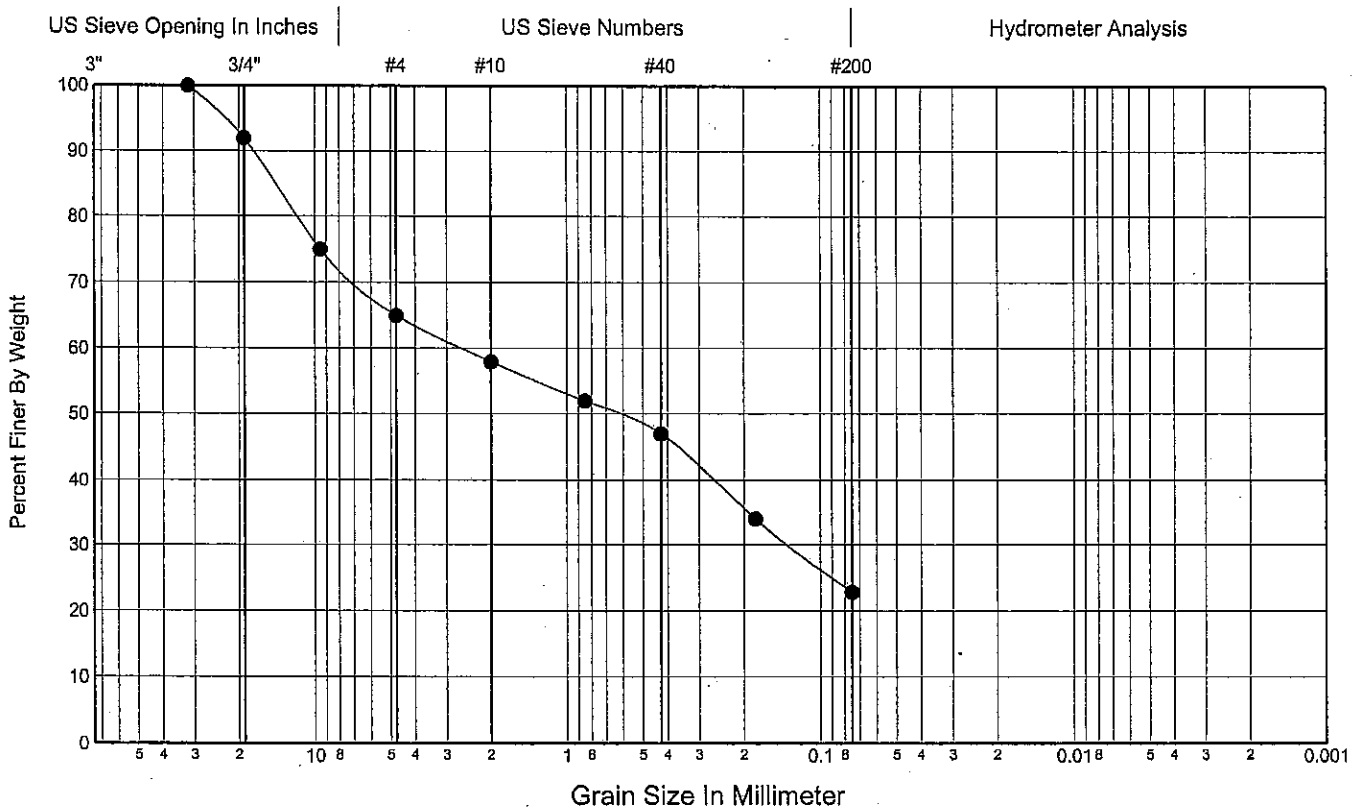
	Depth (ft)	Depth (m)	Sample No.	USCS	Color	Description	MC%	LL	PL	PI
●	0.0	0.00		SM	See Boring Log	SILTY SAND with GRAVEL				

GRADATION FRACTIONS

	%Gravel	%Sand	%Fines	Cc	Cu
●	35.0	42.1	22.9		

GRADATION VALUES

	D60	D50	D30	D20	D10
●	2.561	0.64	0.13		



Gravel	Sand			Silt and Clay
	Coarse	Medium	Fine	

Job No. **OL-3678** Date **November 18, 2003**

Hole No. **HH-27-03** Sheet **1** of **1**

Project **Sidney St. Vicinity to Scenic Heights Rd. Vicinity.**

Laboratory Summary

Washington State Department of Transportation

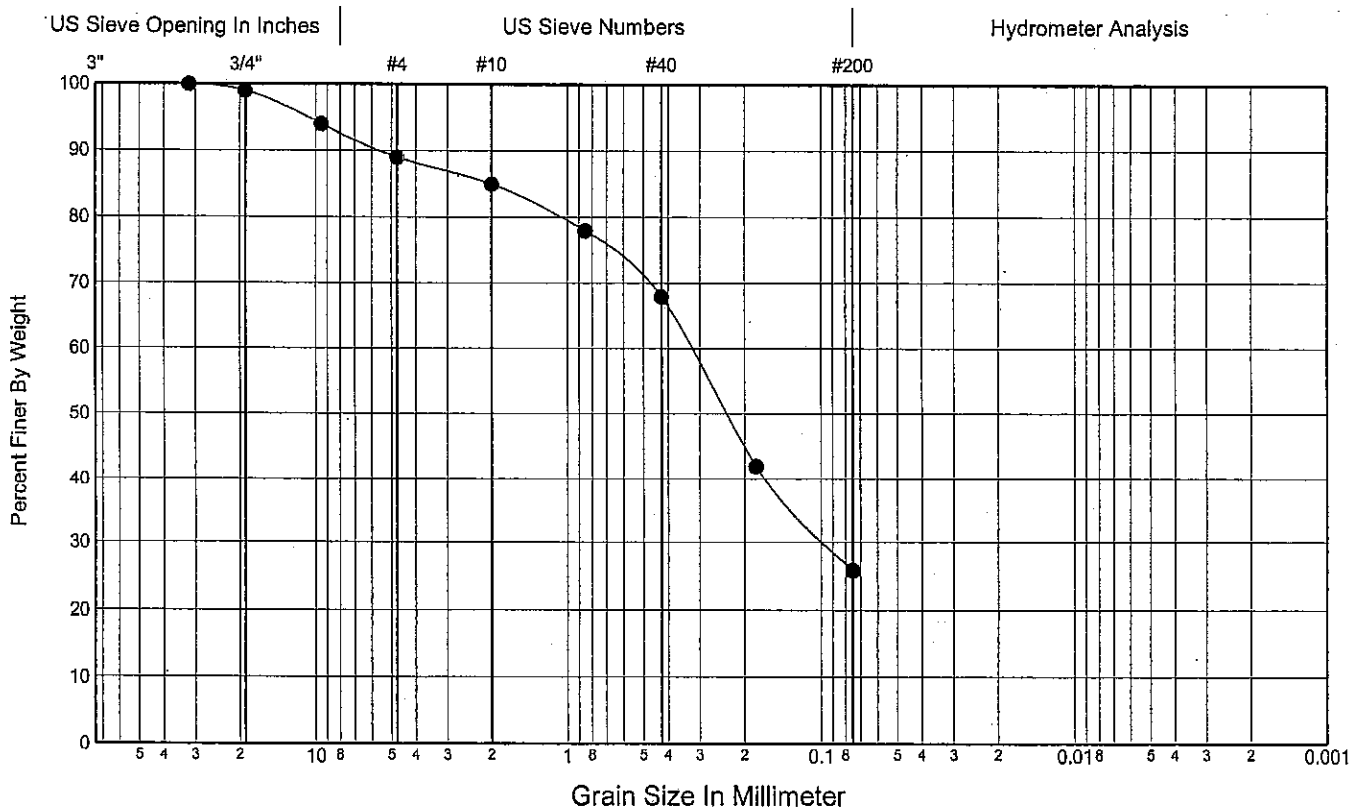
	Depth (ft)	Depth (m)	Sample No.	USCS	Color	Description	MC%	LL	PL	PI
●	0.0	0.00		SM	See Boring Log	SILTY SAND				

GRADATION FRACTIONS

	%Gravel	%Sand	%Fines	Cc	Cu
●	11.0	63.1	25.9		

GRADATION VALUES

	D60	D50	D30	D20	D10
●	0.326	0.23	0.09		



Job No. **OL-3678** Date **November 18, 2003**

Hole No. **PP-1-03** Sheet **1** of **1**

Project **Sidney St. Vicinity to Scenic Heights Rd. Vicinity.**

Laboratory Summary

Washington State Department of Transportation

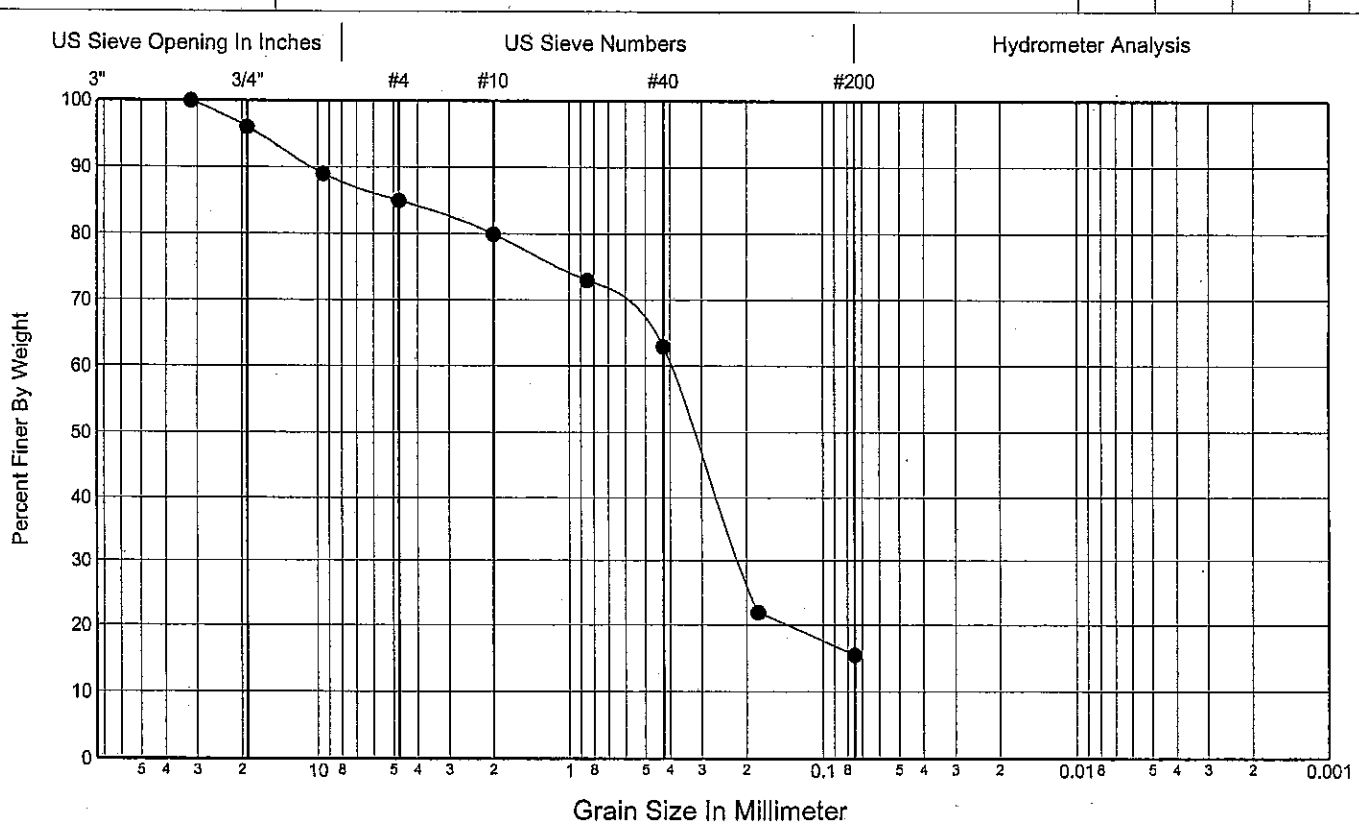
	Depth (ft)	Depth (m)	Sample No.	USCS	Color	Description	MC%	LL	PL	PI
●	1.0	0.30		SM	See Boring Log	SILTY SAND with GRAVEL				

GRADATION FRACTIONS

	%Gravel	%Sand	%Fines	Cc	Cu
●	15.0	69.5	15.5		

GRADATION VALUES

	D60	D50	D30	D20	D10
●	0.399	0.32	0.21	0.14	



Job No. **OL-3678** Date **November 18, 2003**

Hole No. **PP-3-03** Sheet **1** of **1**

Project **Sidney St. Vicinity to Scenic Heights Rd. Vicinity.**

Laboratory Summary

Washington State Department of Transportation

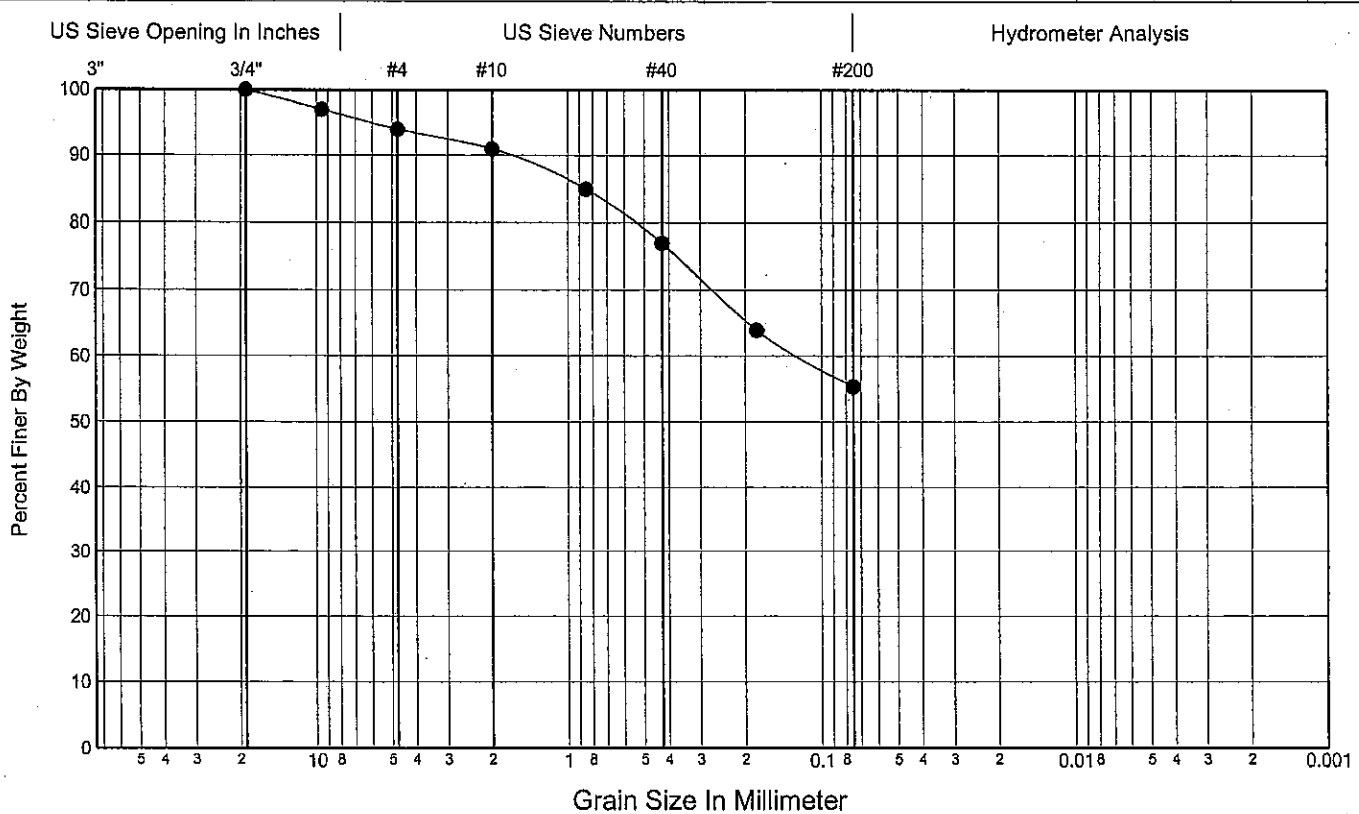
	Depth (ft)	Depth (m)	Sample No.	USCS	Color	Description	MC%	LL	PL	PI
●	1.0	0.30		ML	See Boring Log	SANDY SILT				

GRADATION FRACTIONS

	%Gravel	%Sand	%Fines	Cc	Cu
●	6.0	38.6	55.4		

GRADATION VALUES

	D60	D50	D30	D20	D10
●	0.120				



Job No. **OL-3678** Date **November 18, 2003**

Hole No. **TH-4-03** Sheet **1** of **1**

Project **Sidney St. Vicinity to Scenic Heights Rd. Vicinity.**

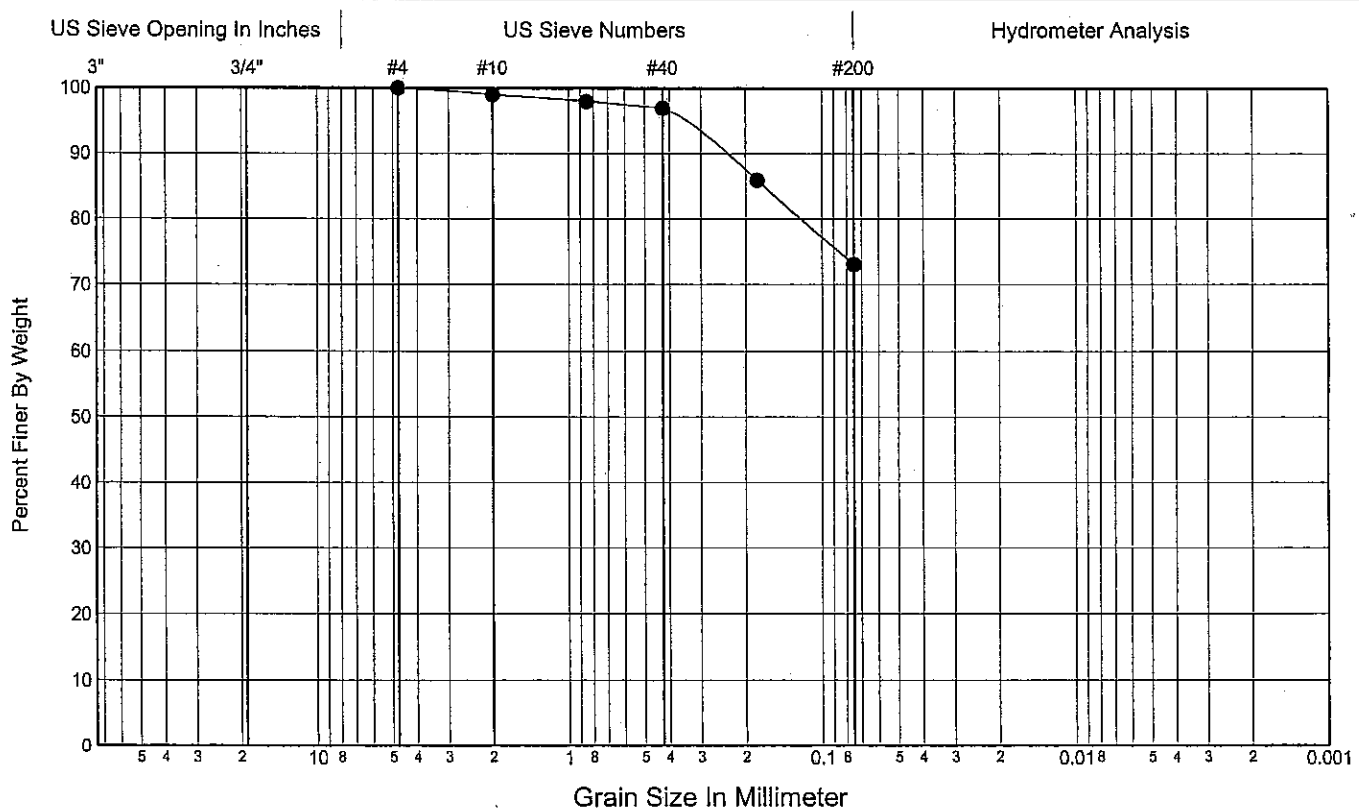
Laboratory Summary

Washington State Department of Transportation

	Depth (ft)	Depth (m)	Sample No.	USCS	Color	Description	MC%	LL	PL	PI
●	2.0	0.61		ML	See Boring Log	SILT with SAND				

GRADATION FRACTIONS

	%Gravel	%Sand	%Fines	Cc	Cu
●	0.0	26.9	73.1		

GRADATION VALUES

	D60	D50	D30	D20	D10
●