APPENDIX B

Test Pit Logs, Boring Logs, and Well Construction Details

Soil Classification System

MAJOR DIVISIONS			GRAPHIC SYMBOL	USCS LETTER SYMBOL[1]	TYPICAL DESCRIPTIONS [2][3]
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well-graded gravel; gravel/sand mixture(s); little or no fines
				GP	Poorly graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)		GM	Silty gravel; gravel/sand/silt mixture(s)
				GC	Clayey gravel; gravel/sand/clay mixture(s)
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well-graded sand; gravelly sand; little or no fines
				SP	Poorly graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)		SM	Silty sand; sand/silt mixture(s)
				SC	Clayey sand; sand/clay mixture(s)
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)			ML	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with slight plasticity
				CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay
				OL	Organic silt; organic, silty clay of low plasticity
	SILT AND CLAY (Liquid limit greater than 50)			MH	Inorganic silt; micaceous or diatomaceous fine sand
				CH	Inorganic clay of high plasticity; fat clay
				OH	Organic clay of medium to high plasticity; organic silt
	HIGHLY ORGANIC SOIL			PT	Peat; humus; swamp soil with high organic content

OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		AC or PC	Asphalt concrete pavement or Portland cement pavement
ROCK		RK	Rock (See Rock Classification)
WOOD		WD	Wood, lumber, wood chips
DEBRIS		DB	Construction debris, garbage

Notes:
1. USCS letter symbols correspond to symbols used by the Unified Soil Classification System and ASTM classification methods. Dual letter symbols (e.g., SP-SM for sand or gravel) indicate soil with an estimated 5-15% fines. Multiple letter symbols (e.g., ML/CL) indicate borderline or multiple soil classifications.
2. Soil descriptions are based on the general approach presented in the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the Standard Test Method for Classification of Soils for Engineering Purposes, as outlined in ASTM D 2487.
3. Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:

Primary Constituent:	> 50% - "GRAVEL," "SAND," "SILT," "CLAY," etc.
Secondary Constituents:	> 30% and ≤ 50% - "very gravelly," "very sandy," "very silty," etc.
	> 15% and ≤ 30% - "gravelly," "sandy," "silty," etc.
Additional Constituents:	> 5% and ≤ 15% - "with gravel," "with sand," "with silt," etc.
	≤ 5% - "with trace gravel," "with trace sand," "with trace silt," etc., or not noted.

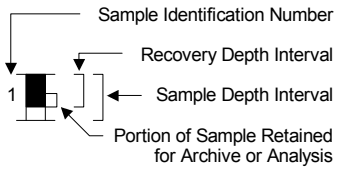
4. Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

Drilling and Sampling Key

SAMPLER TYPE

Code	Description
a	3.25-inch O.D., 2.42-inch I.D. Split Spoon
b	2.00-inch O.D., 1.50-inch I.D. Split Spoon
c	Shelby Tube
d	Grab Sample
e	Single-Tube Core Barrel
f	Double-Tube Core Barrel
g	2.50-inch O.D., 2.00-inch I.D. WSDOT
h	3.00-inch O.D., 2.375-inch I.D. Mod. California
i	Other - See text if applicable
1	300-lb Hammer, 30-inch Drop
2	140-lb Hammer, 30-inch Drop
3	Pushed
4	Vibrocore (Rotosonic/Geoprobe)
5	Other - See text if applicable

SAMPLE NUMBER & INTERVAL



Field and Lab Test Data

Code	Description
PP = 1.0	Pocket Penetrometer, tsf
TV = 0.5	Torvane, tsf
PID = 100	Photoionization Detector VOC screening, ppm
W = 10	Moisture Content, %
D = 120	Dry Density, pcf
-200 = 60	Material smaller than No. 200 sieve, %
GS	Grain Size - See separate figure for data
AL	Atterberg Limits - See separate figure for data
GT	Other Geotechnical Testing
CA	Chemical Analysis

Groundwater

▽ Approximate water level at time of drilling (ATD)

▼ Approximate water level at time other than ATD

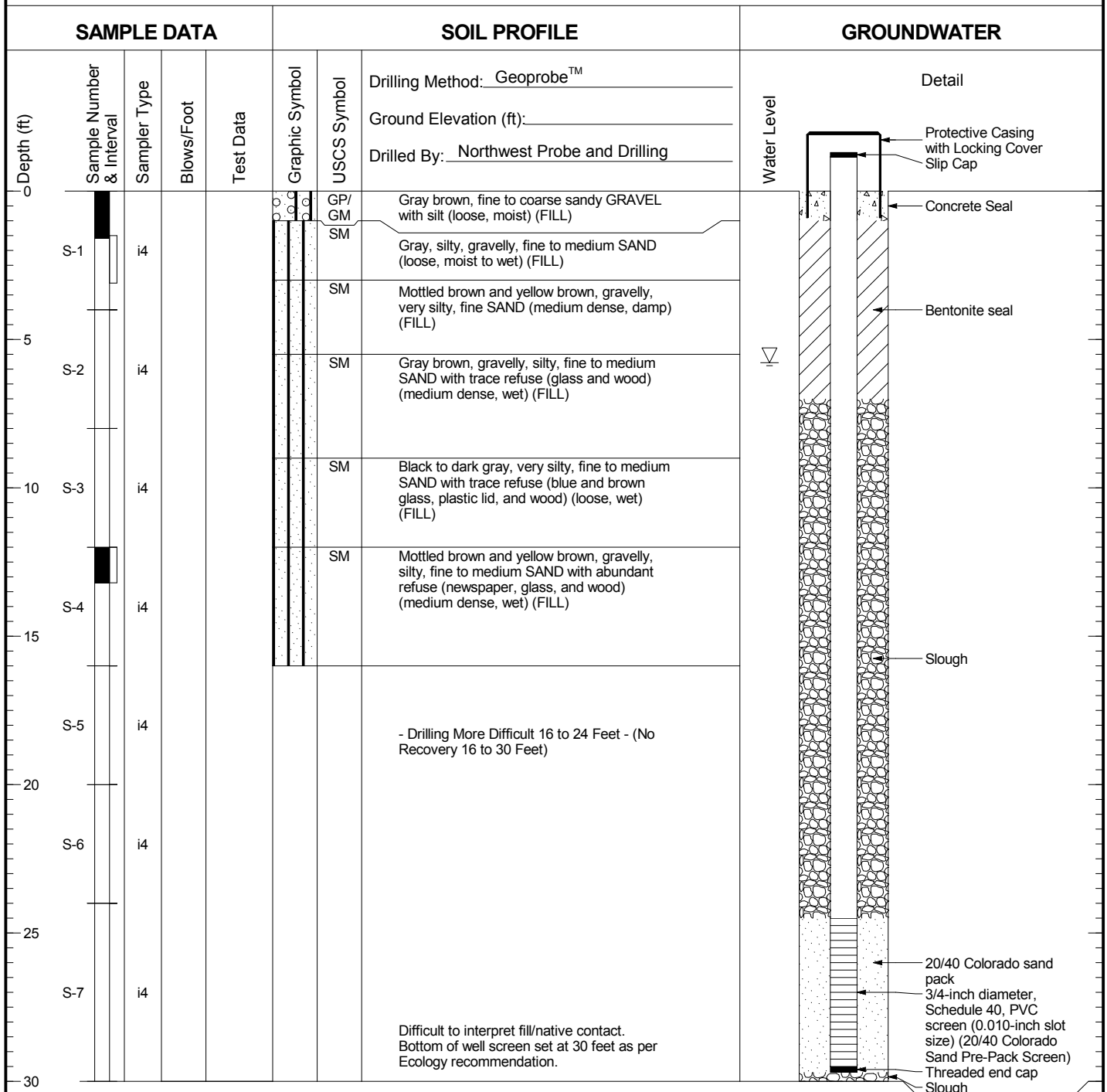
LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, WA

Soil Classification System and Key

Figure B-1

MW-11D



Boring Completed 07/18/12
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. **Generalized log of MW-11D and MW-11S is shown here.**

1020.400.510 2/1/13 N:\PROJECTS\1020.400.510.GPJ WELL LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, WA

Log of MW-11D

Figure
B-2

MW-11S

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Geoprobe™

Ground Elevation (ft):

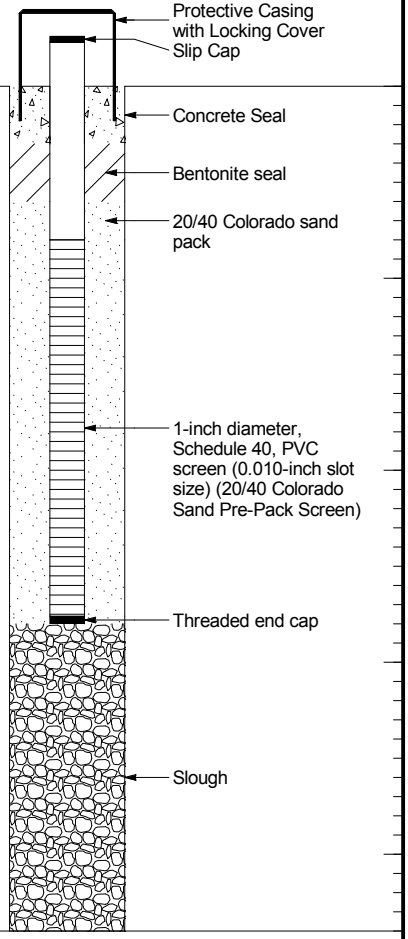
Drilled By: Northwest Probe and Drilling

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol
0	S-1	i4				
5	S-2	i4				
10	S-3	i4				
15	S-4	i4				
20	S-5	i4				
	S-6	i4				
25						
30						
35						

See Generalized Soil Description on MW-11D Boring Log

Water Level

Detail



Boring Completed 07/16/12
Total Depth of Boring = 22.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1020.400.510 2/1/13 N:\PROJECTS\1020.400.510.GPJ WELL LOG

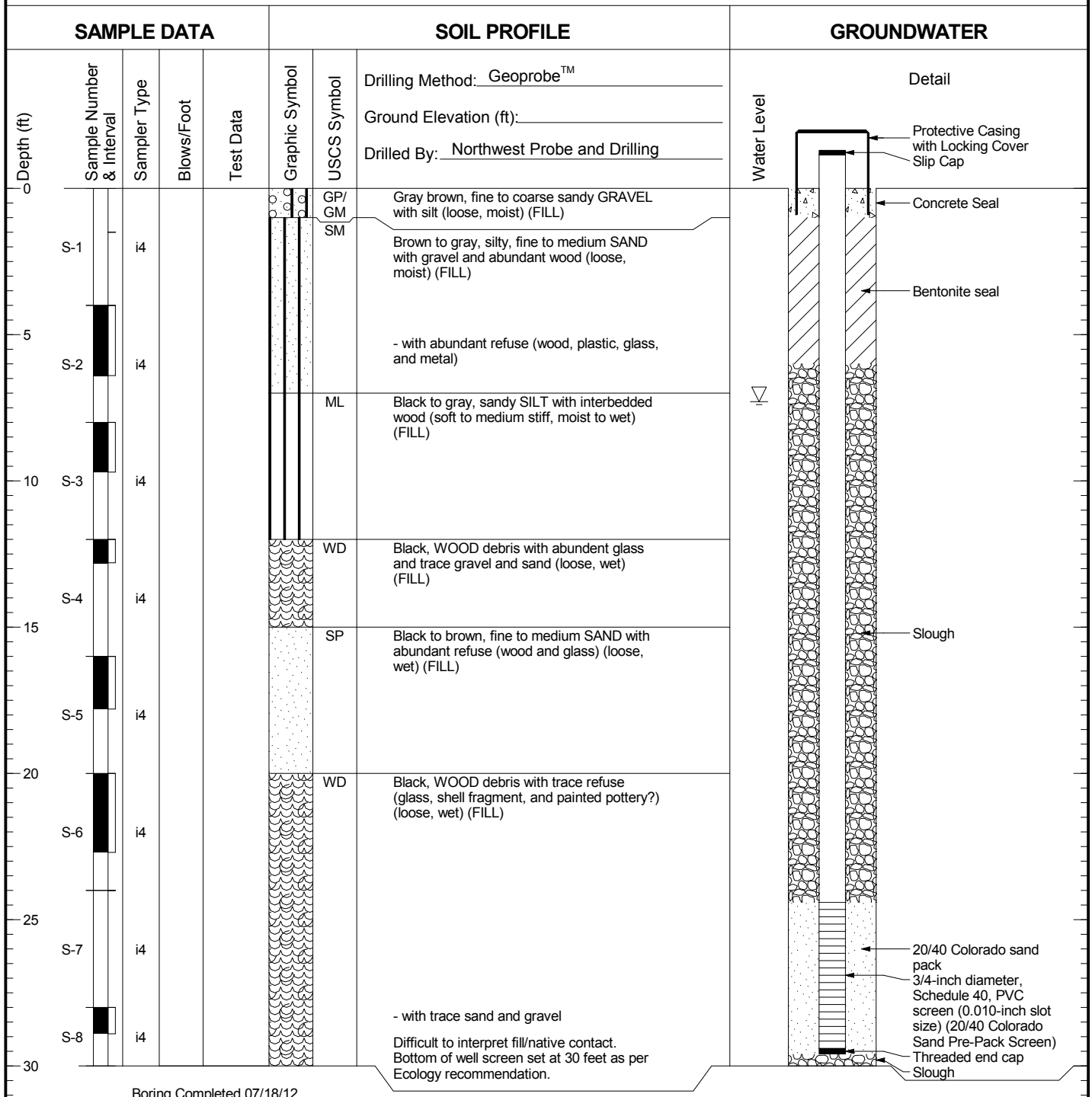
LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, WA

Log of MW-11S

Figure
B-3

MW-12D



Boring Completed 07/18/12
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. **Generalized log of MW-12D and MW-12S is shown here.**

1020.400.510 2/1/13 N:\PROJECTS\1020.400.510.GPJ WELL LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, WA

Log of MW-12D

Figure
B-4

MW-12S

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Geoprobe™

Ground Elevation (ft):

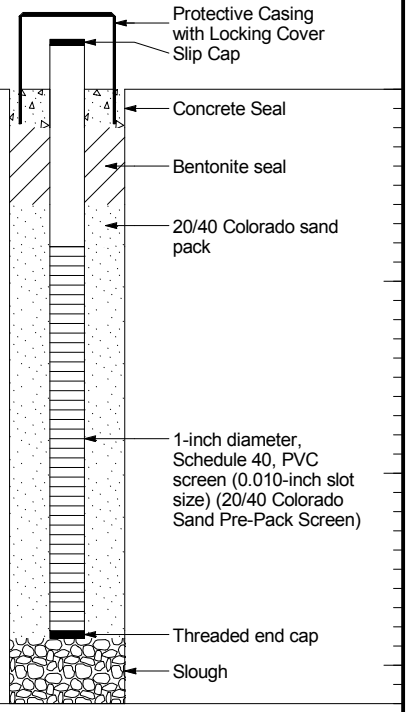
Drilled By: Northwest Probe and Drilling

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol
0	S-1	i4				
5	S-2	i4				
10	S-3	i4				
15	S-4	i4				

See Generalized Soil Description on MW-12D Boring Log

Water Level

Detail



Boring Completed 07/18/12
Total Depth of Boring = 16.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1020.400.510 2/1/13 N:\PROJECTS\1020.400.510.GPJ WELL LOG

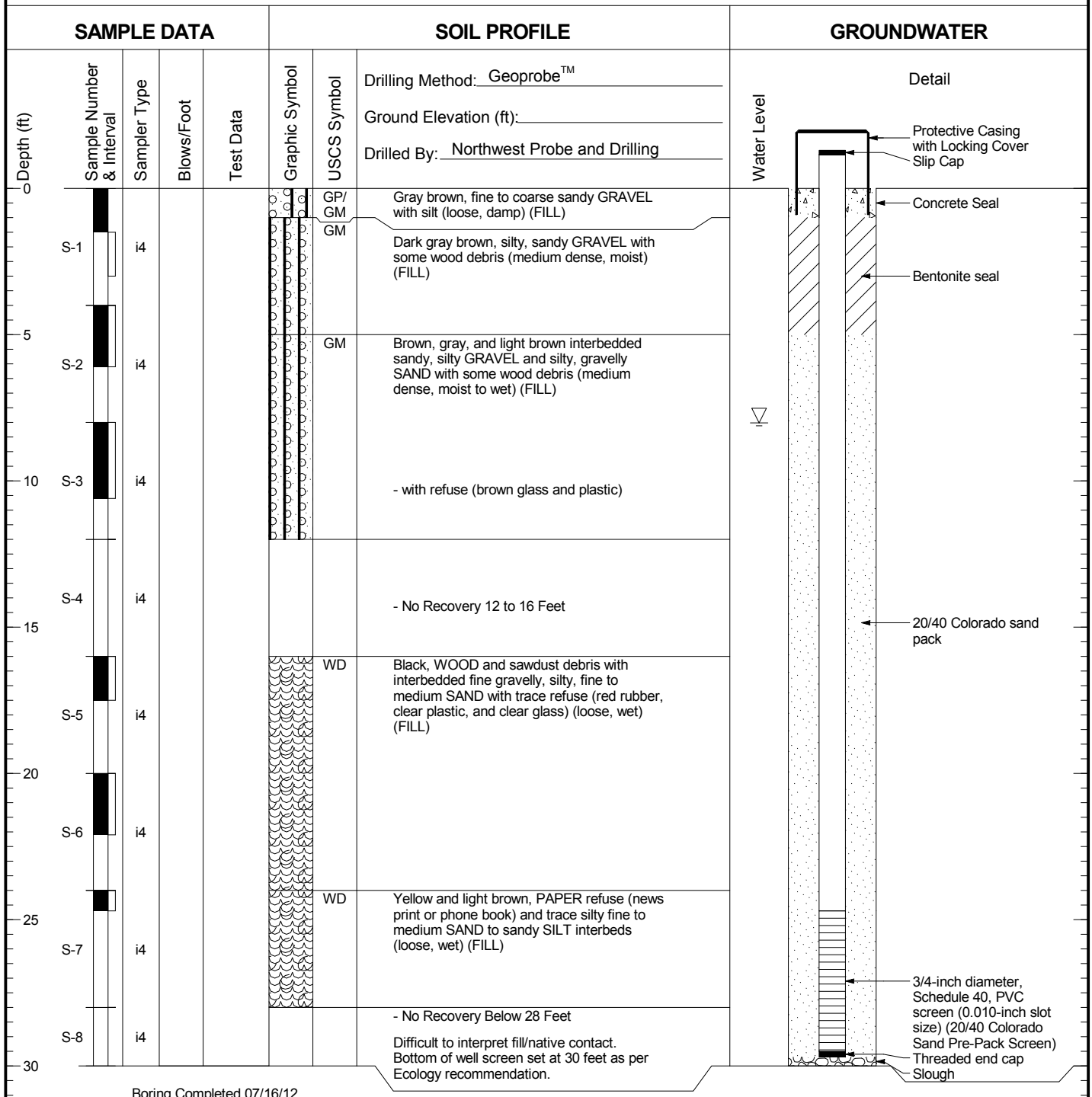
LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, WA

Log of MW-12S

Figure
B-5

MW-13D



Boring Completed 07/16/12
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. **Generalized log of MW-13D and MW-13S is shown here.**

1020.400.510 2/1/13 N:\PROJECTS\1020.400.510.GPJ WELL LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, WA

Log of MW-13D

Figure
B-6

MW-13S

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Water Level

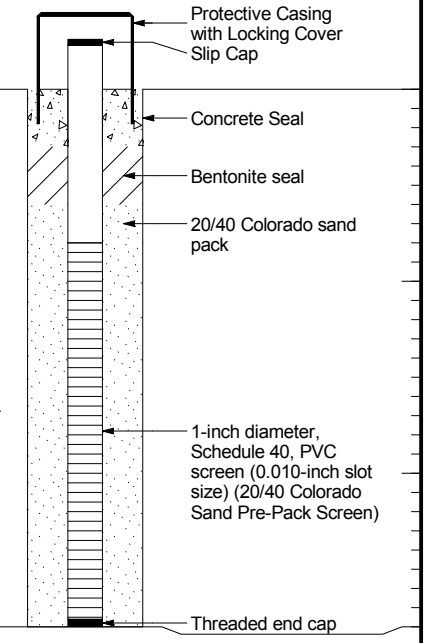
Drilling Method: Geoprobe™

Ground Elevation (ft):

Drilled By: Northwest Probe and Drilling

See Generalized Soil Description on MW-13D Boring Log

Detail



Boring Completed 07/16/12
Total Depth of Boring = 14.0 ft.

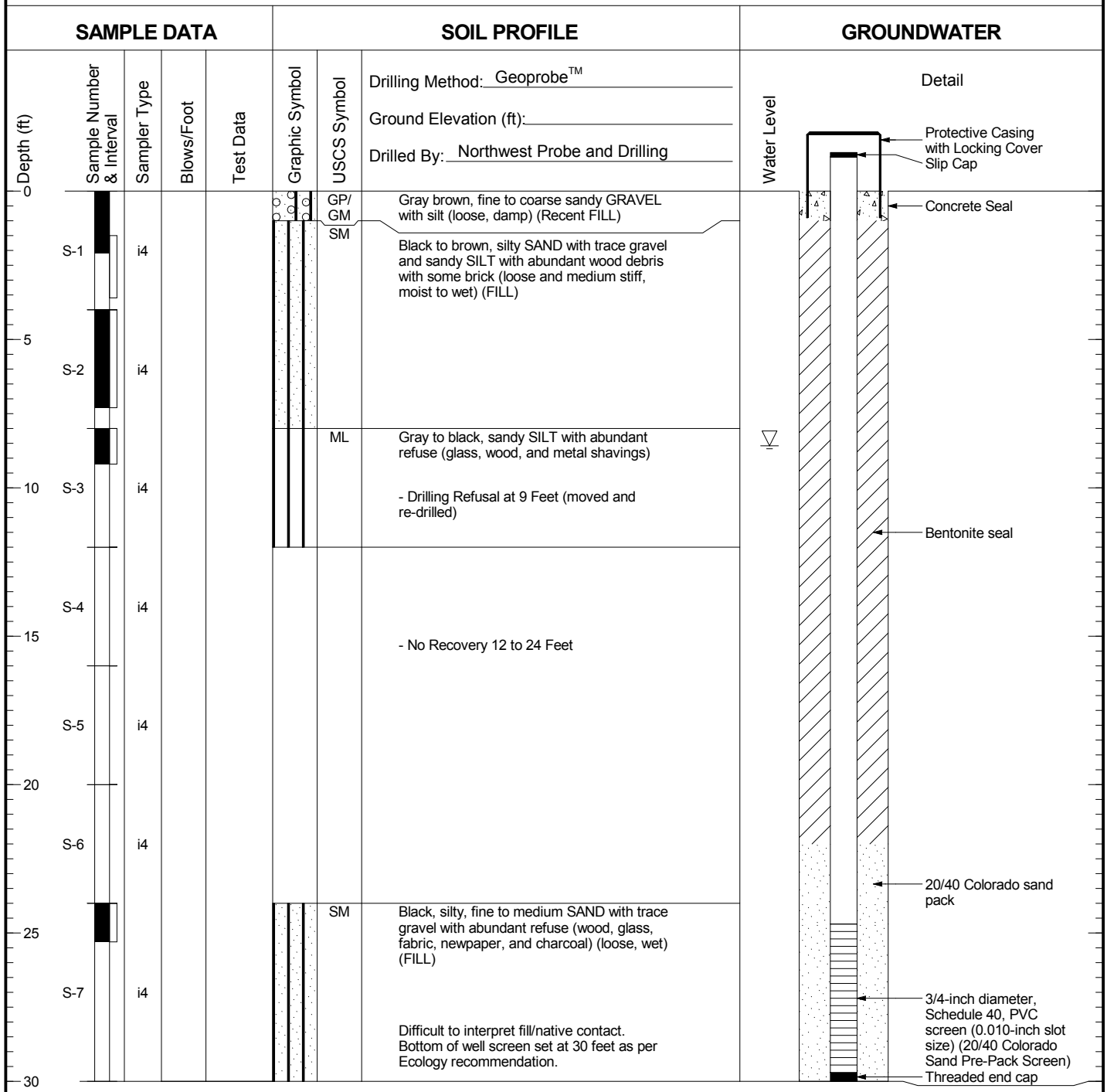
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1020.400.510 2/1/13 N:\PROJECTS\1020.400.510.GPJ WELL LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill Bellingham, WA	Log of MW-13S	Figure B-7

MW-14D



Boring Completed 07/17/12
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. **Generalized log of MW-14D and MW-14S is shown here.**

1020.400.510 2/1/13 N:\PROJECTS\1020.400.510.GPJ WELL LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, WA

Log of MW-14D

Figure
B-8

MW-14S

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Geoprobe™

Ground Elevation (ft):

Drilled By: Northwest Probe and Drilling

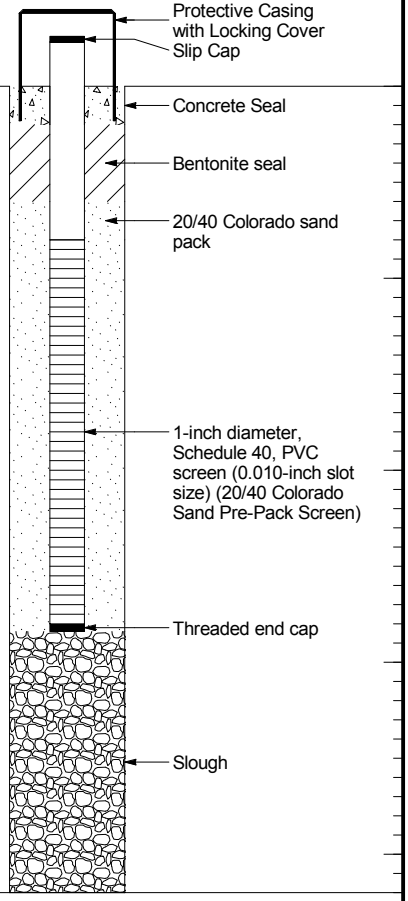
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol
0	S-1	i4				
5	S-2	i4				
10	S-3	i4				
15	S-4	i4				
20	S-5	i4				

See Generalized Soil Description on MW-14D Boring Log

- Drilling Refusal at 4 Feet (moved and re-drilled)

Water Level

Detail



Boring Completed 07/17/12
Total Depth of Boring = 21.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1020.400.510 2/1/13 N:\PROJECTS\1020.400.510.GPJ WELL LOG

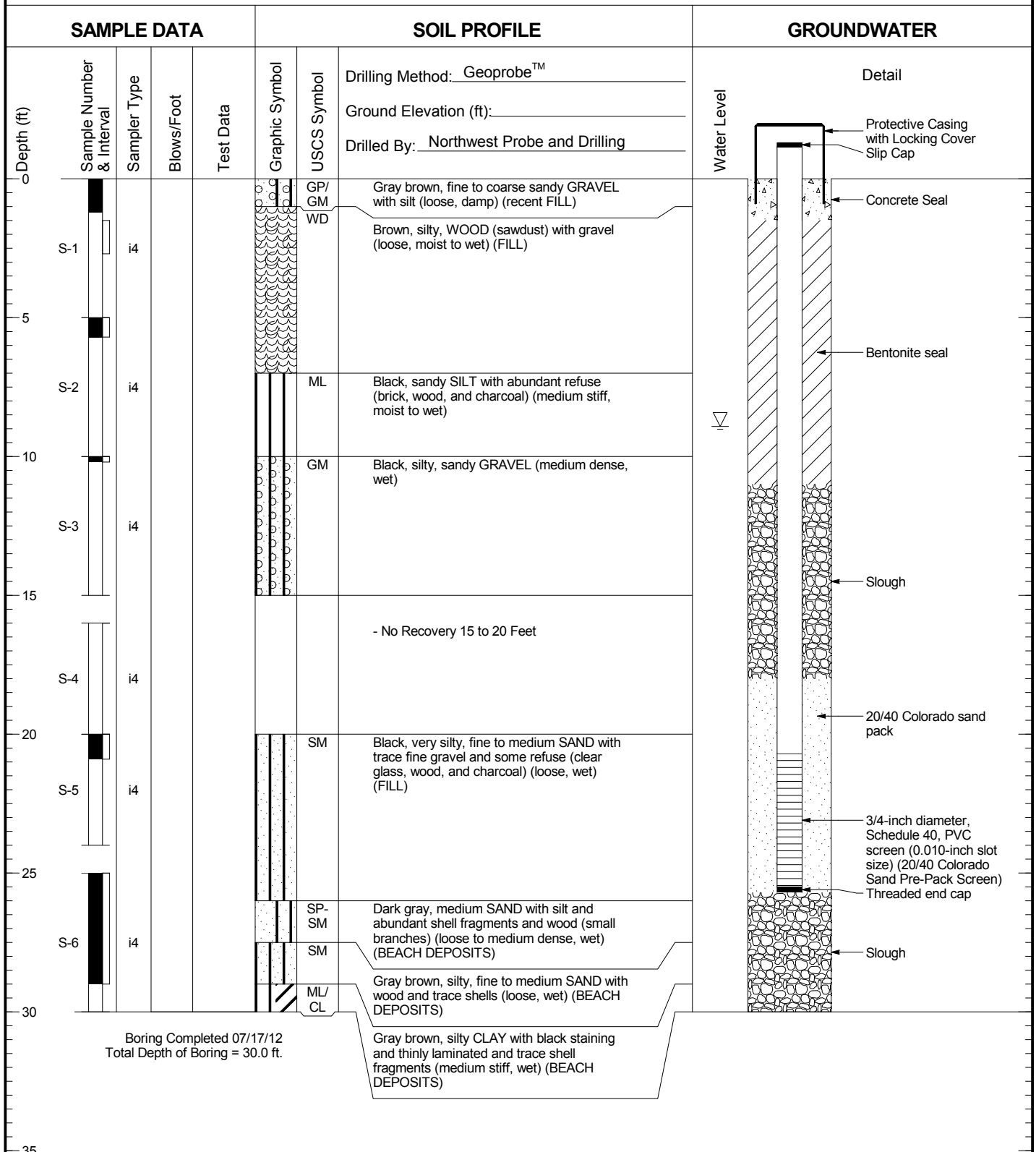
LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, WA

Log of MW-14S

Figure
B-9

MW-15D



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. **Generalized log of MW-15D and MW-15S is shown here.**

1020.400.510 2/1/13 N:\PROJECTS\1020.400.510.GPJ WELL LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, WA

Log of MW-15D

Figure
B-10

MW-15S

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Water Level

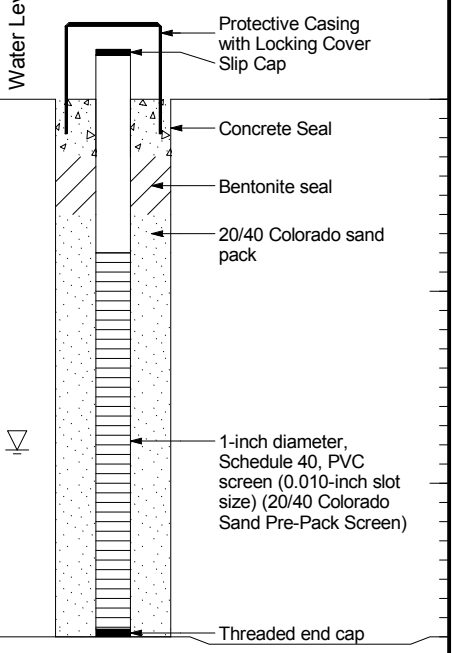
Drilling Method: Geoprobe™

Ground Elevation (ft):

Drilled By: Northwest Probe and Drilling

See Generalized Soil Description on MW-15D Boring Log

Detail



Boring Completed 07/16/12
Total Depth of Boring = 14.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1020.400.510 2/1/13 N:\PROJECTS\1020.400.510.GPJ WELL LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, WA

Log of MW-15S

Figure
B-11

MW-16D

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): Drilled By: Northwest Probe and Drilling	Water Level
0						ML	Brown and gray, SILT with sand and gravel; and fine to medium SAND with silt (soft and loose, moist to wet) (Recent FILL)	
	S-1	i4						
5						ML	Brown, SILT with sand and gravel (soft to medium stiff, moist to wet) (FILL)	
	S-2	i4						
						ML	Gray brown, SILT with trace sand and gravel with abundant wood debris (medium stiff, wet) (FILL)	
10	S-3	i4						
						SM	Gray to black, fine to medium SAND with silt and abundant refuse (wood, nails, brick?) (loose, wet) (FILL)	▽
	S-4	i4						
15						ML	Black, sandy SILT with abundant wood debris and shell fragments (loose, wet) (FILL)	
	S-5	i4						
						SP	Gray to black, SAND with abundant shells (loose, wet) (BEACH DEPOSITS)	
20						CL-ML	Gray brown, silty CLAY with trace shell fragments (medium stiff, wet) (BEACH DEPOSITS)	
	S-6	i4					- No Recovery 20 to 24 Feet	
						SP	Black, fine to medium SAND with trace shell fragments (loose to medium dense, wet) (BEACH DEPOSITS)	
25	S-7	i4						
30								
35								

Boring Completed 07/17/12
Total Depth of Boring = 28.0 ft.

Detail

- Protective Casing with Locking Cover
- Slip Cap
- Concrete Seal
- Bentonite seal
- 20/40 Colorado sand pack
- 3/4-inch diameter, Schedule 40, PVC screen (0.010-inch slot size) (20/40 Colorado Sand Pre-Pack Screen)
- Threaded end cap
- Slough

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. **Generalized log of MW-16D and MW-16S is shown here.**

1020.400.510 2/1/13 N:\PROJECTS\1020.400.510.GPJ WELL LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, WA

Log of MW-16D

Figure
B-12

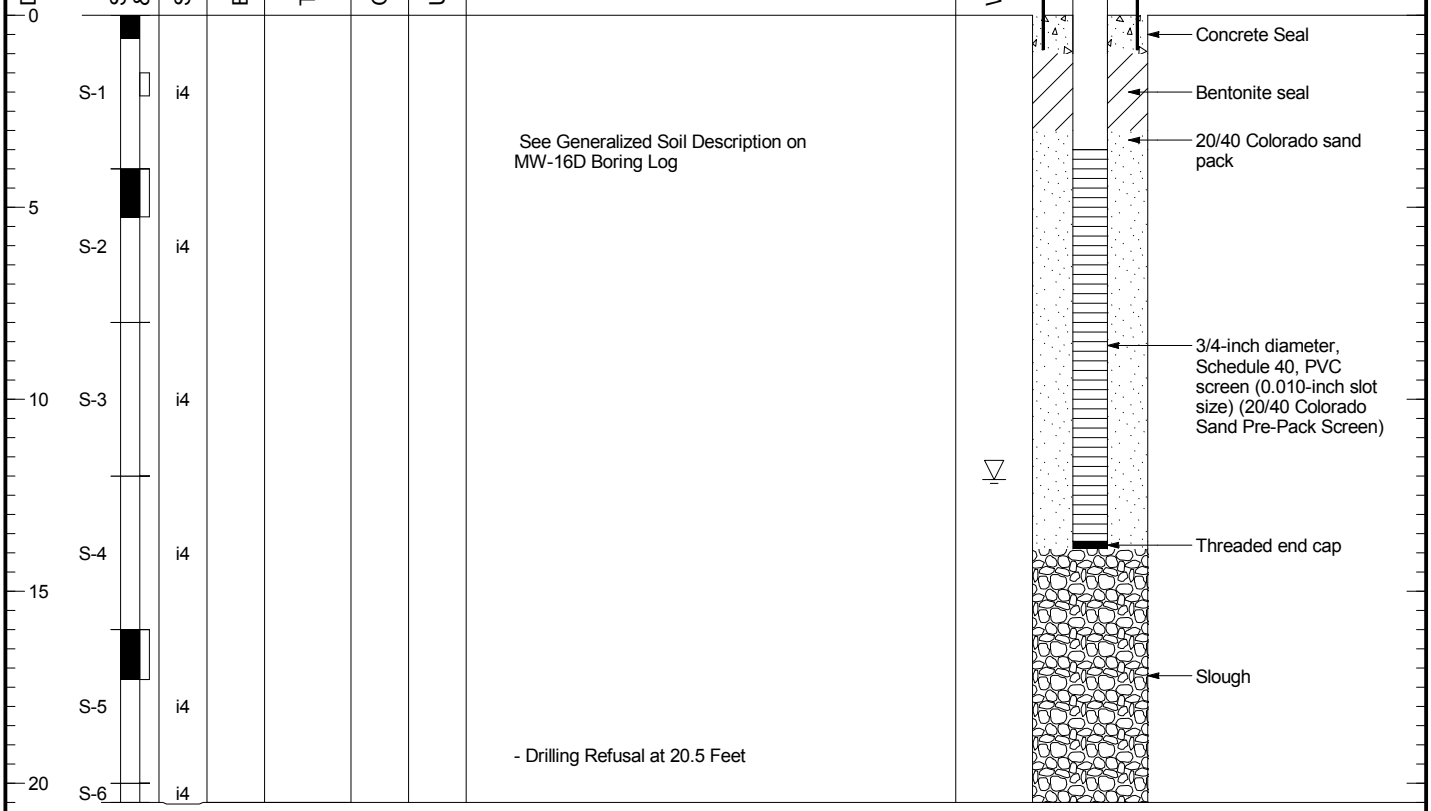
MW-16S

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Geoprobe™

Ground Elevation (ft):

Drilled By: Northwest Probe and Drilling



Boring Completed 07/17/12
Total Depth of Boring = 20.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1020.400.510 2/1/13 N:\PROJECTS\1020.400.510.GPJ WELL LOG

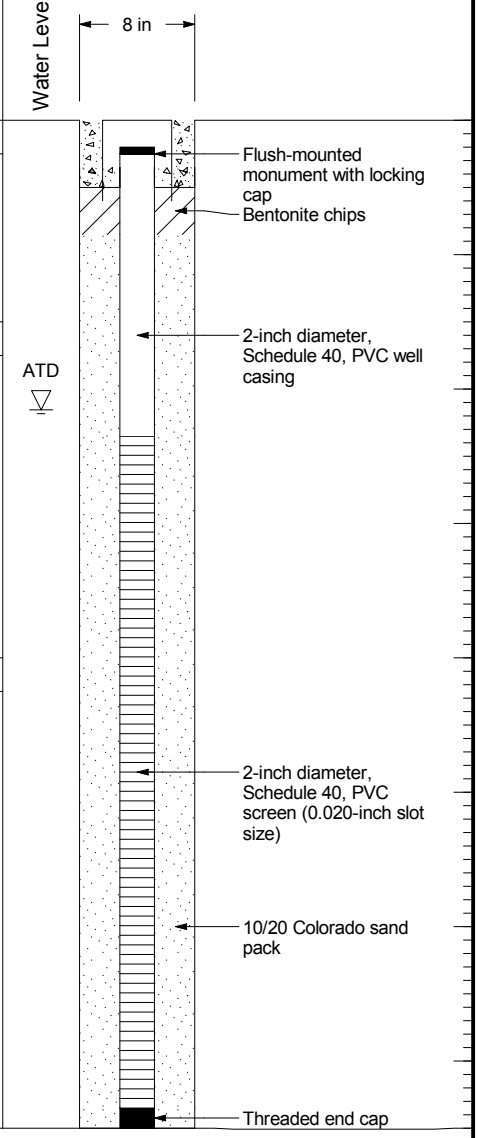
LANDAU ASSOCIATES

Cornwall Avenue Landfill Bellingham, WA	Log of MW-16S	Figure B-13

MW-6

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile
							Drilling Method: Hollow-stem Auger Ground Elevation (ft): 18.63 (MLLW) Drilled By: Cascade Drilling Inc.
0						GP	Black, 2-inch, crushed rock (dense, dry)
						SP-SM	Gray, fine SAND with silt and gravel (medium dense to dense, moist)
2		a2	50/6"	26.9		DB	Pink, angular, 1/8 to 1/4 inch long, inorganic debris of unknown composition (loose to dense, moist) (very heavy petroleum sheen)
						SM	Gray, silty, fine SAND with gravel (medium dense, wet) (moderate to heavy petroleum sheen)
4							
6							
8		a2	77	88		DB	Black, 1/4 inch long COAL fragments with pink, angular, inorganic debris of unknown composition (medium dense to dense, wet) (moderate to heavy petroleum sheen)
						ML	Gray SILT (hard, moist) (moderate petroleum sheen)
10							
12		a2	50/3"	35			
14							
16							
18							
20							

Boring Completed 06/27/02
Total Depth of Boring = 15.0 ft.



Monitoring Well Completed 06/27/02
Elevation at Top of Monitoring Well Casing = 18.42 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ WELL LOG

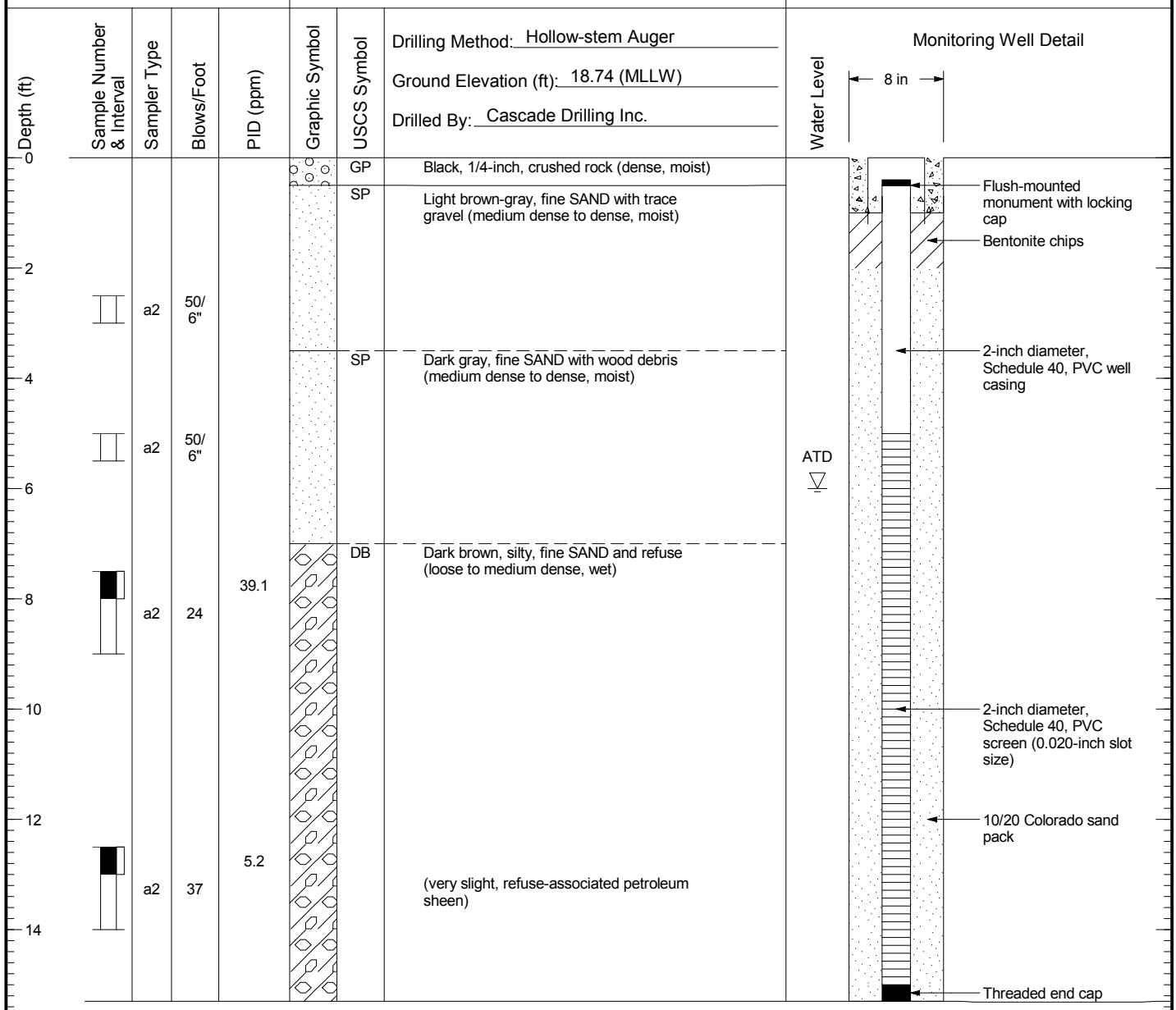
LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Monitoring Well MW-6

Figure
B-14

MW-7



Boring Completed 06/27/02
Total Depth of Boring = 15.3 ft.

Monitoring Well Completed 06/27/02
Elevation at Top of Monitoring Well Casing = 18.37 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ WELL LOG

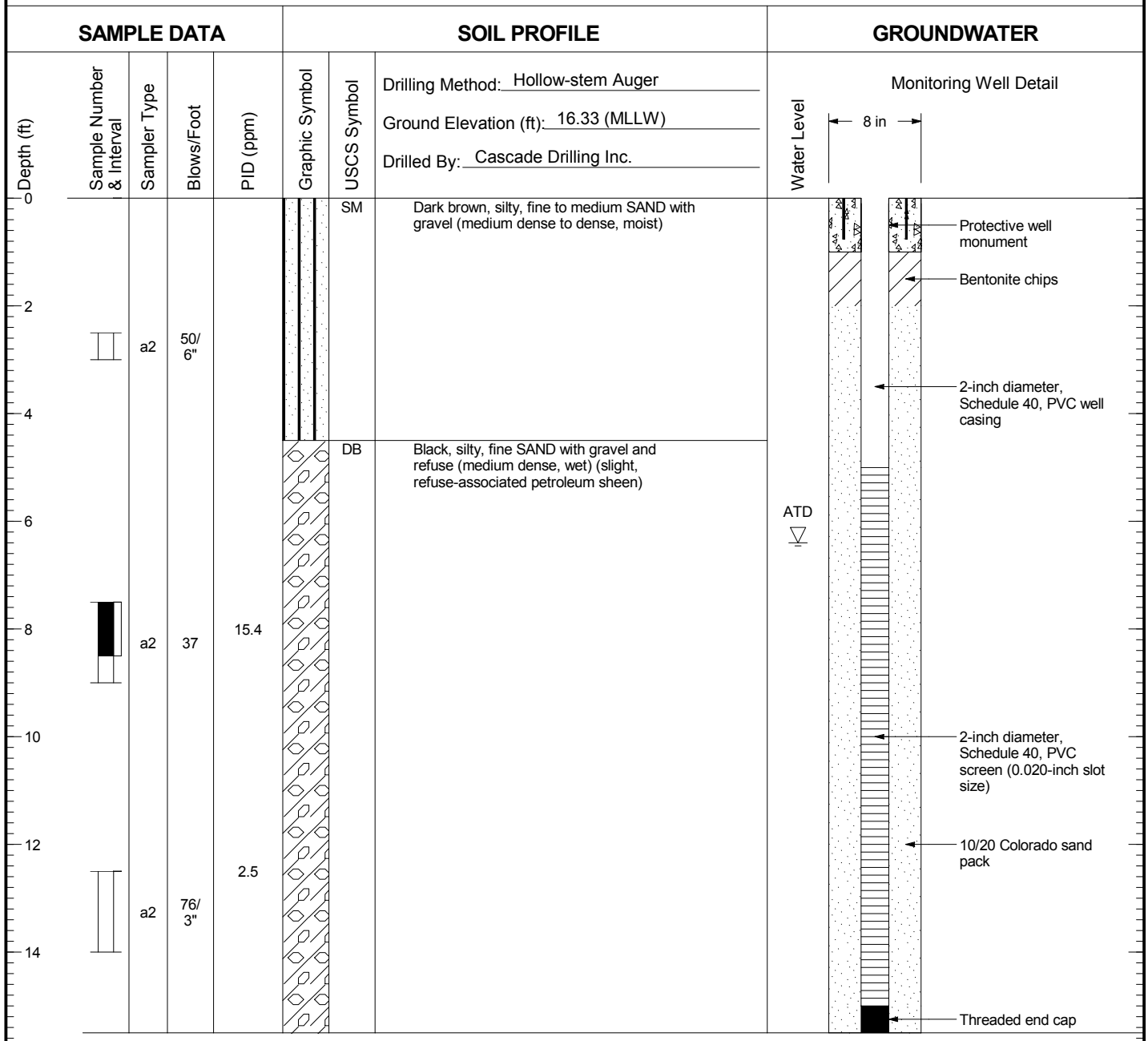
LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Monitoring Well MW-7

Figure
B-15

MW-8



Boring Completed 06/27/02
Total Depth of Boring = 15.5 ft.

Monitoring Well Completed 06/27/02
Elevation at Top of Monitoring Well Casing = 18.53 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ WELL LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Monitoring Well MW-8

Figure
B-16

MW-9

SAMPLE DATA

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)
4		a2	12	3.3
8		a2	50/ 3"	3.6
12		a2	50/ 3"	

SOIL PROFILE

Drilling Method: Hollow-stem Auger

Ground Elevation (ft): 15.71 (MLLW)

Drilled By: Cascade Drilling Inc.

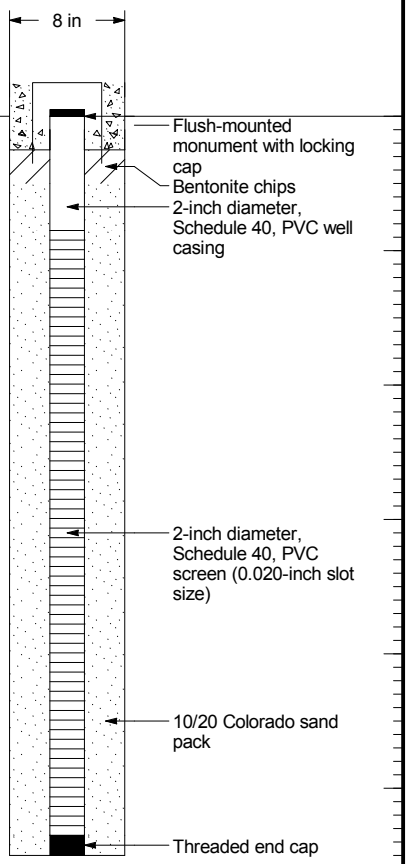
Graphic Symbol	USCS Symbol	Description
	GP	Black, 1/4-inch, crushed rock (dense, moist)
	SP-SM	Brown, gravelly, fine SAND with silt (medium dense, moist)
	SM	Dark gray, silty, fine SAND with gravel and organics (loose, wet)
	SP-SM	Gray, fine SAND with silt and trace gravel (very dense, wet)
	RK	Gray SANDSTONE, medium hard, slightly weathered (Chuckanut Formation)

Boring Completed 06/28/02
Total Depth of Boring = 13.0 ft.

GROUNDWATER

Water Level: ATD

Monitoring Well Detail



Monitoring Well Completed 06/28/02
Elevation at Top of Monitoring Well Casing = 15.34 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ WELL LOG

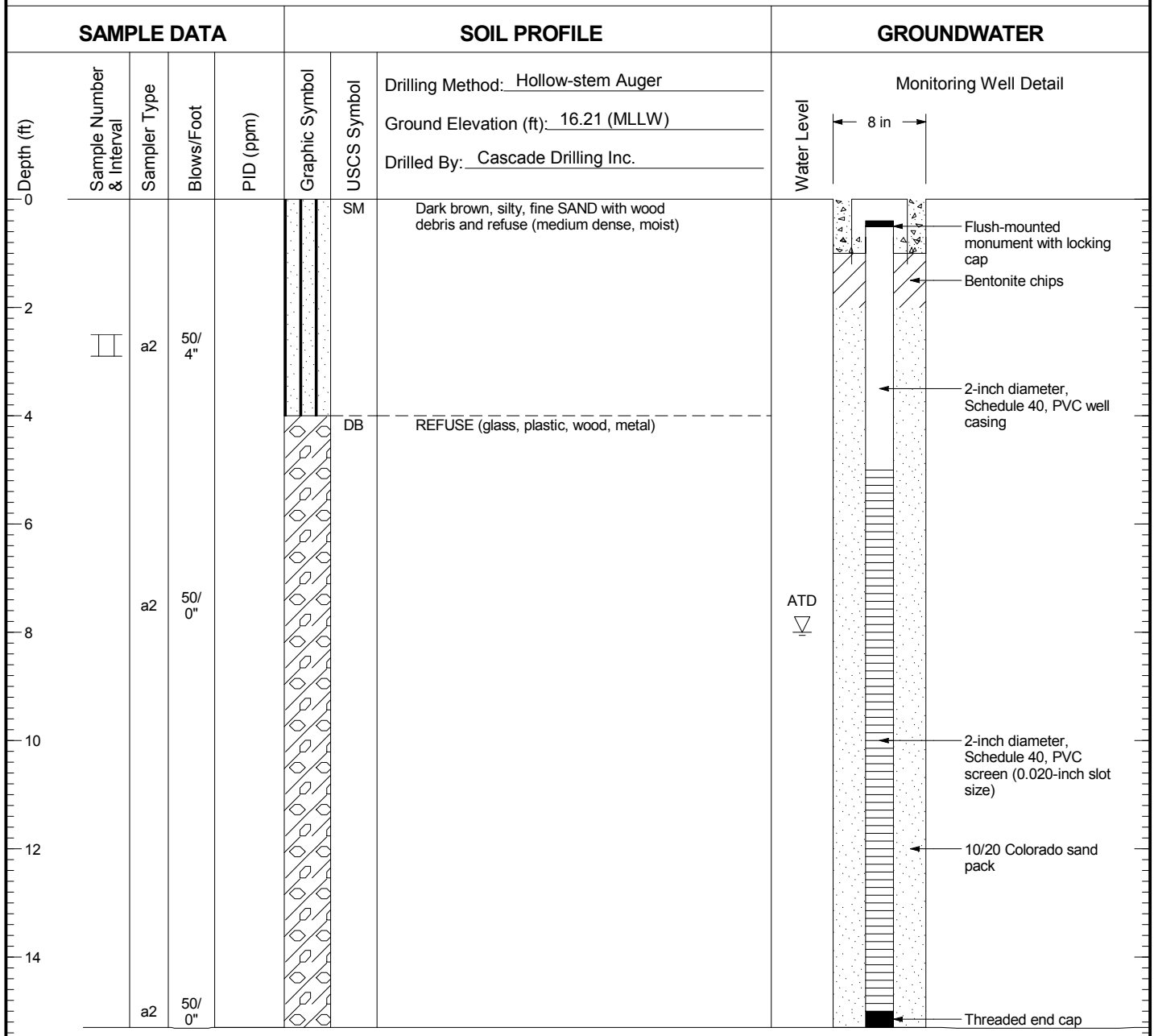
LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Monitoring Well MW-9

Figure
B-17

MW-10



Boring Completed 06/27/02
Total Depth of Boring = 15.3 ft.

Monitoring Well Completed 06/27/02
Elevation at Top of Monitoring Well Casing = 15.92 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ WELL LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Monitoring Well MW-10

Figure
B-18

RISB-1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft): Drilled By: Cascade Drilling Inc.	Water Level
0						AC	Asphalt	
						SM	Gray, silty, fine SAND with gravel and wood fragments (medium dense to dense, moist)	
2								
4								
		a2	50/ 6"	265			(heavy petroleum sheen)	
6								
8						WD	SAWDUST with sulfide odor (loose, wet) (moderate to heavy petroleum sheen)	ATD
10		a2	12	109				
12								
14						SP	Gray, fine SAND with shell fragments (medium dense to dense, wet) (moderate petroleum sheen)	
		a2	50/ 6"	69.2				
16						WD	SAWDUST (loose, wet) (moderate petroleum sheen)	
18								
20								

Boring Completed 06/27/02
Total Depth of Boring = 16.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Boring RISB-1

Figure
B-19

RISB-2

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft): Drilled By: Cascade Drilling Inc.	Water Level
0						AC	Asphalt	
						GP	Gray, GRAVEL and COBBLES (dense, moist)	
2						SM	Dark gray, silty, fine SAND with trace gravel and petroleum odor (medium dense, moist)	
4						ML	Gray, sandy SILT with trace gravel and petroleum odor (medium stiff, wet) (heavy petroleum sheen)	
6		a2	11	211				ATD
8						WD	SAWDUST (medium dense, wet) (slight petroleum sheen)	
10		a2	52	13				
12								
14						SW	Black, fine to coarse SAND with gravel (medium dense, wet)	
16		a2	50	14.1		GP	Brown, 1/4-inch, sandstone fragments (medium dense, wet)	
						WD	SAWDUST (loose, wet)	
18								
20								

Boring Completed 06/27/02
Total Depth of Boring = 16.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Boring RISB-2

Figure
B-20

RISB-3

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft): Drilled By: Cascade Drilling Inc.	
0						AC	Asphalt	
						SM/ ML	Gray, silty, fine SAND to sandy SILT with sandstone debris (dense, moist to wet)	Groundwater not encountered.
2								
4								
		a2	50/ 6"	0			Wet at 5 feet	
6								
8								
		a2	50/ 1"	0				
10								
12								
14								
16								
18								
20								

Boring Completed 06/27/02
Total Depth of Boring = 9.2 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Boring RISB-3

Figure
B-21

RISB-4

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger Ground Elevation (ft): Drilled By: Cascade Drilling Inc.	Water Level
0						AC	Asphalt	
						SM	Dark gray, silty, fine SAND with gravel (medium dense, moist)	
2						SM	Gray, silty, fine SAND with gravel (dense to very dense, wet) (heavy petroleum sheen)	
	a2	50/ 5"	156					ATD
4								
6								
8								
10								
12								
14								
16								
18								
20								

Boring Completed 06/27/02
Total Depth of Boring = 7.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Boring RISB-4

Figure
B-22

RITP- 1

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	
						Excavation Method: Rubber-tired Backhoe Ground Elevation (ft): Excavated By: Custom Backhoe Logged By: KJR
0					SM	Gray, gravelly, silty SAND (dense, moist)
2			22.1			
4			52.4		SM	Dark gray, silty, fine SAND with gravel (dense, moist)
					DB	Slight petroleum sheen at 4 feet REFUSE with silty sand, roots, and creosoted wood fragments (dense, moist)
6						
8			170			Slight petroleum sheen at 8 feet ▽ ATD groundwater seepage encountered at 8.5 ft.
10						

Test Pit Completed 06/25/02
Total Depth of Test Pit = 9.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP- 1

Figure
B-23

RITP- 2

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	
						Excavation Method: Rubber-tired Backhoe Ground Elevation (ft): Excavated By: Custom Backhoe Logged By: KJR
0					GP	Black, crushed rock (dense, moist)
					GP	Light gray, limestone rock spalls with crushed limestone powder (dense, moist)
					SP	Brown, fine to medium SAND with trace dark gray sand (medium dense, moist)
2			13.9		SM	Dark brown to black, silty, fine SAND with trace glass, brick fragments, and sandstone boulders (medium dense to dense, moist)
4						
					DB	REFUSE with soil and wood pulp/sawdust (medium dense, moist)
6						
8			33.7			Slight petroleum sheen at 8.5 feet
			29.9			Heavy petroleum sheen at 9 feet
						▽ ATD groundwater seepage encountered at 9.0 ft.
10						

Test Pit Completed 06/25/02
Total Depth of Test Pit = 9.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP- 2

Figure
B-24

RITP- 3

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	

Excavation Method: Rubber-tired Backhoe
Ground Elevation (ft): _____
Excavated By: Custom Backhoe
Logged By: KJR

Depth (ft)	USCS Symbol	Description
0	GP	Light gray, limestone rock spalls (dense, moist)
2	SM	Dark gray to black, silty, fine SAND with gravel and trace refuse (medium dense, moist)
6	DB	REFUSE and dark gray, silty, fine SAND (medium dense, moist to wet)
		Slight, non-petroleum sheen at 5 feet
8		Slight, non-petroleum sheen at 8 feet
		▽ ATD groundwater seepage encountered at 9.0 ft.
10		Slight non-petroleum sheen at 9.5 feet
12		

Test Pit Completed 06/25/02
Total Depth of Test Pit = 10.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP- 3

Figure
B-25

RITP- 4

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	Excavation Method: Rubber-tired Backhoe Ground Elevation (ft): Excavated By: Custom Backhoe Logged By: KJR	
0					GP	Light gray, limestone rock spalls (dense, moist)	
2					DB	Dark brown, silty, fine SAND with refuse and wood debris (medium dense to dense, moist)	
						Slight, refuse-associated petroleum sheen at 3 feet	
4							
						Slight, refuse-associated petroleum sheen at 5.5 feet	
6							
8							▽ ATD groundwater seepage encountered at 8.0 ft.
10							

Test Pit Completed 06/25/02
Total Depth of Test Pit = 9.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP- 4

Figure
B-26

RITP- 5

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	
						Excavation Method: Rubber-tired Backhoe Ground Elevation (ft): Excavated By: Custom Backhoe Logged By: KJR
0					GP	Black, crushed rock (dense, moist)
					SM	Dark gray-brown, silty, fine SAND (medium dense, moist)
2						Heavy petroleum sheen, strong gasoline odor at 2.5 feet
					SM	Blue/gray, silty, fine to coarse SAND with gravel (medium dense, moist)
4					SP	Brown, fine to coarse SAND with gravel and brick fragments (medium dense, moist to wet) Heavy petroleum sheen and strong gasoline odor at 4.5 feet
						▽ ATD groundwater seepage encountered at 5.5 ft.
6						
8						

Test Pit Completed 06/25/02
Total Depth of Test Pit = 7.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP- 5

Figure
B-27

RITP- 6

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	Excavation Method: Rubber-tired Backhoe Ground Elevation (ft): Excavated By: Custom Backhoe Logged By: KJR	
0					GP	Black, crushed rock (dense, moist)	Groundwater not encountered.
					SP	Brown, fine to coarse SAND (medium dense, moist)	
2					SM	Dark gray, silty, fine SAND with brick fragments (dense, moist)	
4						Test pit met refusal on concrete slab	
6							

Test Pit Completed 06/25/02
Total Depth of Test Pit = 4.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP- 6

Figure
B-28

RITP- 7

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	
						Excavation Method: Rubber-tired Backhoe Ground Elevation (ft): Excavated By: Custom Backhoe Logged By: KJR
0					GP	Black, crushed rock (dense, moist)
					SP-SM	Light gray, fine SAND with silt (medium dense, moist)
					SM	Tan, silty, fine SAND with trace gravel (medium dense, moist)
2					SM	Dark brown, silty, fine SAND with metal fragments, wood debris, and logs (medium dense, moist)
			5.3		SM	Gray, silty, fine SAND with trace gravel (medium dense, moist to wet)
4						
			440			Heavy petroleum sheen and strong diesel/gasoline odor at 5 feet
						Free product on water surface at 5.5 feet
						▽ ATD groundwater seepage encountered at 5.5 ft.
6						
8						

Test Pit Completed 06/26/02
Total Depth of Test Pit = 6.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP- 7

Figure
B-29

RITP- 8

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	Excavation Method: Rubber-tired Backhoe Ground Elevation (ft): Excavated By: Custom Backhoe Logged By: KJR
0					GP	Black, crushed rock (dense, moist)
2			41		SM	Dark gray, silty, fine SAND with trace refuse (medium dense, moist)
4					DB	REFUSE and gray silty, fine SAND with brick fragments (medium dense, moist)
6			4.6			
8			17.3		SP	Gray, fine SAND (dense, moist to wet) Moderate petroleum sheen at 8.5 feet
10			133			Heavy petroleum sheen and strong gasoline/diesel odor at 9.5 feet ▽ ATD groundwater seepage encountered at 9.5 ft.
12						

Test Pit Completed 06/26/02
Total Depth of Test Pit = 10.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP- 8

Figure
B-30

RITP- 9

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	
						Excavation Method: Rubber-tired Backhoe Ground Elevation (ft): Excavated By: Custom Backhoe Logged By: KJR
0					SM	Brown, silty, fine SAND with gravel and roots (loose, moist)
2					DB	Brown, silty, fine SAND and REFUSE (medium dense, dry to moist)
4					DB	Dark gray, silty, fine SAND with refuse, logs, and asphalt shingles (medium dense, moist)
			2.9			
6						
			3.0			
8						
10			1.3			▽ ATD groundwater seepage encountered at 10.5 ft.
					ML	Gray SILT (very stiff, moist to wet)
12						
14						

Test Pit Completed 06/26/02
Total Depth of Test Pit = 12.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP- 9

Figure
B-31

RITP-10

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	
0						Excavation Method: Rubber-tired Backhoe Ground Elevation (ft): Excavated By: Custom Backhoe Logged By: KJR
					SM	Gray, gravelly, silty, fine SAND (medium dense to dense, moist)
2						
					SM	Gray, silty, fine SAND with gravel and logs (medium dense, moist to wet)
4			0.0			
6			0.0			▽ ATD groundwater seepage encountered at 7.5 ft.
8			0.0			
10						

Test Pit Completed 06/26/02
Total Depth of Test Pit = 9.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP-10

Figure
B-32

RITP-11

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	

Excavation Method: Rubber-tired Backhoe
Ground Elevation (ft): _____
Excavated By: Custom Backhoe
Logged By: KJR

Depth (ft)	PID (ppm)	USCS Symbol	
0		GP	Black, crushed rock (dense, moist)
		SM	Brown, silty, fine SAND with wood fragments and gravel (medium dense, moist)
2		DB	Dark gray to black, silty, fine SAND with gravel and refuse (dense, moist)
4	2.6		
6			
	8.4		
8			
10			

▽ ATD groundwater seepage encountered at 7.5 ft.

Test Pit Completed 06/26/02
Total Depth of Test Pit = 8.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP-11

Figure
B-33

RITP-12

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	Excavation Method: Rubber-tired Backhoe Ground Elevation (ft): Excavated By: Custom Backhoe Logged By: KJR	
0					GP	Black, crushed rock (dense, moist)	Groundwater not encountered.
					GP	Tan, sandstone, rock spalls and wood debris (dense, moist)	
2					SM	Dark gray to black, silty, fine SAND with refuse (medium dense, moist)	
4						2 to 6 inches of black, non-petroleum free product on a wood-bottomed structure at 4 feet	
6							

Test Pit Completed 06/26/02
Total Depth of Test Pit = 4.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP-12

Figure
B-34

RITP-13

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	
						Excavation Method: Rubber-tired Backhoe Ground Elevation (ft): Excavated By: Custom Backhoe Logged By: KJR
0					SM	Brown, silty, fine SAND with gravel and trace gravel-sized, yellow sulfur pieces (medium dense, moist)
					DB	Dark gray to black, silty, fine SAND with organic matter, refuse, and wood fragments (loose, moist)
2					SP	Blue-gray SAND (dense, moist)
			0.7			
					DB	Brown WOOD DEBRIS with refuse, silty sand, and gravel (loose to medium dense, moist)
4						
6						
			15.1			Moderate, refuse-associated petroleum sheen at 7.5 feet
8						▽ ATD groundwater seepage encountered at 7.5 ft.
10						

Test Pit Completed 06/26/02
Total Depth of Test Pit = 8.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP-13

Figure
B-35

RITP-14

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	Graphic Symbol	USCS Symbol	Excavation Method: Rubber-tired Backhoe Ground Elevation (ft): Excavated By: Custom Backhoe Logged By: KJR	
0					GP	Brown GRAVEL (medium dense, moist)	Groundwater not encountered.
					SM	Gray to black, silty, fine SAND with gravel (medium dense, moist)	
2			0				
					DB	Pink and gray, angular, 1/8 to 1/4 inch long, inorganic DEBRIS of unknown composition with silt (loose, wet) Heavy petroleum sheen and solvent/paint odor at 3.5 feet	
			0				
4					SM	Gray, silty, fine SAND with gravel (dense, moist)	
					RK	Gray SANDSTONE, medium hard, slightly weathered (Chuckanut Formation)	
6							

Test Pit Completed 06/26/02
Total Depth of Test Pit = 5.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Densities in units containing refuse are based on drilling action instead of blow counts. Refuse over represented unit density at point of sampling.

1020.22 2/1/13 N:\PROJECTS\001020.GPJ SINGLE TEST PIT LOG

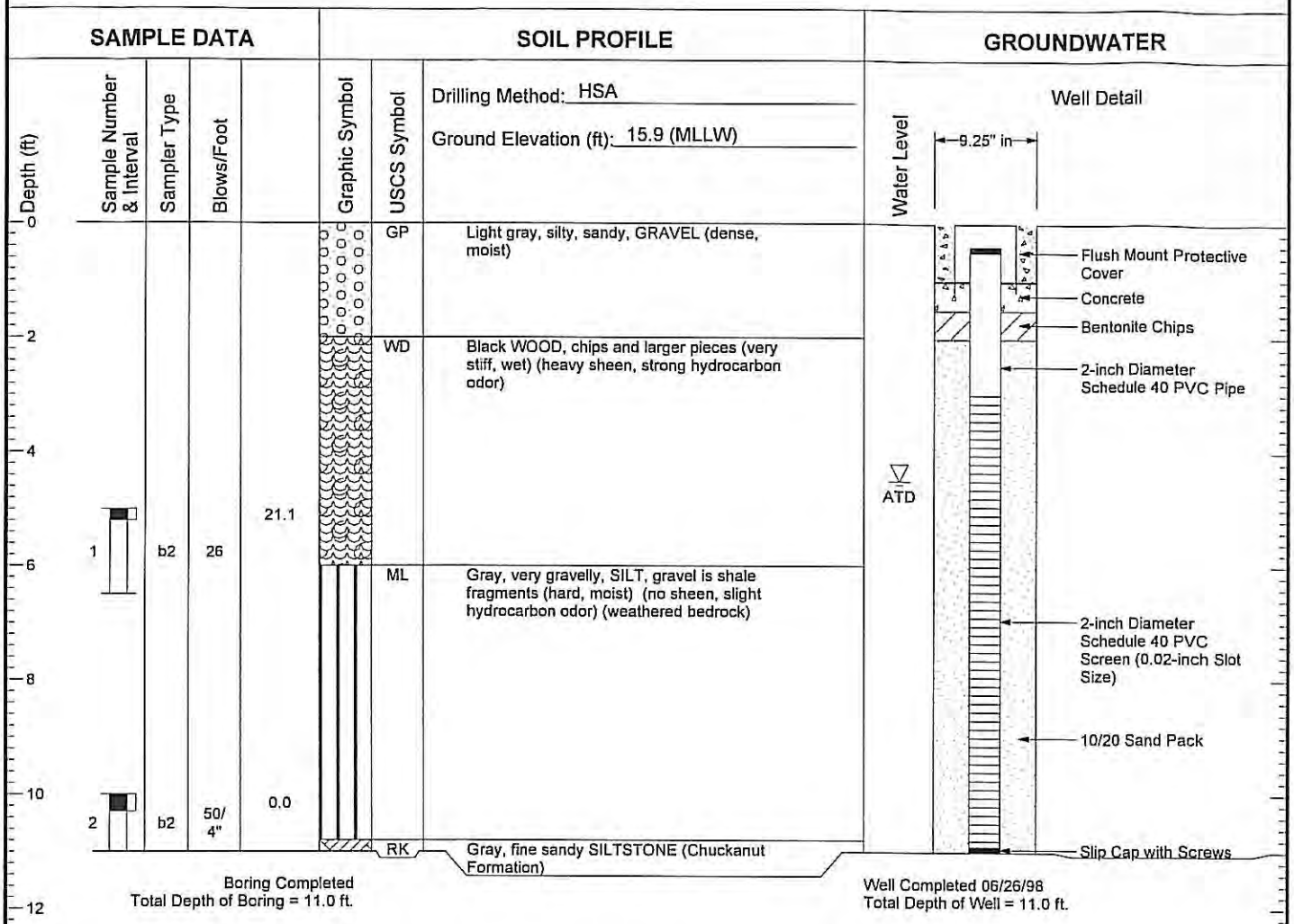
LANDAU ASSOCIATES

Cornwall Avenue Landfill
Bellingham, Washington

Log of Test Pit RITP-14

Figure
B-36

MW-1



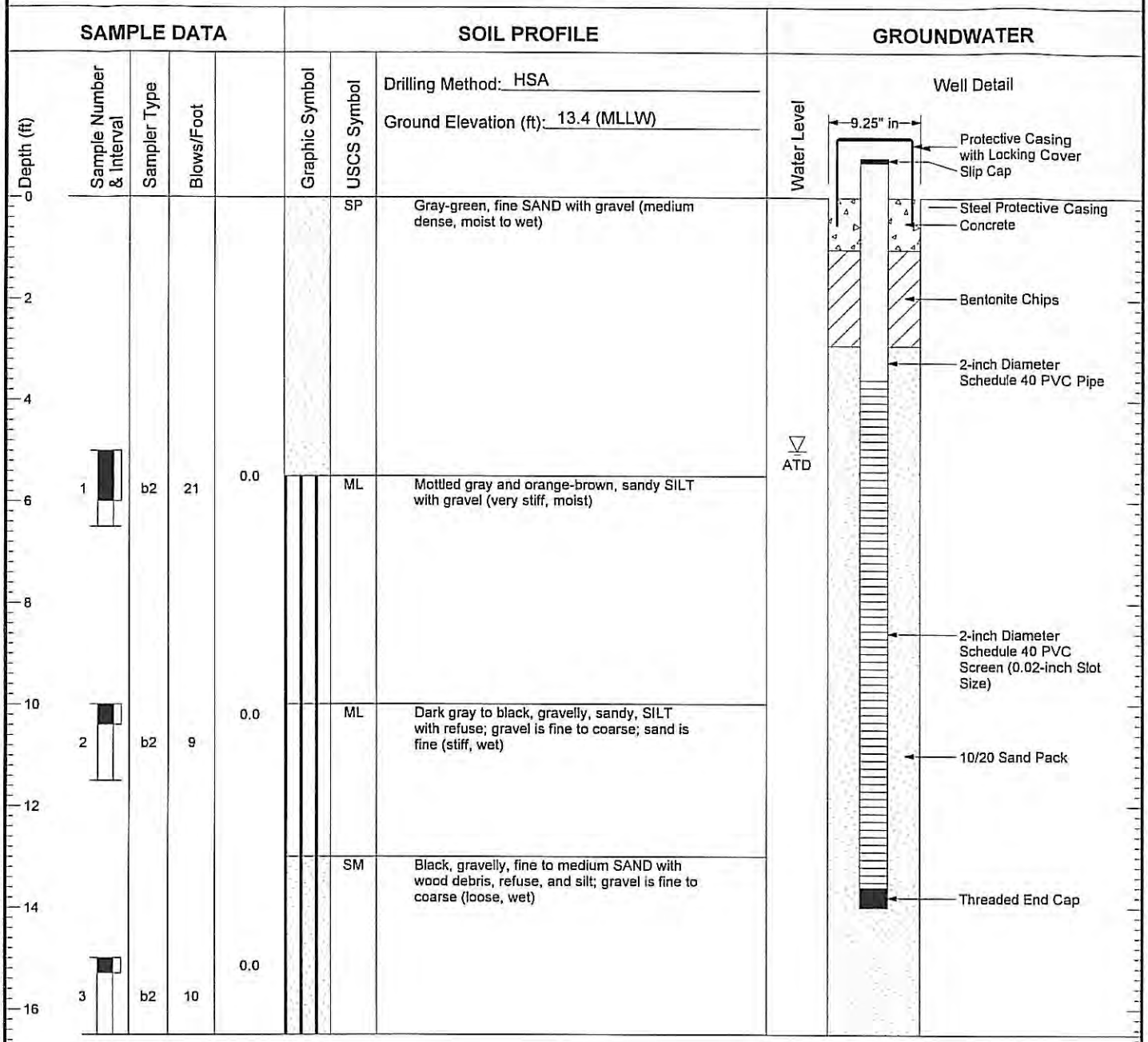
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1020.60 10/9/03 \\EDMNAS\GINT\GINTWP\PROJECTS\CORNWALL.GPJ WELL LOG

Log of Well MW-1

Figure C-2

MW-2



Boring Completed
Total Depth of Boring = 16.5 ft.

Well Completed 06/25/98
Total Depth of Well = 14.0 ft.

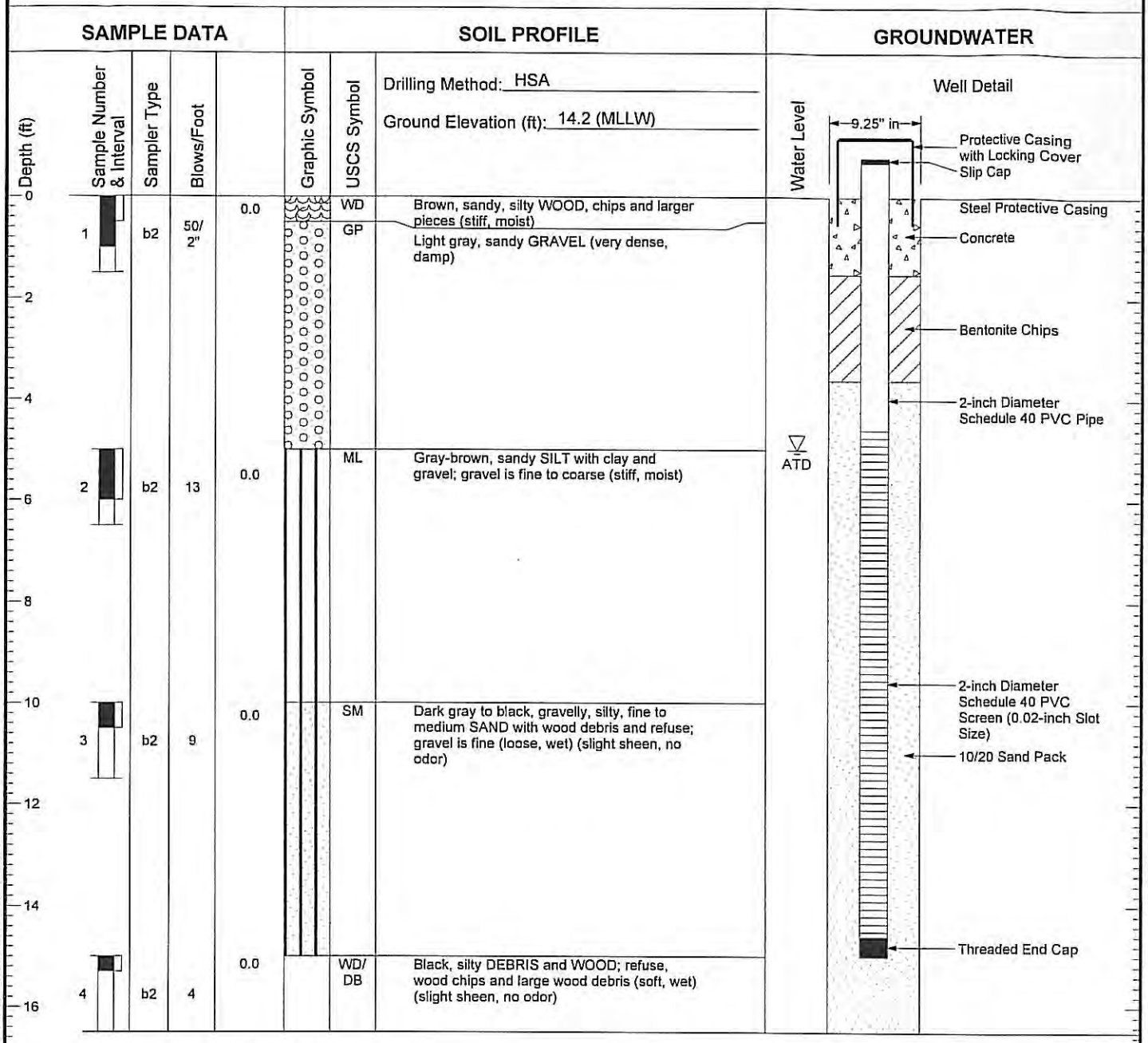
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1020.60 10/9/03 \\EDMNAS\GINT\GINTWP\PROJECTS\CORNWALL.GPJ WELL LOG

Log of Well MW-2

Figure C-3

MW-3



Boring Completed
Total Depth of Boring = 16.5 ft.

Well Completed 06/25/98
Total Depth of Well = 15.0 ft.

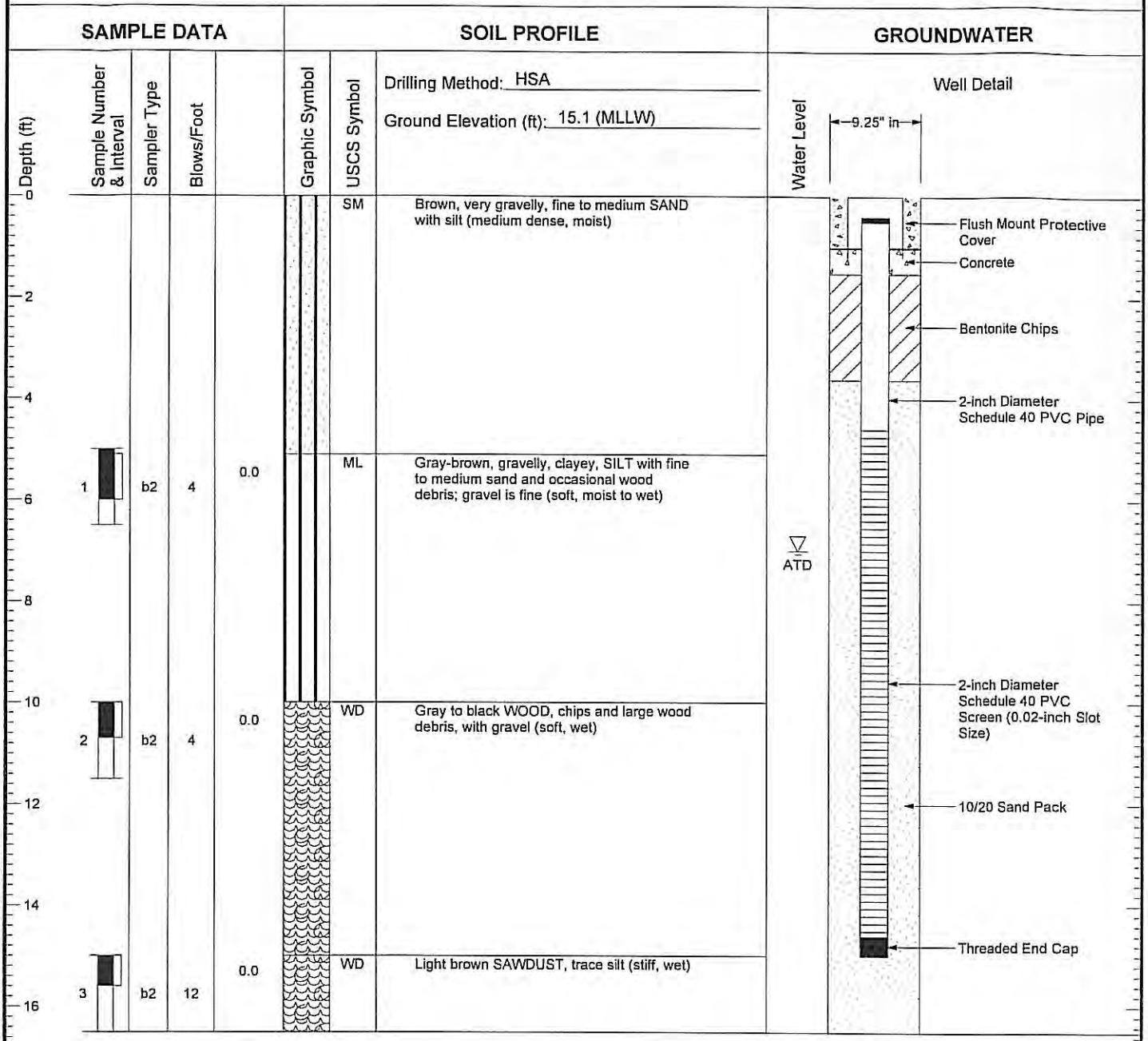
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1020 60 10/9/03 \\EDMNAS\GINT\GINTWPROJECTS\CORNWALL.GPJ WELL LOG

Log of Well MW-3

Figure C-4

MW-4



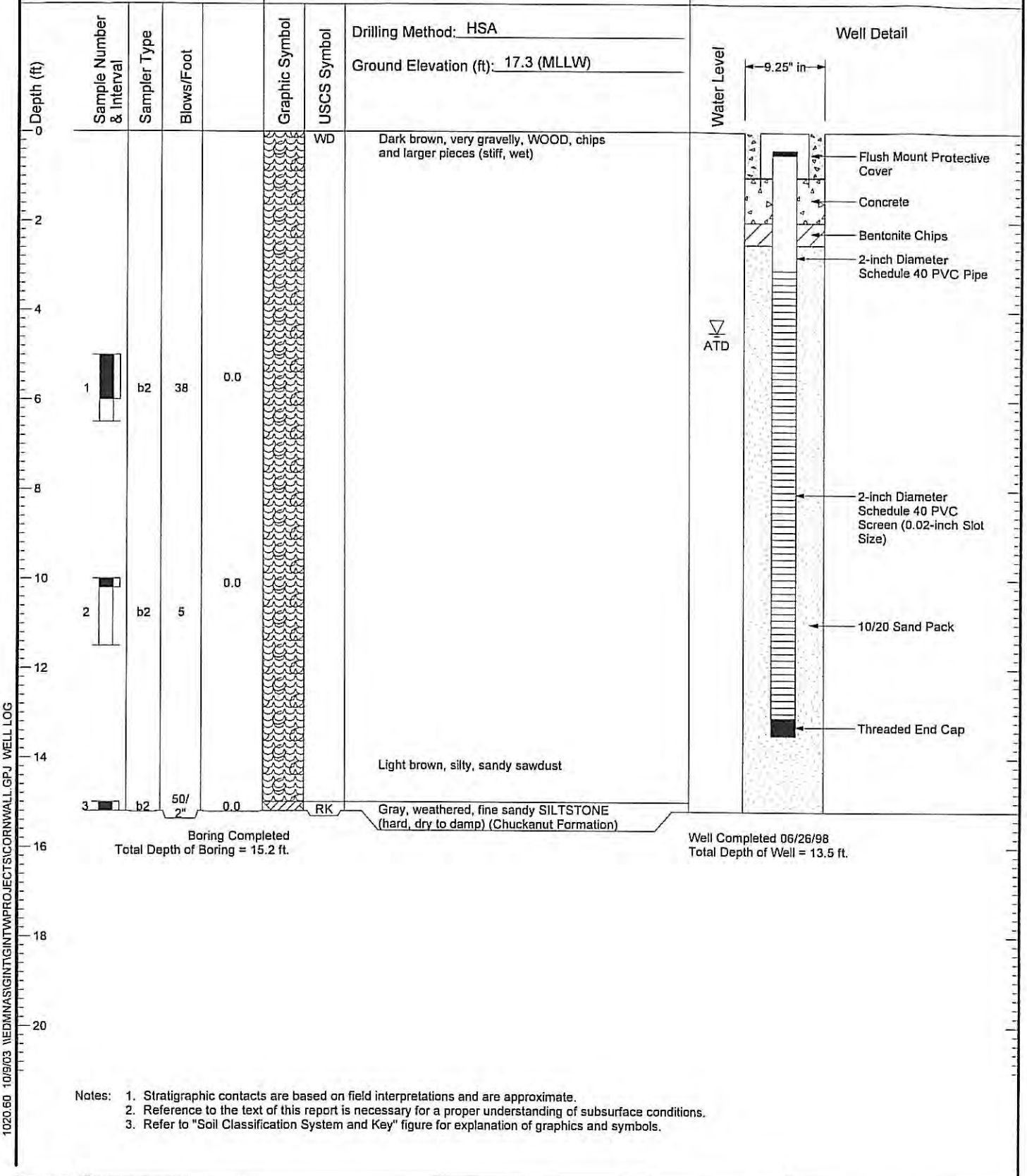
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1020.60 10/9/03 \\EDMNAS\GINTGINTWPROJECTS\CORNWALL.GPJ WELL LOG

Log of Well MW-4

Figure C-5

MW-5



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1020.60 10/9/03 \\EDMNAS\GINT\GINTWPROJECTS\CORNWALL.GPJ WELL LOG

Log of Well MW-5

Figure C-6

TABLE 2

INTERTIDAL TEST PIT DESCRIPTIONS

	Approximate Elevation (ft, MLLW)[a]	Depth Interval (ft)	Description
TP-1	+2	0 - 6	Refuse with granular material (silt, sand, and gravel). Plastic bags, trash, wood, bottles, bricks. Test pit did not encounter native soil/sediment. Granular material is black (possibly indicating iron sulfide presence).
TP-2	+2	0 - 4	Refuse with granular material. Less refuse than TP-1. Bricks, metal debris, porcelain, wires. Did not appear to reach native soil/sediment. Sloughing of test pit wall limited depth attained. Sheen (and petroleum odor) observed on water that collected in pit. Bottles observed. The surface 0-6 inches of material is red gravel (iron staining?). The 6-24 inch interval was black and sulfidic with similar material composition as the remainder of the excavation.
TP-3	+1	0 - 4.5	Similar to TP-2 with slightly more refuse. Petroleum odor and sheen observed. Test pit did not encounter native soil/sediment.
TP-4	+5	0 - 5	Refuse with granular material. Similar to TP-1. Test pit did not encounter native soil/sediment.

(a) Elevations were estimated based on test pit elevation relative to the tide line at a certain time.

Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	6/29/2012	6/29/2012	9.5	RNM	CEB	Cascade Drilling, L.P.	Hollow-stem Auger

Hammer Data	300 (lbs) / 30 (in) Drop	Drilling Equipment	Truck-mounted CME 75
Surface Elevation (ft) Vertical Datum	13.65 NAVD88	Top of Casing Elevation (ft)	13.06
Easting (X) Northing (Y)	638936.68 1239888.2	Horizontal Datum	NAD83/98

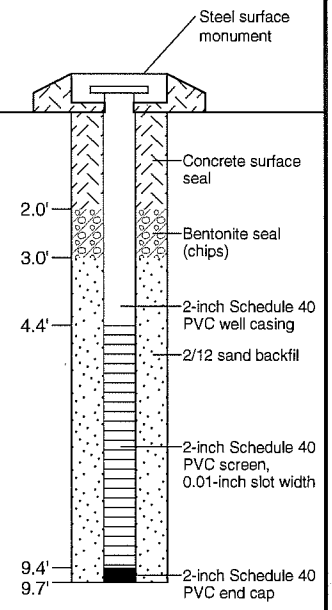
DOE Well I.D.: BHE 982
A 2 (in) well was installed on 6/29/2012 to a depth of 9.7 (ft).

Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
6/29/2012	5.3	8.35

Notes: Auger Data: 4¼-inch I.D.

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)
	0							SM	Silty sand with gravel (55/25/20), fine to medium sand, fine gravel, brown, moist, loose		
10		10	5							SS	<1
	5					▽		ML	Gravelly silt with sand (60/25/15), fine gravel, fine sand, moist, medium stiff		
		12	3		CL-MW-101-6-7 CA					NS	<1
5		12	3					Wood	Wood fragments and shavings, black to brown, 15% silt between 7 and 7.5 feet, wet at 7.5 feet	NS	<1

WELL LOG



Note: Please see Figure A-1 for explanation of symbols

Log of Monitoring Well CL-MW-101

GeoEngineers

Project: R.G. Haley Site
Project Location: Bellingham, Washington
Project Number: 0356-114-06

Figure A-
Sheet 1 of 1

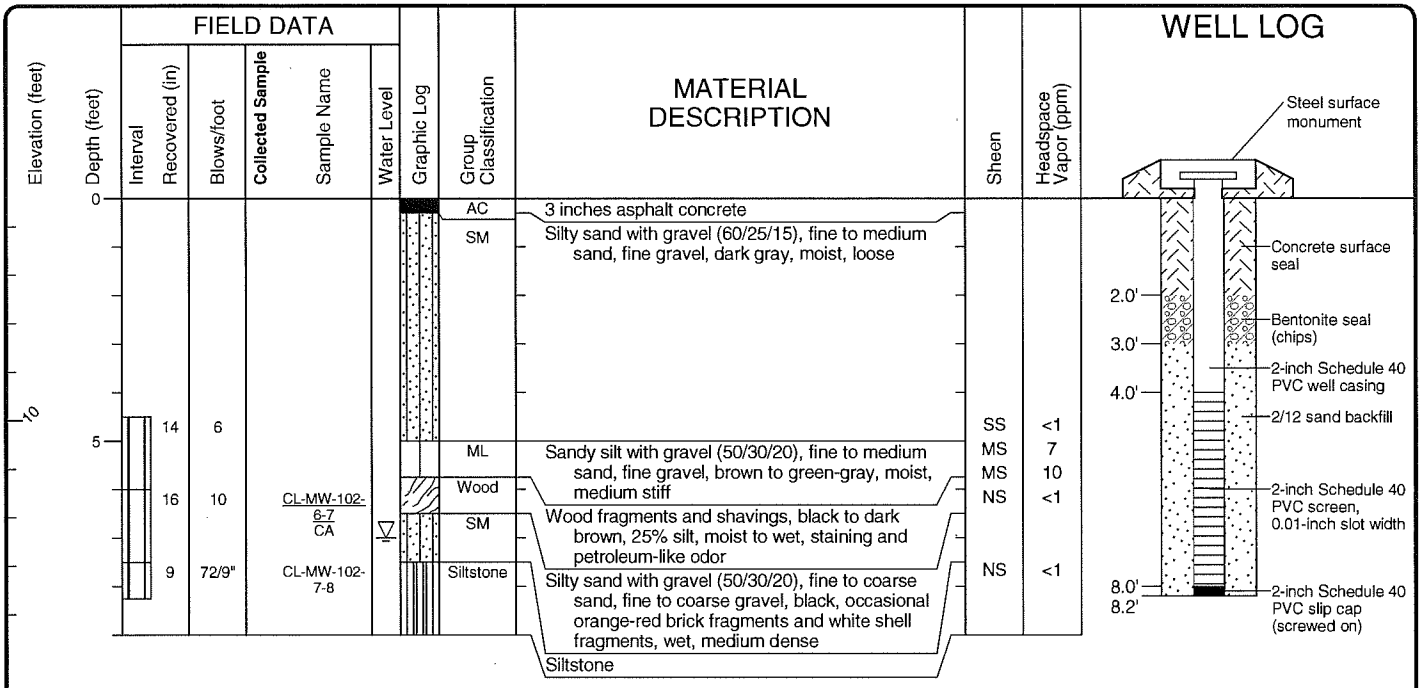
Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	6/29/2012	6/29/2012	9	RNM	CEB	Cascade Drilling, L.P.	Hollow-stem Auger

Hammer Data	300 (lbs) / 30 (in) Drop	Drilling Equipment	Truck-mounted CME 75
Surface Elevation (ft)	14.58	Top of Casing Elevation (ft)	14.27
Vertical Datum	NAVD88		
Easting (X)	638879.53	Horizontal Datum	NAD83/98
Northing (Y)	1230037.41		

DOE Well I.D.: BHE 983
A 2 (in) well was installed on 6/29/2012 to a depth of 8.2 (ft).

Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
6/29/2012	7.0	7.58

Notes: Auger Data: 4¼-inch I.D.



Note: Please see Figure A-1 for explanation of symbols

Log of Monitoring Well CL-MW-102

GeoEngineers

Project: R.G. Haley Site
Project Location: Bellingham, Washington
Project Number: 0356-114-06

Figure A-
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
	7/10/2012	7/10/2012	16.5	CTB / CEB	Boart Longyear	Hollow-stem Auger

Hammer Data	300 (lbs) / 30 (in) Drop	Drilling Equipment	Truck-mounted CME 75
Surface Elevation (ft) Vertical Datum	14.8 NAVD88	Top of Casing Elevation (ft)	14.41
Easting (X) Northing (Y)	639109.99 1240003.47	Horizontal Datum	NAD83/98

DOE Well I.D.: BHK 961
A 2 (in) well was installed on 7/10/2012 to a depth of 15 (ft).

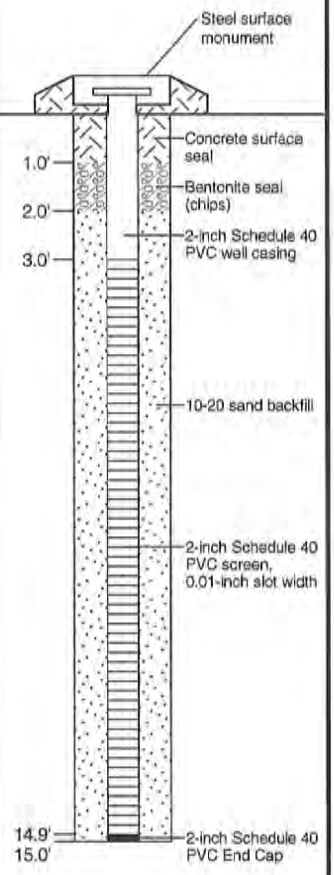
Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
7/10/2012	6.5	8.30

Notes: Auger Data: 4¼-inch I.D.; 8½-inch O.D.

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)
	0							Wood	Wood fragments with 10% sand with silt, black, moist to wet, petroleum-like odor		
	5	2	3		CL-MW-103-5-6.5 CA	▼				MS	1
		5	4			▽		Wood	Wood fragments with <5% silty sand, black, wet, petroleum-like odor, NAPL	HS	<1
	10	4	2		CL-MW-103-10-11.5 (LV)			SM	Silty sand (60/40), fine to coarse sand, with 30% wood fragments, gray-black, very loose, wet, petroleum-like odor, NAPL	HS	<1
		6	12		CL-MW-103-12.5-14					HS	<1
	15	4	50/6"							SS	<1
								ML	Sandy silt (70/30), fine to medium sand, gray, hard, moist		

Refusal on bedrock at 16.5 feet

WELL LOG



DRAFT

Note: Please see Figure A-1 for explanation of symbols

Log of Monitoring Well CL-MW-103

GeoEngineers

Project:	R.G. Haley Site
Project Location:	Bellingham, Washington
Project Number:	0356-114-06

Figure A-
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	6/25/2012	6/25/2012	7.5	RNM	CEB	Cascade Drilling, L.P.	Direct Push

Surface Elevation (ft) Vertical Datum	15.23 NAVD88	Hammer Data	140 (lbs) / 30 (in) Drop	Drilling Equipment	GeoProbe 6600
Easting (X) Northing (Y)	638967.38 1240106.26	System Datum	NAD83/98	Groundwater	

Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
6/25/2012	4.5	10.73

Notes: 5 foot by 1½-inch core with poly liner

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
15	0		32						GP	Poorly graded gravel (100), fine to coarse gravel, gray, moist			
									GP	Poorly graded gravel with sand (60/35/5 silt), fine to coarse gravel, fine to medium sand, brown, moist			
											NS	<1	
									SM	Silty sand (70/30), fine to medium, gray, occasional wood shavings, moist			
						CL-SB-101-4-5 CA	▽		SP-SM	Poorly graded sand with gravel and silt (60/30/10) gray, occasional brown wood fragments, wet	SS	<1	
10	5		29								MS	2	
						CL-SB-101-6-7 CA					MS	<1	
									Siltstone	Siltstone			
											NS	<1	

Note: Please see Figure A-1 for explanation of symbols

Log of Boring CL-SB-101

GeoEngineers

Project: R.G. Haley Site
Project Location: Bellingham, Washington
Project Number: 0356-114-06

Figure A-
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	6/25/2012	6/25/2012	15	RNM	CEB	Cascade Drilling, L.P.	Direct Push

Surface Elevation (ft)	15.01	Hammer Data	140 (lbs) / 30 (in) Drop	Drilling Equipment	GeoProbe 6600
Vertical Datum	NAVD88				
Easting (X)	639061.86	System Datum	NAD83/98	Groundwater	
Northing (Y)	1240059.79			Date Measured: 6/25/2012	Depth to Water (ft): 10.0 / Elevation (ft): 5.01

Notes: 5 foot by 1½-inch core with poly liner

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
10	0		54						GP	Poory graded gravel with sand (50/45/5 silt), fine to coarse gravel, fine to medium sand, brown, moist	SS	<1	
									GP	Poorly graded gravel (90/10 sand), fine to medium sand, gray, moist	NS	<1	
									SP-SM	Poorly graded sand with gravel and silt (50/40/10), medium to coarse sand, fine to coarse gravel, gray to brown, occasional red-orange brick fragments and black staining, moist	NS	<1	
	5		48			CL-SB-102-4-5 CA			SM	Silty sand (50/45/5 gravel), fine to medium sand, fine to coarse gravel, brown, occasional brown fresh wood shavings and roots, moist	NS	<1	
											NS	<1	
											NS	<1	
											NS	<1	
5									SP-SM	Poorly graded sand with gravel and silt (50/40/10), medium to coarse sand, fine to coarse gravel, gray to brown, occasional red-orange brick fragments, moist	NS	<1	
									SM	Silty sand with gravel (50/30/20), fine to medium sand, fine to coarse gravel, gray, occasional brown fresh wood fragments and roots, moist	MS		
											MS	4	
	10		50			CL-SB-102-9-10 CA	▽		Wood	Silt and wood (50% silt, 50% wood), fresh brown to decomposed black wood fragments and shavings, moist to wet, petroleum-like odor	HS	27	
0									Wood	Fresh orange-brown wood fragments and shavings, wet	MS	3	
											NS	<1	
						CL-SB-102-13-14 CA			ML	Silt with sand (80/20), fine sand, gray, occasional fine gravel, wet to moist	NS	<1	
									Siltstone	Siltstone	NS	<1	
-5	15												

DRAFT

Note: Please see Figure A-1 for explanation of symbols

Log of Boring CL-SB-102

GeoEngineers

Project: R.G. Haley Site
Project Location: Bellingham, Washington
Project Number: 0356-114-06

Figure A-
Sheet 1 of 1

Seattle: Date:9/27/12 Path:C:\USERS\CVOSS\DESKTOP\0356114406 HALEY.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_ENVIRONMENTAL_STANDARD

Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	6/25/2012	6/25/2012	15	RNM	CEB	Cascade Drilling, L.P.	Direct Push

Surface Elevation (ft) / Vertical Datum	15.06 NAVD88	Hammer Data	140 (lbs) / 30 (in) Drop	Drilling Equipment	GeoProbe 6600
Easting (X) / Northing (Y)	638969.79 / 124002.83	System Datum	NAD83/98	Groundwater	

Groundwater		
Date Measured	Depth to Water (ft)	Elevation (ft)
6/25/2012	8.5	6.56

Notes: 5 foot by 1½-inch core with poly liner

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample / Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		50					AC	Asphalt concrete			
								GP	Poorly graded gravel with sand (70/25/5 silt) fine to coarse gravel, fine to medium sand, gray to brown, moist	SS	<1	
										NS	<1	
10	5		36		CL-SB-103-4-5 CA			SM	Silty sand (50/40/10 gravel), fine to medium sand, fine gravel, dark gray, occasional red-orange brick fragments and greenish-gray staining, moist	MS	7	
								SP-SM	Poorly graded sand with gravel and silt (70/20/10), fine to medium sand, fine gravel, dark gray to black, moist to wet, petroleum-like odor and staining	MS	12	
					CL-SB-103-8-9 CA	▽				HS	30	
5	10		48					Wood	Fresh brown to decomposed black wood fragments and shavings, wet, NAPL, petroleum-like odor and staining	HS	28	
								SM	Silty sand (70/20/10 gravel), fine to medium sand, fine to coarse gravel, gray, wet			
								SP-SM	Poorly graded sand with gravel and silt (70/20/10), medium to coarse sand, fine gravel, dark gray to black, occasional red-orange brick fragments, white shells and fresh brown wood fragments, wet	SS	<1	
					CL-SB-103-14-15 CA					NS	<1	
	15							Siltstone	Gray siltstone			

Note: Please see Figure A-1 for explanation of symbols

Log of Boring CL-SB-103

GeoEngineers

Project: R.G. Haley Site
Project Location: Bellingham, Washington
Project Number: 0356-114-06

MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS (MORE THAN 50 % OF MATERIAL IS LARGER THAN NO 200 SIEVE SIZE)	GRAVEL AND GRAVELLY SOILS (MORE THAN 50 % OF COARSE FRACTION RETAINED ON NO 4 SIEVE)	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS (MORE THAN 50% OF COARSE FRACTION PASSING NO 4 SIEVE)	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND SILT MIXTURES
				SC	CLAYEY SANDS, SAND CLAY MIXTURES
FINE GRAINED SOILS (MORE THAN 50 % OF MATERIAL IS SMALLER THAN NO 200 SIEVE SIZE)	SILTS AND CLAYS (LIQUID LIMIT LESS THAN 50)			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (LIQUID LIMIT GREATER THAN 50)			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

UNIFIED SOIL CLASSIFICATION SYSTEM

DRIVEN SAMPLES :

BLOWS REQUIRED TO DRIVE SAMPLER ONE FOOT

MOISTURE CONTENT 11.2% — 111 DRY DENSITY IN PCF — 28

■ INDICATES LOCATION OF UNDISTURBED SAMPLE

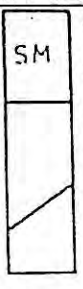
☒ INDICATES LOCATION OF DISTURBED SAMPLE

□ INDICATES LOCATION OF SAMPLING ATTEMPT WITH NO RECOVERY

OTHER TYPES OF SAMPLES

INDICATES LOCATION OF THIN WALL, PITCHER, OR OTHER TYPES OF SAMPLES (SEE TEXT)

GRAPHIC LOG



LETTER SYMBOL SOIL TYPE

DISTINCT CONTACT BETWEEN SOIL STRATA

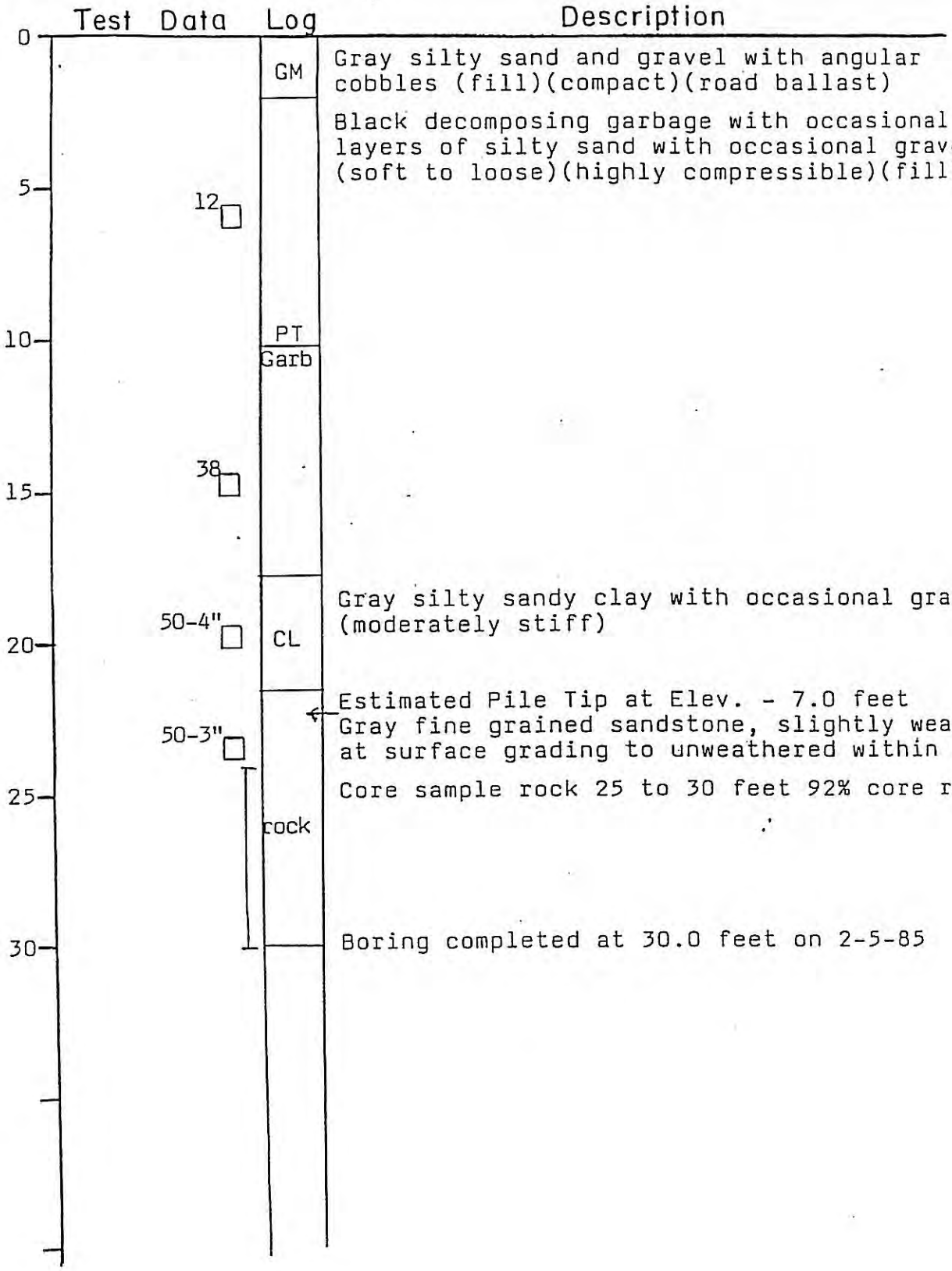
GRADUAL CHANGE BETWEEN SOIL STRATA

BOTTOM OF BORING

W. D. PURNELL & ASSOCIATES

SAMPLE DATA KEY

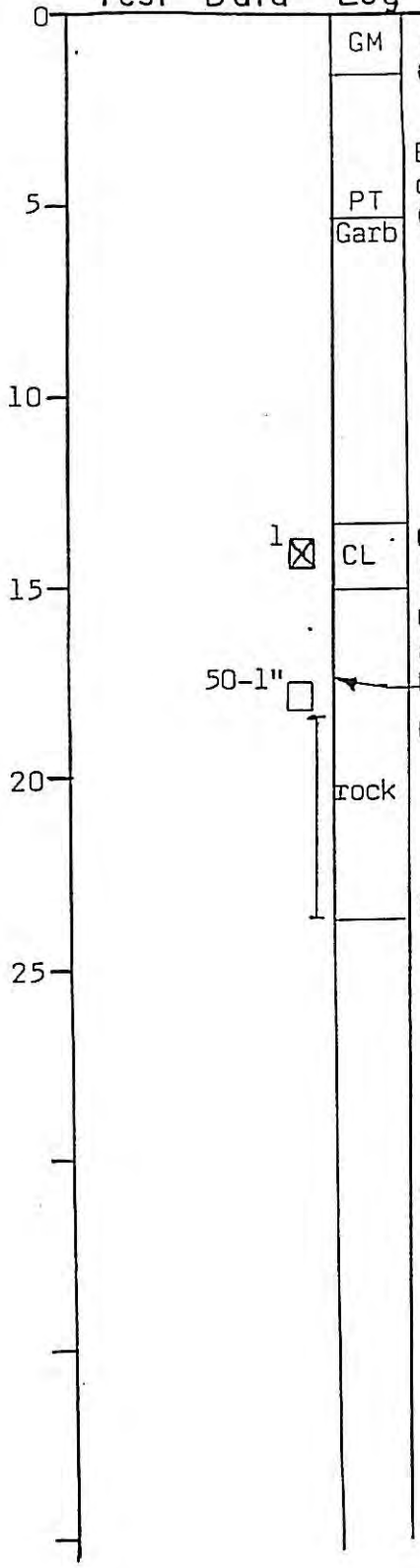
ELEVATION: 15.0 feet BORING NO. 1



W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

ELEVATION 16.8 feet

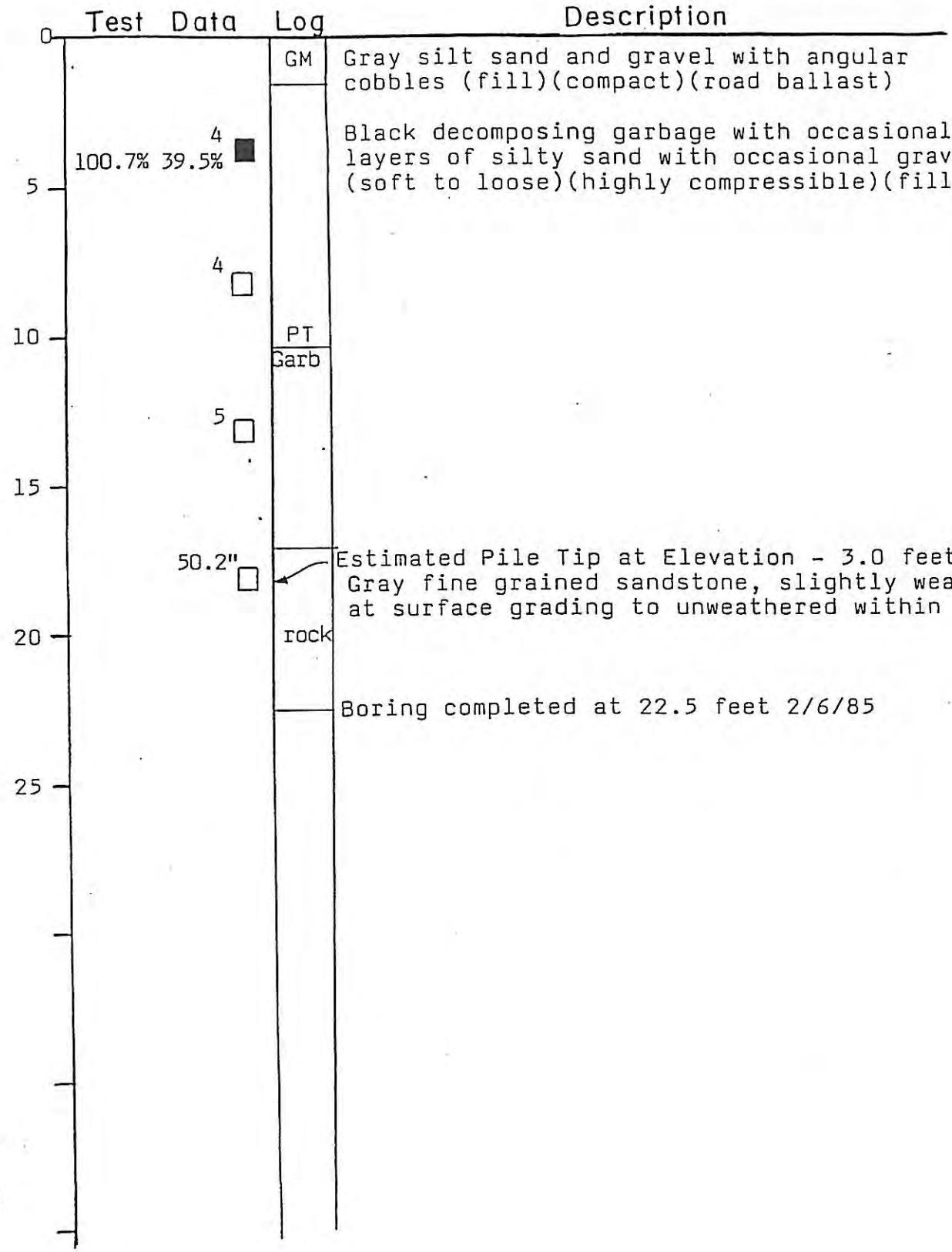
BORING NO. 2



W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

ELEVATION: 15.6 feet

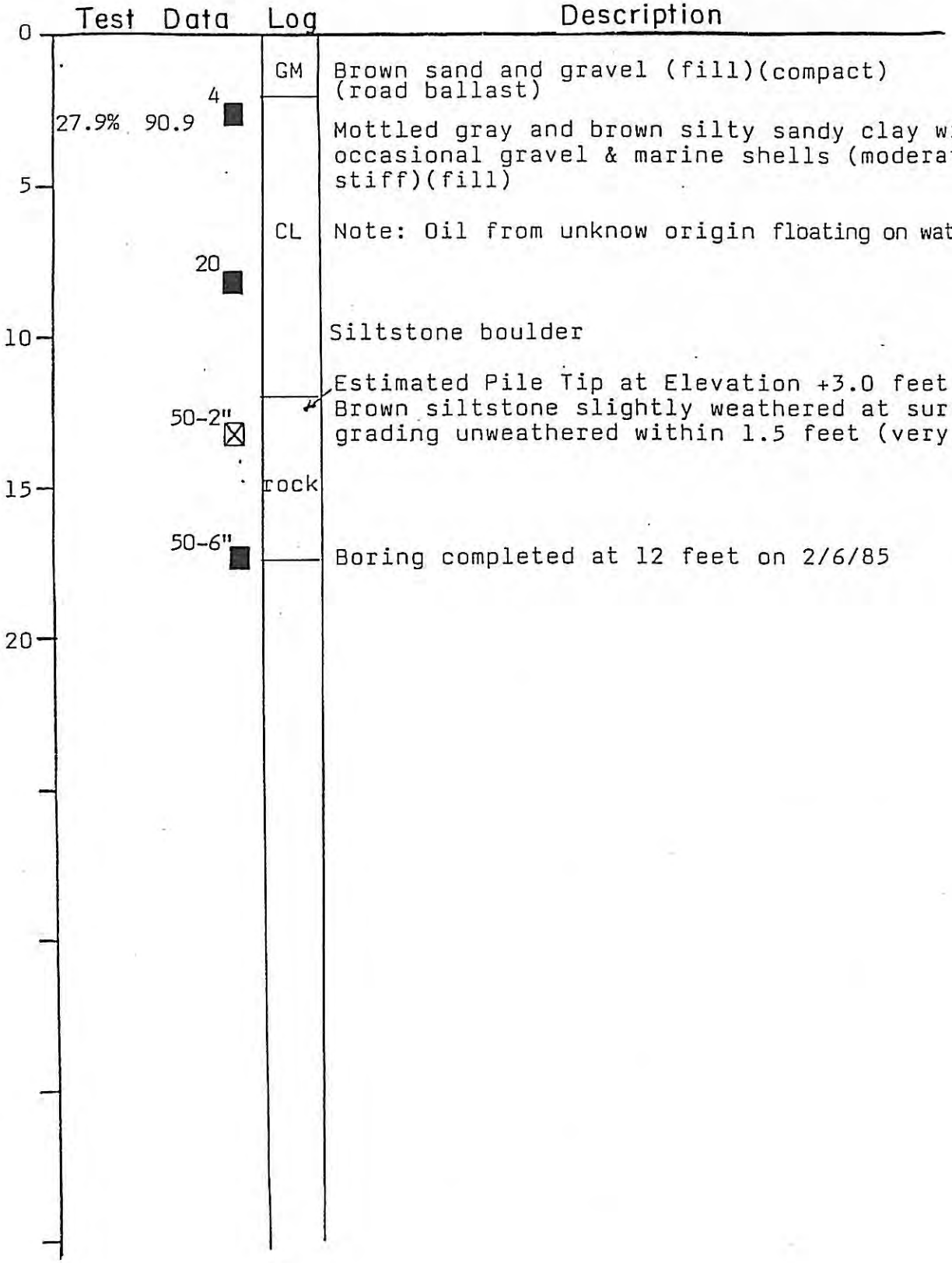
BORING NO. 3



W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

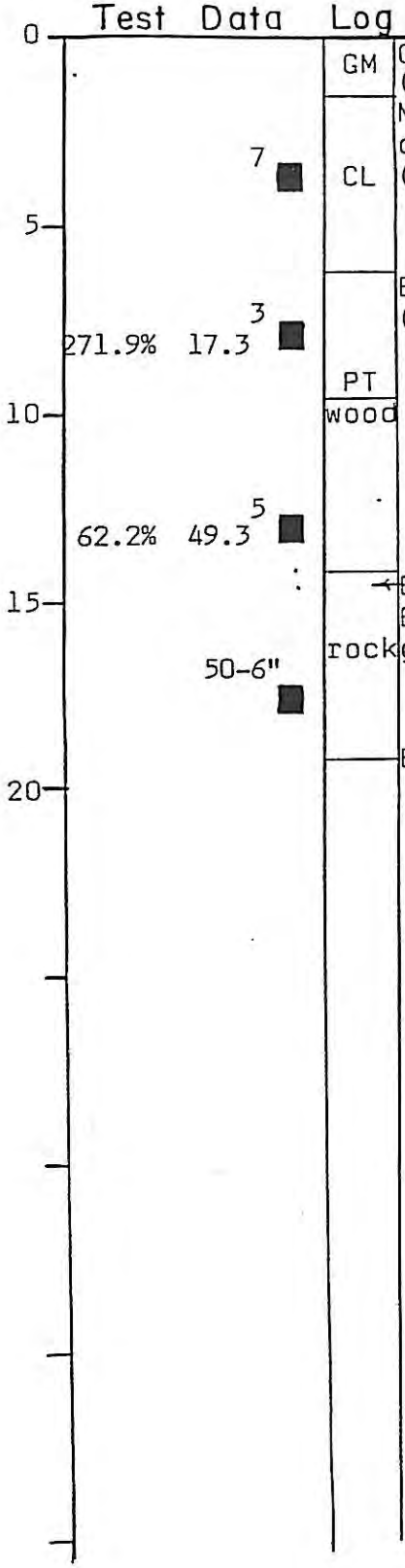
ELEVATION: 15.4 feet

BORING NO. 4



W. D. PURNELL & ASSOCIATES	EXPLORATION LOG

ELEVATION: 14.3 feet BORING NO. 5



Description

Gray silt sand and gravel with angular cobbles (fill)(compact)(road ballast)

Mottled gray and brown silty sandy clay with occasional gravel & marine shells (moderately stiff) (fill)

Bark, silt, wood & sawdust (loose with voids) (fill)

Estimated Pile Tip at Elevation 0.0 feet

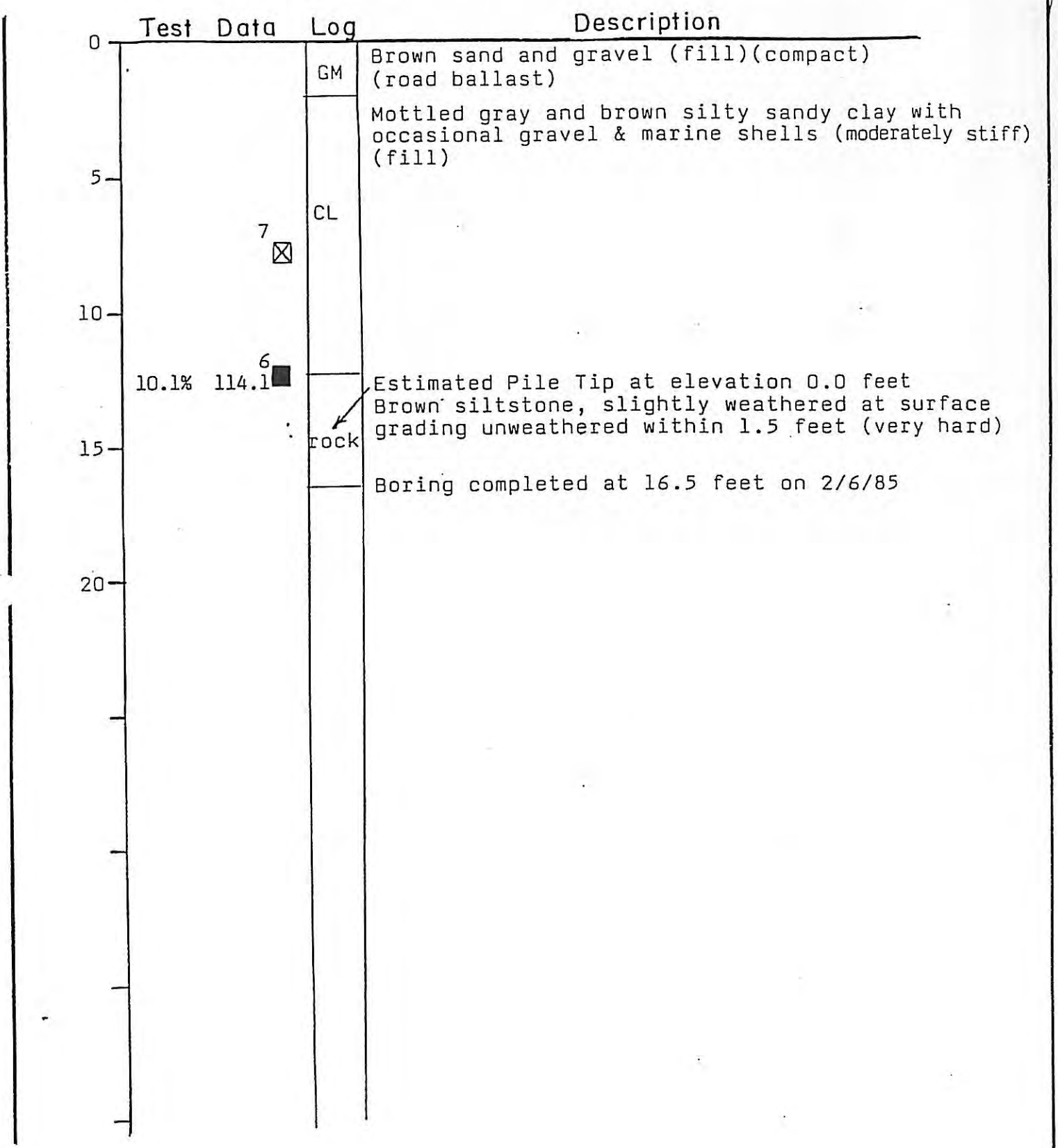
Brown siltstone, slightly weathered at surface grading unweathered within 1.5 feet (very hard)

Boring completed at 18.0 feet on 2/6/95

W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

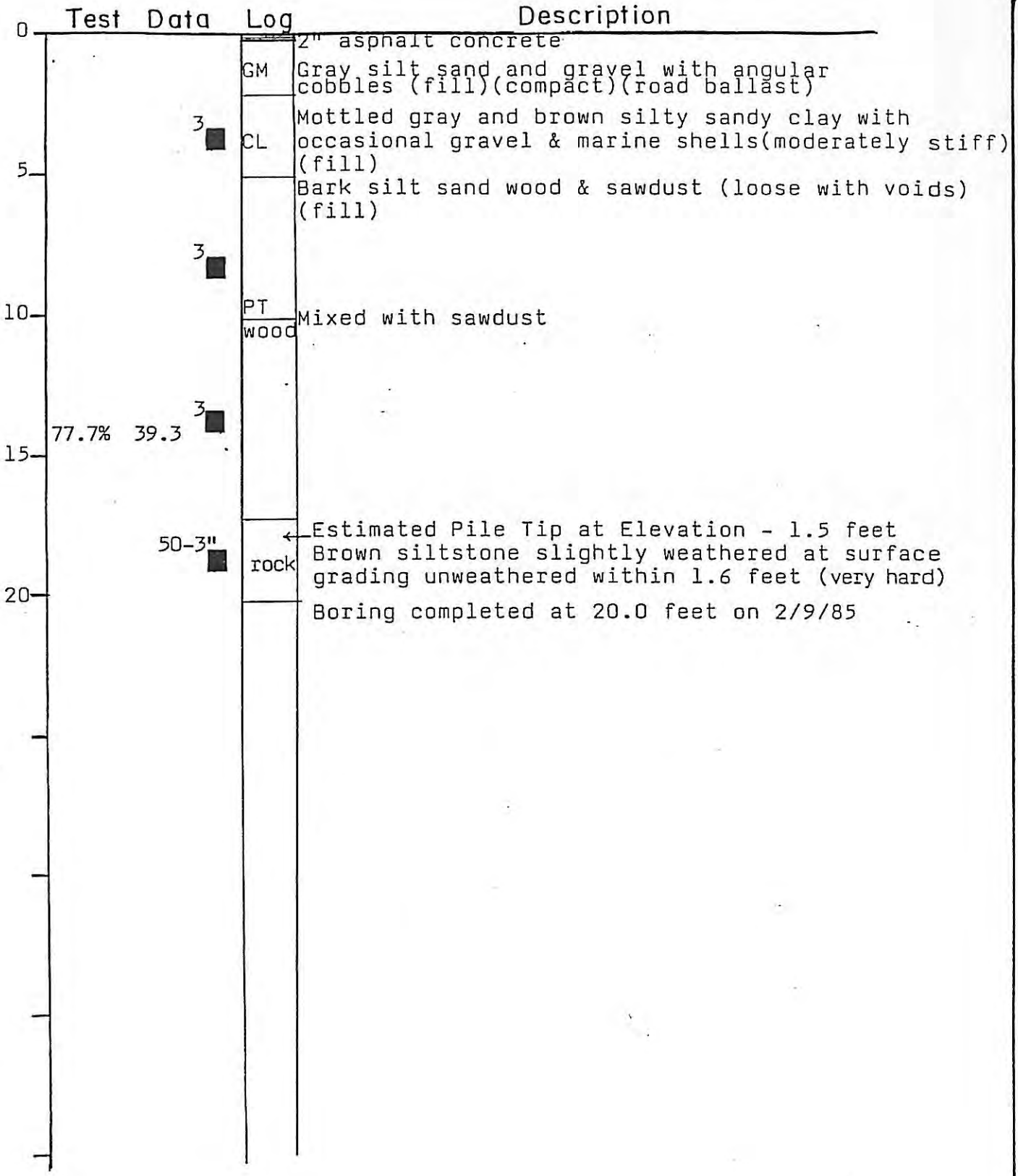
ELEVATION: 14.3 feet

BORING NO. 6



W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

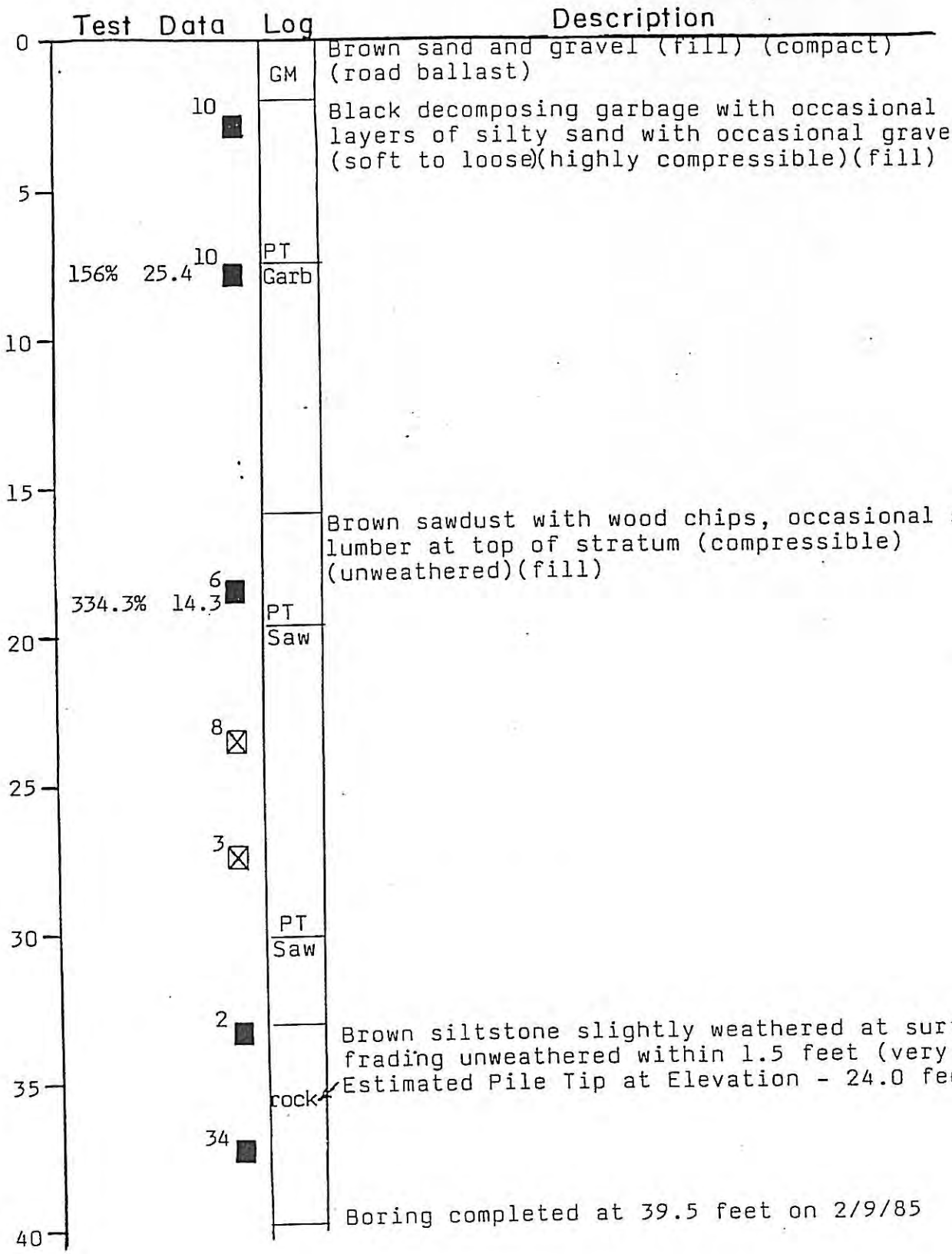
ELEVATION: 16.5 feet BORING NO. 7



W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

ELEVATION: 11.5 feet

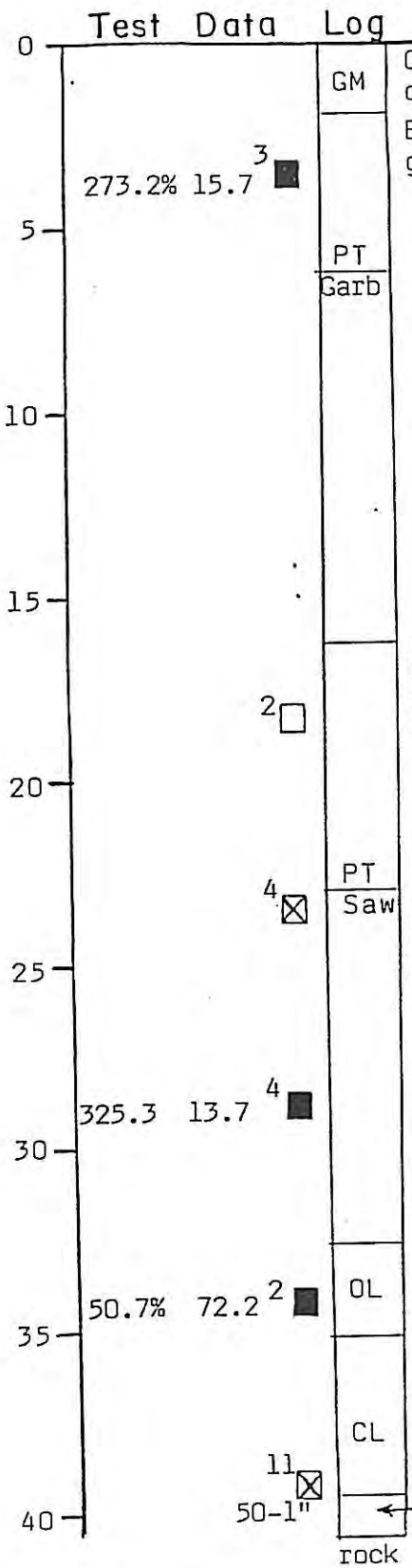
BORING NO. 8



W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

ELEVATION: 12.4 feet

BORING NO. 9



Description

Gray silt sand and gravel with angular cobbles (fill)(compact(road ballast)

Black decomposing gargabe with occasional gravel (soft to loose)(highly compressible)(fill)

Brown sawdust with wood chips, occasional scrap lumber at top of stratum (compressible) (unweathered)(fill)

Green silt with occasional marine shells (soft)

Gray silty sandy clay with occasional gravel (moderately stiff)

Estimated piling Tip at Elevation-27.5 feet

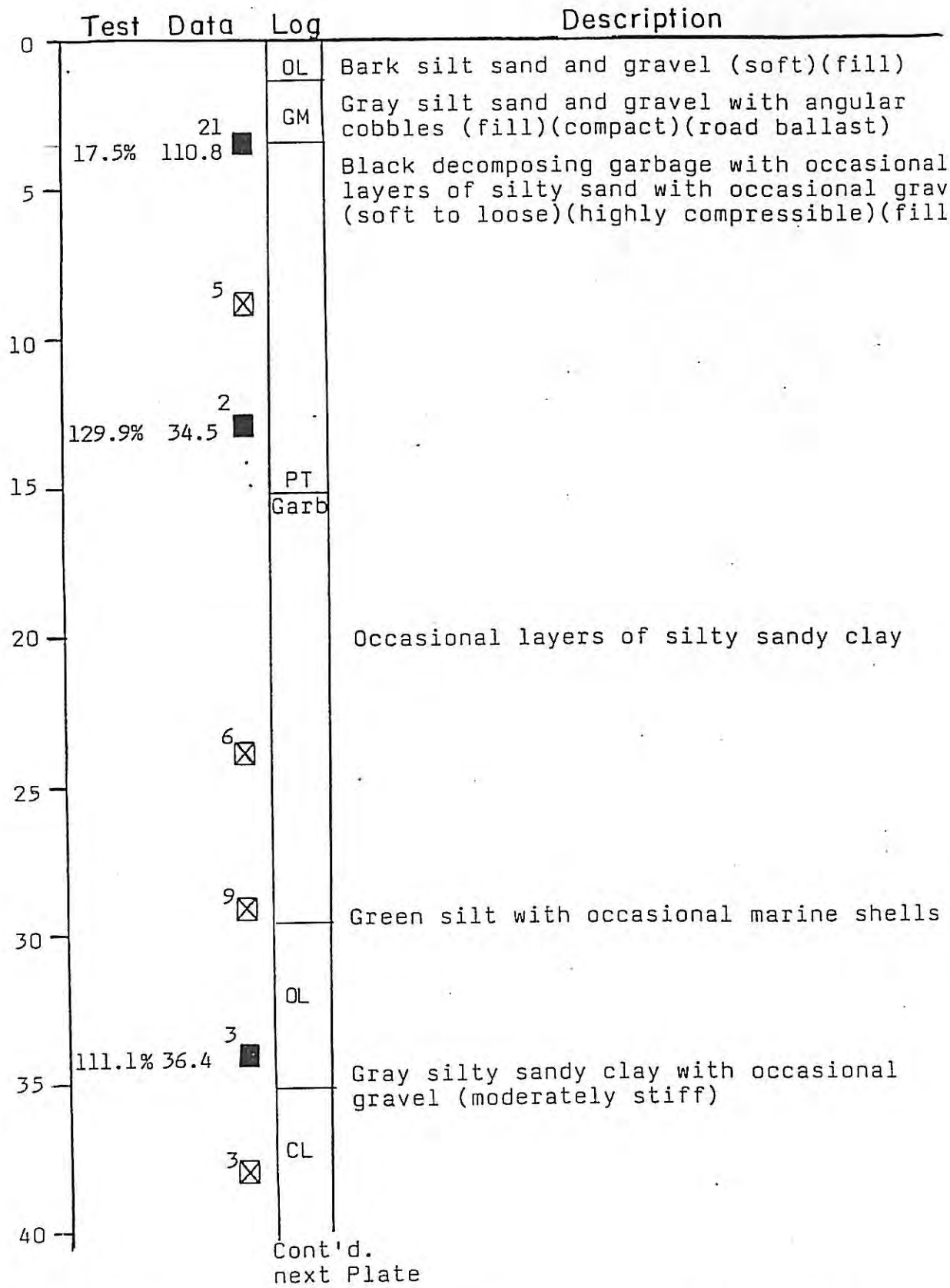
Brown siltstone, slightly weathered at surface grading unweathered within 1.5 feet (very hard)

Boring completed at 40.5 feet on 2/9/85

W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

ELEVATION: 13.6 feet

BORING NO. 10
PLATE 1 of 2



W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

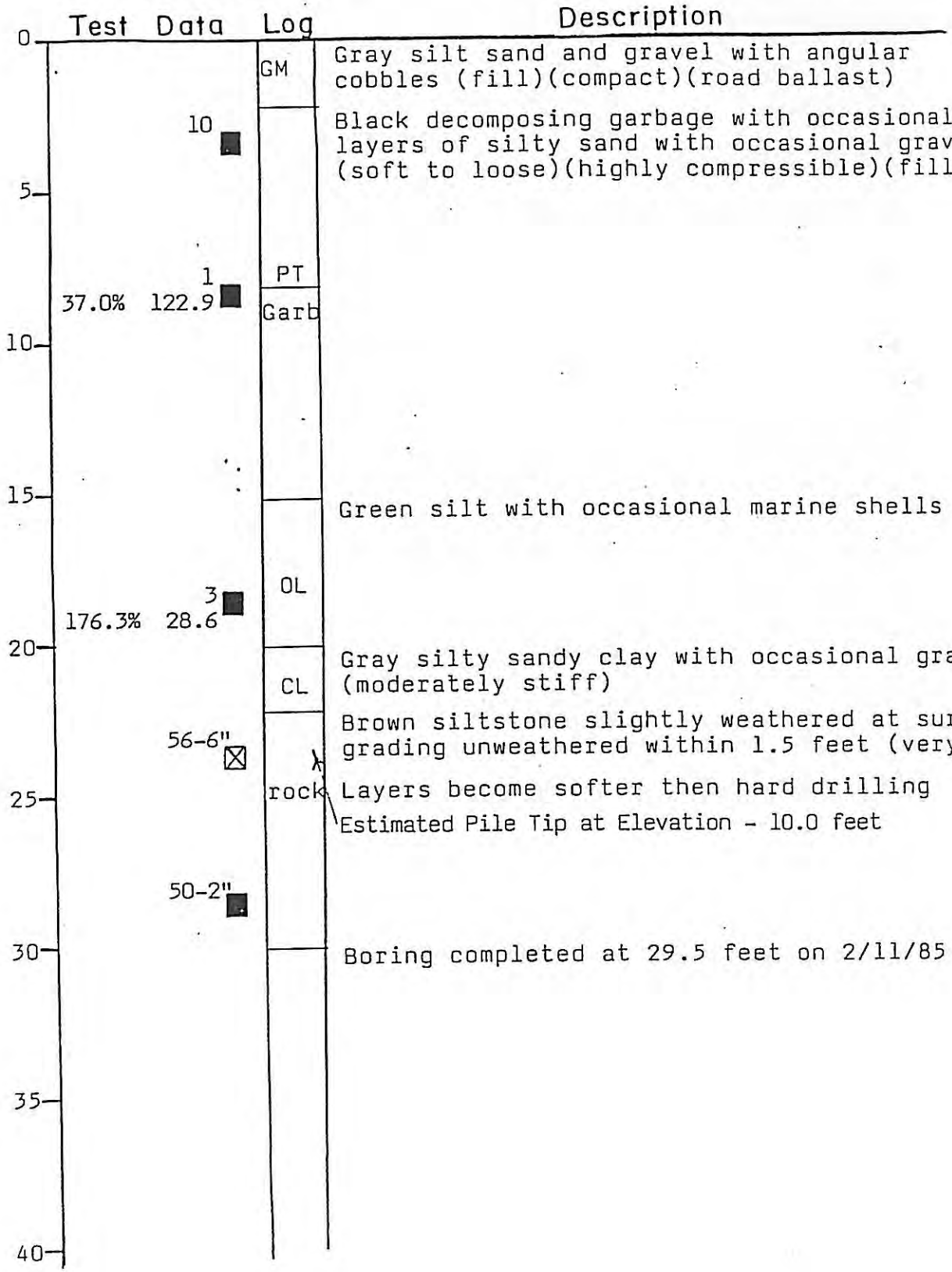
BORING NO. 10
PLATE 2 of 2

	Test Data	Log	Description
40			continued from page 1
45	4 ⊠		
	10 ■ 18.4% 111.9	CL	
50			Increasing gravel content
	9 □		
55			Estimated Pile Tip at Elevation - 41.3 feet
			Gray medium to coarse sandstone (very hard)
	75.6" ■	rock	
			Boring completed at 58.0 feet on 2/11/85
60			

W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

ELEVATION: 13.5 feet

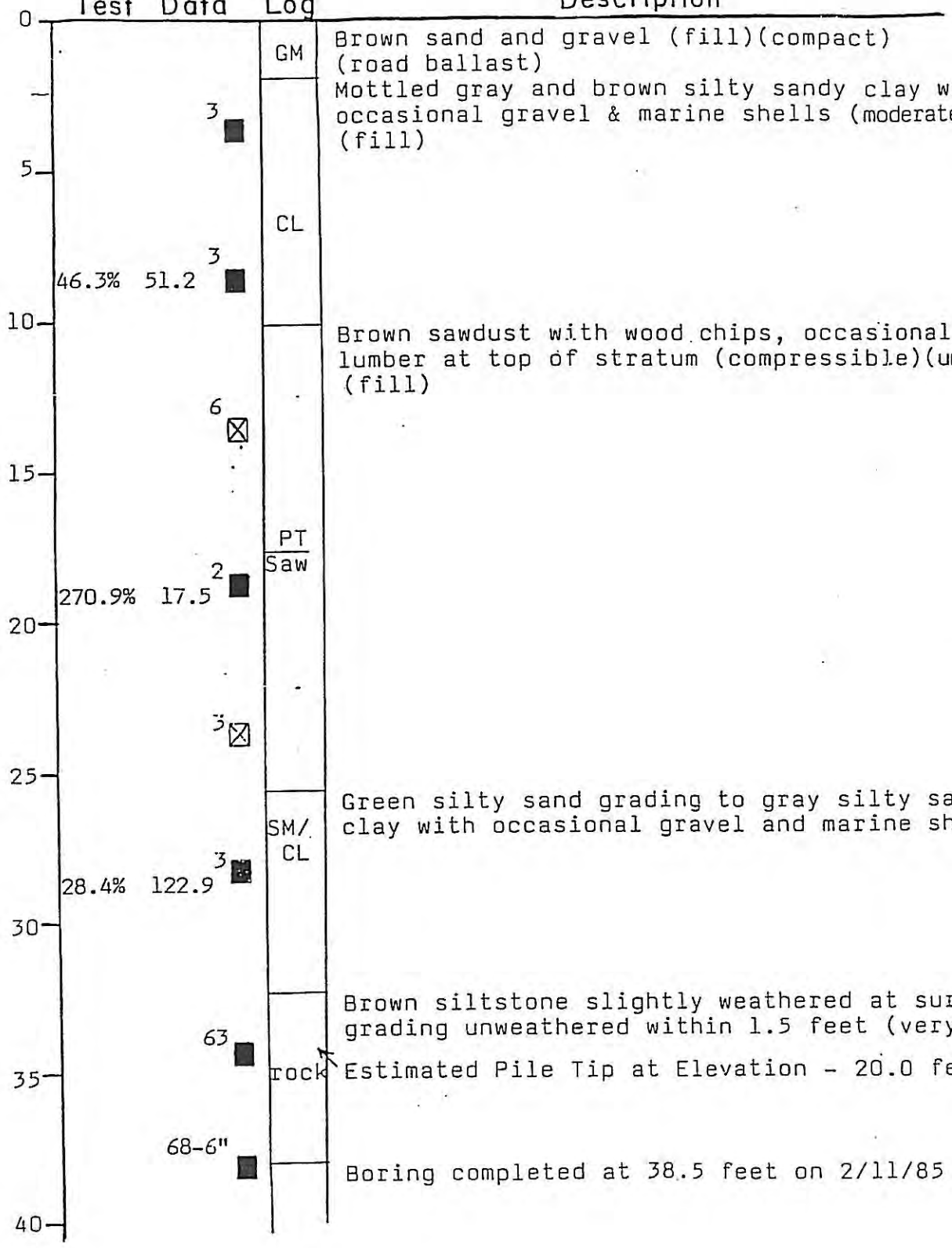
BORING NO. 11



W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

ELEVATION 14.0 feet

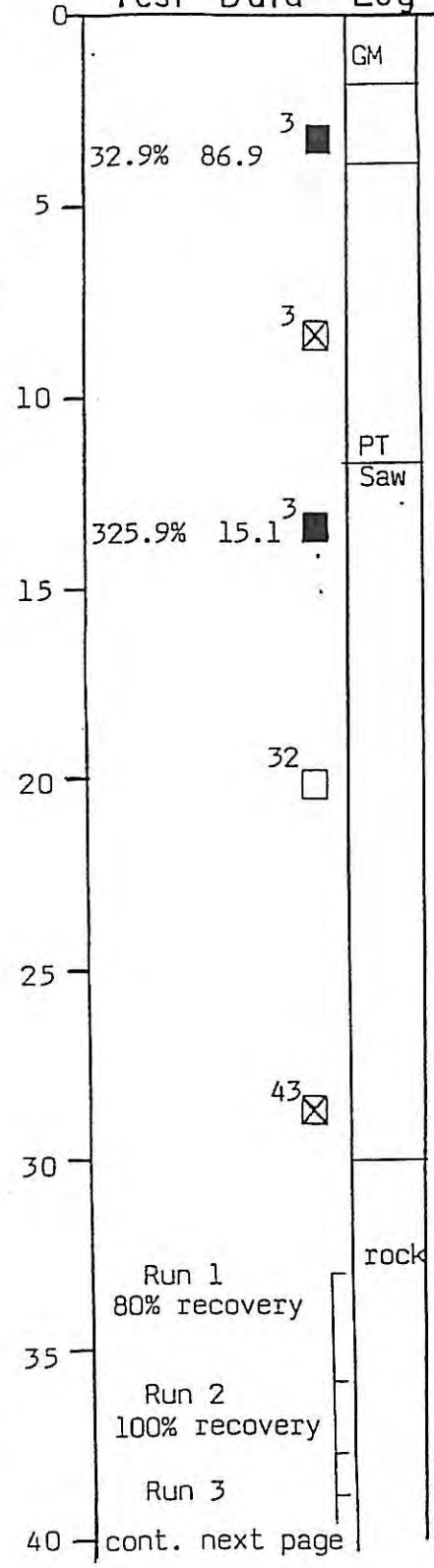
BORING NO. 12



W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

ELEVATION: 13.8

BORING NO. 13
PLATE 1 of 2



Description

Brown siltstone slightly weathered at surface grading unweathered within 1.5 feet (very hard)
Estimated Pile Tip at Elevation - 17.2 feet

Rock cored from 33.0 feet to 42.8 feet core

W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

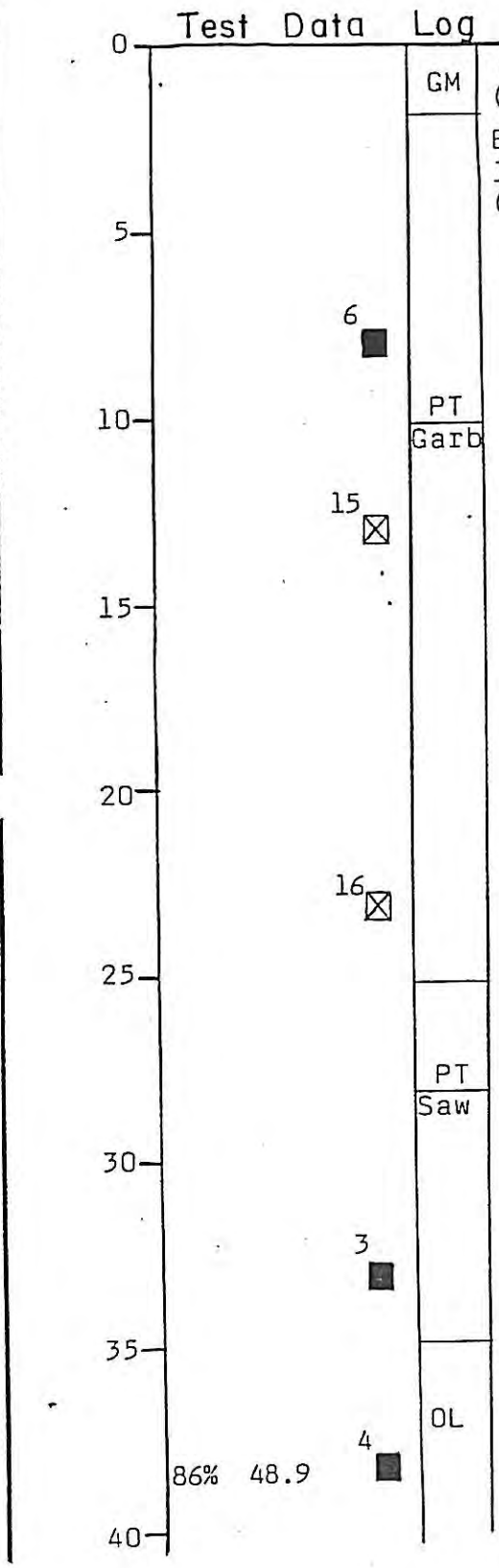
BORING NO. 13
PLATE 2 of 2

	Test Data	Log	Description
40	Run 3 100% recovery	rock	continued from page 1
45			Auger refused to advance further Boring completed at 44.5 feet on 2/13/85

W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

ELEVATION: 11.5 feet

BORING NO. 14
PLATE 1 of 2



Description

Brown sand and gravel (fill)(compact) (road ballast)

Black decomposing garbage with occasional layers of silty sand with occasional gravel (soft to loose)(highly compressible)(fill)

Brown sawdust with wood chips, occasional scrap lumber at top of stratum (compressible) (unweathered)(fill)

Green silt with occasional marine shells (soft)

W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

BORING NO. 14
PLATE 2 of 2

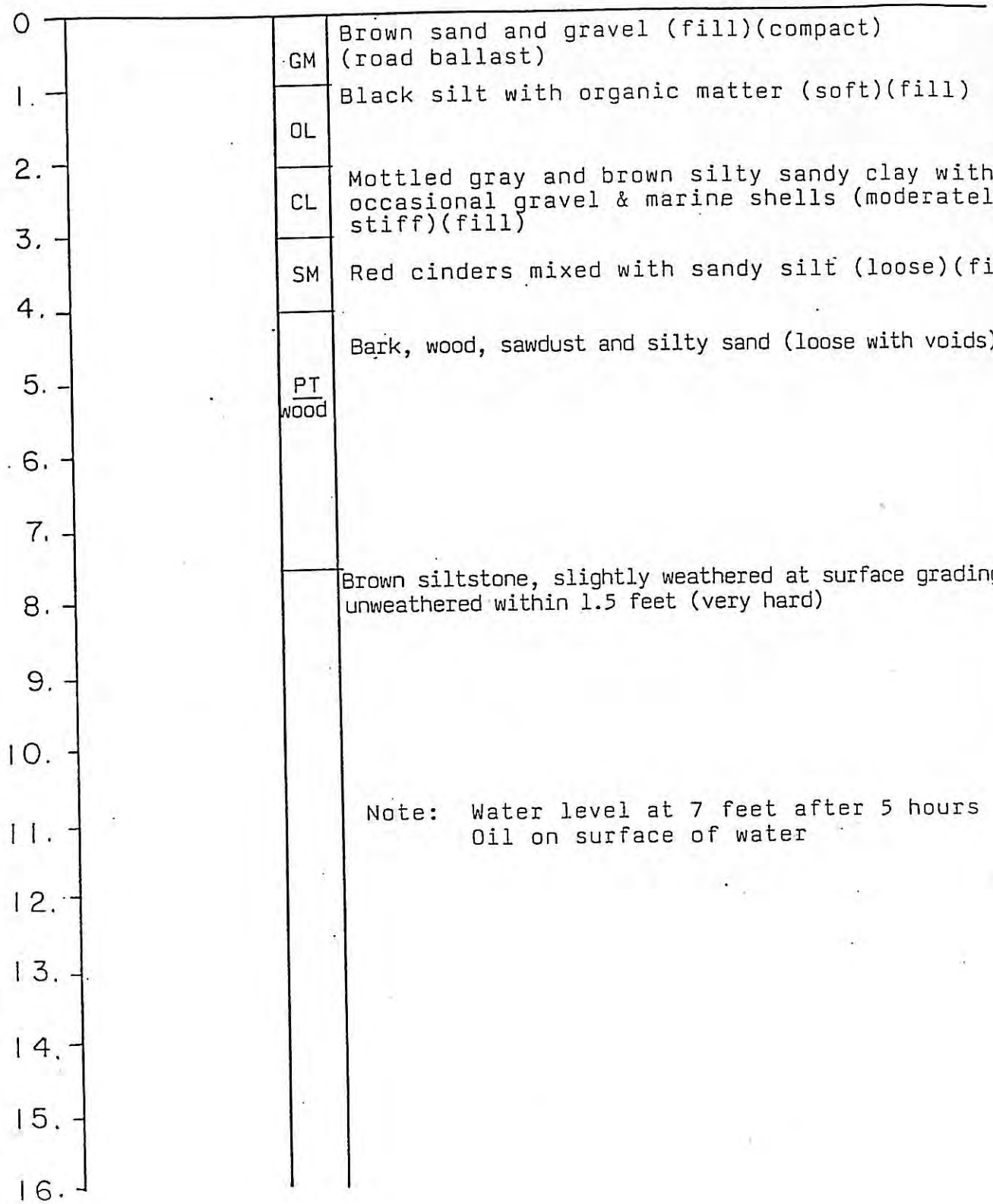
Test Data	Log	Description
40	OL	
	CL	Gray silty sandy clay with occasional gravel (moderately stiff)
2 ⊠		Estimated Pile Tip at Elevation - 33.0 feet
	rock	Brown siltstone slightly weathred at surface grading unweathered within 1.5 feet (very hard)
45		Boring completed at 46.0 feet on 2/14/85

W. D. PURNELL & ASSOCIATES | EXPLORATION LOG

Test Pit No. 1

Elevation 16.0 feet

Soils Classified Visually by the Unified Soils Classification System
Pit Excavated by Rubber Tired Backhoe



Note: Water level at 7 feet after 5 hours
Oil on surface of water

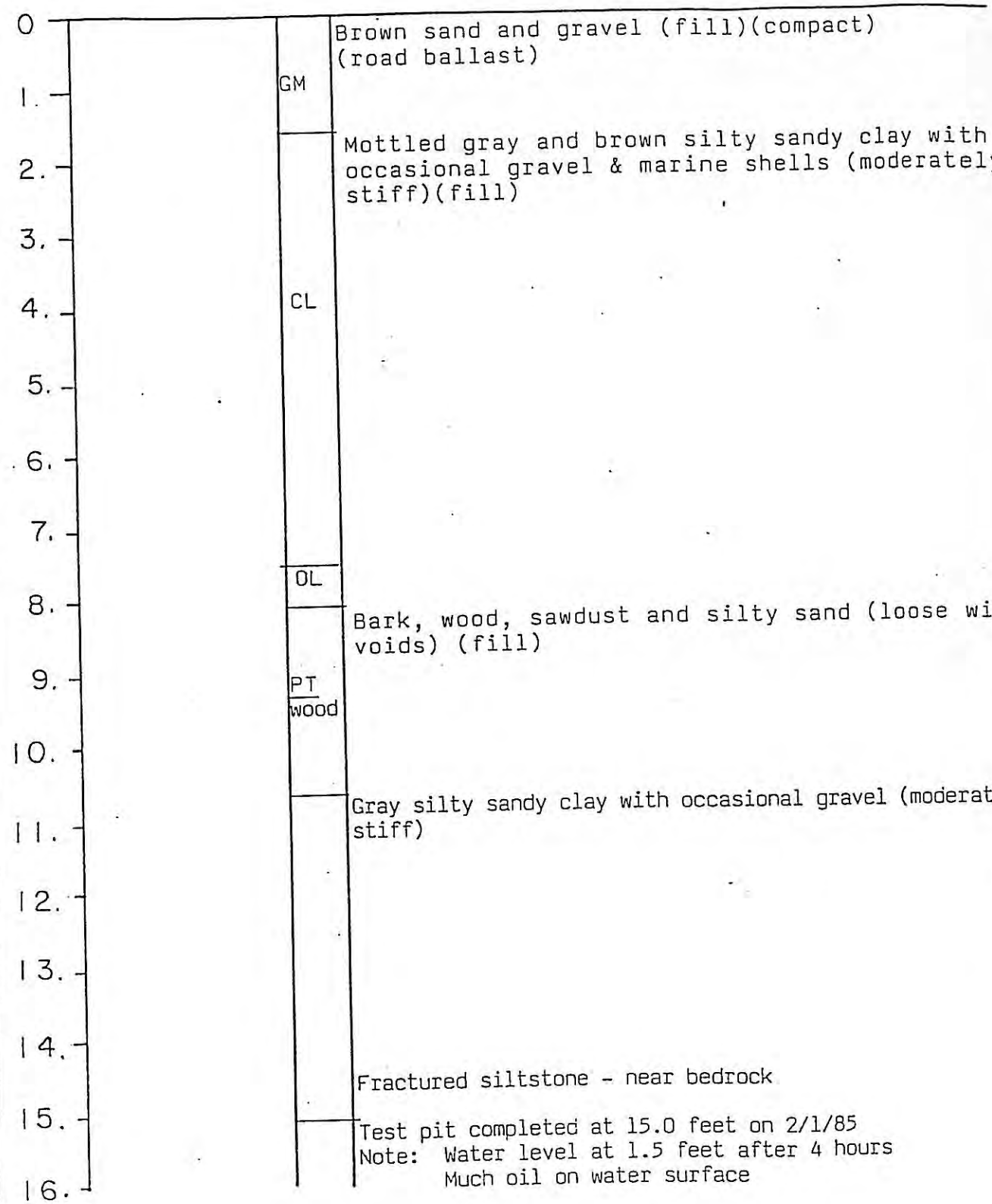
W. D. PURNELL & ASSOCIATES

4202 Guide Meridian, Suite 200
Bellingham, WA 98226

Test Pit No. 2

Elevation 15.3 feet

Soils Classified Visually
by the Unified Soils
Classification System
Pit Excavated by
Rubber Tired Backhoe



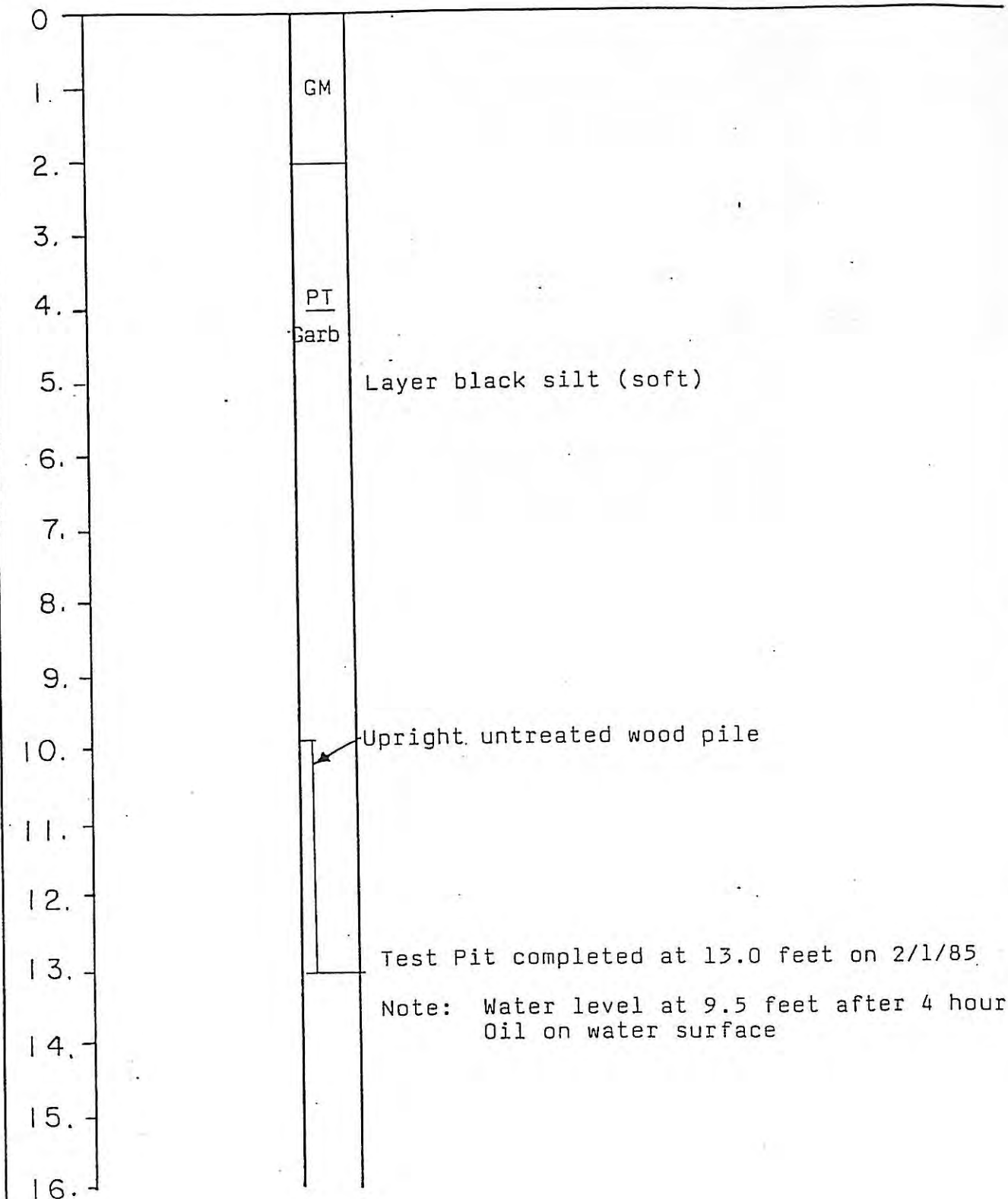
W. D. PURNELL & ASSOCIATES

4202 Guide Meridian, Suite 200
Bellingham, WA 98226

Test Pit No. 3

Elevation 16.5 feet

Soils Classified Visually
by the Unified Soils
Classification System
Pit Excavated by
Rubber Tired Backhoe



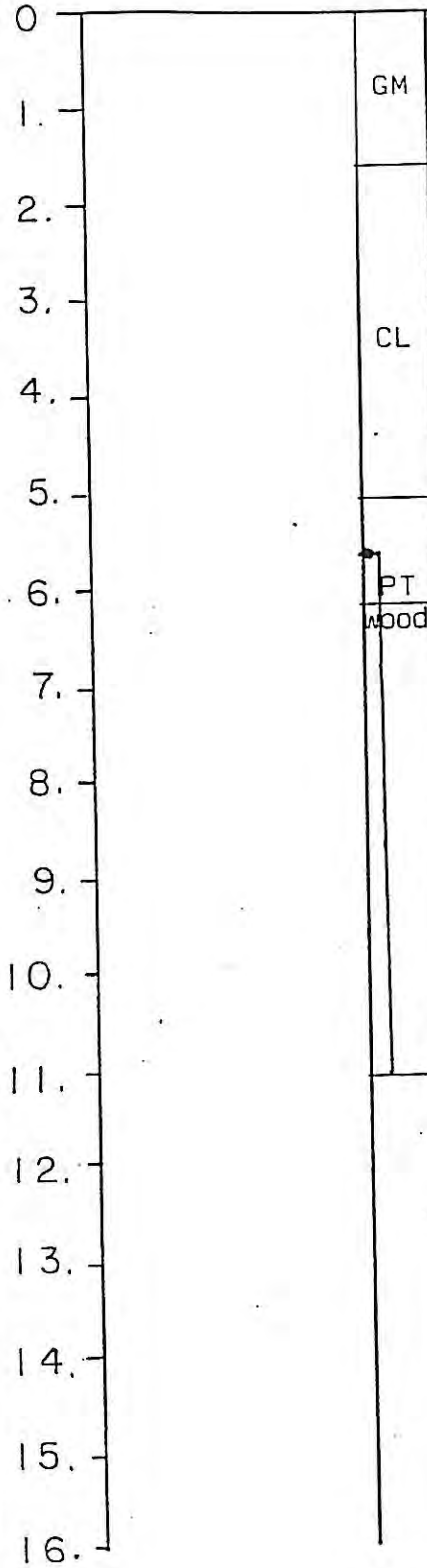
W. D. PURNELL & ASSOCIATES

4202 Guide Meridian, Suite 200
Bellingham, WA 98226

Test Pit No. 4

Elevation 14.1 feet

Soils Classified Visually
by the Unified Soils
Classification System
Pit Excavated by
Rubber Tired Backhoe



Gray silt sand and gravel with angular cobbles (fill)(compact)(road ballast)

Mottled gray and brown silty sandy clay with occasional gravel and marine shells (moderately stiff)(fill)

Bark, wood, sawdust and silty sand (loose with voids)(fill)

Two untreated wood piles restricting backhoe progress

Test Pit completed at 11.0 feet on 2/1/85

Note: Water level at 5.0 feet after 2 hours.
Oil on water surface

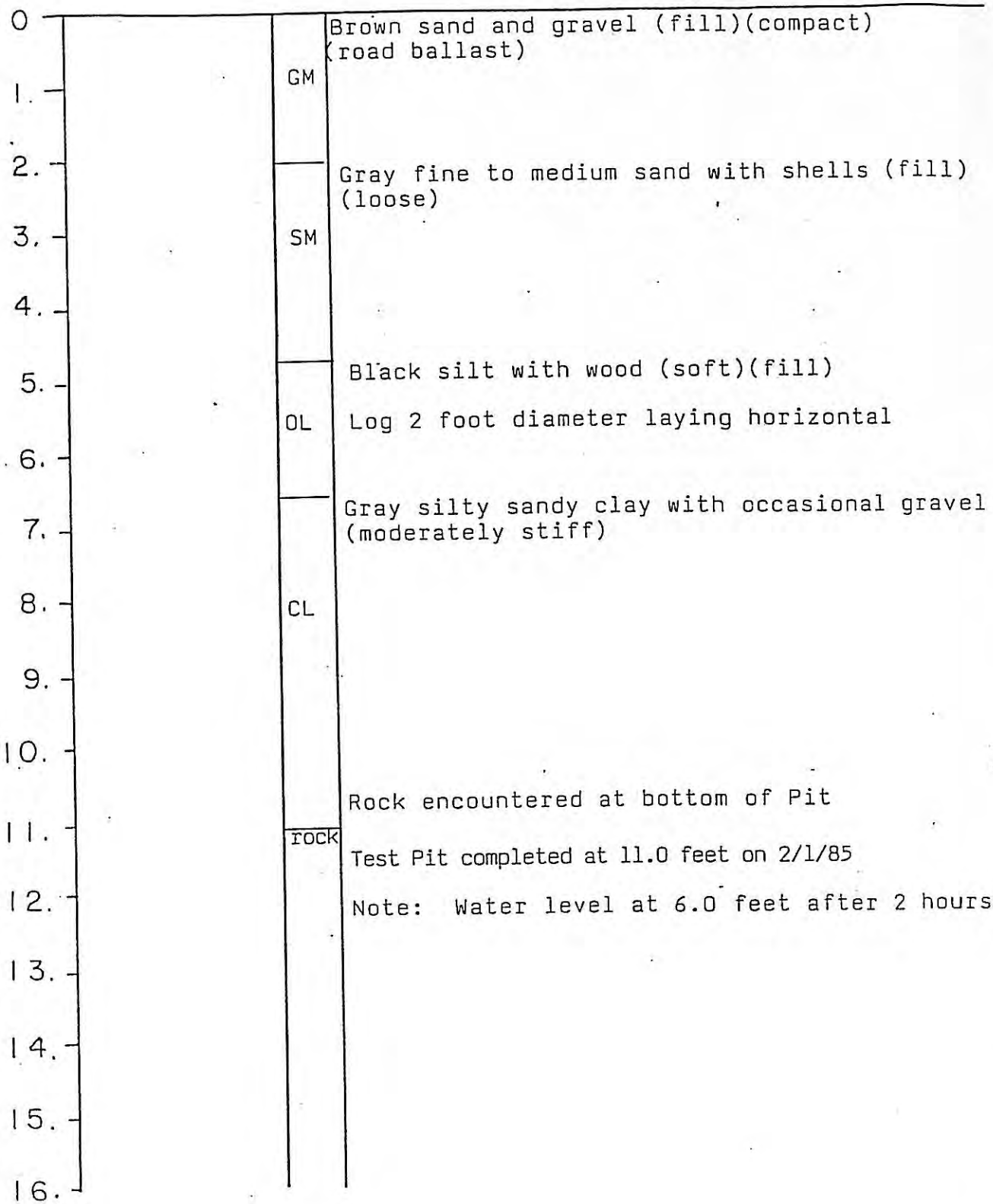
W. D. PURNELL & ASSOCIATES

4202 Guide Meridian, Suite 200
Bellingham, WA 98226

Test Pit No. 5

Elevation 14.7 feet

Soils Classified Visually
by the Unified Soils
Classification System
Pit Excavated by
Rubber Tired Backhoe



Brown sand and gravel (fill)(compact)
(road ballast)

Gray fine to medium sand with shells (fill)
(loose)

Black silt with wood (soft)(fill)

Log 2 foot diameter laying horizontal

Gray silty sandy clay with occasional gravel
(moderately stiff)

Rock encountered at bottom of Pit

Test Pit completed at 11.0 feet on 2/1/85

Note: Water level at 6.0 feet after 2 hours

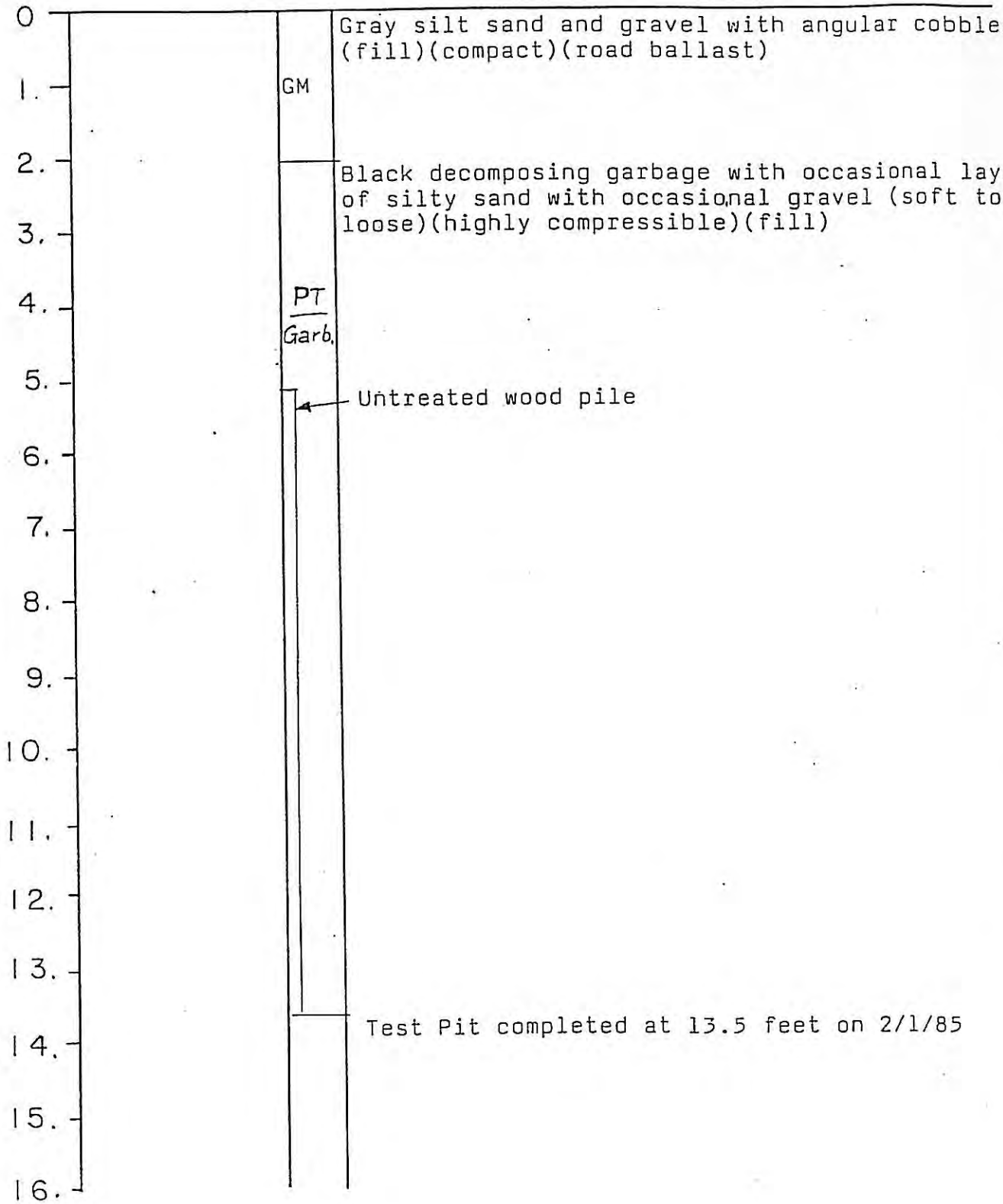
W. D. PURNELL & ASSOCIATES

4202 Guide Meridian, Suite 200
Bellingham, WA 98226

Test Pit No. 6

Elevation 14.5 feet

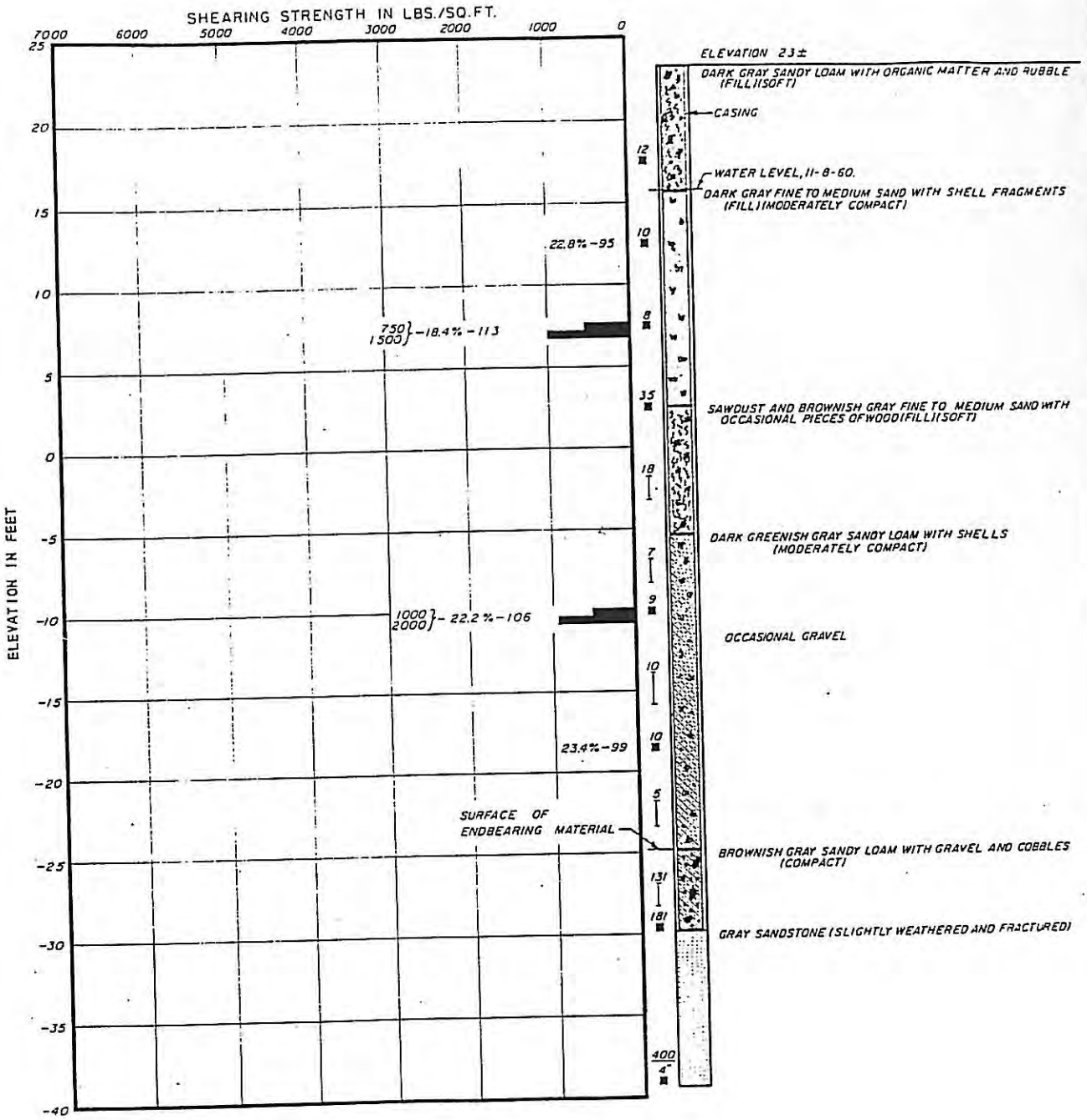
Soils Classified Visually
by the Unified Soils
Classification System
Pit Excavated by
Rubber Tired Backhoe



W. D. PURNELL & ASSOCIATES

4202 Guide Meridian, Suite 200
Bellingham, WA 98226

BORING 1

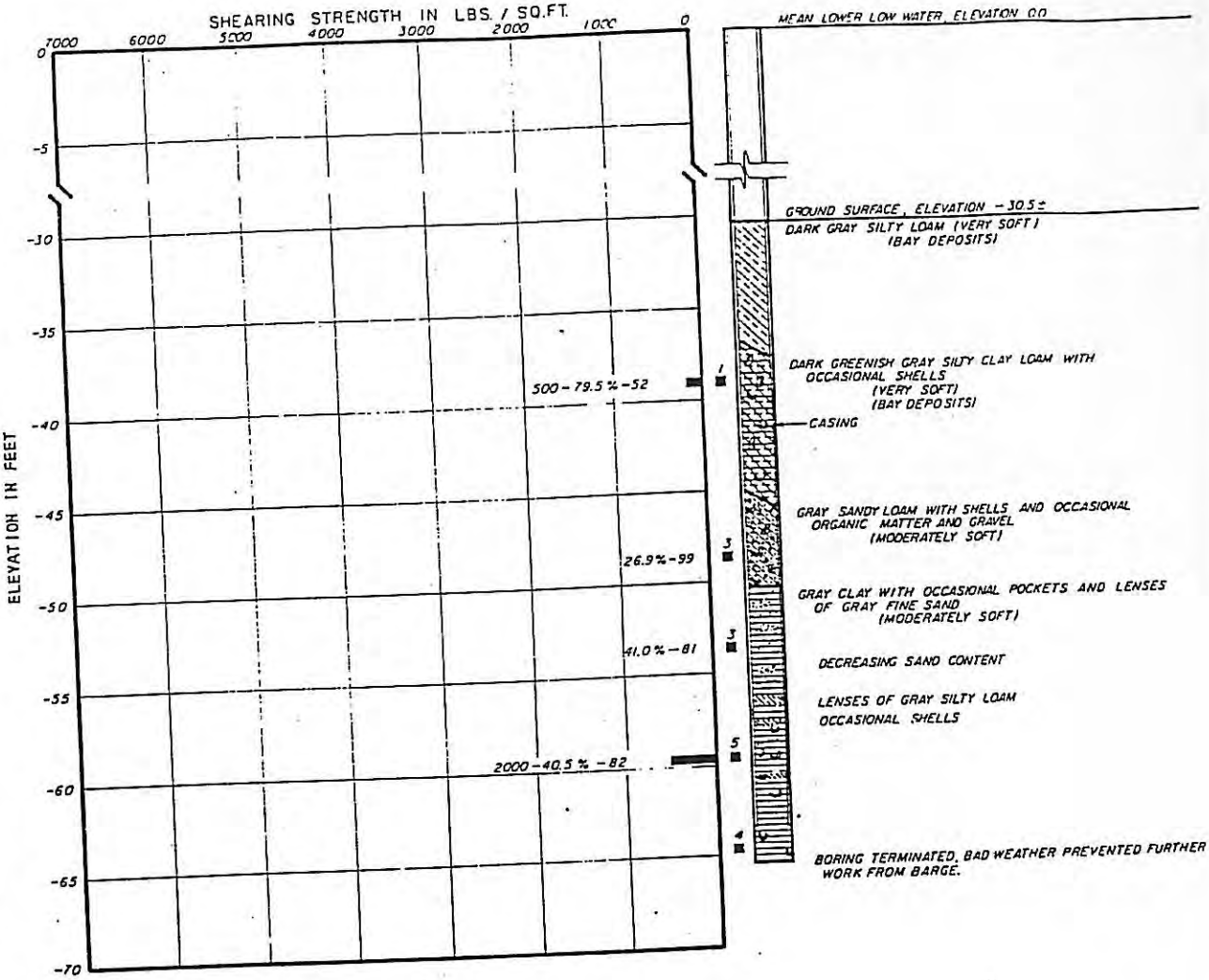


NOTE:
ELEVATIONS REFER TO U.S.C.&G.S. DATUM, (M.L.L.W. = ELEVATION 00).

LOG OF BORINGS

DAMES & MOORE
SOIL MECHANICS ENGINEERS

BORING 3



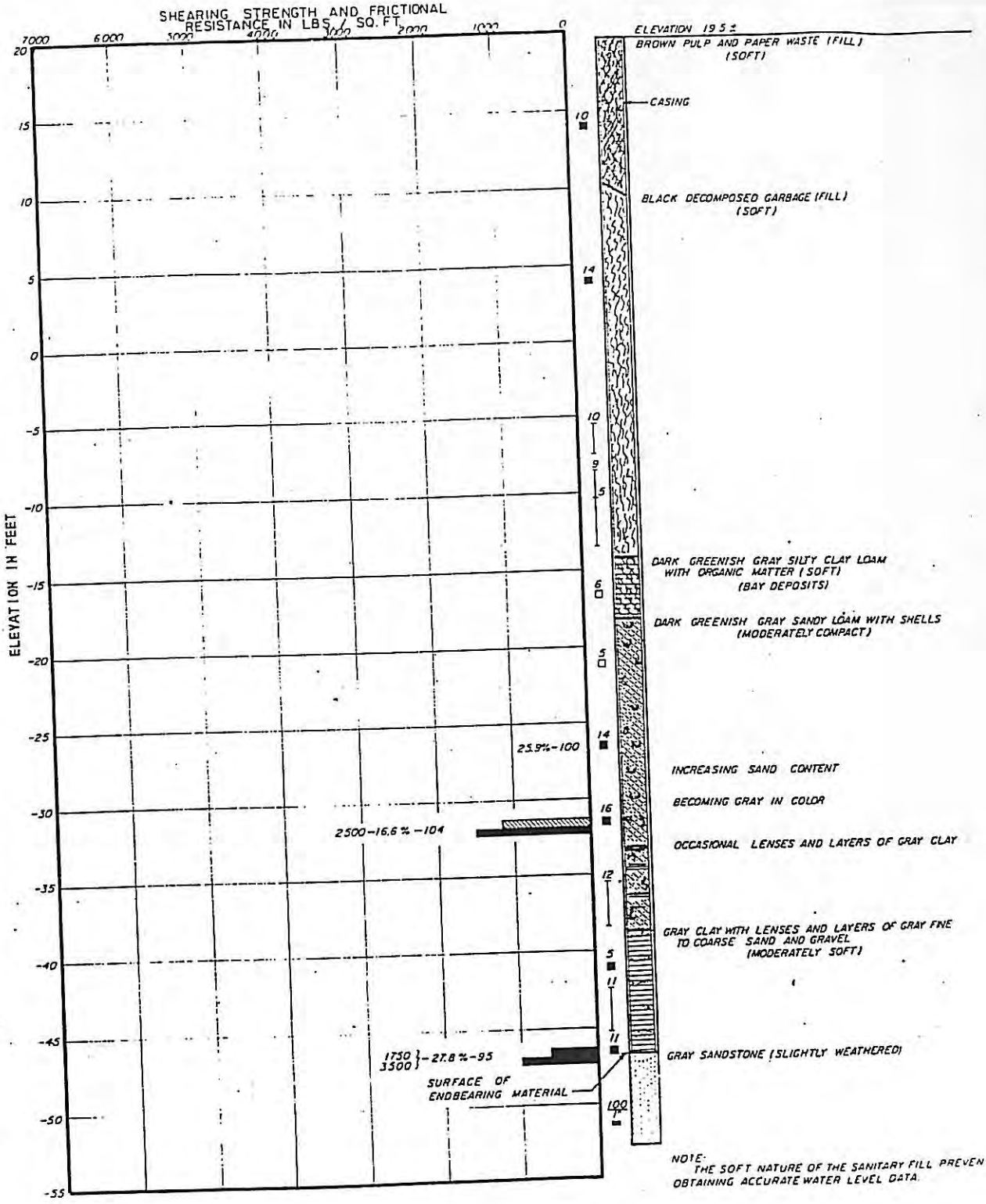
LOG OF BORINGS

REVISIONS
BY ..... DATE .....
BY ..... DATE .....
PLATE ..... OF .....

FILE 3395-6
Port of Billingham
BY ..... DATE 12-1-60
CHECKED BY ..... DATE .....

DAMES & MO
SOIL MECHANICS ENGI

BORING 4



LOG OF BORINGS

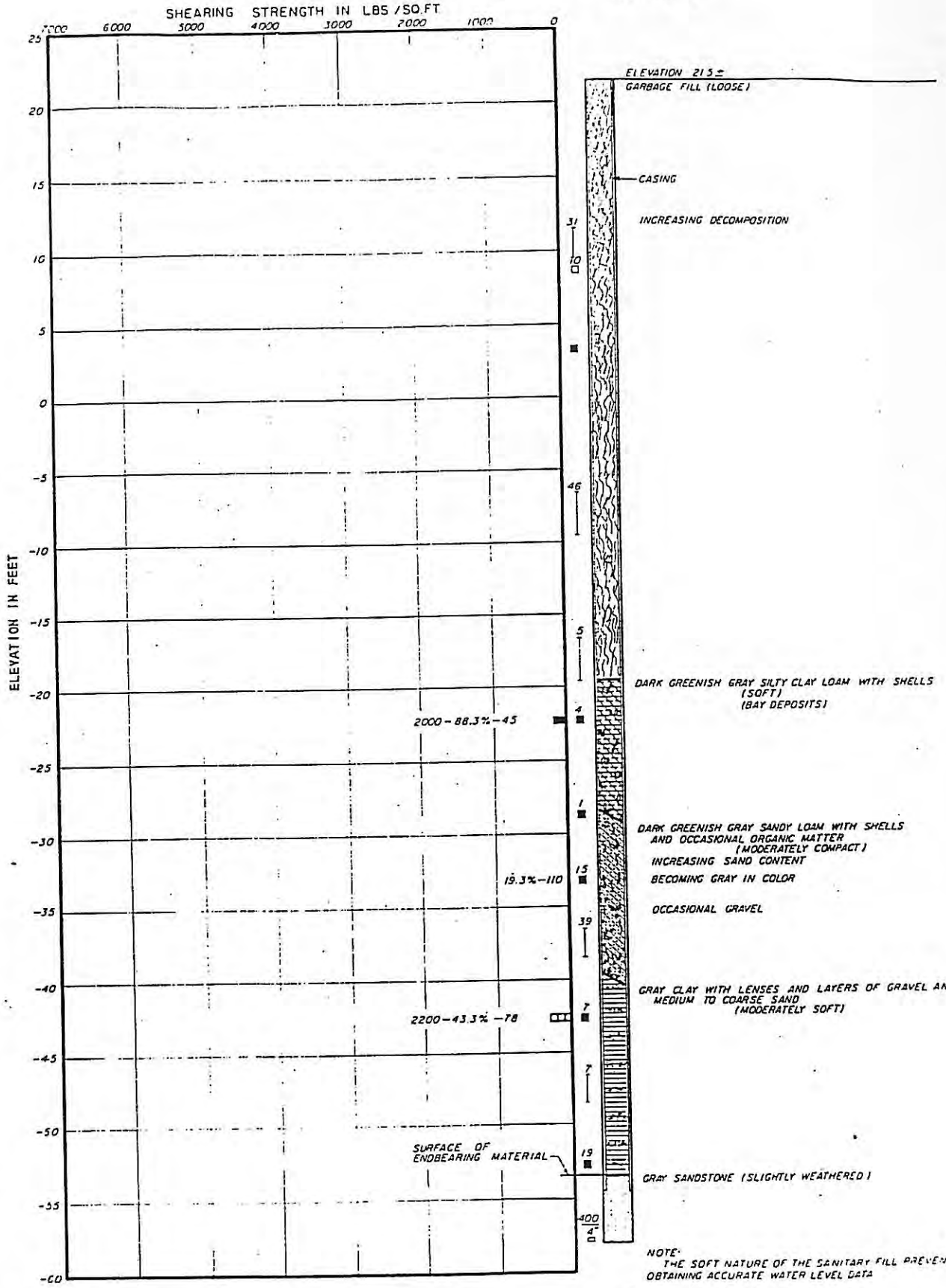
DAMES & MO
SOIL MECHANICS ENGIN

PLATE A-4

REVISIONS
BY_____ DATE_____
BY_____ DATE_____
PLATE_____ OF_____

FILE 3325-B
BY Prof. de Kelley Co DATE 12-1-60
CHECKED BY_____ DATE_____

BORING 5



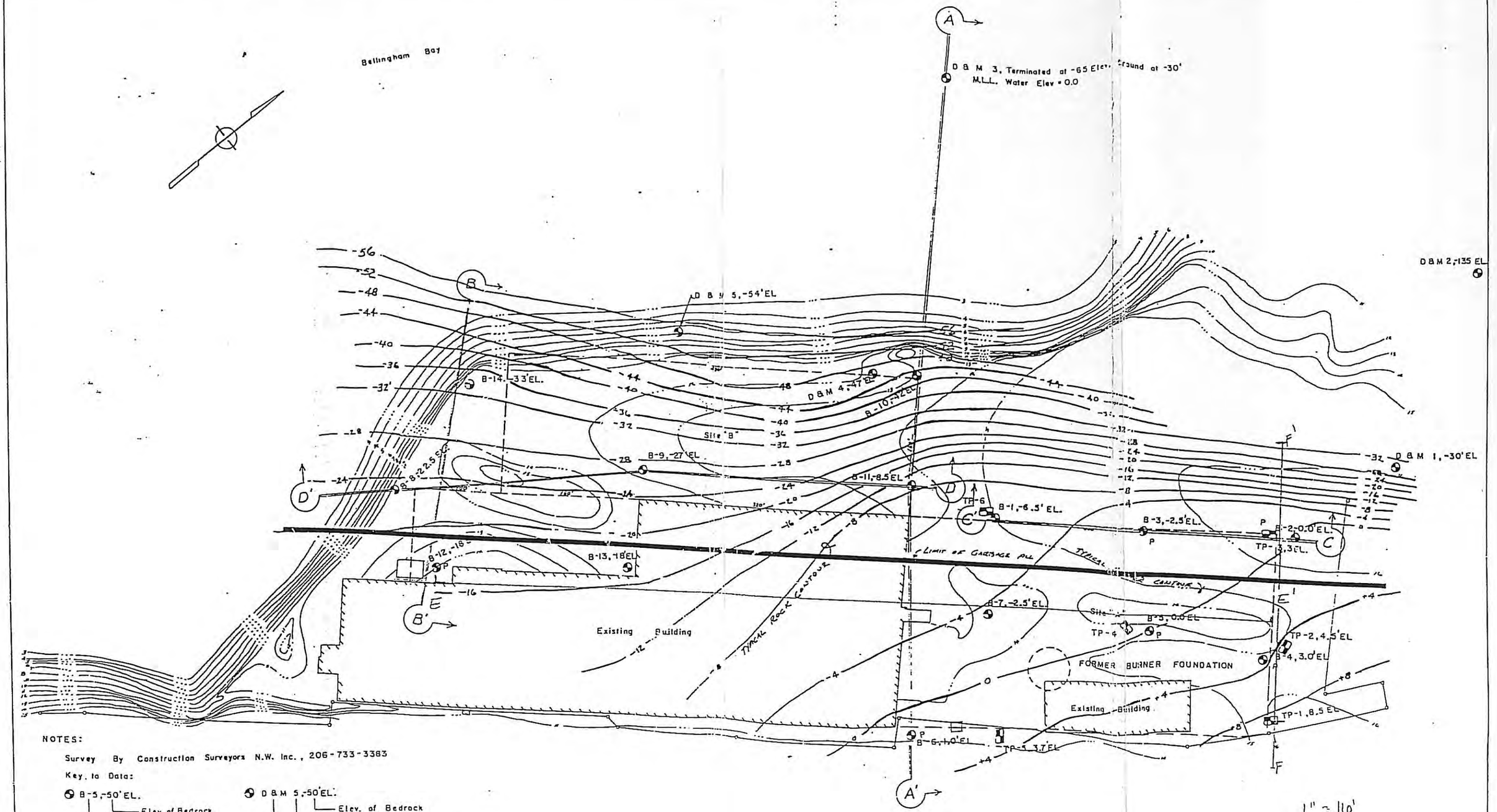
NOTE:
THE SOFT NATURE OF THE SANITARY FILL PREVENTED OBTAINING ACCURATE WATER LEVEL DATA

LOG OF BORINGS

DAMES & MOOR
SOIL MECHANICS ENGINEERS

REVISIONS
BY _____ DATE _____
BY _____ DATE _____
PLATE _____ OF _____

FILE 3325-B
BY Bart A. Kallgren DATE 12-2-60
CHECKED BY _____ DATE _____



NOTES:

Survey By Construction Surveyors N.W. Inc., 206-733-3383

Key to Data:

B-5, -50'EL. — Elev. of Bedrock; Boring Number

TP-5, -10'EL. — Elev. of Bedrock; Test Pit Number

D B M 5, -50'EL. — Elev. of Bedrock; Boring Number; Ref: Report of Soils Investigation Port of Bellingham February 1962

Rock Contours estimated between borings

P - Piezometer Location

1" = 110'

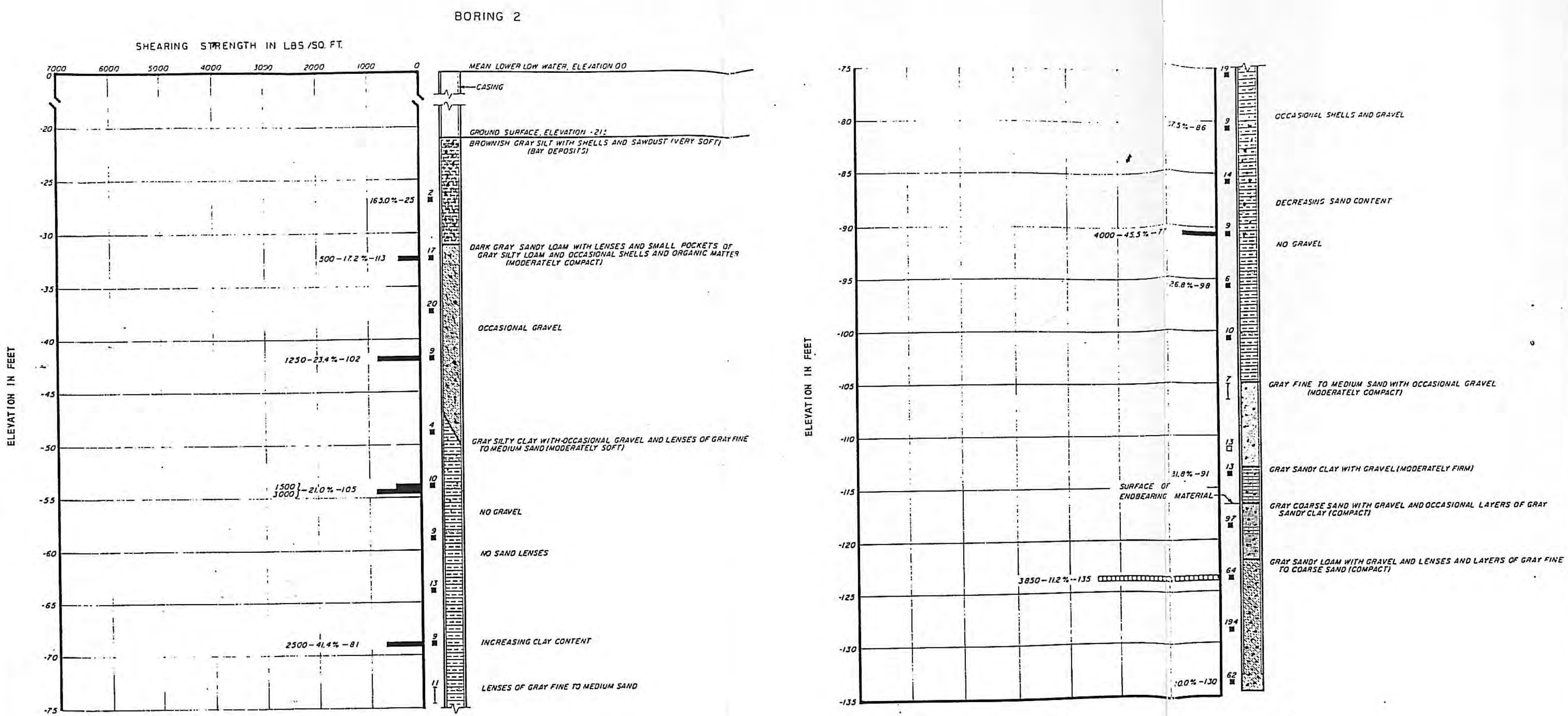
ROCK CONTOURS
PLAN OF TEST PITS & BORING LOCATIONS AND GEOLOGIC SECTIONS

SCALE 1"=30' | DRAWN JP
DATE 3-7-85 | CHECKED

GEORGIA - PACIFIC CORP. WAREHOUSE

W. O. PURNELL & ASSOCIATES
206-676-9589

FIGURE 1



LOG OF BORINGS

DAMES & MOORE

BELLINGHAM BAY

OUTER HARBOR LINE

LOCATION OF OLD DOCK
(DOCK HAS BEEN REMOVED BUT PORTIONS OF PILING STILL EXIST)

BORING NO.

APPROXIMATE SHORELINE

GARBAGE DUMP
(SANITARY FILL)

~350'

INNER HARBOR LINE

EXISTING BUILDINGS

WAREHOUSE NO. 7

TOE OF SLOPE

REFERENCE:
PORT OF BELLINGHAM DRAWING ENTITLED "BLOEDEL-DONOVAN MILL SITE-1960," DATED 7-21-60.

PLOT PLAN

FEET
100 0 100 200

1960

DAMES & MOO

REVISIONS
BY_____DATE_____
BY_____DATE_____
BY_____DATE_____
PLATE_____OF_____

FILE 3995-B
PORT OF BELLINGHAM
BY BJO DATE 12-8-60
CHECKED BY_____DATE_____