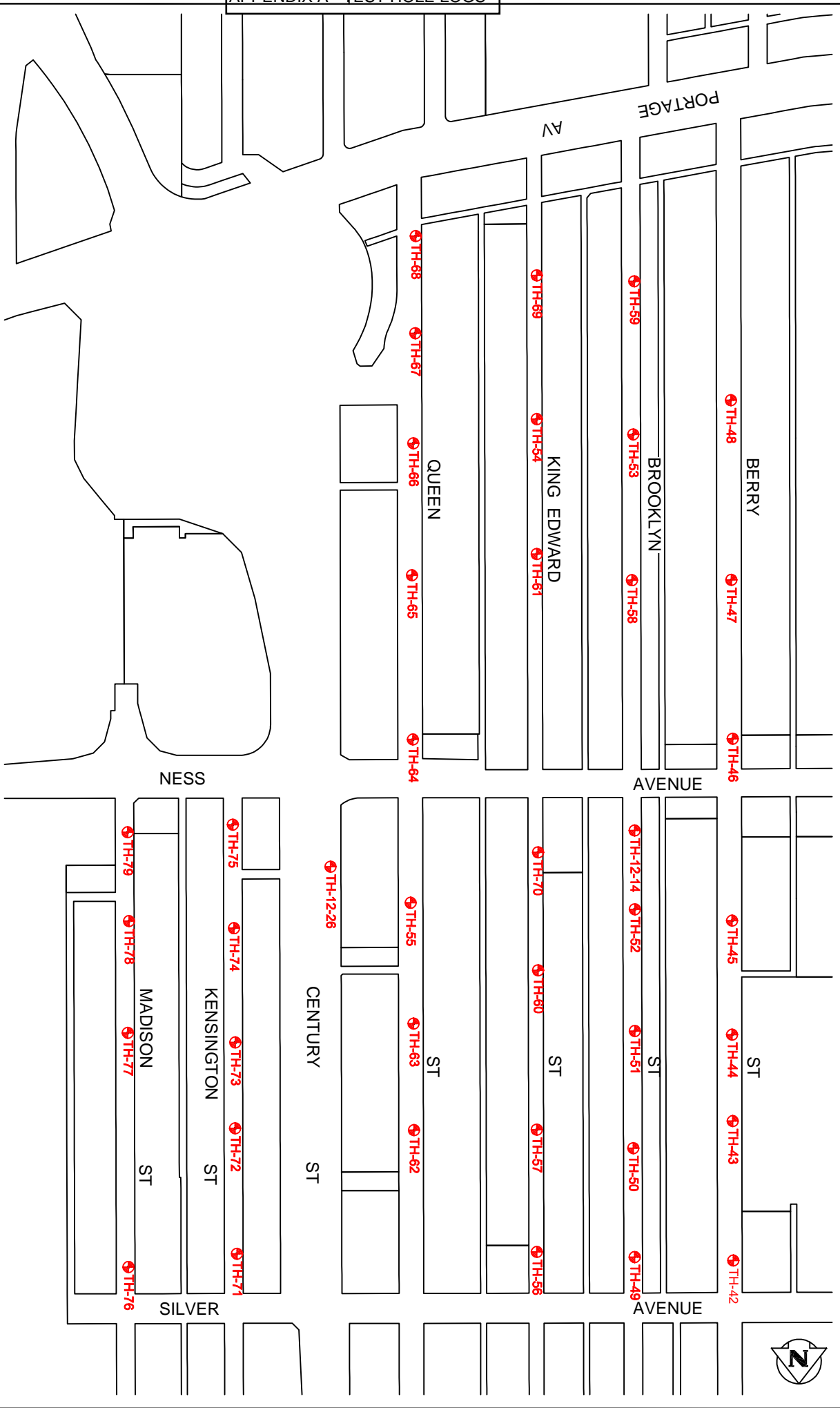


APPENDIX A - TEST HOLE LOGS

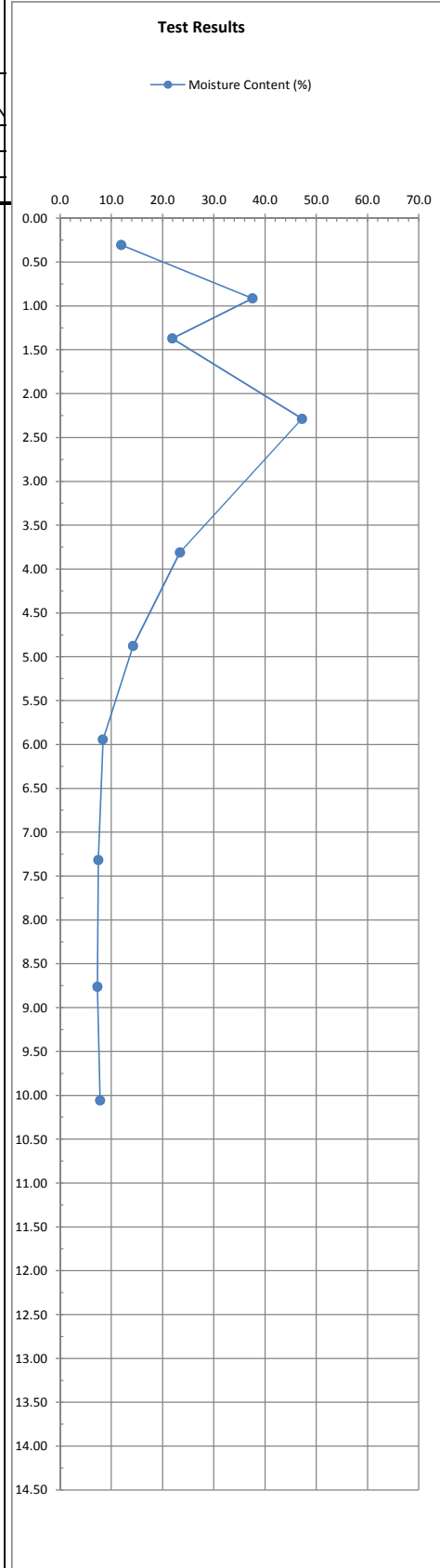
X:\4-077 OF 048780 - WATER & WASTE DEPARTMENT - 0012\1001231010 - FERRY ROAD AND RIVERBEND C&S WORKS DESIGN AND CONSTRUCTION\WATER ROAD TEST HOLE LOCATIONS CONT 1 & 2.DWG 13.04.23 10:06



DESIGNED BY: GMD	CHECKED BY: APPROVED	CONSULTANT DRAWING NO. 1000120300-SKI-120009A	CITY DRAWING NUMBER
DRAWN BY: GMD	APPROVED BY:		SHEET 1 OF 1
HOR. SCALE:	RELEASED FOR CONSTRUCTION:		
VERTICAL:	DATE:		
TEST HOLE LOCATIONS CONTRACTS 1 & 2			

APPENDIX A - TEST HOLE LOGS

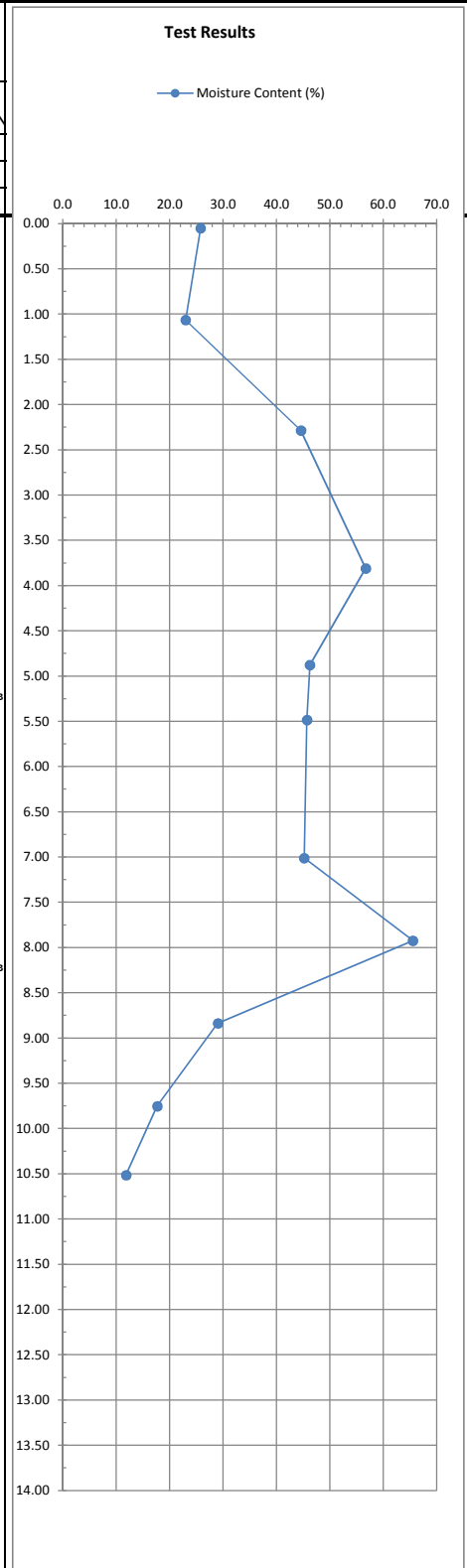
DYREGROV ROBINSON INC. CONSULTING GEOTECHNICAL ENGINEERS			PROJECT # 113324	TEST HOLE NO. 12-14		
PROJECT: Ferry Road LDS		LOGGED BY: RB				
LOCATION: Brooklyn St. at Ness Ave.		REVIEWED BY: AOD				
CONTRACTOR: Paddock Drilling Ltd.		DRILL DATE: April 30, 2012				
METHOD: Acker MP8 - 125 mm SSA		DRILL DEPTH (m): 14.0				
DEPTH (m)	ELEVATION (m)	SOIL SYMBOL	SOIL DESCRIPTION	UNDRAINED SHEAR STRENGTH Su		Test Results —●— Moisture Content (%)
				QU	UNCONFINED COMPRESSION	
				TV	TORVANE	
				PP	POCKET PEN.	
				γ	UNIT WEIGHT	
0.00	235.00		0 - 0.15 m CONCRETE			
0.50	234.50		0.15 - 0.6 m CLAY (Fill) - silty, sandy, some gravel - dark grey to black, stiff, moist, intermediate plasticity	PP = 78 kPa		
1.00	234.00		0.6 - 1.2 m CLAY - silty - mottled brown and grey, stiff, moist, high plasticity			
1.50	233.50		1.2 - 1.8 m SILT - some sand - tan, compact, moist			
2.00	233.00		1.8 - 4.6 m CLAY - silty - brown - firm, moist - high plasticity	TV = 39 kPa PP = 29 kPa		
2.50	232.50					
3.00	232.00		- some till inclusions, some sand, some gravel below 3.0 m			
3.50	231.50					
4.00	231.00					
4.50	230.50					
5.00	230.00		4.6 - 11.3 m SILT (Till) - some sand, some cobbles - trace gravel - tan, compact, moist			
5.50	229.50					
6.00	229.00		- light grey, dense, dry below 5.8 m			
6.50	228.50					
7.00	228.00					
7.50	227.50					
8.00	227.00					
8.50	226.50					
9.00	226.00					
9.50	225.50					
10.00	225.00					
10.50	224.50					
11.00	224.00		- auger refusal, HQ coring below 11.3 m			
11.50	223.50		11.3 - 14.0 m LIMESTONE (Bedrock) - yellowish white - R3 medium strong			
12.00	223.00		- very close to moderately close spacing (0.04 - 0.36 m) - Class 2 gapped aperture			
12.50	222.50		- class 1 filling - good quality RQD (82%)			
13.00	222.00					
13.50	221.50					
14.00	221.00		- thin clay seam (< 5 mm thick) at 14.0 m			
14.50	220.50		14.0 m END OF TEST HOLE AT 14.0 m IN LIMESTONE BEDROCK Notes: 1. Squeezing below 3.0 m in clay 2. Auger refusal at 11.3 m, switched to HQ coring. 3. Test hole backfilled with auger cuttings, capped with concrete core and coldpatch.			



APPENDIX A - TEST HOLE LOGS

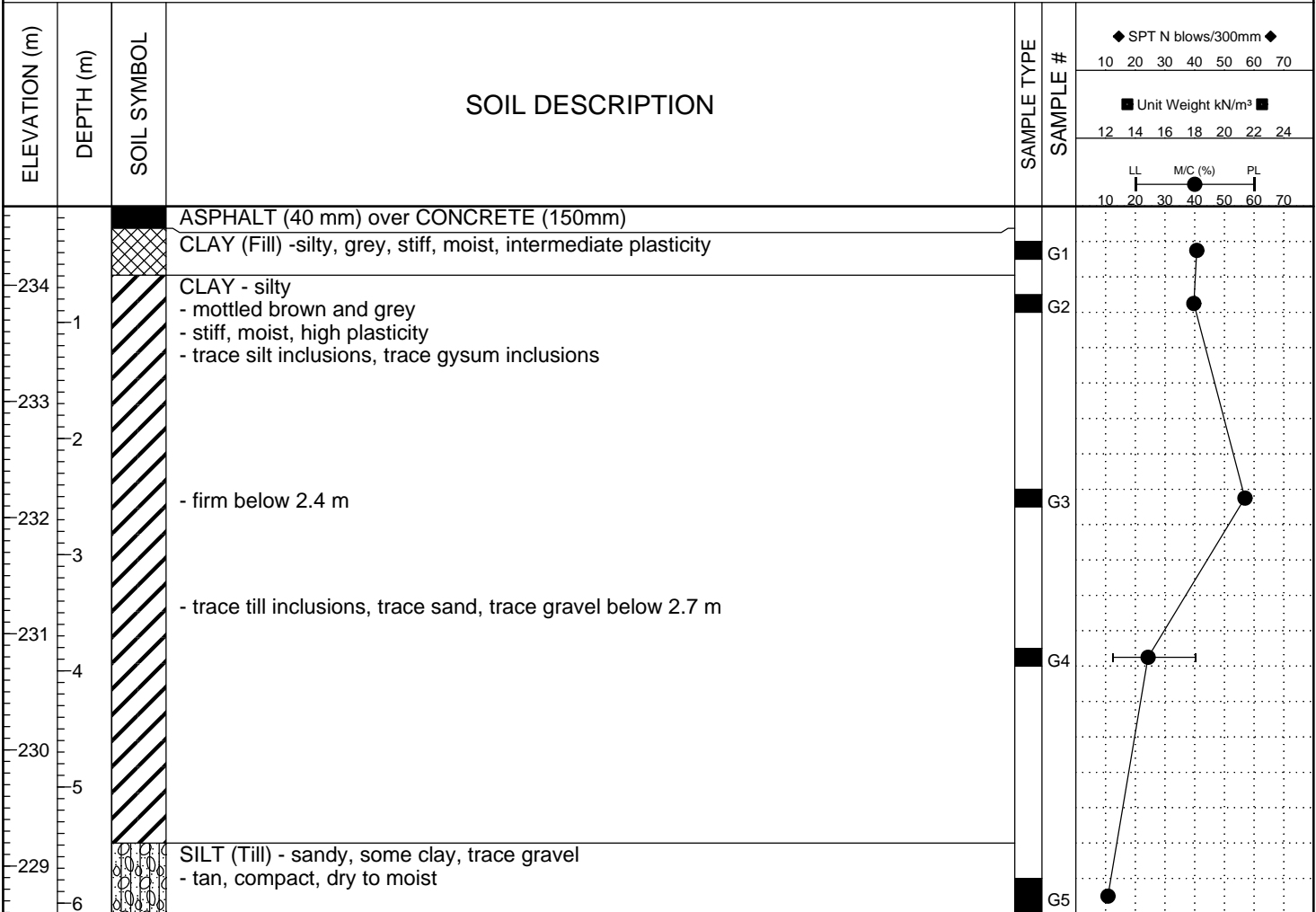
DYREGROV ROBINSON INC. CONSULTING GEOTECHNICAL ENGINEERS		PROJECT # 113324	TEST HOLE NO. 12-26
PROJECT: Ferry Road LDS		LOGGED BY: RB	
LOCATION: Century St. at Ness Ave.		REVIEWED BY: AOD	
CONTRACTOR: Paddock Drilling Ltd.		DRILL DATE: May 16, 2012	
METHOD: Acker MP8 - 125 mm SSA, HQ Core Barrel		DRILL DEPTH (m): 13.7	

DEPTH (m)	ELEVATION (m)	SOIL SYMBOL	SOIL DESCRIPTION	PIEZOMETER	UNDRAINED SHEAR STRENGTH Su		MOISTURE CONTENT (%)
					QU UNCONFINED COMPRESSION	TV TORVANE	
0.00	235.04		0 - 0.76 m CLAY (Fill) - silty, trace sand, trace gravel - black - stiff, moist, high plasticity				
0.50	234.54						
1.00	234.04		0.76 - 1.7 m SILT - tan - loose, moist				
1.50	233.54						
2.00	233.04		1.7 - 9.1 m CLAY - silty - brown - stiff, moist, high plasticity				
2.50	232.54				TV = 61 kPa PP = 37 kPa		
3.00	232.04		- mottled brown and grey, trace silt inclusions below 3.0 m				
3.50	231.54						
4.00	231.04				TV = 52 kPa PP = 32 kPa		
4.50	230.54						
5.00	230.04				Qu = 61 kPa TV = 55 kPa PP = 92 kPa γ = 17.3 kN/m ³		
5.50	229.54						
6.00	229.04		- grey, firm, trace sand, trace gravel below 6.1 m		TV = 42 kPa PP = 27 kPa		
6.50	228.54						
7.00	228.04						
7.50	227.54		- some till inclusions, wet, trace cobbles below 7.2 m				
8.00	227.04		▼				
8.50	226.54		8.5 - 11.4 m SILT (Till) - clayey, some sand, trace gravel - light grey - loose, wet, intermediate plasticity - trace clay, low plasticity below 9.1 m				
9.00	226.04						
9.50	225.54						
10.00	225.04						
10.50	224.54						
11.00	224.04		- auger refusal on boulder, HQ coring below 11.0 m				
11.50	223.54		11.4 - 13.7 m LIMESTONE (Bedrock) - yellowish white - R3 medium strong - extremely close to moderately close spacing (0.01 - 0.27 m) - Class 2 gapped aperture - class 1 filling - fair quality RQD (52%)				
12.00	223.04						
12.50	222.54						
13.00	222.04						
13.50	221.54						
14.00	221.04		13.7 m END OF TEST HOLE AT 13.7 m IN LIMESTONE BEDROCK Notes: 1. Sloughing in silt till layer. 2. Standpipe piezometer with Casagrande tip installed to 12.2 m. 3. Water level measured at 8.01 m below ground surface on June 12, 2012. 4. Test hole backfilled with sand to 11.4 m, bentonite chips to 10.1 m and auger cuttings to ground surface. Piezometer protected with a flushmount cover.				



APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-42		
LOCATION: Berry St. at Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling Ltd.		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.835		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

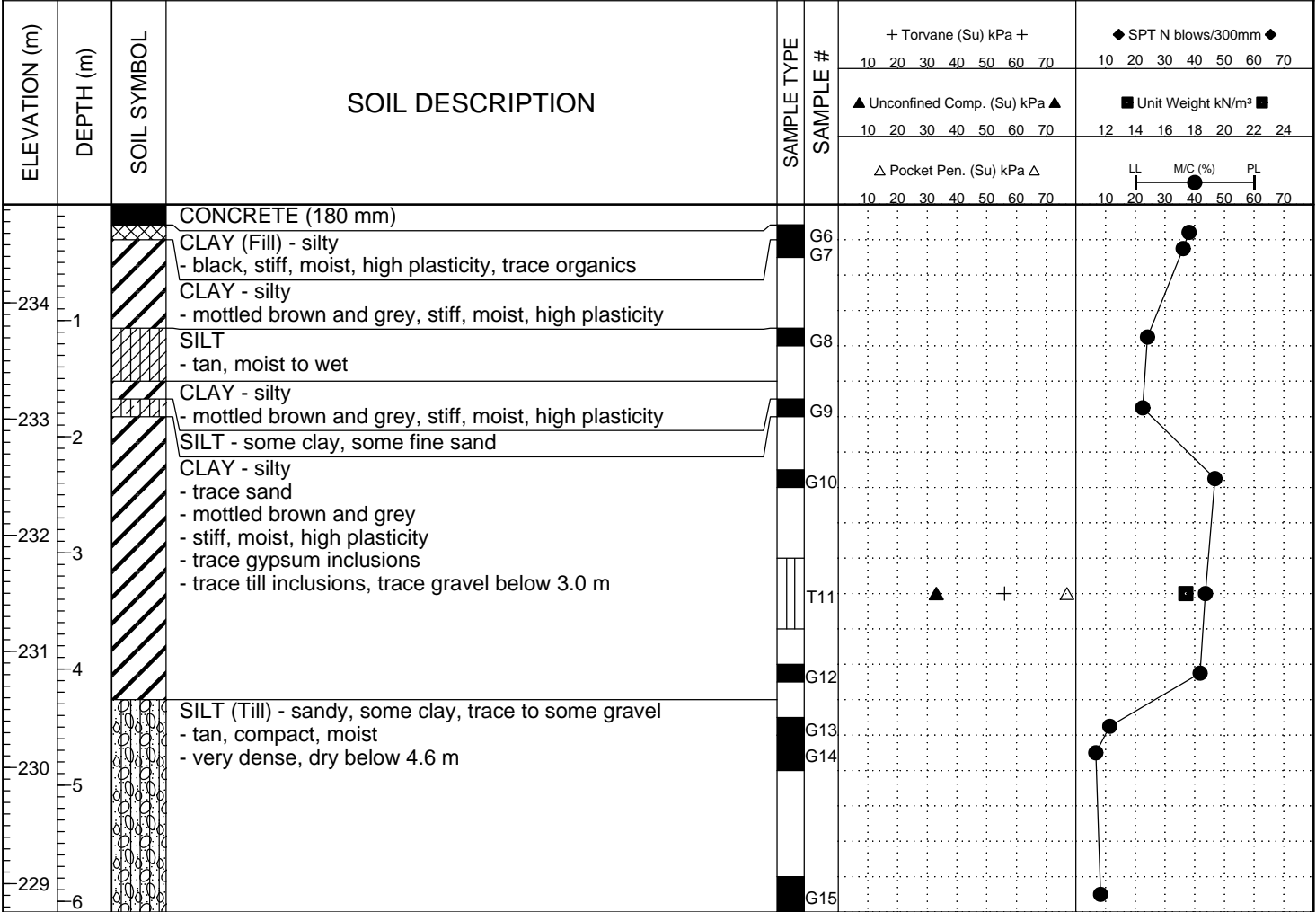


END OF TEST HOLE AT 6.1 m IN SILT TILL
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEWALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-43		
LOCATION: Berry St. Approx. 100 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.003		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

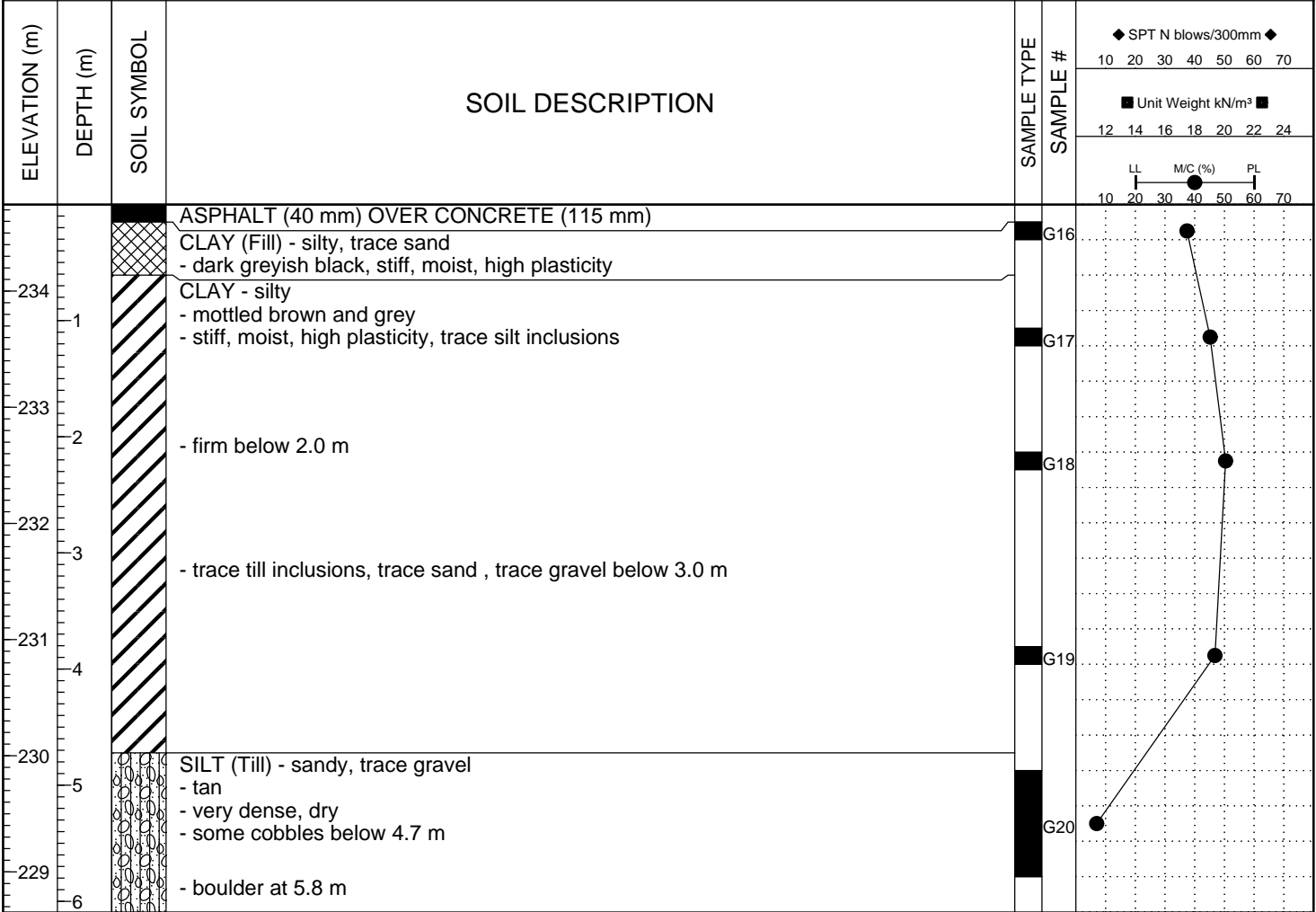


END OF TEST HOLE AT 6.1 m IN SILT TILL
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-44		
LOCATION: Berry St. Approx. 200 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.901		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

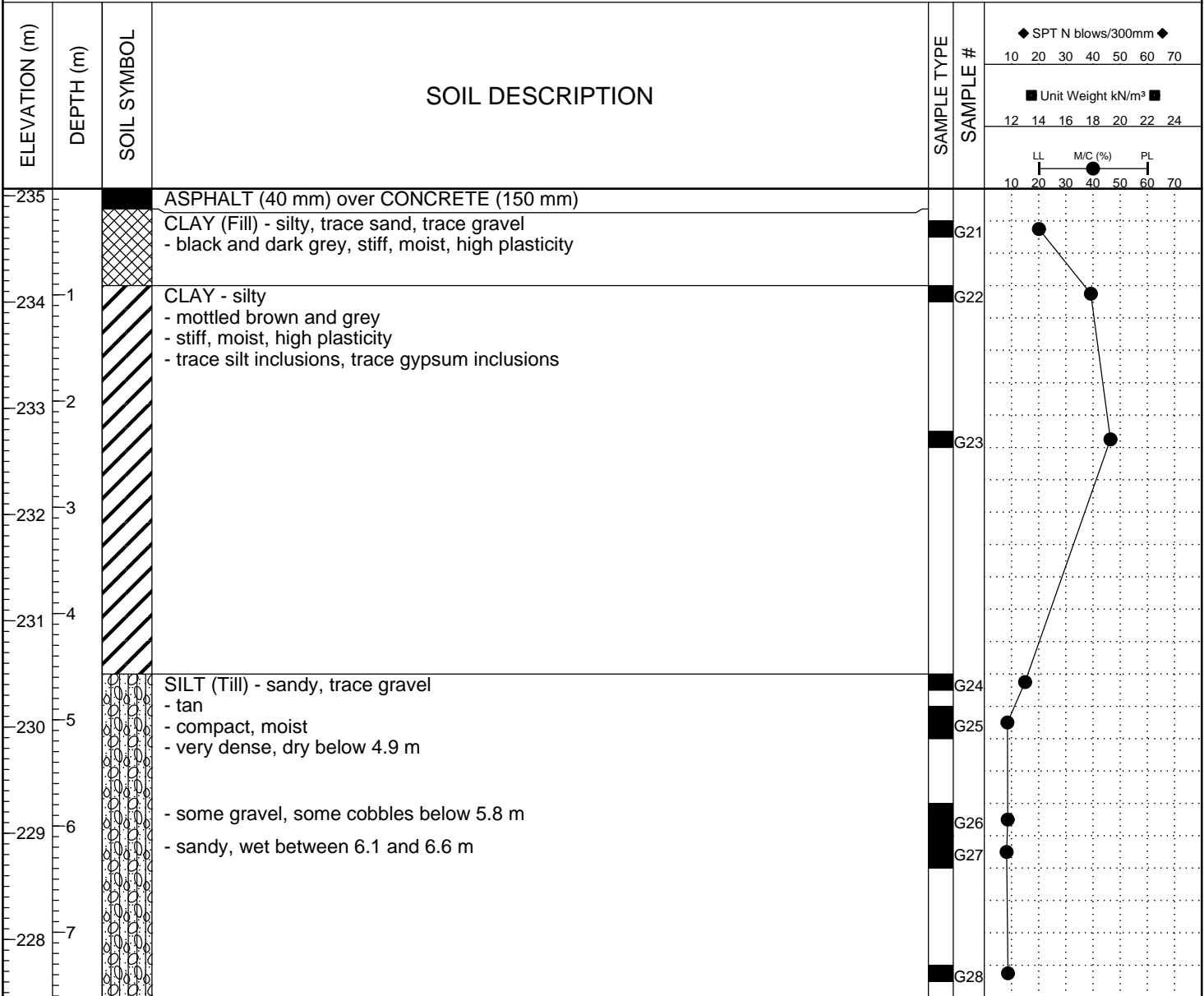


END OF TEST HOLE AT 6.1 m IN SILT TILL
 NOTES:
 1. Auger refusal at 4.7 m. Bullit bit used to advance to 6.1 m (no refusal)
 2. No sloughing or seepage observed.
 3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEWALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-45		
LOCATION: Berry St. Approx. 300 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.223		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



END OF TESET HOLE AT 7.6 m IN SILT TILL

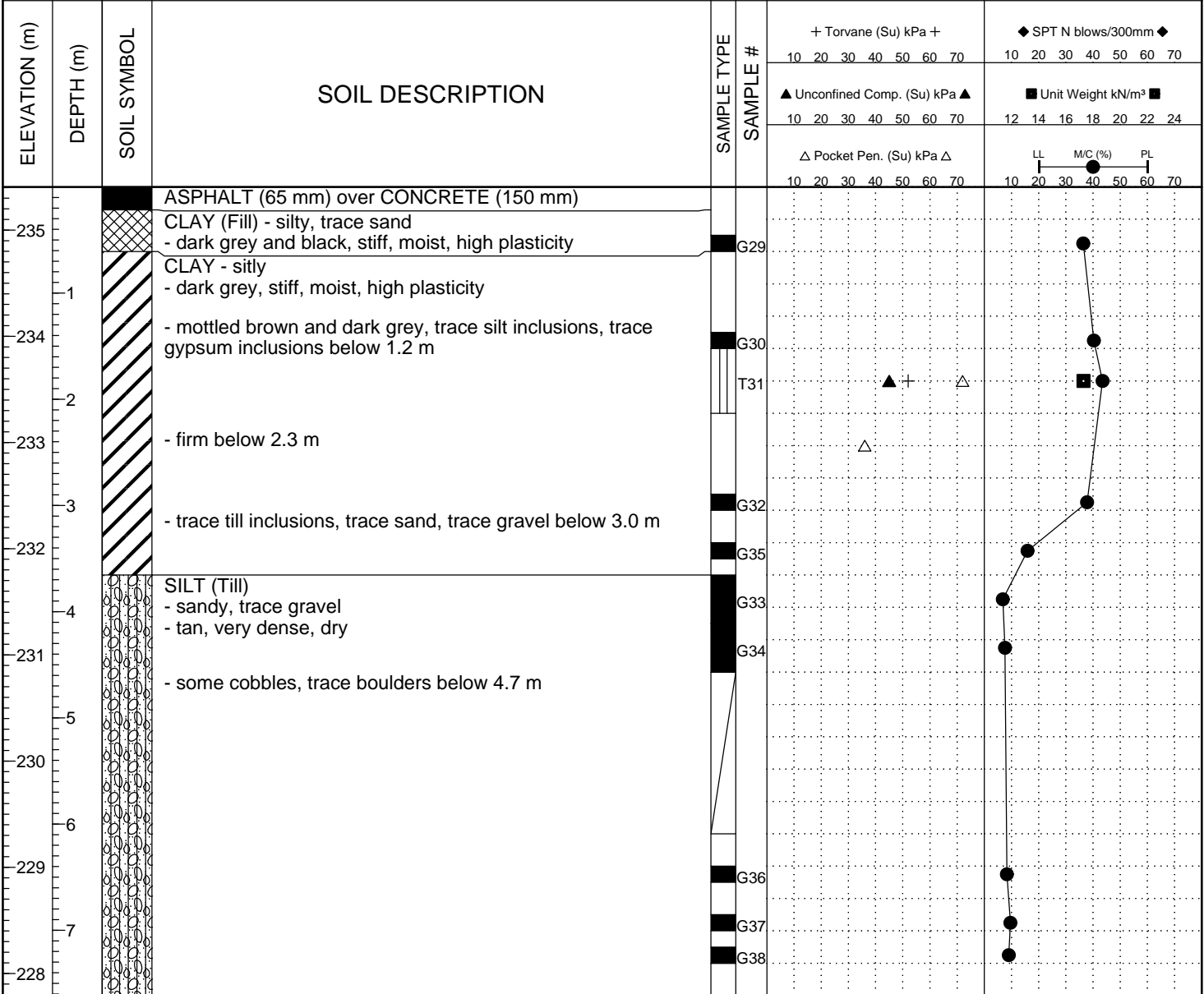
Notes:

- Trace seepage between 6.1 and 6.6 m.
- No sloughing observed.
- Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-46		
LOCATION: Berry St. at Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.562		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

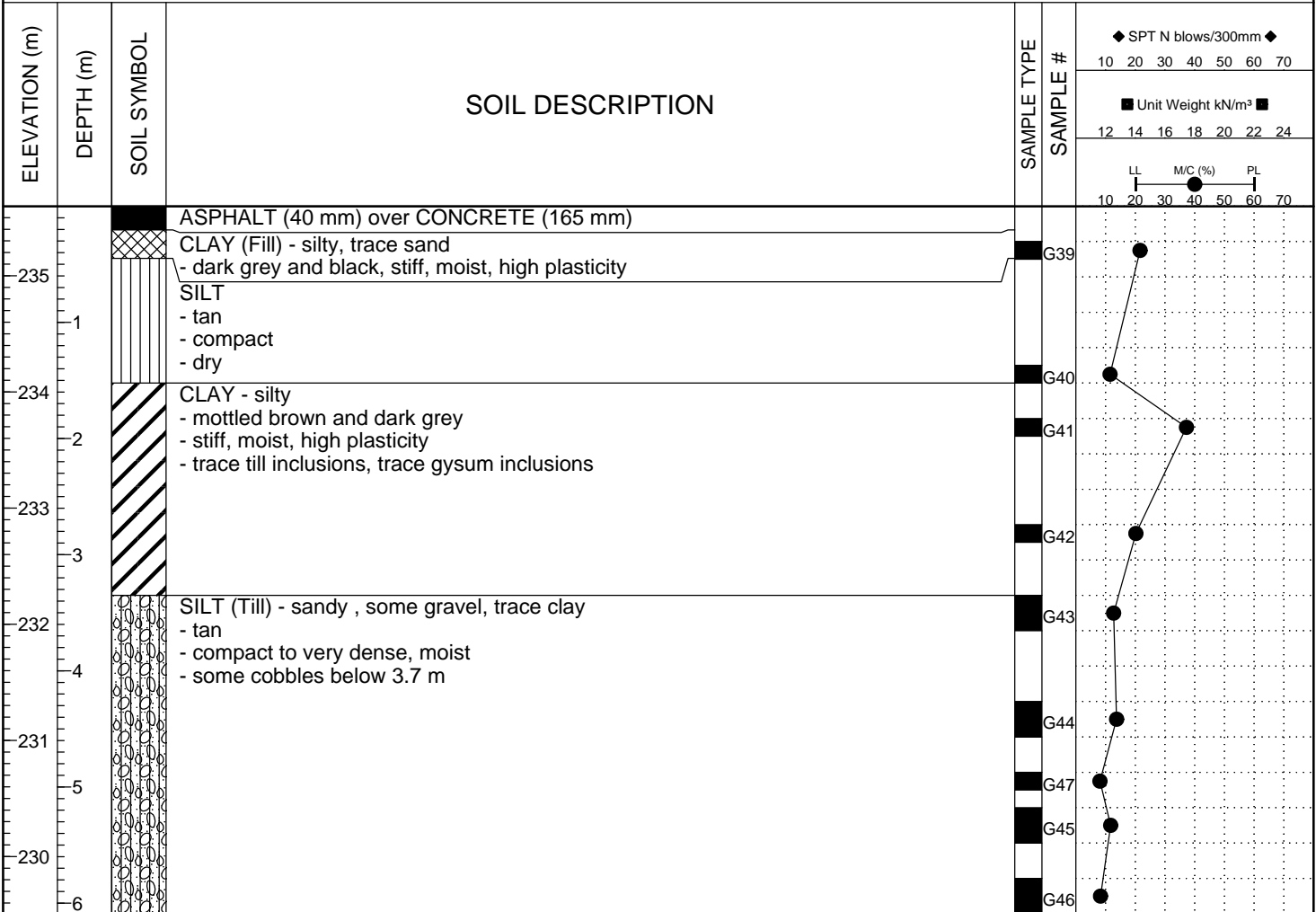


END OF TEST HOLE AT 7.6 m IN SILT TILL
 NOTES:
 1. Auger refusal at 5.8 m. Bullit bit used to advance to 7.6 m (no refusal)
 2. No soil recovery between 4.7 and 6.1 m.
 3. No sloughing or seepage observed.
 4. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-47		
LOCATION: Berry St. Approx. 100 m South of Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.754		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

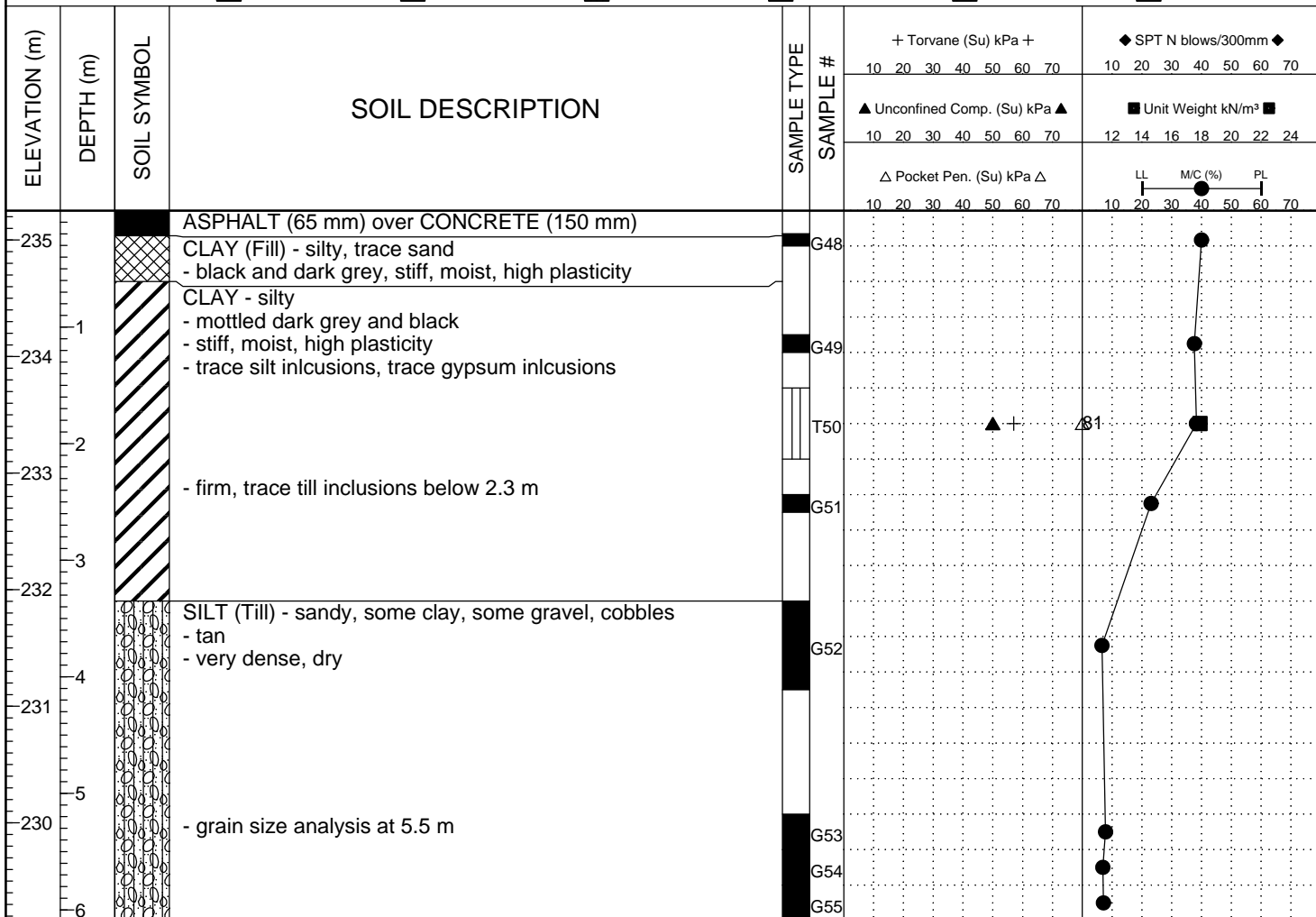


END OF TEST HOLE AT 6.1 m IN SILT TILL
 NOTES:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEWALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-48		
LOCATION: Berry St. Approx. 200 m South of Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.408		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



END OF TEST HOLE AT 6.1 m IN SILT TILL

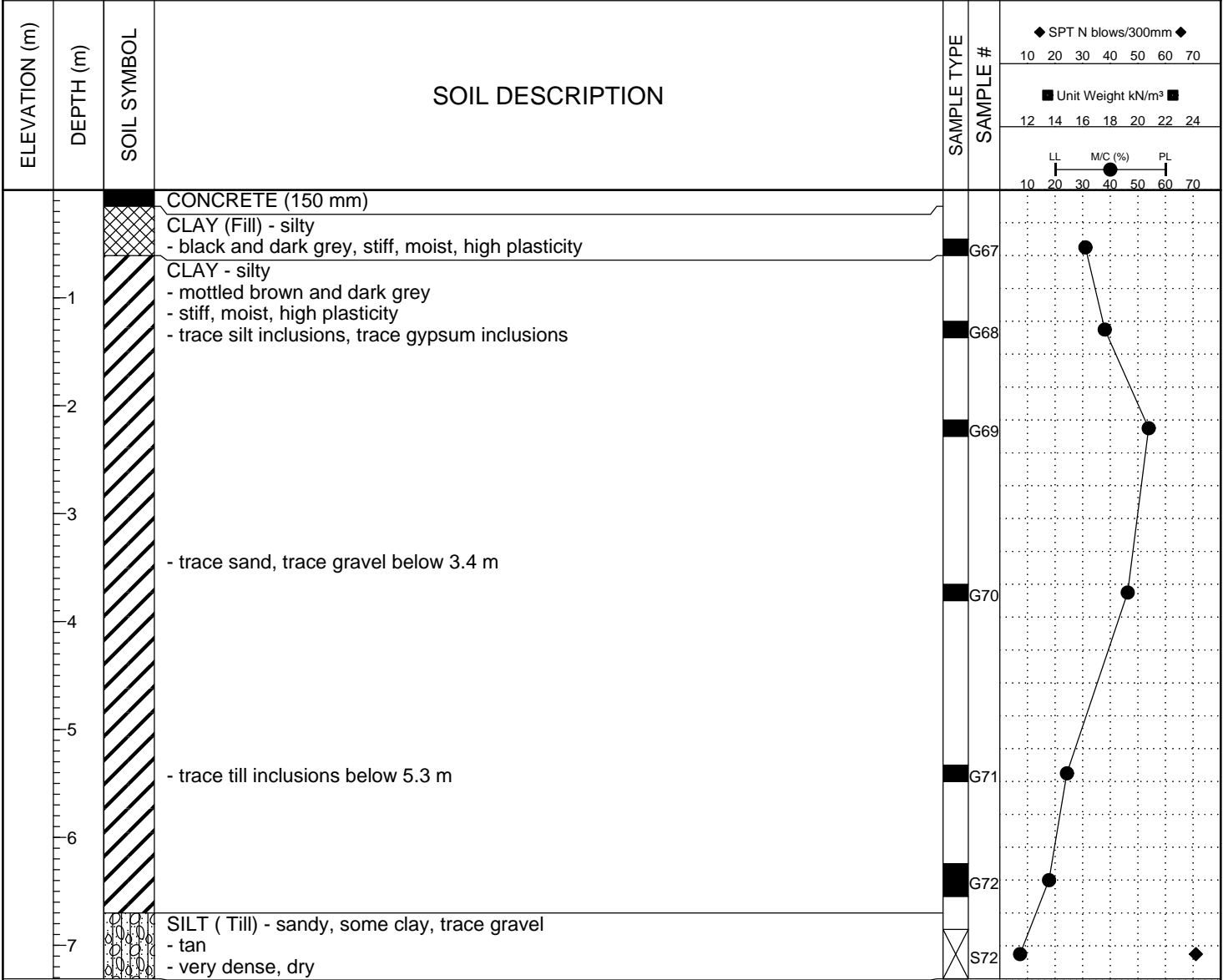
Notes:

1. No sloughing or seepage observed.
2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEWALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-50		
LOCATION: Brooklyn St. Approx. 100 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m):		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

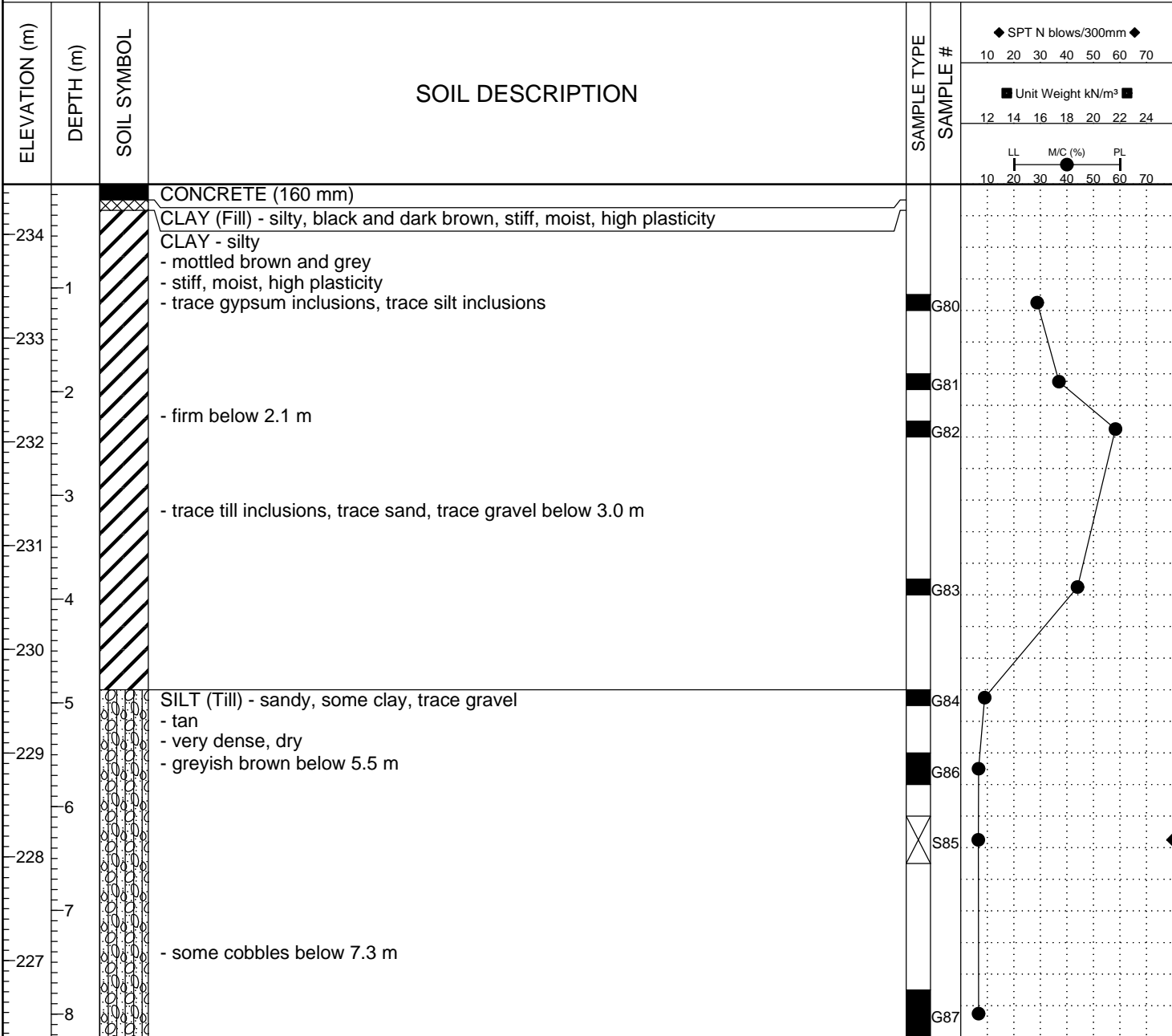


END OF TEST HOLE AT 7.3 m IN SILT TILL
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-52		
LOCATION: Brooklyn St. Approx. 300 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.639		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

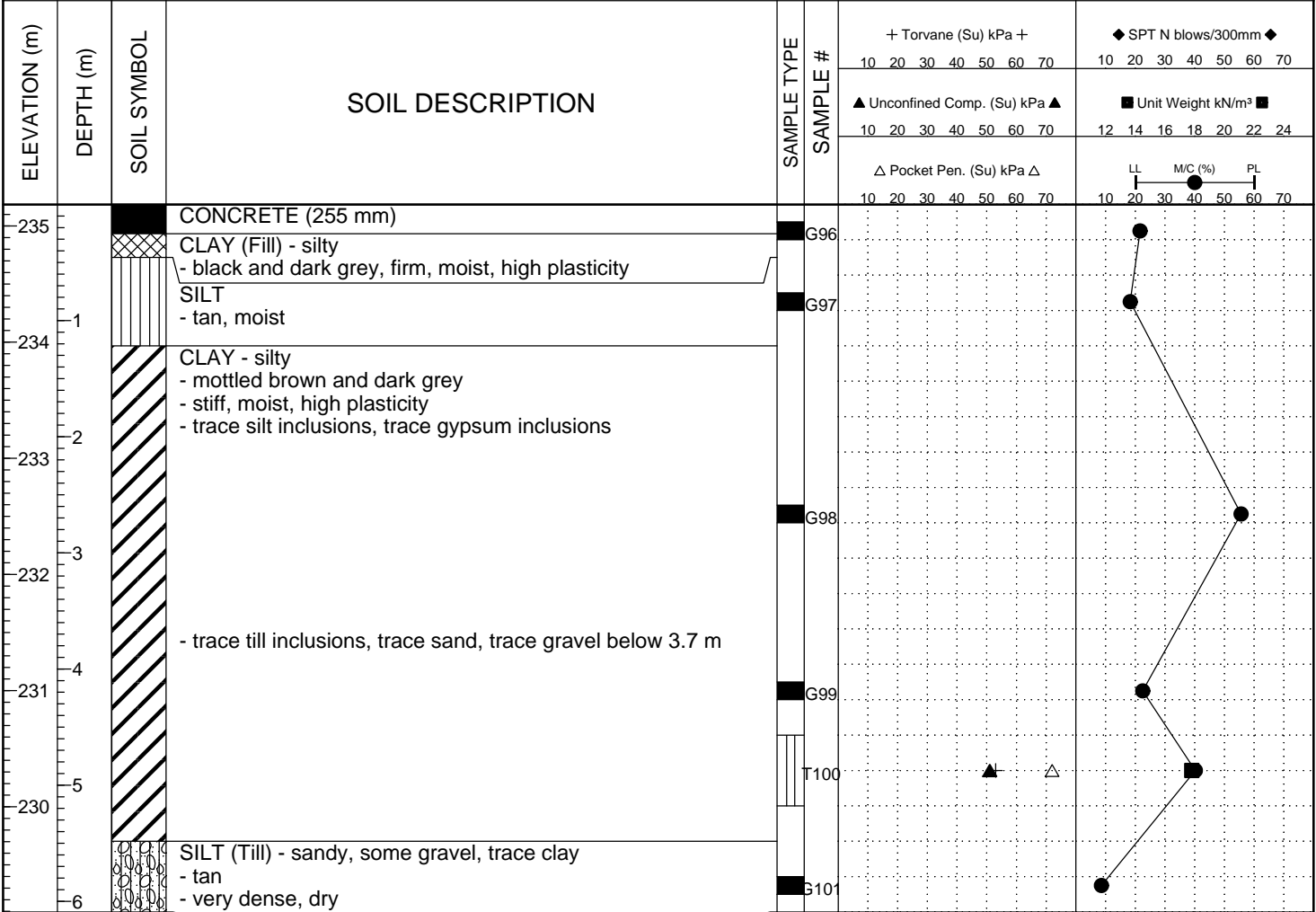


END OF TEST HOLE AT 8.2 m IN SILT (Till)
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-54		
LOCATION: King Edward St. Approx. 200 m South of Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.341		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

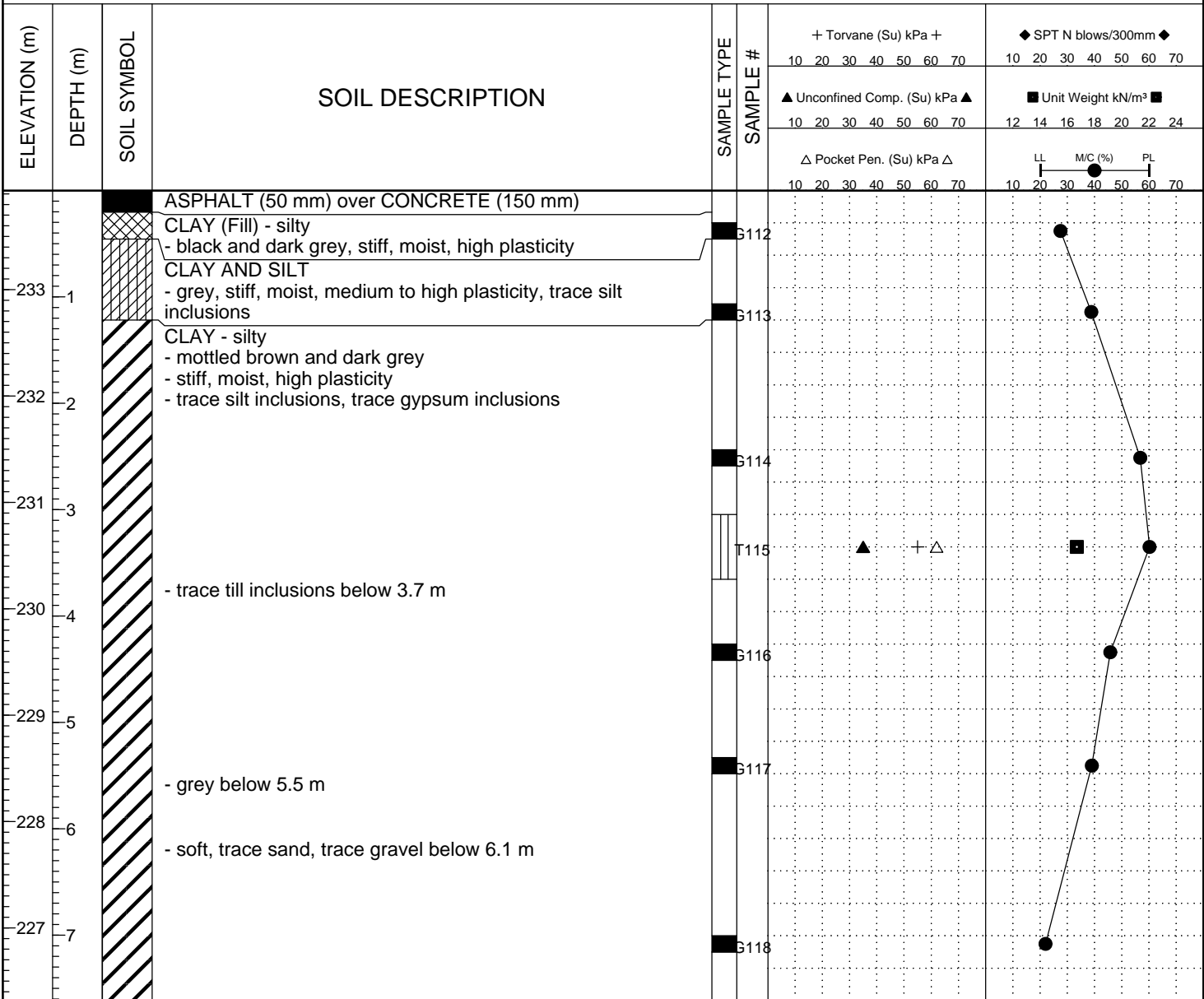


END OF TEST HOLE AT 6.1 m IN SILT TILL
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-56		
LOCATION: King Edward St. at Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.086		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

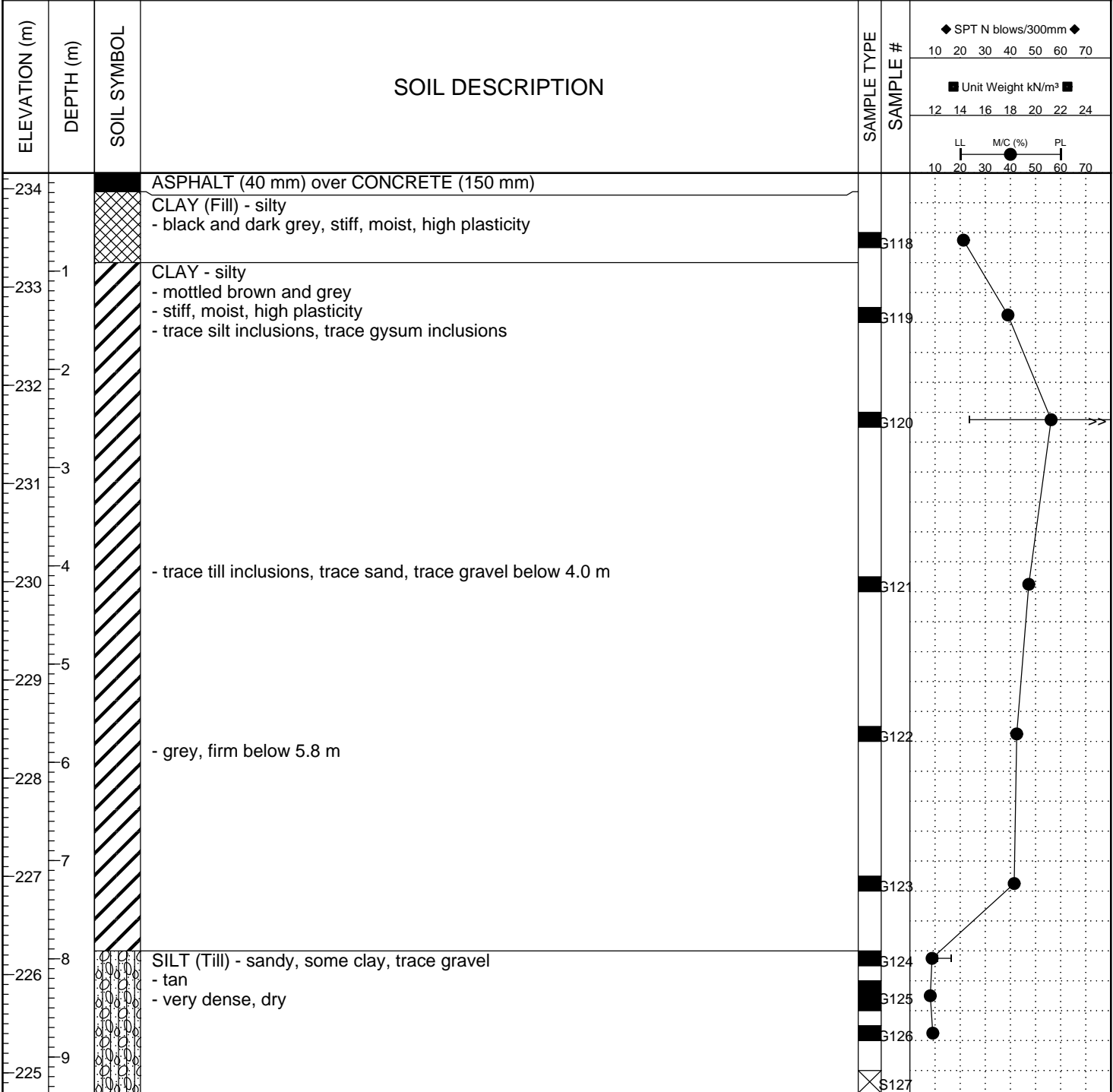


END OF TEST HOLE AT 7.6 m IN CLAY
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-57		
LOCATION: King Edward St. Approx. 100 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.316		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



END OF TEST HOLE AT 9.4 m IN SILT TILL

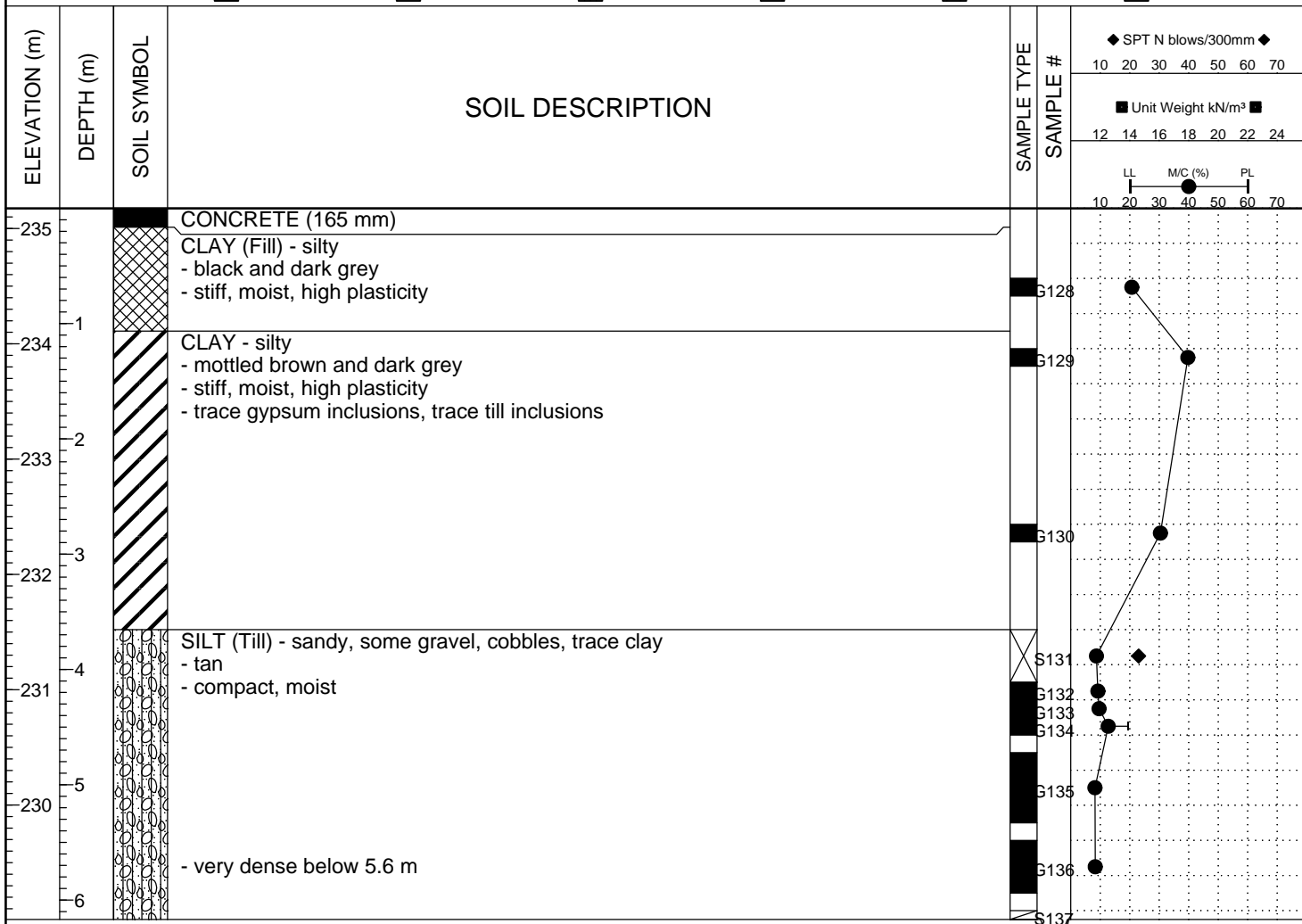
Notes:

1. SPT terminated at 9.4 m. Refused on suspected cobble.
2. No sloughing or seepage observed.
3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS-NEWALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2	CLIENT: Tetra Tech	TESTHOLE NO: 12-58
LOCATION: Brooklyn St. Approx. of Ness Ave. 150 m South of Ness Ave.		PROJECT NO.: 123499
CONTRACTOR: Paddock Drilling	METHOD: ACKER MP8 125mm dia. SSA	ELEVATION (m): 235.331
SAMPLE TYPE <input checked="" type="checkbox"/> GRAB <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> SPLIT SPOON <input type="checkbox"/> BULK <input type="checkbox"/> NO RECOVERY <input type="checkbox"/> CORE		
BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> CUTTINGS <input type="checkbox"/> SAND		

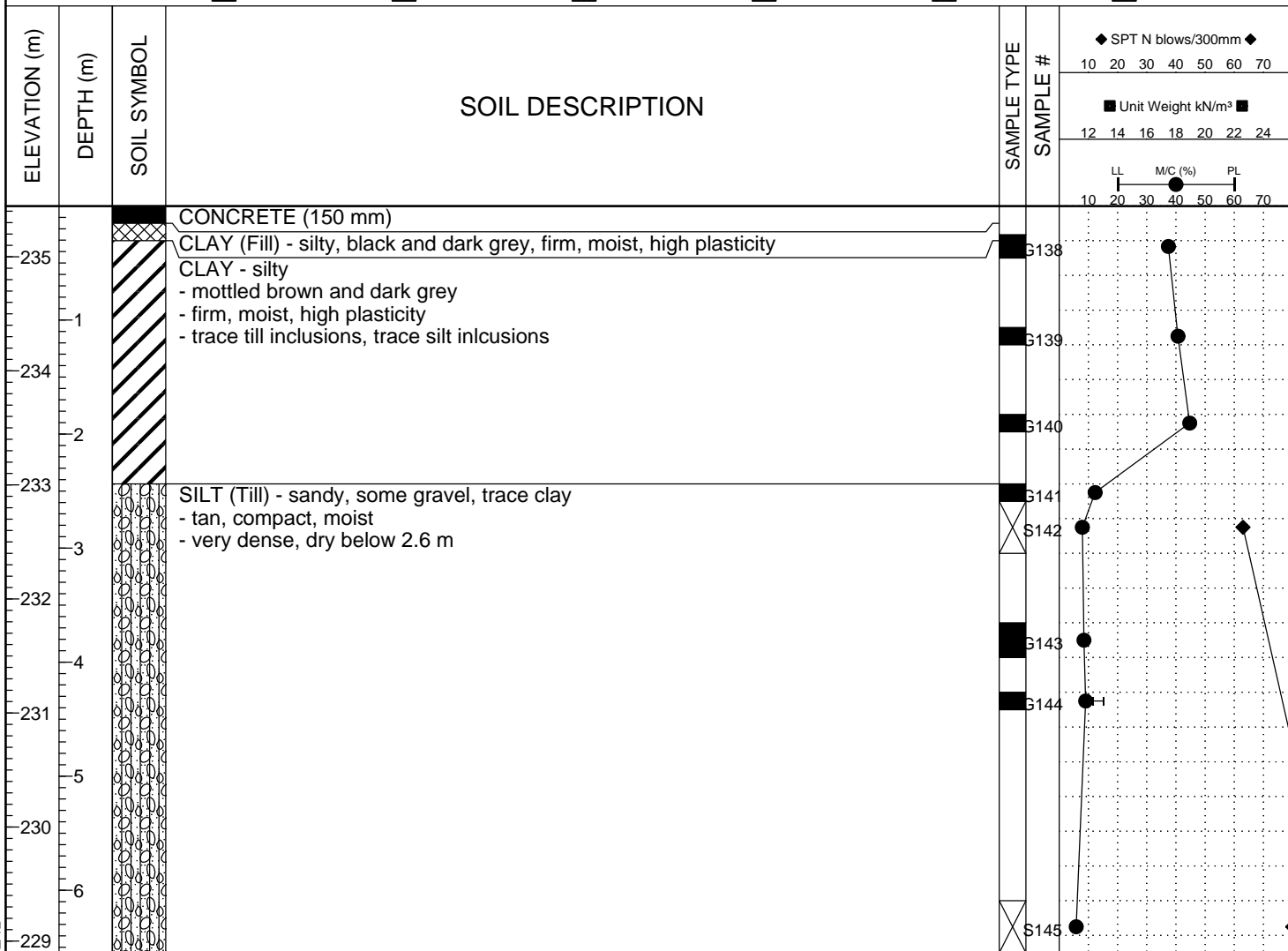


END OF TEST HOLE AT 6.2 m IN SILT TILL
 Notes:
 1. SPT terminated at 6.2 m. Refusal on suspected cobble.
 2. No sloughing or seepage observed.
 3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-59		
LOCATION: Brooklyn St. Approx. 300 m South of Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.601		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

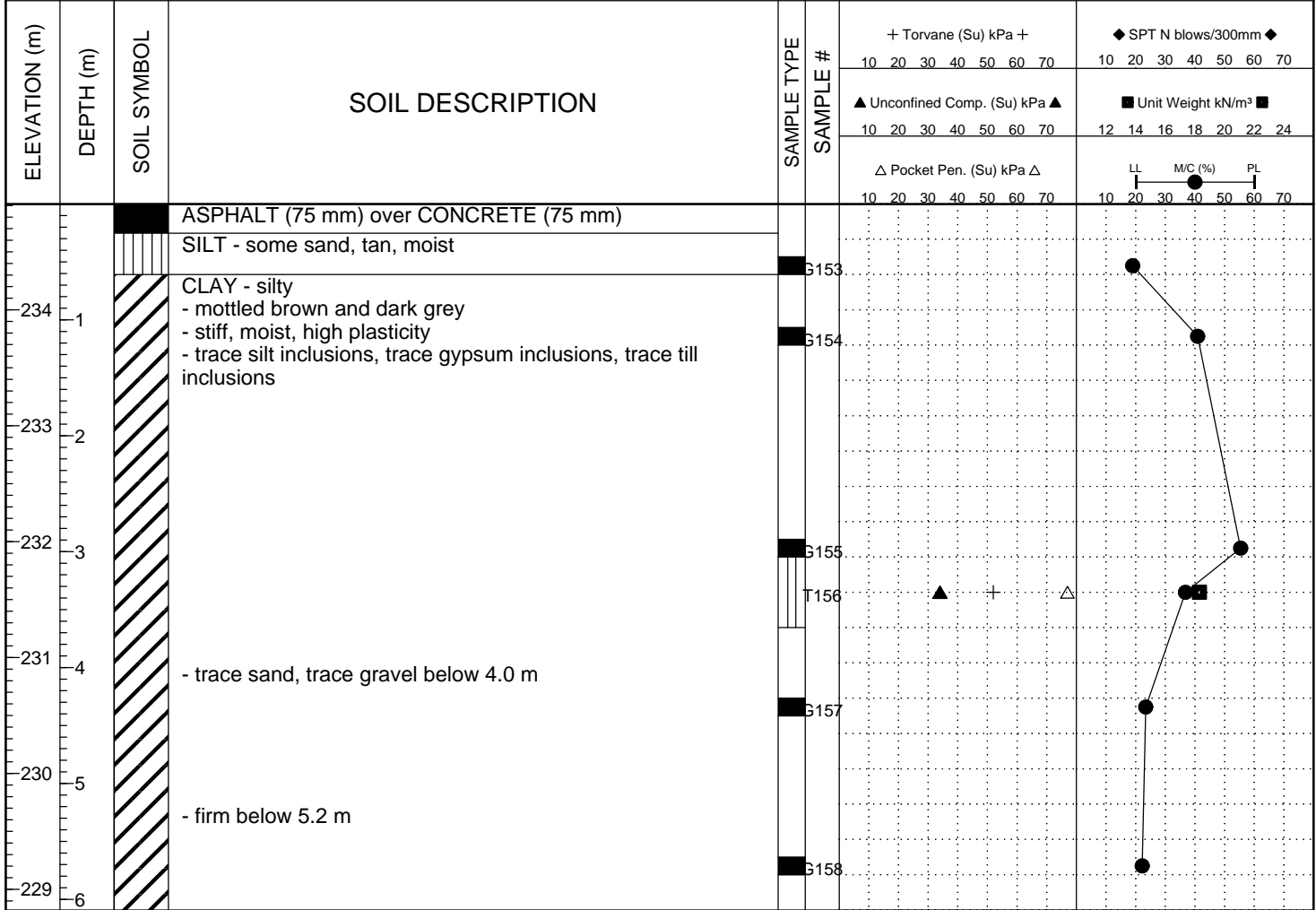


END OF TEST HOLE AT 6.5 m IN SILT TILL
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-61		
LOCATION: King Edward St. Approx. 100 m South of Silver Ave. Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.068		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

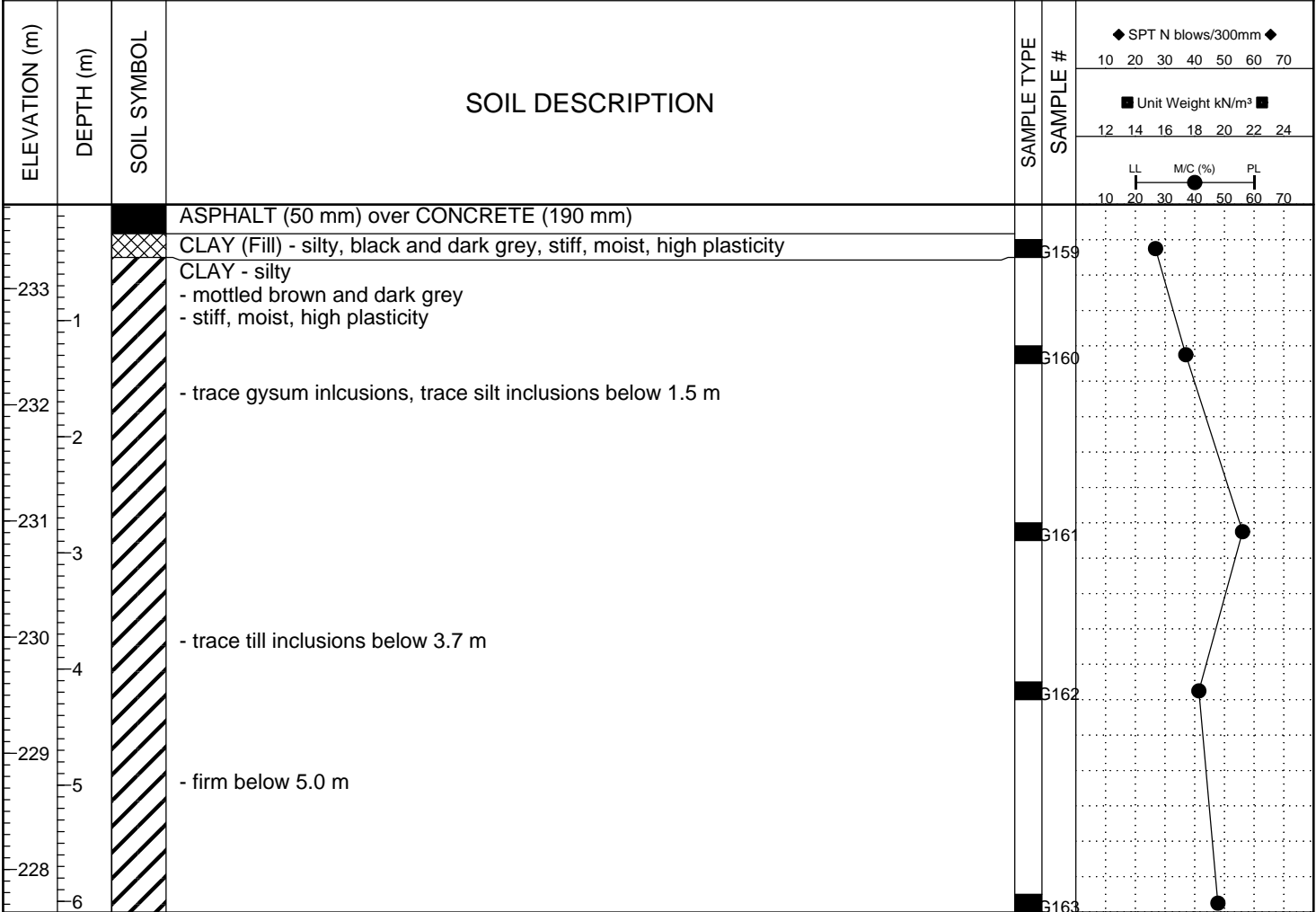


END OF TEST HOLE AT 6.1 m IN CLAY
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-62		
LOCATION: Queen St. Approx. 100 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.879		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

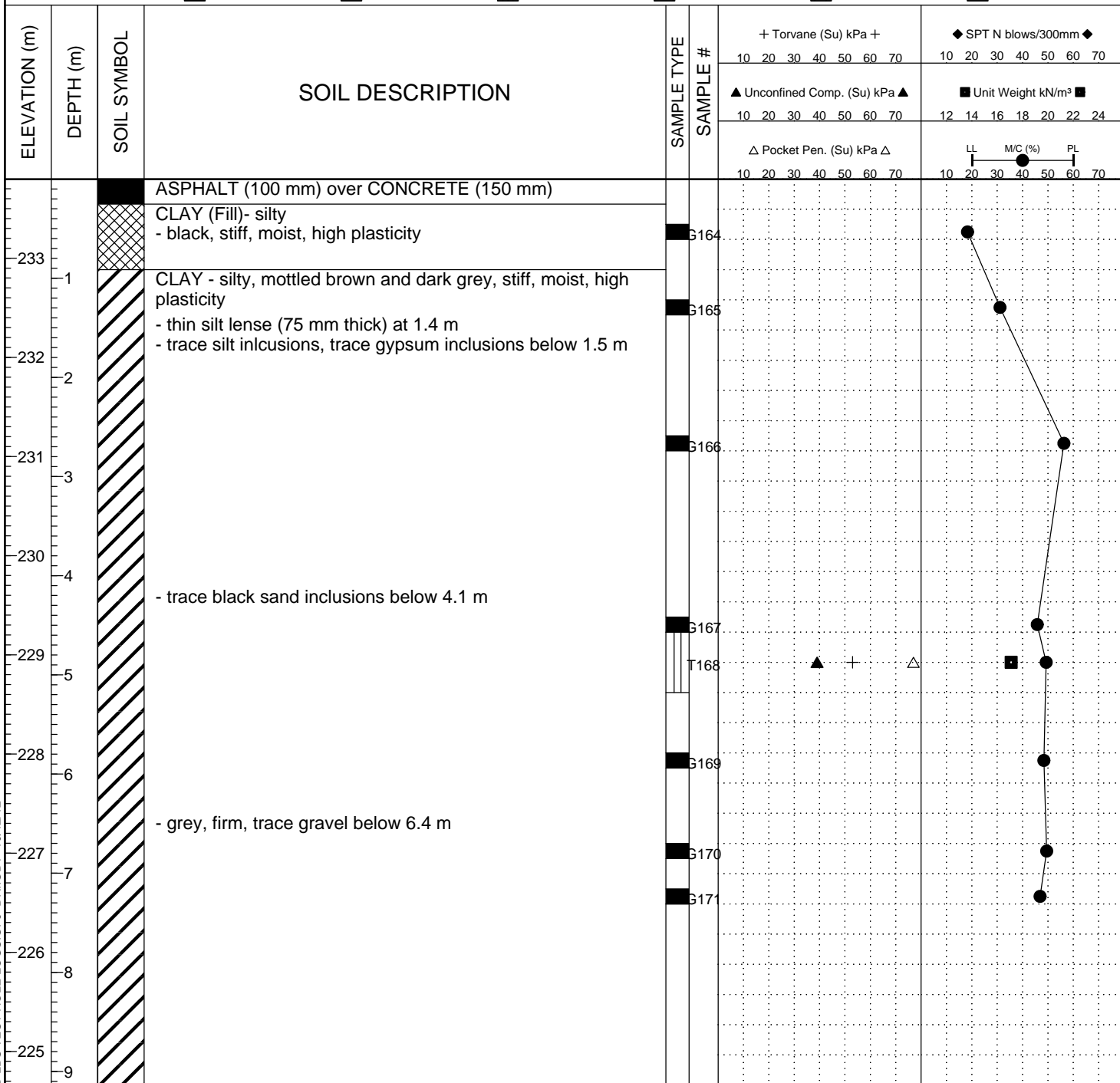


END OF TEST HOLE AT 6.1 m IN CLAY
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-63		
LOCATION: Queen St. Approx. 200 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.952		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



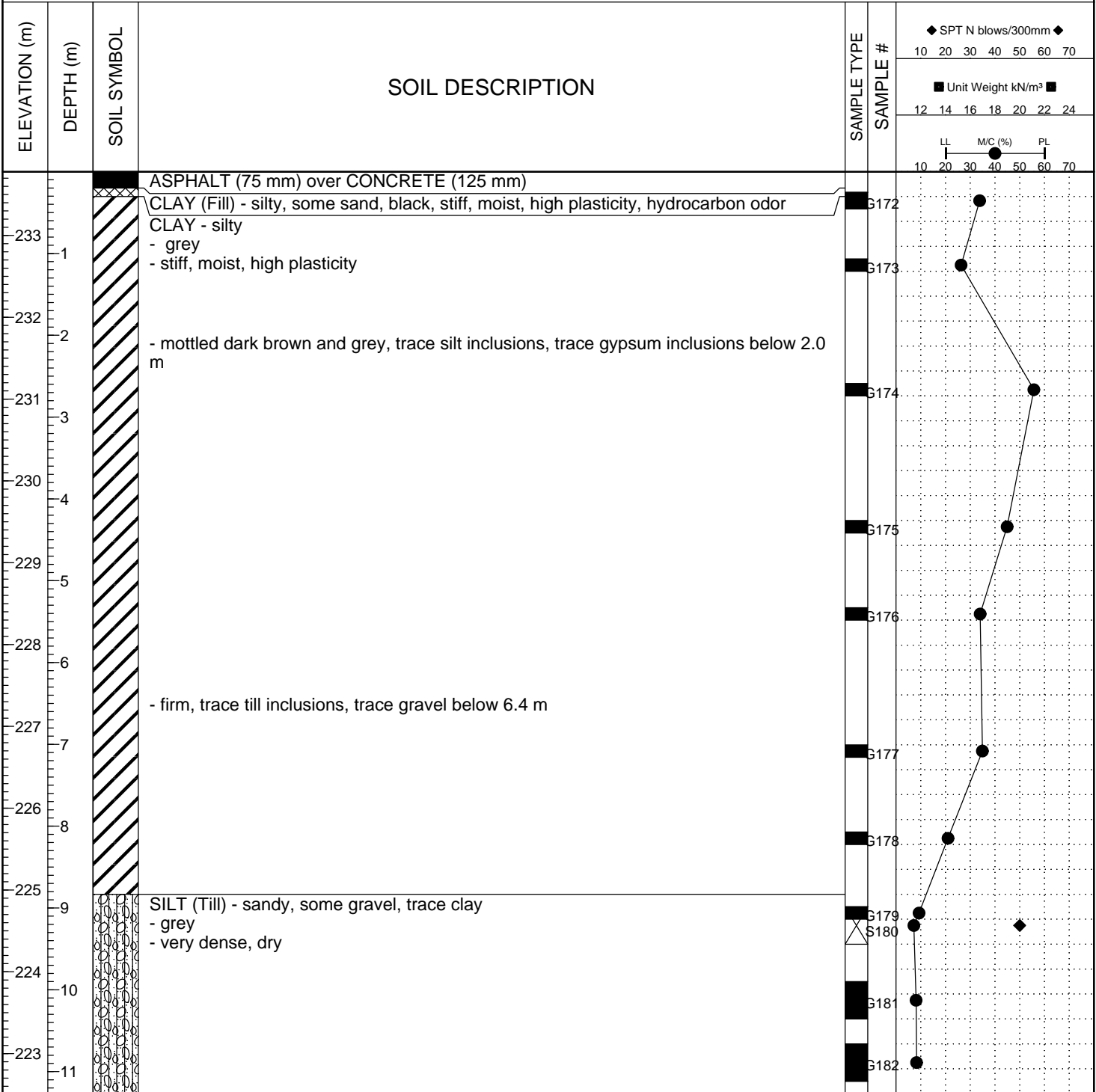
END OF TEST HOLE AT 9.1 m IN CLAY

- Notes:
1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-64		
LOCATION: Queen St. at Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.934		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

END OF TEST HOLE AT AUGER REFUSAL AT 11.3 m IN SILT TILL

- Notes:
1. Refusal on suspected bedrock.
 2. No sloughing or seepage observed.
 3. Test hole backfilled with auger cuttings.

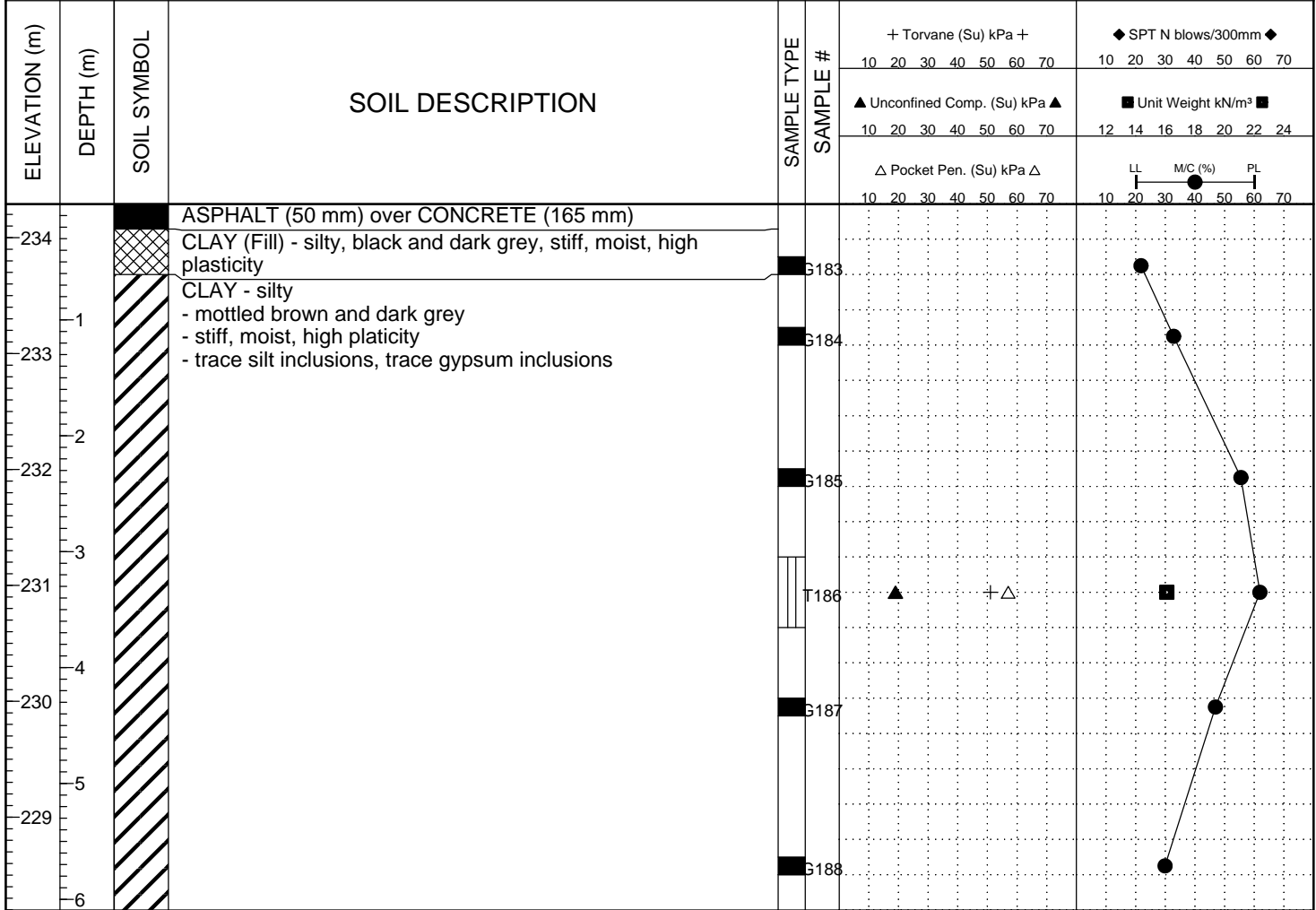
DYREGROV ROBINSON INC.
Consulting Geotechnical Engineers

LOGGED BY: CR
REVIEWED BY: AOD
PROJECT ENGINEER: Alv Dyregrov

COMPLETION DEPTH: 11.28 m
COMPLETION DATE: 01/11/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-65		
LOCATION: Queen St. Approx. 100 m South of Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.445		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

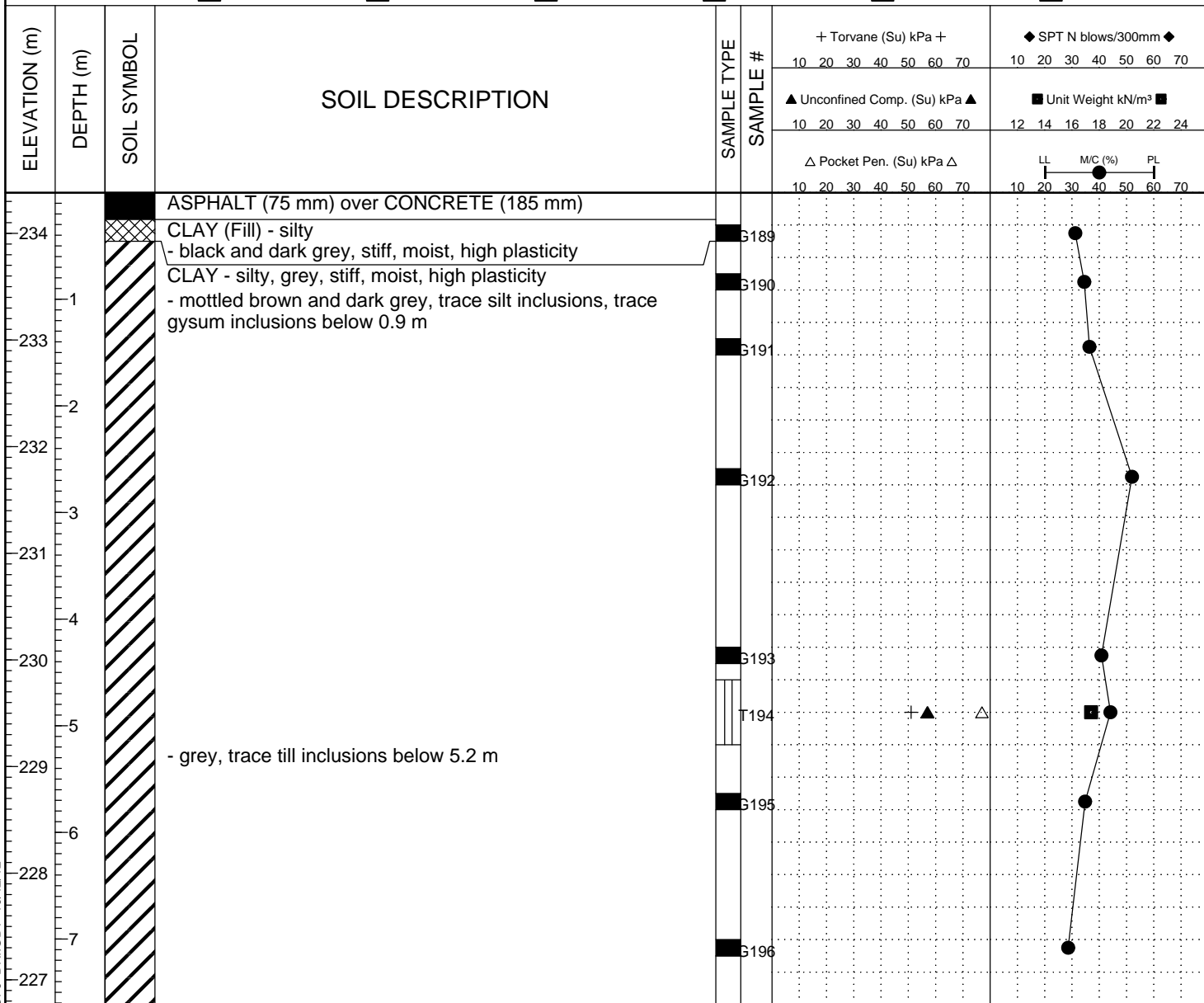


END OF TEST HOLE AT 6.1 m IN CLAY
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-66		
LOCATION: Queen St. Approx. 200 m South of Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.537		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

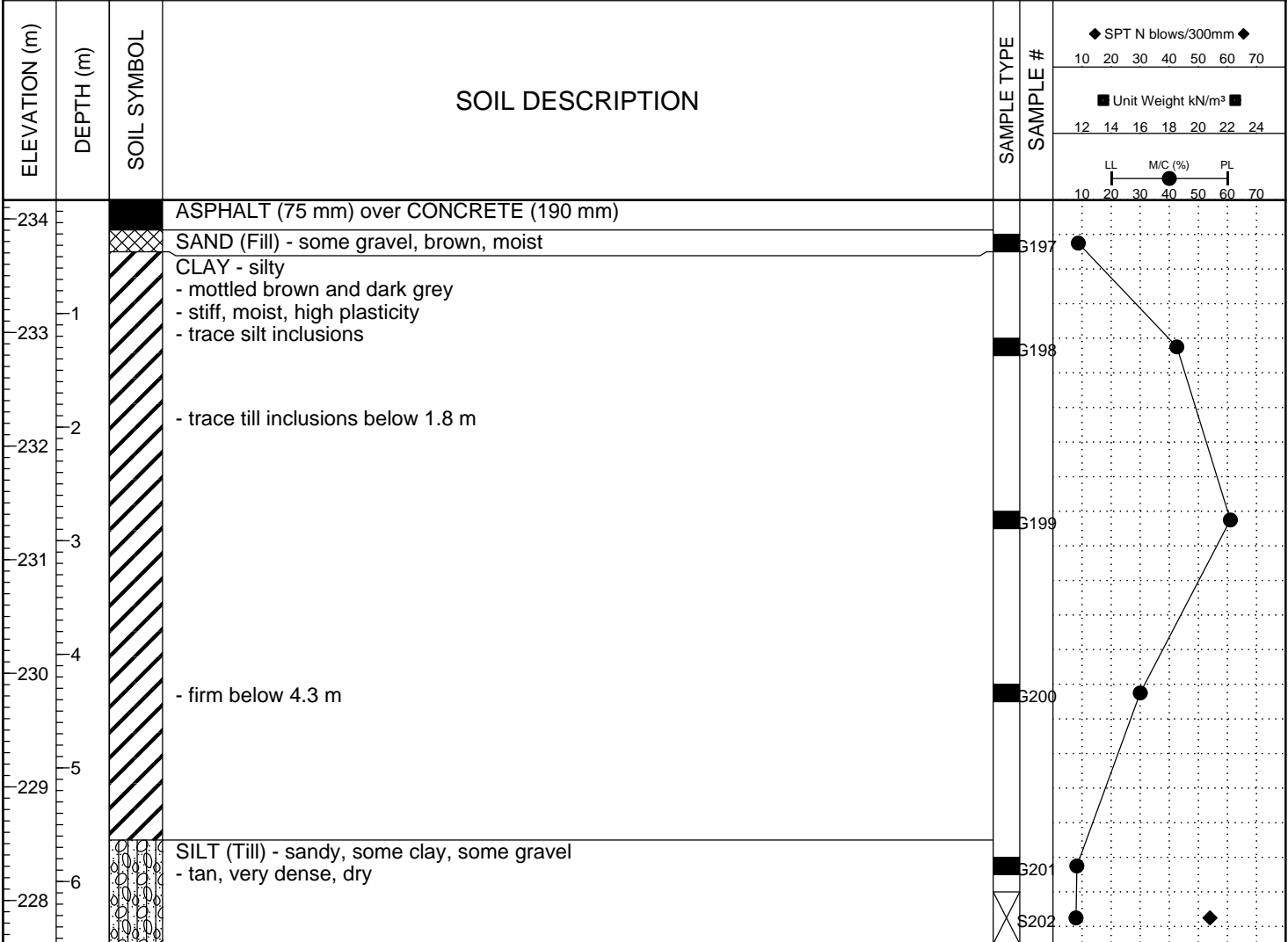


END OF TEST HOLE AT 7.6 m IN CLAY
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2	CLIENT: Tetra Tech	TESTHOLE NO: 12-67
LOCATION: Queen St. Approx. 300 m South of Ness Ave.		PROJECT NO.: 123499
CONTRACTOR: Paddock Drilling	METHOD: ACKER MP8 125mm dia. SSA	ELEVATION (m): 234.321
SAMPLE TYPE <input checked="" type="checkbox"/> GRAB	<input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> SPLIT SPOON <input type="checkbox"/> BULK	<input type="checkbox"/> NO RECOVERY <input type="checkbox"/> CORE
BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT	<input type="checkbox"/> CUTTINGS <input type="checkbox"/> SAND



END OF TEST HOLE AT 6.6 m IN SILT TILL

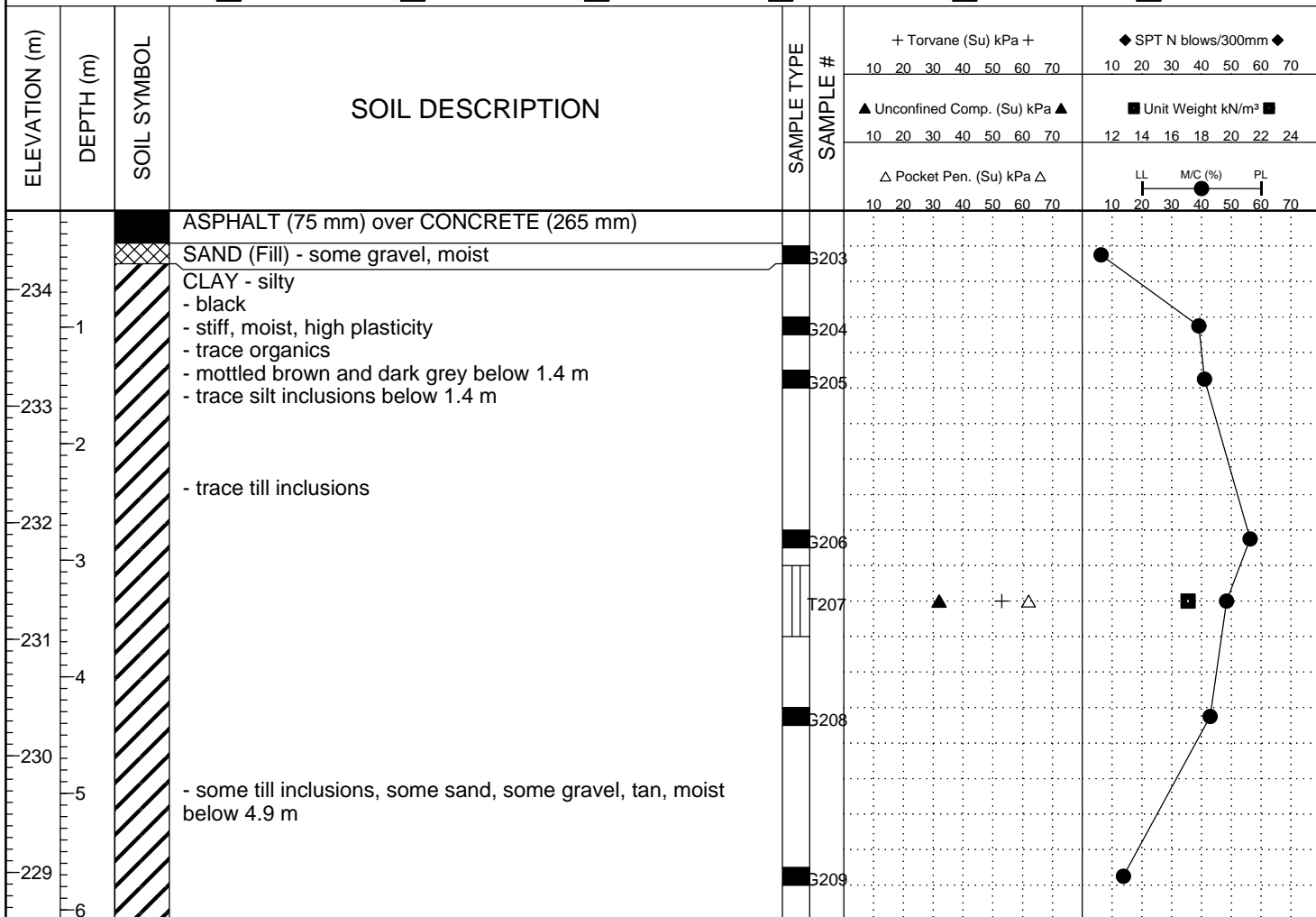
Notes:

1. Trace seepage below 0.3 m from sand fill layer.
2. No sloughing observed.
3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-68		
LOCATION: Queen St. Approx. 400 m South of Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.833		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

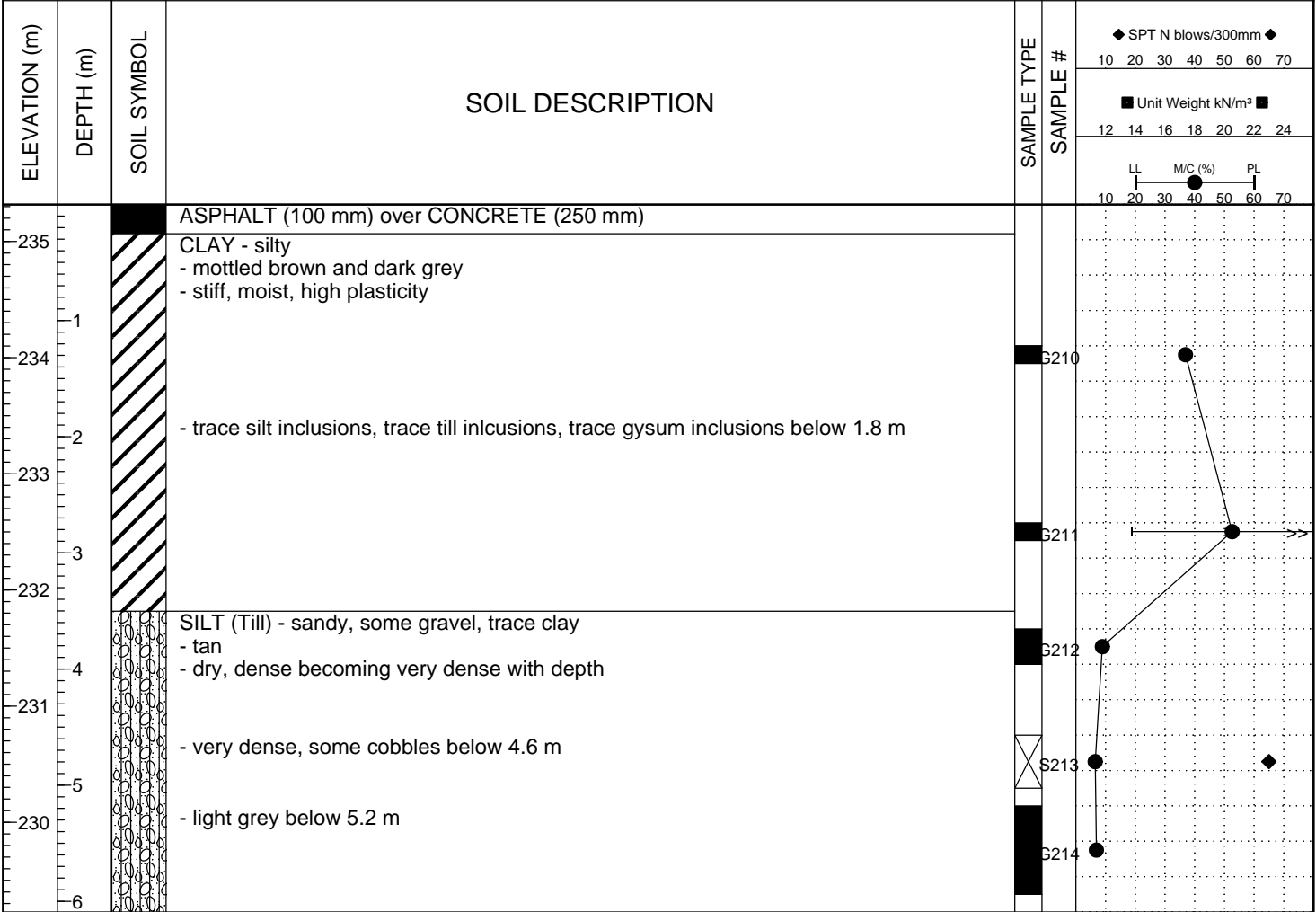


END OF TEST HOLE AT 6.1 m IN CLAY
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-69	
LOCATION: King Edward St. Approx. 300 m South of Ness Ave.				PROJECT NO.: 123499	
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 235.474	
SAMPLE TYPE	<input checked="" type="checkbox"/> GRAB	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> SPLIT SPOON	<input type="checkbox"/> BULK	<input type="checkbox"/> NO RECOVERY
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> CUTTINGS
				<input type="checkbox"/> CORE	<input type="checkbox"/> SAND

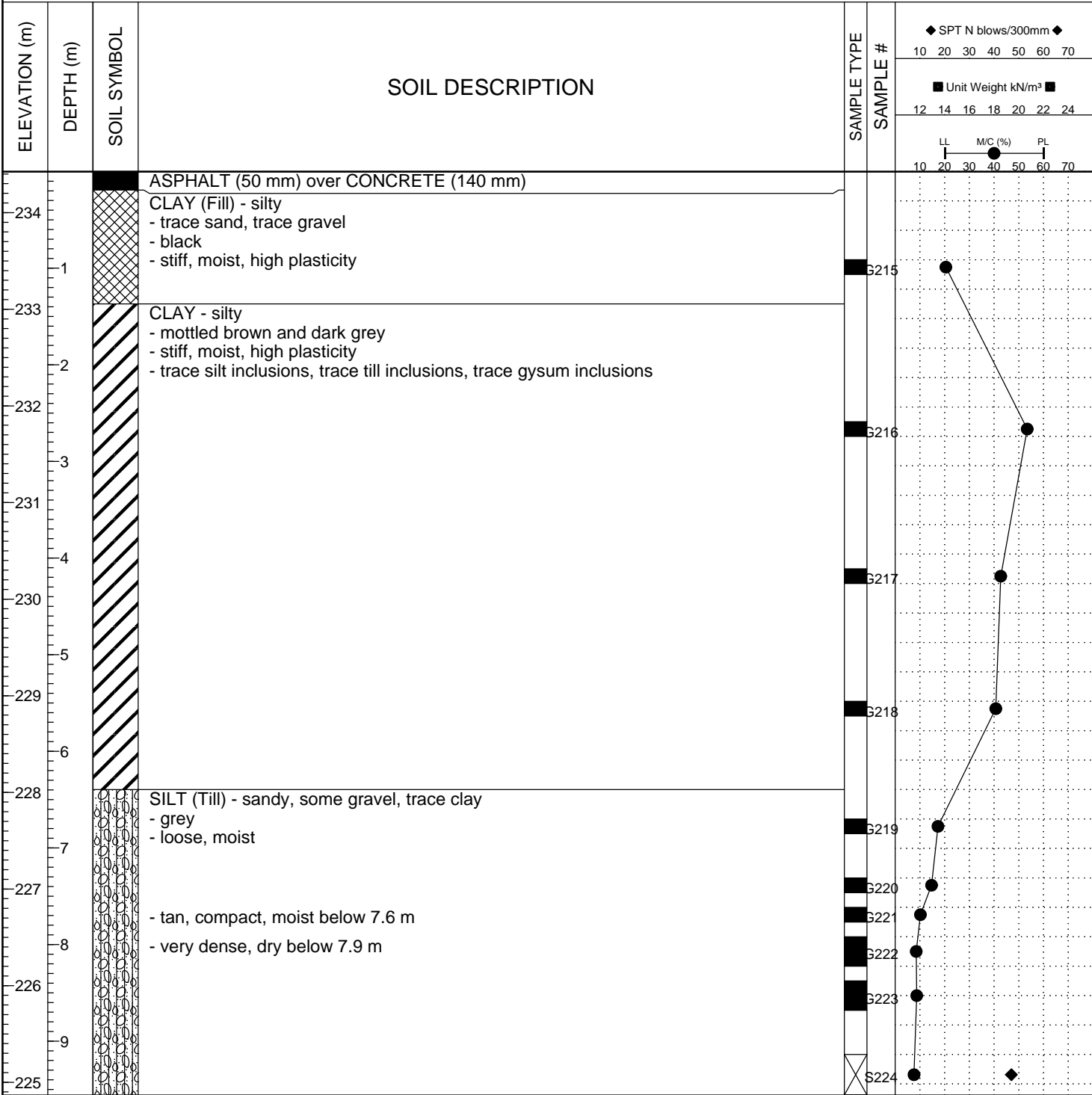


END OF TEST HOLE AT 6.1 m IN SILT TILL
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-70		
LOCATION: King Edward St. Approx. 350 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 234.58		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



END OF TEST HOLE AT 9.6 m IN SILT TILL

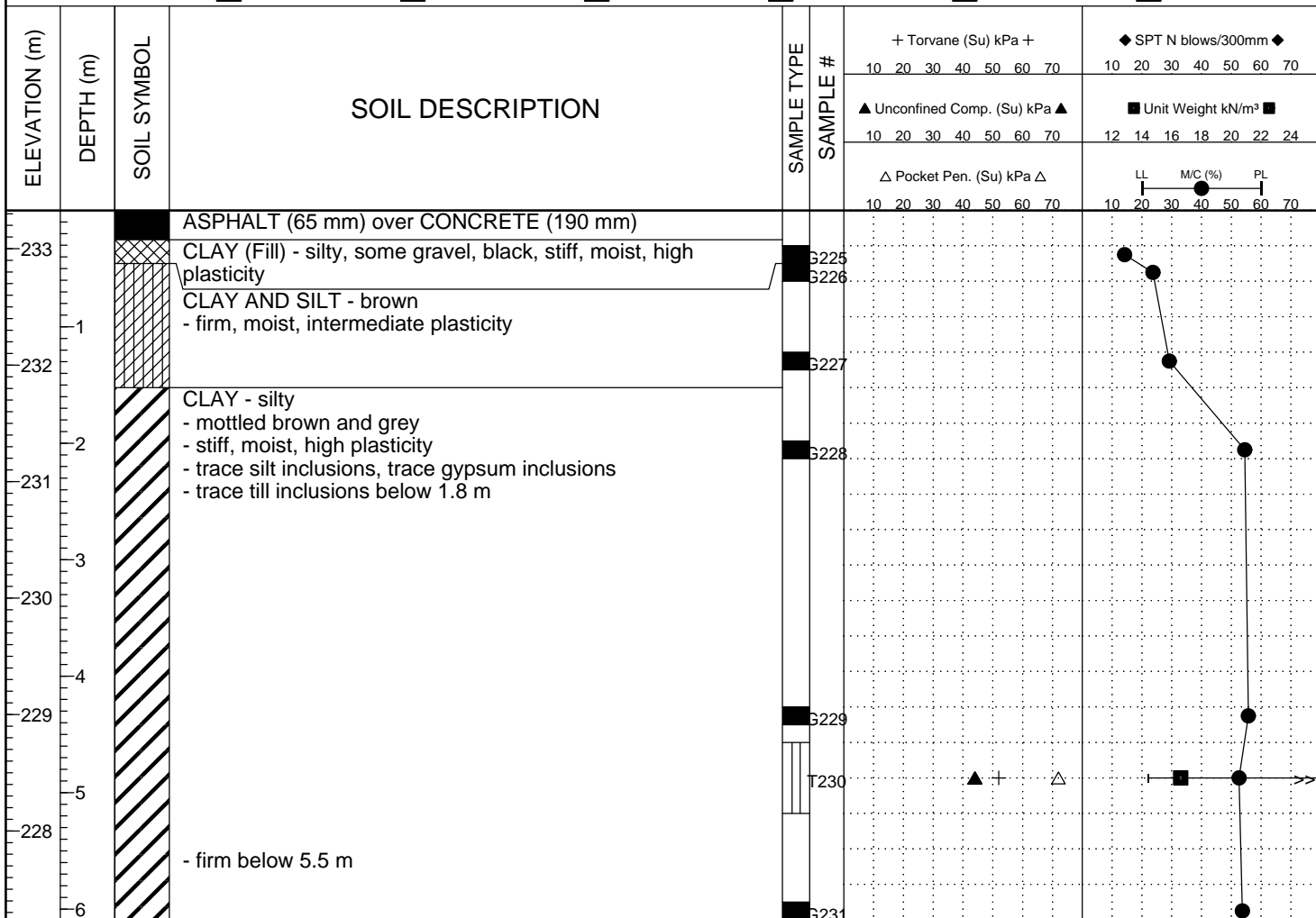
Notes:

1. SPT terminated at 9.6 m. Refused on suspected cobble.
2. No sloughing or seepage observed.
3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS-NEWAL-T1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-71		
LOCATION: Kensington St. at Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.483		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

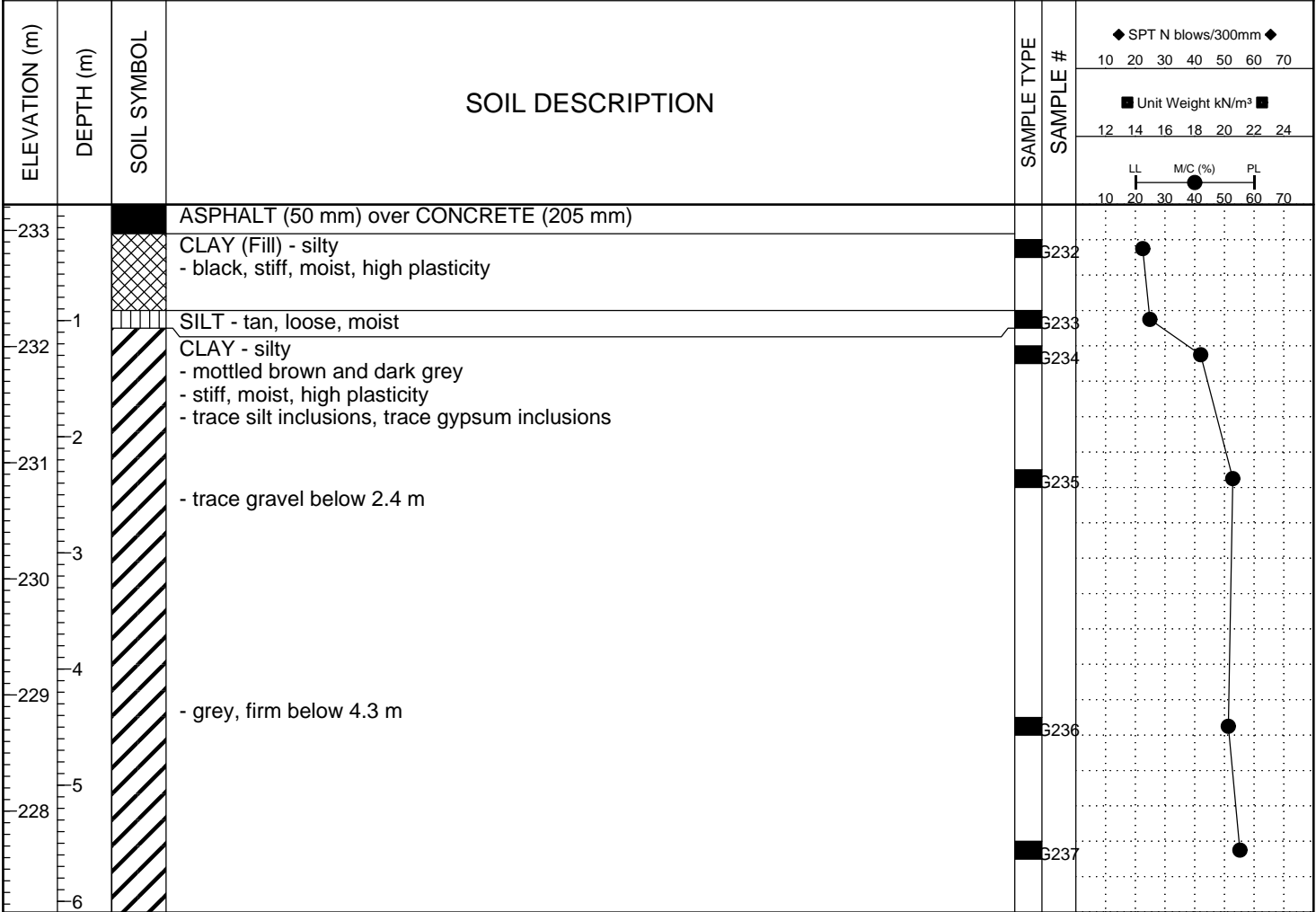


END OF TEST HOLE AT 6.1 m IN CLAY
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-72		
LOCATION: Kensington St. Approx. 100 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.377		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

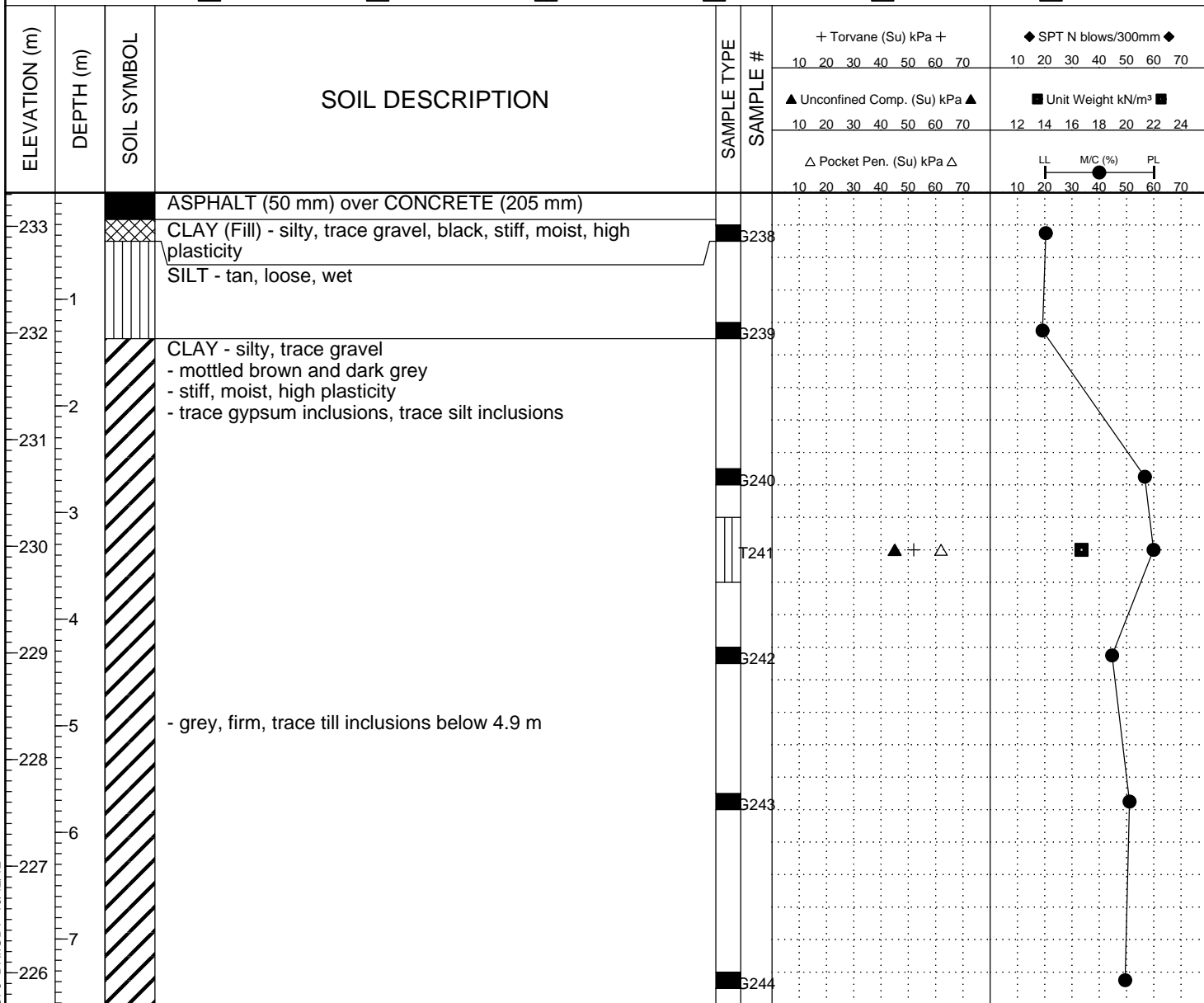


END OF TEST HOLE AT 6.1 m IN CLAY
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-73		
LOCATION: Kensington St. Approx. 200 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.471		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

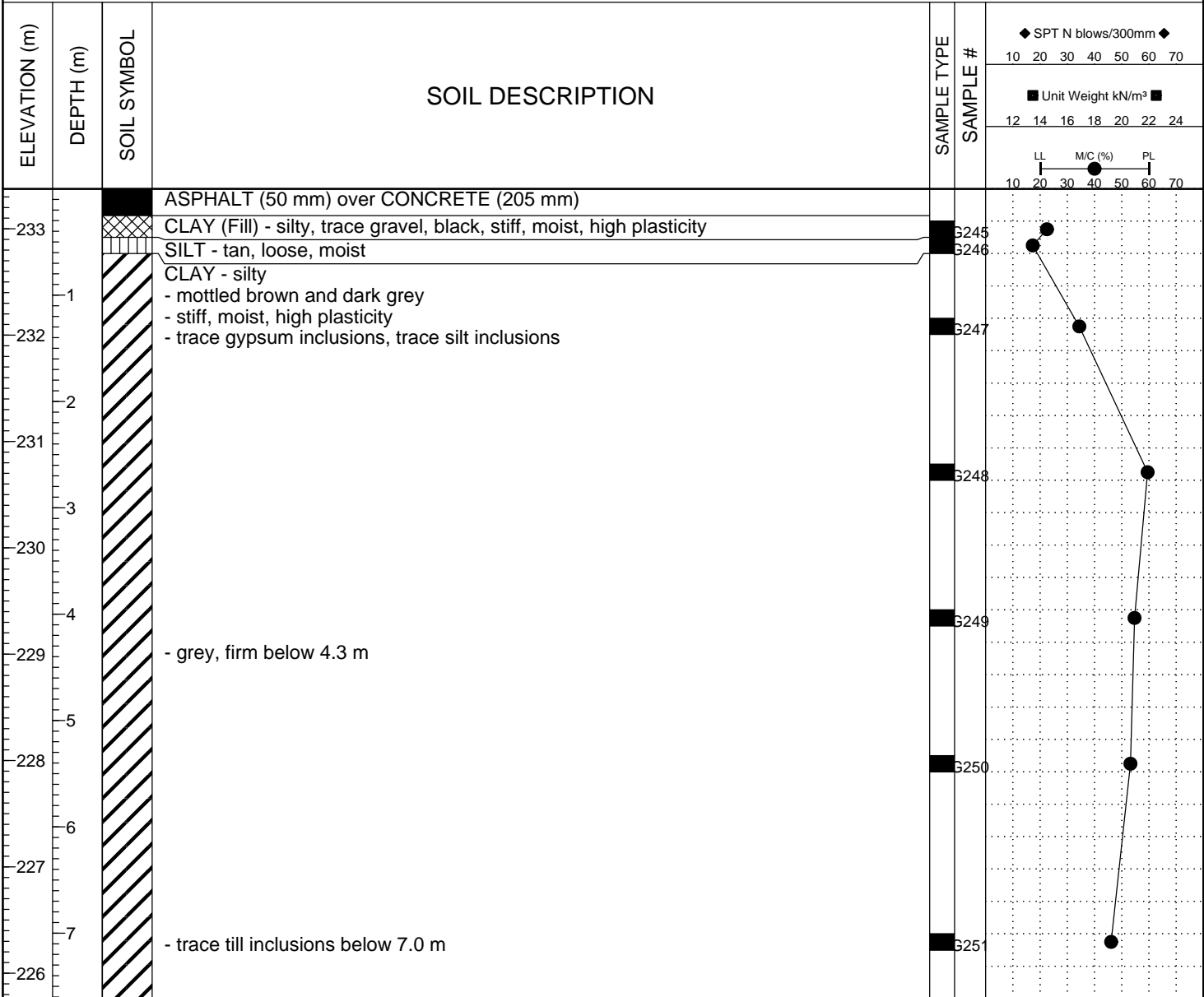


END OF TEST HOLE AT 7.6 m IN CLAY
 Notes:
 1. Trace seepage below 0.5 m from silt layer.
 2. No sloughing observed.
 3. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-74		
LOCATION: Kensington St. Approx. 300 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.53		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

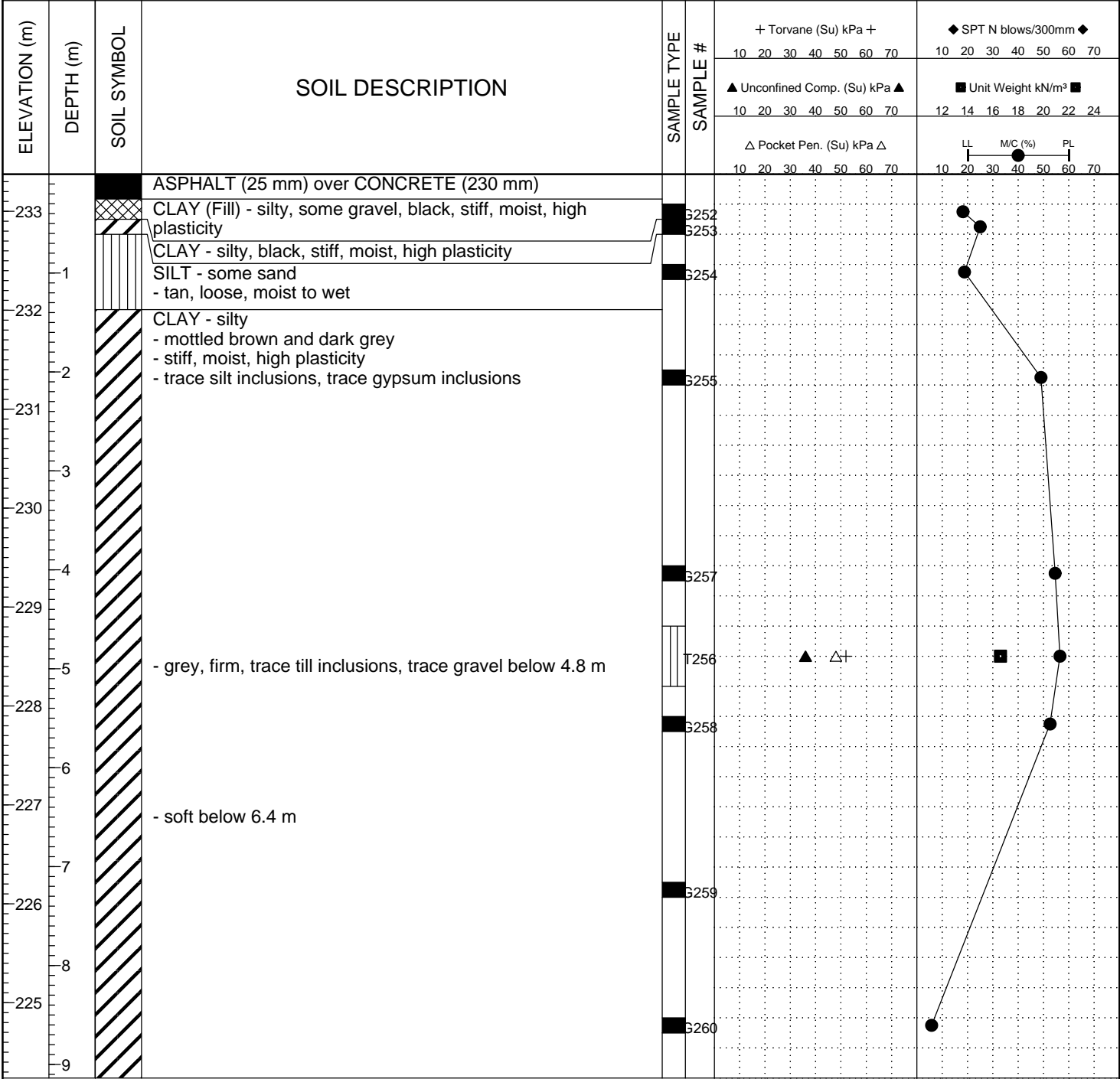


END OF TEST HOLE AT 7.6 m IN CLAY
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-75		
LOCATION: Kensington St. at Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.53		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

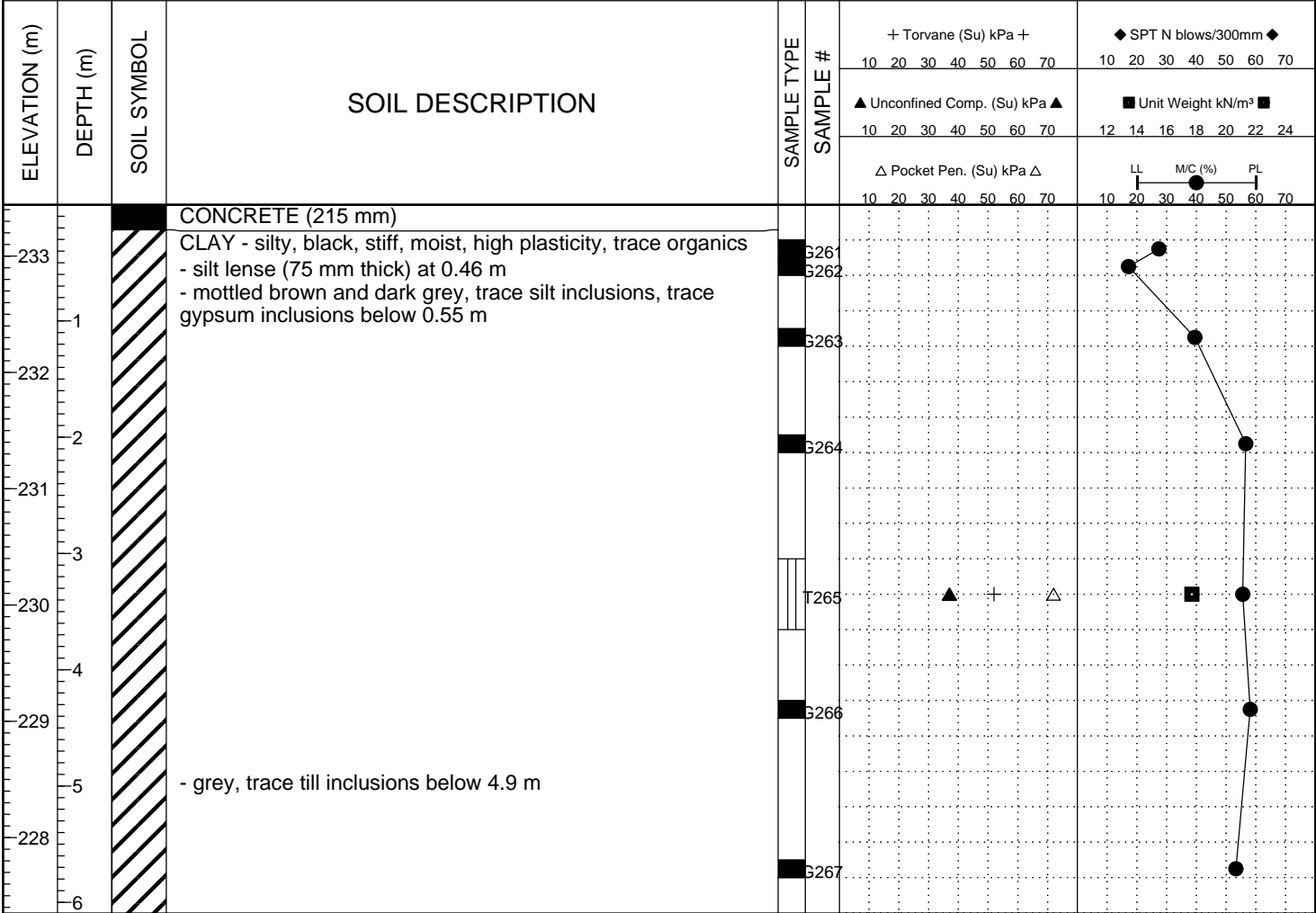


END OF TEST HOLE AT 9.1 m IN CLAY
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-76		
LOCATION: Madison St. Approx. 100 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.597		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

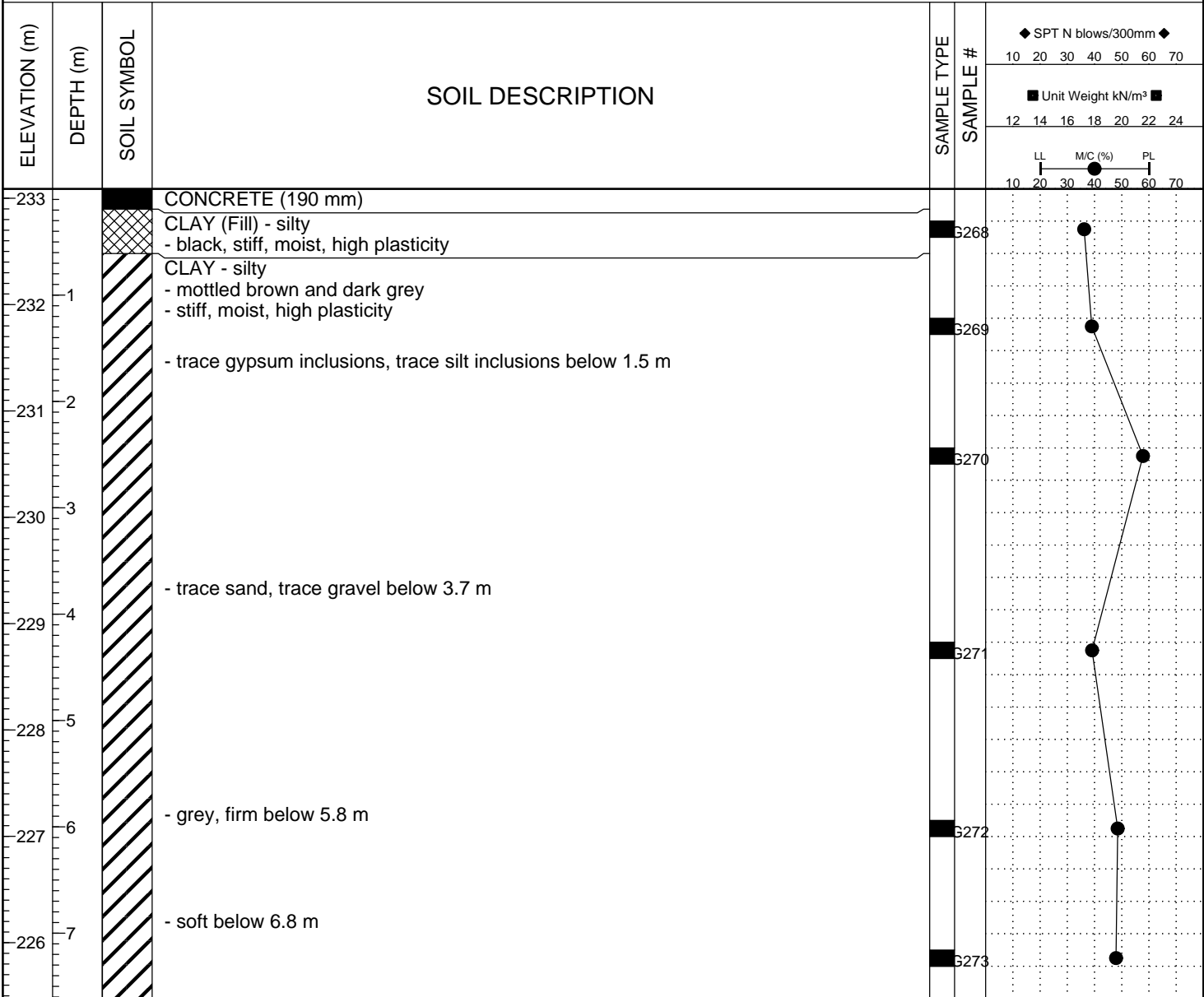


END OF TEST HOLE AT 6.1 m IN CLAY
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-77		
LOCATION: Madison St. Approx. 200 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.243		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



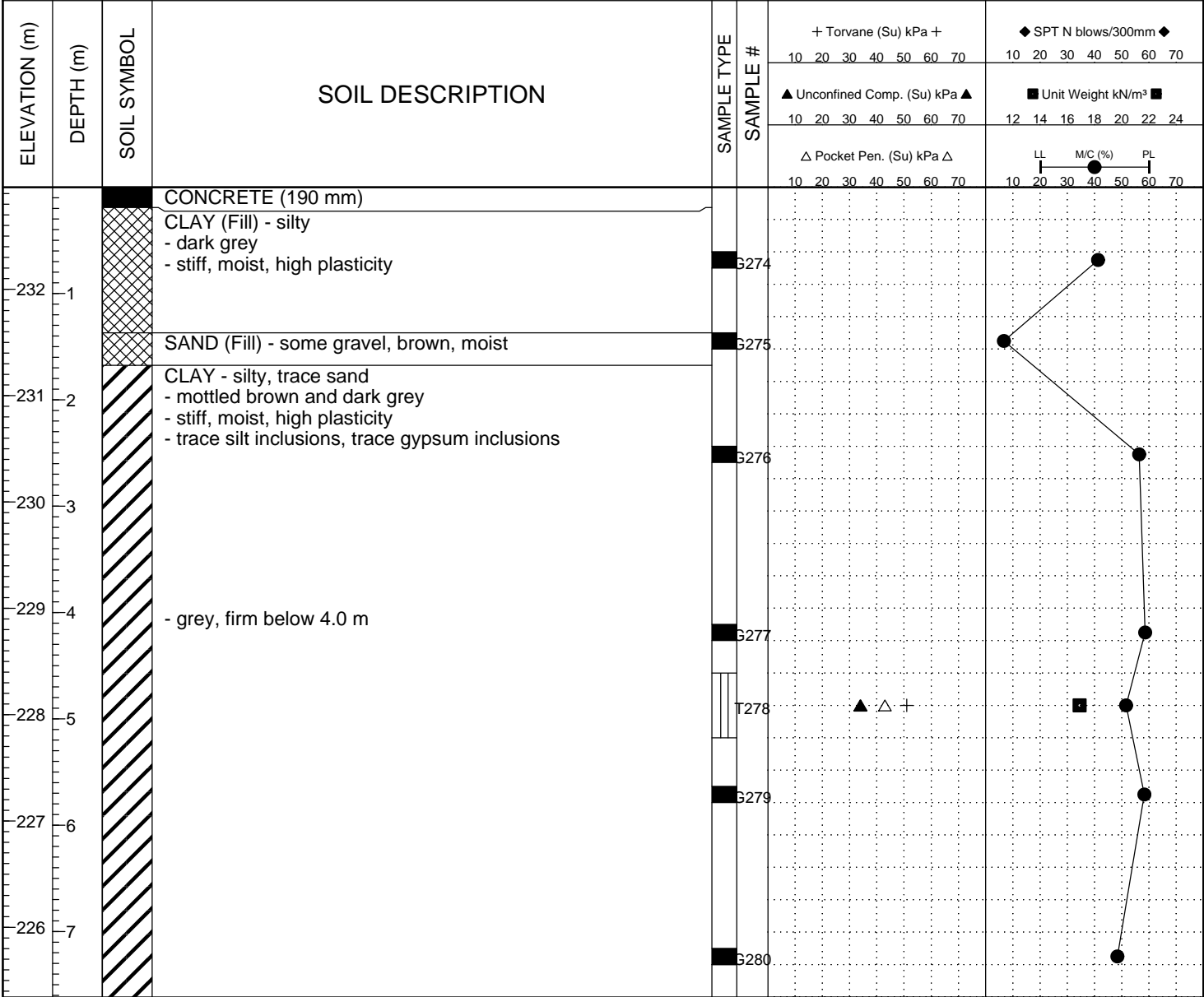
END OF TEST HOLE AT 7.6 m IN CLAY

- Notes:
1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-78		
LOCATION: Madison St. Approx. 300 m South of Silver Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.114		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND

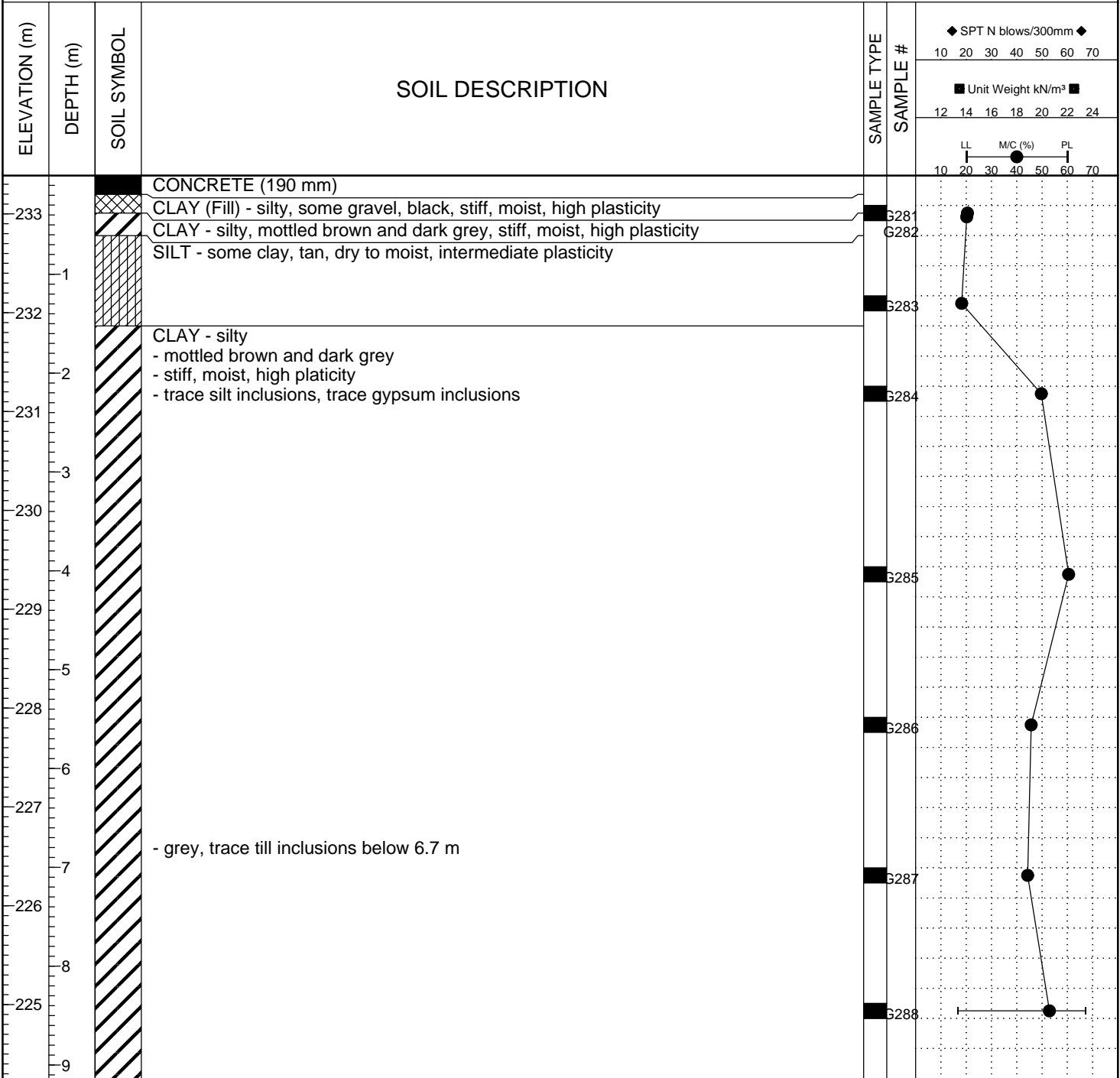


END OF TEST HOLE AT 7.6 m IN CLAY
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS - NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12

APPENDIX A - TEST HOLE LOGS

PROJECT: Ferry Road and Riverbend - Contracts 1 & 2		CLIENT: Tetra Tech		TESTHOLE NO: 12-79		
LOCATION: Madison St. at Ness Ave.				PROJECT NO.: 123499		
CONTRACTOR: Paddock Drilling		METHOD: ACKER MP8 125mm dia. SSA		ELEVATION (m): 233.543		
SAMPLE TYPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	NO RECOVERY	CORE
BACKFILL TYPE	BENTONITE	GRAVEL	SLOUGH	GROUT	CUTTINGS	SAND



END OF TEST HOLE AT 9.1 m IN CLAY
 Notes:
 1. No sloughing or seepage observed.
 2. Test hole backfilled with auger cuttings.

BH GEOTECH PLOTS -NEW ALT1 RIVERBEND LDS TEST HOLE LOGS.GPJ DRI.GDT 10/12/12