

LEGEND

- Property Line
- 195.03 m
⊕
08-1 Borehole Number and Ground Surface Elevation
- △ Local Bench Mark
Elevation = 200.00 m
(Top of Bolt on Light Standard)



Hagstrom Geotechnical Services Ltd.

5607 - 134 A. Avenue, Edmonton, Alberta T5A 0M3

West 18th Street Enterprises
Proposed Commercial Development
Lot 3, Block 2, Plan 981 6014, 525 St. Albert Road
St. Albert, Alberta
Site Plan

Job No: H0806 -168

Date: April 19, 2012

Plate: 13

Explanation of Field and Laboratory Test Data

The following pages are an explanation of the terms and symbols used in the Test Hole Log

Soil Profile and Description

Soil types are described by the Modified Unified Soil Classification System.
(See Plate 2 for terms and symbols)




Soils classified by particle size fall in the following ranges:

BOULDERS - greater than 200 mm	SAND - 0.08 mm to 5 mm
COBBLES - 75 mm to 200 mm	SILT - 0.002 mm to 0.08 mm
GRAVEL - 5 mm to 75 mm	CLAY - finer than 0.002 mm

Additional graphic symbols include:

	seepage
	water level surface

Soil Sample Type

	Standard Penetration Sample (D)
	Undisturbed Sample (Shelby) (U)
	Bag Sample

Penetration Resistance

Field test indication number of blows (N) of a 140 pound hammer dropping 30 inches (76cm) required to drive a 2 inch (5 cm) O.D. open end sampler a distance of 1 foot (30 cm) from 0.5 to 1.5 feet (15 to 45 cm) into the undisturbed soil. This test is outlined in A.S.T.M., D1568.

Miscellaneous Tests

In this column are summarized results of all the laboratory test as indicated by the following symbols:

HVR	Hydrocarbon Vapour Readings, ppm or % LEL
* MA	Mechanical grain size analysis
G	Specific gravity
k	Coefficient of permeability
PP	Pocket penetrometer strength kg/cm ²
* q	Triaxial compression test
* C	Consolidation test
Qu	Unconfined compressive strength kg/cm ²
SO ₄	Soluble sulphate concentration
γ	Bulk unit weight
γ _d	Dry unit weigh

* Tests normally summarized on separate data sheets

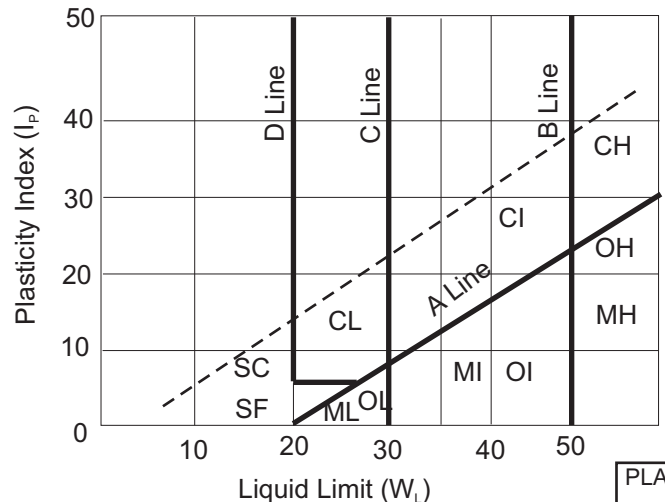


Modified Unified Classification System For Soils

Major Division			Group Symbol	Graph Symbol	Color Code	Typical Description	Laboratory Classification Criteria	
Coarse-Grained Soils (more than half by weight larger than 200 sieve)	Gravels more than half coarse grains larger than No. 4 sieve	Clean Gravels (little or no fines)	GW		Red	Well graded gravels, little or no fines	$C_u = (D_{60}/D_{10}) > 6$ $C_c = D_{30}^2 / (D_{10} * D_{60}) = 1 \text{ to } 3$	
			GP		Red	Poorly graded gravels, and gravel sand mixtures, little or no fines	Not meeting above requirements	
		Dirty Gravel (with some fines)	GM		Yellow	Silty gravels, gravel-sand-silt mixtures	Content of fines exceeds 12%	Below "A" line P.I. less than 4
			GC		Yellow	Clayey gravels, gravel-sand-(silt) clay mixtures		Above "A" line P.I. more than 7
	Sands more than half fine grains smaller than No. 4 sieve	Clean Sands (little or no fines)	SW		Red	Well graded sands, gravelly sands, little or no fines	$C_u = (D_{60}/D_{10}) > 4$ $C_c = D_{30}^2 / (D_{10} * D_{60}) = 1 \text{ to } 3$	
			SP		Red	Poorly graded sands, little or no fines	Not meeting above requirements	
		Dirty Sands (with some fines)	SM		Yellow	Silty sands, sand-silt mixtures	Content of fines exceeds 12%	Below "A" line P.I. less than 4
			SC		Yellow	Clayey sands, sand-(silt) clay mixtures		Above "A" line P.I. more than 7
Fine-Grained Soils (more than half by weight passes 200 sieve)	Silt below "A" line negligible organic content	$W_L < 50\%$	ML		Green	Inorganic silts and very fine sands, rock flour, silty sands of slight plasticity	Classification is based upon plasticity chart Whenever the nature of the fine content has not been determined it is designated by the letter "F". E.G. SF is a mixture of sand with silt or clay	
		$W_L > 50\%$	MH		Blue	Inorganic silts, micaceous or diatomaceous, fine sandy or silty soils		
	Clays above "A" line negligible organic content	$W_L < 30\%$	CL		Green	Inorganic clays of low plasticity, gravelly, sandy, or silty clays, lean clays		
		$30\% < W_L < 50\%$	CI		Green-Blue	Inorganic clays of medium plasticity, silty clays		
		$W_L > 50\%$	CH		Blue	Inorganic clays of high plasticity		
	Organic Silt & Clays below "A" line on chart	$W_L < 50\%$	OL		Green	Organic silts and organic silty clays of low plasticity		
		$W_L > 50\%$	OH		Blue	Organic clays of high plasticity		
Highly Organic Soils			PI		Orange	Peat and other highly organic soils	Strong color or odor, and often fibrous texture	

Bedrock Symbols

Bedrock (Undifferentiated)	
Shale	
Sandstone	
Siltstone	
Fill	
Coal	



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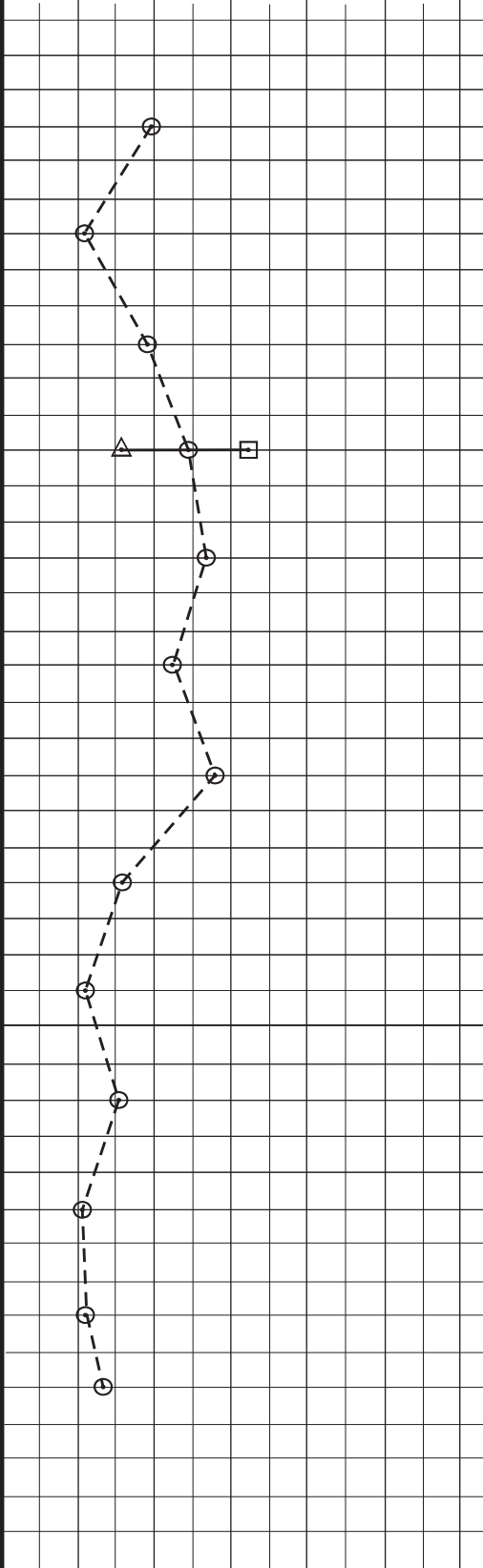
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MOISTURE CONDITIONS
ATTERBERG LIMITS

MOISTURE CONTENT %

10 20 30 40 50 60



DRILL TYPE: B-61 Solid Stem Auger
SOIL PROFILE & DESCRIPTION

TEST RESULTS

DATUM: Local

SURFACE ELEVATION: 202.04 m

SOIL SYMBOL

SAMPLE TYPE

BLOW COUNT-N

MISCELLANEOUS TESTS

FILL-CLAY; silty, damp, loose, occasional small roots, dark olive brown, 30 cm thick 30 cm

CLAY; silty, damp, very stiff, low plasticity, occasional thin sand lenses, dark olive brown

- firm consistency

- stiff consistency

- very silty, very sensitive, dark olive brown

- occasional coal chips and rust staining

- occasional thin sand lenses

- firm to stiff, very moist 6.6 m

CLAY TILL; silty, medium plasticity, moist, very stiff, occasional gravel chips and coal chips, dark olive brown

- very stiff

- hard consistency

BEDROCK (Clay Shale); silty, highly weathered bedrock, light olive brown 9.1 m

- no evidence of groundwater seepage 9.5 m

End of Borehole = 9.5 m

Slough = 9.4 m, 0 hours

Water level = 9.4 m (dry), 0 hours

Water level = 8.0 m, 5 hours later

Water level = 4.0 m (dry), 26 days later

PP = 275 kPa

PP = 255 kPa

PP = 205 kPa
SO₄ = 0.04%

PP = 220 kPa

PP = 205 kPa

PP = 135 kPa

PP = 135 kPa

PP = 135 kPa

PP = 135 kPa

PP = 360 kPa

PP = 325 kPa

PP = 410 kPa

PP = 415 kPa

PP = 450 kPa

<p>⊙ MOISTURE CONTENT</p> <p>□ LIQUID LIMIT</p> <p>△ PLASTIC LIMIT</p>	<p>Q_u UNCONFINED COMPRESSION</p> <p>γ_d DRY UNIT WEIGHT</p>	<p>SO₄ SULPHATE CONTENT</p> <p>≡ WATER TABLE</p> <p>N PENETRATION RESISTANCE</p>	<p>⊗ STANDARD PENETRATION SAMPLE</p> <p>⊠ UNDISTURBED SAMPLE (SHELBY)</p> <p>⊞ BAG SAMPLE</p>	<p>PLATE No. 3</p>
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MOISTURE CONDITIONS
ATTERBERG LIMITS

MOISTURE CONTENT %

10 20 30 40 50 60

DEPTH
IN FEET

DEPTH
(m)

DRILL TYPE: B-61 Solid Stem Auger

SOIL PROFILE & DESCRIPTION

TEST RESULTS

DATUM: Local

SURFACE ELEVATION: 202.62 m

SOIL
SYMBOL

SAMPLE
TYPE

BLOW
COUNT-N

MISCELLANEOUS
TESTS

FILL-CLAY; silty, very stiff, medium plasticity, dark brown, 110 cm thick

- topsoil lense from 1.0 to 1.1 m 1.1 m

CLAY; silty, stiff, low plasticity, occasional silt lenses, light olive brown

- stiff, moist

- softer with depth, very moist

- occasional silt lenses

- clay till like

CLAY TILL; silty, trace of sand, very stiff, moist, medium plasticity, occasional gravel chips and coal chips, dark olive brown

- very stiff, medium plasticity, damp, dark brown

- no evidence of groundwater seepage 9.0 m

End of Borehole = 9.0 m

Slough = 8.9 m, 0 hours

Water level = 8.9 m (dry), 0 hours

Water level = 5.2 m, 1 hour later

Water level = 4.0 m, 26 days later

PP = 480 kPa

PP = 550 kPa

PP = 410 kPa
SO₄ = 0.18%

PP = 270 kPa

PP = 120 kPa

PP = 135 kPa

PP = 100 kPa

PP = 155 kPa

PP = 170 kPa

PP = 360 kPa

PP = 305 kPa

PP = 305 kPa

PP = 325 kPa

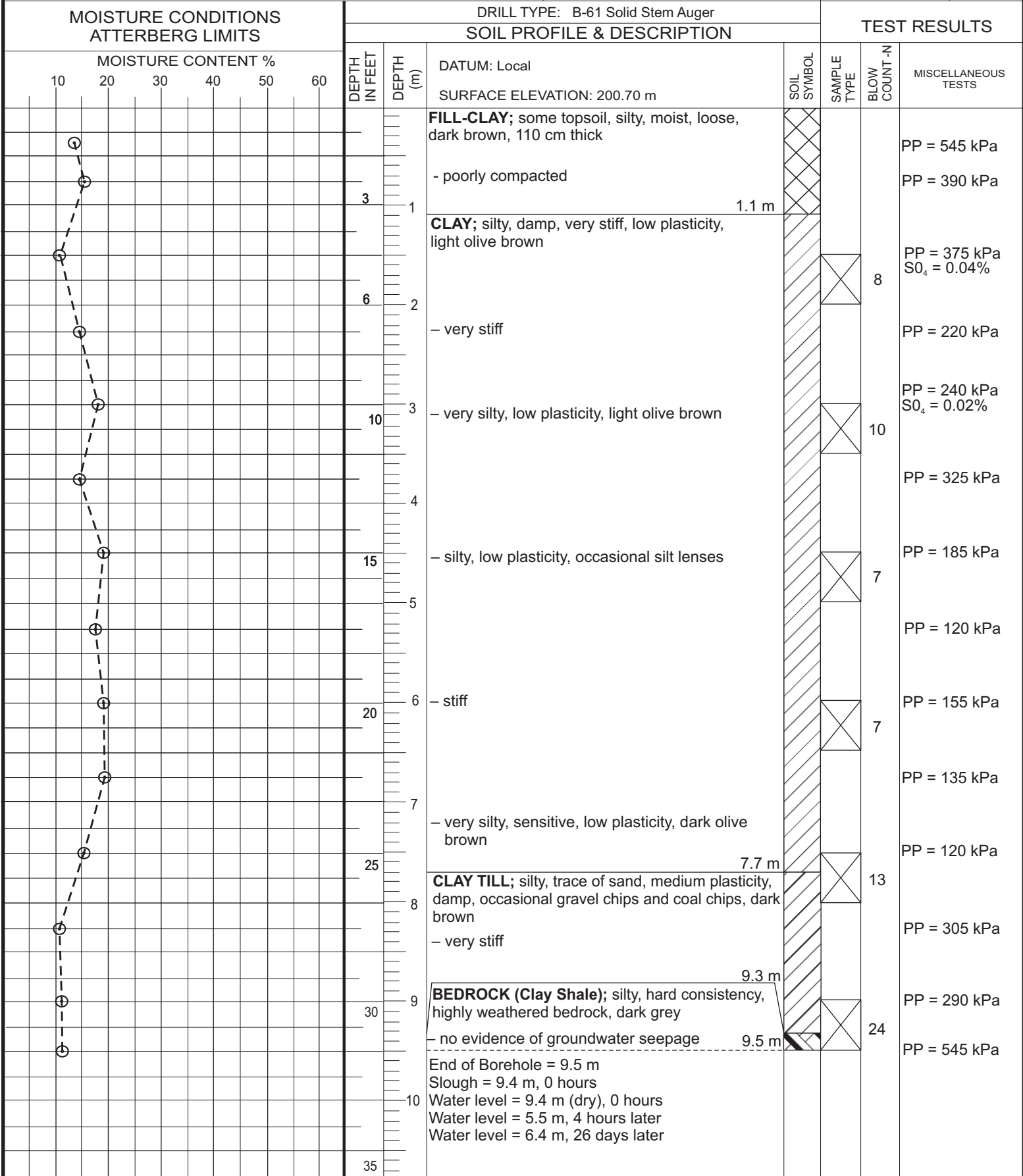
⊙ MOISTURE CONTENT
□ LIQUID LIMIT
△ PLASTIC LIMIT

Q_u UNCONFINED COMPRESSION
γ_d DRY UNIT WEIGHT

SO₄ SULPHATE CONTENT
≡ WATER TABLE
N PENETRATION RESISTANCE

⊠ STANDARD PENETRATION SAMPLE
▨ UNDISTURBED SAMPLE (SHELBY)
⊞ BAG SAMPLE

PLATE
No. **4**



⊙ MOISTURE CONTENT
□ LIQUID LIMIT
△ PLASTIC LIMIT

Q_u UNCONFINED COMPRESSION
γ_d DRY UNIT WEIGHT

SO₄ SULPHATE CONTENT
≡ WATER TABLE
N PENETRATION RESISTANCE

⊗ STANDARD PENETRATION SAMPLE
□ UNDISTURBED SAMPLE (SHELBY)
⊠ BAG SAMPLE

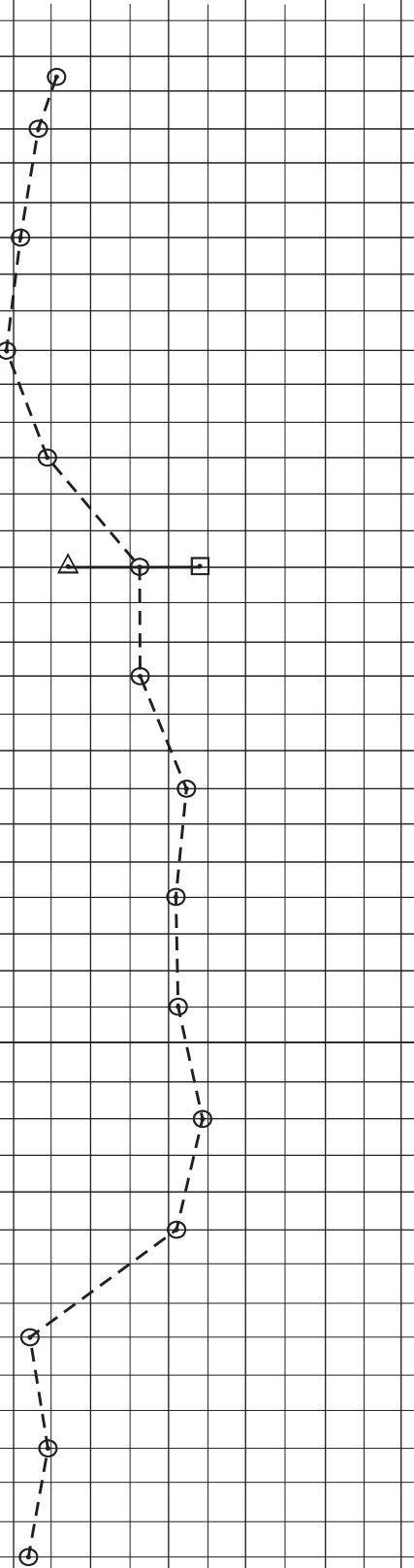
PLATE
No. 5



MOISTURE CONDITIONS
ATTERBERG LIMITS

MOISTURE CONTENT %

10 20 30 40 50 60



DRILL TYPE: B-61 Solid Stem Auger
SOIL PROFILE & DESCRIPTION

TEST RESULTS

DATUM: Local

SURFACE ELEVATION: 200.57 m

SOIL SYMBOL

SAMPLE TYPE

BLOW COUNT-N

MISCELLANEOUS TESTS

FILL-CLAY; silty, damp, occasional topsoil lenses, dark brown, 100 cm thick

1.0 m

CLAY; very silty, dry, low plasticity, very stiff, light olive brown

- very stiff

- very stiff, medium plasticity

- light olive brown, firm to stiff consistency

- very moist, low plasticity, dak olive brown

- firm to stiff, dark olive brown

8.5 m

CLAY TILL; silty, trace of sand, very stiff, moist, medium plasticity, occasional gravel chips and coal chips, dark olive brown

- very stiff

- no evidence of groundwater seepage 10.5 m

End of Borehole = 10.5 m

Slough = 10.3 m, 0 hours

Water level = 10.3 m (dry), 0 hours

Water level = 8.2 m, 1.5 hours later

Water level = 6.7 m (dry), 26 days later

PP = 460 kPa

PP = 340 kPa

PP = 475 kPa

PP = 410 kPa

PP = 305 kPa

PP = 290 kPa
SO₄ = 0.04%

PP = 240 kPa

PP = 185 kPa
SO₄ = 0.10%

PP = 170 kPa

PP = 135 kPa

PP = 185 kPa

PP = 140 kPa

PP = 155 kPa

PP = 340 kPa

PP = 340 kPa

PP = 370 kPa

⊙ MOISTURE CONTENT
□ LIQUID LIMIT
△ PLASTIC LIMIT

Q_u UNCONFINED COMPRESSION
γ_d DRY UNIT WEIGHT

SO₄ SULPHATE CONTENT
≡ WATER TABLE
N PENETRATION RESISTANCE

⊠ STANDARD PENETRATION SAMPLE
▨ UNDISTURBED SAMPLE (SHELBY)
⊞ BAG SAMPLE

PLATE
No. 6



MOISTURE CONDITIONS
ATTERBERG LIMITS

MOISTURE CONTENT %

10 20 30 40 50 60

DEPTH
IN FEET

DEPTH
(M)

DRILL TYPE: B-61 Solid Stem Auger

SOIL PROFILE & DESCRIPTION

TEST RESULTS

DATUM: Local

SURFACE ELEVATION: 199.16 m

SOIL
SYMBOL

SAMPLE
TYPE

BLOW
COUNT-N

MISCELLANEOUS
TESTS

FILL-CLAY; silty, damp, very stiff, loose, poorly compacted, dark brown, 210 cm thick

– poorly compacted

– concrete chunk at 1.5 m

– occasional wood fragments

2.1 m

CLAY; very silty, dry, very stiff, low plasticity, light olive brown

– free water

– very stiff, low to medium plasticity, damp

– very stiff

– very silty, damp, low plasticity, dark olive brown

6.2 m

SILT; clayey, some sand, damp, dark olive brown

– stiff consistency

– stiff

8.5 m

CLAY; silty, damp, stiff, low plasticity, occasional sand lenses, dark olive brown

– stiff, moist

PP = 410 kPa

PP = 375 kPa

PP = 355 kPa

SO₄ = 0.12%

PP = 340 kPa

PP = 410 kPa

PP = 375 kPa

PP = 270 kPa

PP = 205 kPa

PP = 220 kPa

PP = 170 kPa

PP = 135 kPa

PP = 155 kPa

PP = 135 kPa

PP = 170 kPa

PP = 205 kPa

⊙ MOISTURE CONTENT
□ LIQUID LIMIT
△ PLASTIC LIMIT

Q_u UNCONFINED COMPRESSION
γ_d DRY UNIT WEIGHT

SO₄ SULPHATE CONTENT
▽ WATER TABLE
N PENETRATION RESISTANCE

⊠ STANDARD PENETRATION SAMPLE
⊞ UNDISTURBED SAMPLE (SHELBY)
⊡ BAG SAMPLE

PLATE
No. 7



CLIENT : West 18th Street Enterprises

PROJECT: Proposed Commercial Development

LOCATION: Lot 3, Block 2, Plan 9826014, 525 St. Albert Road, St. Albert, AB

JOB No.: H0805-168

DATE: June 13, 2008

TECH: MH

TEST BORING 08-5 Con't.

MOISTURE CONDITIONS ATTERBERG LIMITS

DRILL TYPE: B-61 Solid Stem Auger
SOIL PROFILE & DESCRIPTION

TEST RESULTS

MOISTURE CONTENT %

10 20 30 40 50 60

DEPTH IN FEET

DEPTH (M)

DATUM: Local

SURFACE ELEVATION: 199.16 m

SOIL SYMBOL

SAMPLE TYPE

BLOW COUNT-N

MISCELLANEOUS TESTS



11 **CLAY(Con't.);** silty, damp, stiff, low plasticity, occasional sand lenses, dark olive brown

39 - no evidence of groundwater seepage 12.0 m

12
End of Borehole = 12.0 m
Slough = 11.9 m, 0 hours
Water level = 11.9 m (dry), 0 hours
Water level = 11.4 m, 2 hours later
Water level = 11.6 m (dry), 26 days later

PP = 205 kPa

PP = 155 kPa

MOISTURE CONTENT
LIQUID LIMIT
PLASTIC LIMIT

Q_u UNCONFINED COMPRESSION
γ_d DRY UNIT WEIGHT

SO₄ SULPHATE CONTENT
WATER TABLE
N PENETRATION RESISTANCE

STANDARD PENETRATION SAMPLE
UNDISTURBED SAMPLE (SHELBY)
BAG SAMPLE

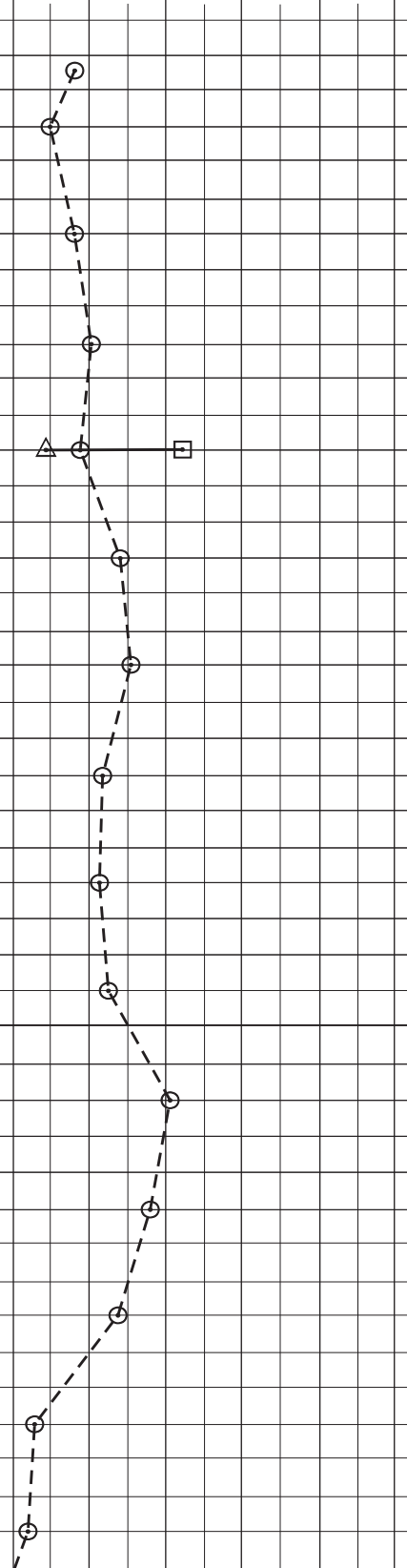
PLATE No. 7A



MOISTURE CONDITIONS ATTERBERG LIMITS

MOISTURE CONTENT %

10 20 30 40 50 60



DRILL TYPE: B-61 Solid Stem Auger

SOIL PROFILE & DESCRIPTION

TEST RESULTS

DATUM: Local

SURFACE ELEVATION: 199.69 m

SOIL SYMBOL

SAMPLE TYPE

BLOW COUNT-N

MISCELLANEOUS TESTS

FILL-CLAY; silty, very stiff, medium plasticity, occasional topsoil lenses, dark brown, 190 cm thick - topsoil layer from 0.6 to 0.9 m

- poorly compacted

1.9 m

CLAY; silty, dry to damp, very stiff, low plasticity, light olive brown

- very silty, some sand, light olive brown

- moist, dark olive brown

- moist, occasional silt lenses

- stiff, very moist

- dark grey, very silty

- very moist, low plasticity, soft to firm

9.4 m

CLAY TILL; silty, trace of sand, very stiff, medium plasticity, occasional thin sand lenses and gravel chips, dark grey

- very stiff to hard

PP = 340 kPa

PP = 375 kPa

PP = 305 kPa

PP = 410 kPa

PP = 205 kPa
SO₄ = 0.16%

PP = 185 kPa
SO₄ = 0.08%

PP = 255 kPa

PP = 205 kPa

PP = 135 kPa

PP = 155 kPa

PP = 170 kPa

PP = 135 kPa

PP = 170 kPa

PP = 425 kPa

PP = 410 kPa

MOISTURE CONTENT
LIQUID LIMIT
PLASTIC LIMIT

Q_u UNCONFINED COMPRESSION
γ_d DRY UNIT WEIGHT

SO₄ SULPHATE CONTENT
WATER TABLE
N PENETRATION RESISTANCE

STANDARD PENETRATION SAMPLE
UNDISTURBED SAMPLE (SHELBY)
BAG SAMPLE

PLATE No. 8



CLIENT : West 18th Street Enterprises

PROJECT: Proposed Commercial Development

LOCATION: Lot 3, Block 2, Plan 9826014, 525 St. Albert Road, St. Albert, AB

JOB No.: H0805-168

DATE: June 13, 2008

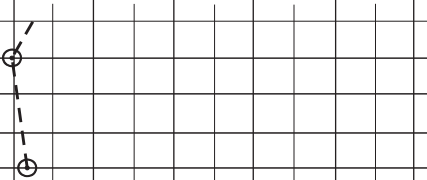
TECH: MH

TEST BORING 08-6 Con't.

MOISTURE CONDITIONS ATTERBERG LIMITS

MOISTURE CONTENT %

10 20 30 40 50 60



DRILL TYPE: B-61 Solid Stem Auger

SOIL PROFILE & DESCRIPTION

TEST RESULTS

DATUM: Local

SURFACE ELEVATION: 199.69 m

SOIL SYMBOL

SAMPLE TYPE

BLOW COUNT-N

MISCELLANEOUS TESTS

11 **CLAY TILL (Con't.);** silty, trace of sand, very stiff, medium plasticity, occasional thin sand lenses and gravel chips, dark grey

39 - no evidence of groundwater seepage 12.0 m

12 End of Borehole = 12.0 m
Slough = 11.8 m, 0 hours
Water level = 11.8 m (dry), 0 hours
Water level = 11.4 m, 1.5 hours later
Water level = 11.3 m (dry), 26 days later

PP = 440 kPa

PP = 355 kPa

MOISTURE CONTENT
LIQUID LIMIT
PLASTIC LIMIT

Q_u UNCONFINED COMPRESSION
γ_d DRY UNIT WEIGHT

SO₄ SULPHATE CONTENT
N WATER TABLE
N PENETRATION RESISTANCE

STANDARD PENETRATION SAMPLE
UNDISTURBED SAMPLE (SHELBY)
BAG SAMPLE

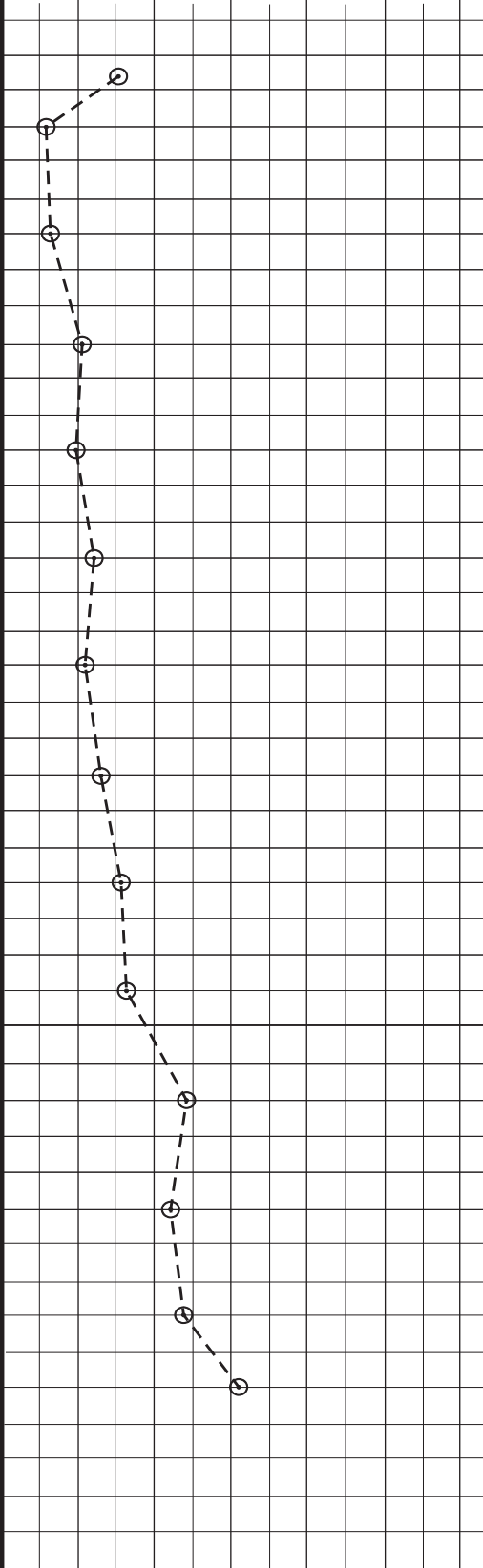
PLATE No. 8A



MOISTURE CONDITIONS ATTERBERG LIMITS

MOISTURE CONTENT %

10 20 30 40 50 60



DRILL TYPE: B-61 Solid Stem Auger

SOIL PROFILE & DESCRIPTION

TEST RESULTS

DATUM: Local

SURFACE ELEVATION: 198.60 m

SOIL SYMBOL

SAMPLE TYPE

BLOW COUNT-N

MISCELLANEOUS TESTS

FILL-CLAY; some topsoil, silty, loose, poorly compacted, dark brown, 230 cm thick

- very silty, dry, very stiff, occasional silt lenses, light olive brown

- topsoil lense from 1.6 to 1.8 m

2.3m

CLAY; very silty, low plasticity, damp, very stiff, light olive brown

- frequent fine sand lenses, light olive brown

4.2 m

SILT; clayey, trace of sand, damp, stiff, light olive brown

- sandy, dry, light olive brown

- stiff consistency

7.2 m

CLAY; silty, low plasticity, occasional silt lenses, stiff, dark olive brown

- stiff consistency

- very moist

- no evidence of groundwater seepage

9.5 m

End of Borehole = 9.5 m

Slough = 9.4 m, 0 hours

Water level = 9.4 m (dry), 0 hours

Water level = 8.1 m (dry), 3 hours later

Water level = 11.9 m (dry), 26 days later

PP = 580 kPa

PP = 475 kPa

PP = 375 kPa

SO₄ = 0.12%

PP = 410 kPa

PP = 340 kPa

SO₄ = 0.14%

PP = 305 kPa

PP = 270 kPa

PP = 170 kPa

PP = 135 kPa

PP = 155 kPa

PP = 255 kPa

PP = 205 kPa

PP = 270 kPa

PP = 205 kPa

MOISTURE CONTENT
LIQUID LIMIT
PLASTIC LIMIT

Q_u UNCONFINED COMPRESSION
γ_d DRY UNIT WEIGHT

SO₄ SULPHATE CONTENT
WATER TABLE
N PENETRATION RESISTANCE

STANDARD PENETRATION SAMPLE
UNDISTURBED SAMPLE (SHELBY)
BAG SAMPLE

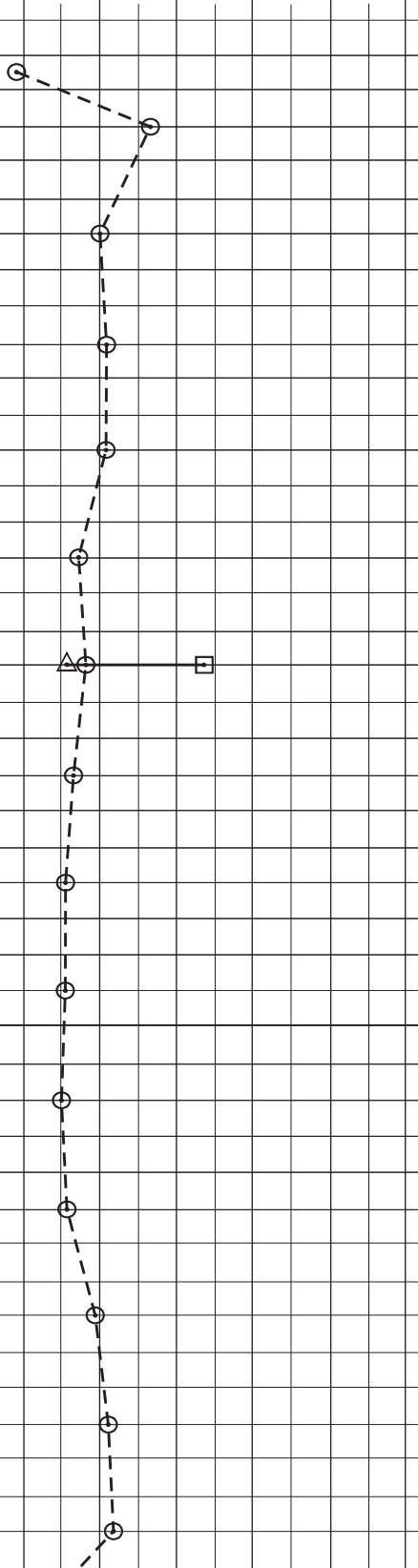
PLATE No. 9



MOISTURE CONDITIONS
ATTERBERG LIMITS

MOISTURE CONTENT %

10 20 30 40 50 60



DRILL TYPE: B-61 Solid Stem Auger

SOIL PROFILE & DESCRIPTION

TEST RESULTS

DATUM: Local

SURFACE ELEVATION: 198.32 m

SOIL SYMBOL

SAMPLE TYPE

BLOW COUNT-N

MISCELLANEOUS TESTS

FILL-CLAY; silty, dry, loose, poorly compacted, dark brown, 290 cm thick



PP = 340 kPa

PP = 410 kPa

- frequent topsoil lenses, damp, stiff

PP = 445 kPa
SO₄ = 0.16%

- concrete chunk at 2.0 m

PP = 410 kPa

2.9 m

CLAY; silty, damp, stiff, low plasticity, occasional silt lenses, light olive brown



PP = 340 kPa
SO₄ = 0.08%

PP = 270 kPa

- stiff to very stiff consistency

PP = 205 kPa

PP = 205 kPa

- dark olive brown, moist, low plasticity

PP = 135 kPa

PP = 155 kPa

- silt lense from 7.2 to 7.5 m

PP = 135 kPa

PP = 155 kPa

- very silty, damp, dark olive brown

PP = 135 kPa

- stiff consistency

PP = 170 kPa

- groundwater seepage

PP = 135 kPa

⊙ MOISTURE CONTENT
□ LIQUID LIMIT
△ PLASTIC LIMIT

Q_u UNCONFINED COMPRESSION
γ_d DRY UNIT WEIGHT

SO₄ SULPHATE CONTENT
▽ WATER TABLE
N PENETRATION RESISTANCE

⊠ STANDARD PENETRATION SAMPLE
▨ UNDISTURBED SAMPLE (SHELBY)
⊞ BAG SAMPLE

PLATE No. 10



MOISTURE CONDITIONS ATTERBERG LIMITS

DRILL TYPE: B-61 Solid Stem Auger

SOIL PROFILE & DESCRIPTION

TEST RESULTS

MOISTURE CONTENT %

10 20 30 40 50 60

DEPTH IN FEET

DEPTH (M)

DATUM: Local

SURFACE ELEVATION: 198.32 m

SOIL SYMBOL

SAMPLE TYPE

BLOW COUNT-N

MISCELLANEOUS TESTS

CLAY (Con't.); silty, damp, stiff, low plasticity, occasional silt lenses, light olive brown

- stiff consistency

12.0 m

End of Borehole = 12.0 m
Slough = 11.84 m, 0 hours
Water level = 11.8 m (dry), 0 hours
Water level = 10.2 m, 2.5 hours later
Water level = 10.1 m, 26 days later

PP = 135 kPa

PP = 135 kPa

MOISTURE CONTENT
LIQUID LIMIT
PLASTIC LIMIT

Q_u UNCONFINED COMPRESSION
γ_d DRY UNIT WEIGHT

SO₄ SULPHATE CONTENT
WATER TABLE
N PENETRATION RESISTANCE

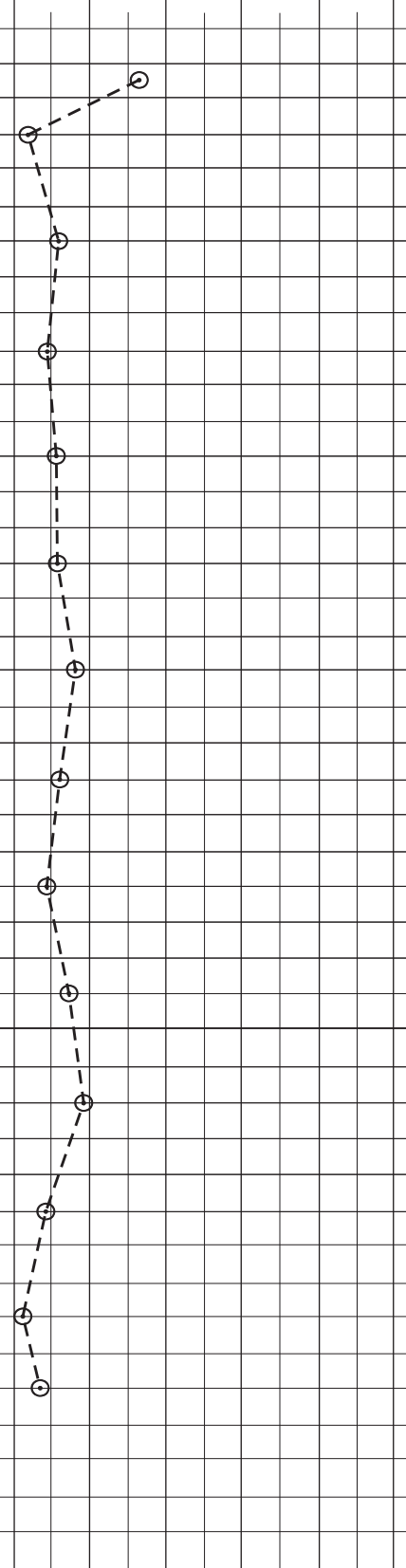
STANDARD PENETRATION SAMPLE
UNDISTURBED SAMPLE (SHELBY)
BAG SAMPLE

PLATE No. 10A



MOISTURE CONDITIONS
ATTERBERG LIMITS

MOISTURE CONTENT %



DRILL TYPE: B-617 Solid Stem Auger

SOIL PROFILE & DESCRIPTION

TEST RESULTS

DATUM: Local

SURFACE ELEVATION: 105.03 m

SOIL SYMBOL

SAMPLE TYPE

BLOW COUNT-N

MISCELLANEOUS TESTS

FILL-CLAY; silty, occasional gravel size rocks and topsoil lenses, dark brown, 160 cm thick

SOIL SYMBOL: Diagonal hatching (top to bottom)

SAMPLE TYPE: Standard Penetration Sample (X)

BLOW COUNT-N: 8

PP = 545 kPa
PP = 475 kPa
SO₄ = 0.10%

– frequent topsoil layers form 1.4 to 1.8 m

CLAY; silty, dry, low plasticity, very stiff, light olive brown

SOIL SYMBOL: Diagonal hatching (bottom to top)

SAMPLE TYPE: Standard Penetration Sample (X)

BLOW COUNT-N: 8

PP = 440 kPa

SILT; clayey, trace of sand, dry, stiff, light olive brown

SOIL SYMBOL: Vertical lines

SAMPLE TYPE: Standard Penetration Sample (X)

BLOW COUNT-N: 14

PP = 355 kPa

– very stiff, damp to moist

CLAY; silty, damp, stiff, low plasticity, occasional silt lenses, light olive brown

SOIL SYMBOL: Diagonal hatching (bottom to top)

SAMPLE TYPE: Standard Penetration Sample (X)

BLOW COUNT-N: 12

PP = 340 kPa

– silt lense from 6.1 to 6.3 m

– stiff to very stiff

– very silty, low plasticity, dry to damp, very stiff

– no evidence of groundwater seepage

End of Borehole = 9.5 m
Slough = 9.4 m, 0 hours
Water level = 9.4 m (dry), 0 hours
Water level = 8.9 m (dry), 3 hours later
Water level = 8.8 m (dry), 26 days later

SOIL SYMBOL: Diagonal hatching (bottom to top)

SAMPLE TYPE: Standard Penetration Sample (X)

BLOW COUNT-N: 18

PP = 270 kPa

PP = 305 kPa

PP = 240 kPa

PP = 270 kPa

PP = 255 kPa

⊙ MOISTURE CONTENT
□ LIQUID LIMIT
△ PLASTIC LIMIT

Q_u UNCONFINED COMPRESSION
γ_d DRY UNIT WEIGHT

SO₄ SULPHATE CONTENT
≡ WATER TABLE
N PENETRATION RESISTANCE

⊗ STANDARD PENETRATION SAMPLE
⊠ UNDISTURBED SAMPLE (SHELBY)
⊞ BAG SAMPLE

PLATE
No. 11



MOISTURE CONDITIONS
ATTERBERG LIMITS

MOISTURE CONTENT %

10 20 30 40 50 60

DEPTH
IN FEET

DEPTH
(M)

DRILL TYPE: B-61 Solid Stem Auger

SOIL PROFILE & DESCRIPTION

TEST RESULTS

DATUM: Local

SURFACE ELEVATION: 195.92 m

SOIL
SYMBOL

SAMPLE
TYPE

BLOW
COUNT-N

MISCELLANEOUS
TESTS

FILL-CLAY; silty, dry, very stiff, loose, poorly compacted, dark brown, 250 cm thick

- poorly compacted

- frequent topsoil lenses

2.5 m

CLAY; silty, moist, very stiff, low plasticity, light olive brown

- silty, damp, low plasticity, stiff

- stiff consistency, occasional thin silt lenses

- siltier with depth

- stiff consistency

- dark olive brown, very silty

PP = 355 kPa

PP = 375 kPa

PP = 355 kPa

PP = 325 kPa

PP = 270 kPa
SO₄ = 0.14%

PP = 255 kPa

PP = 155 kPa

PP = 170 kPa

PP = 220 kPa

PP = 255 kPa

PP = 170 kPa

PP = 155 kPa

PP = 170 kPa

PP = 185 kPa

PP = 205 kPa

⊙ MOISTURE CONTENT
□ LIQUID LIMIT
△ PLASTIC LIMIT

Q_u UNCONFINED COMPRESSION
γ_d DRY UNIT WEIGHT

SO₄ SULPHATE CONTENT
≡ WATER TABLE
N PENETRATION RESISTANCE

⊠ STANDARD PENETRATION SAMPLE
▨ UNDISTURBED SAMPLE (SHELBY)
⊞ BAG SAMPLE

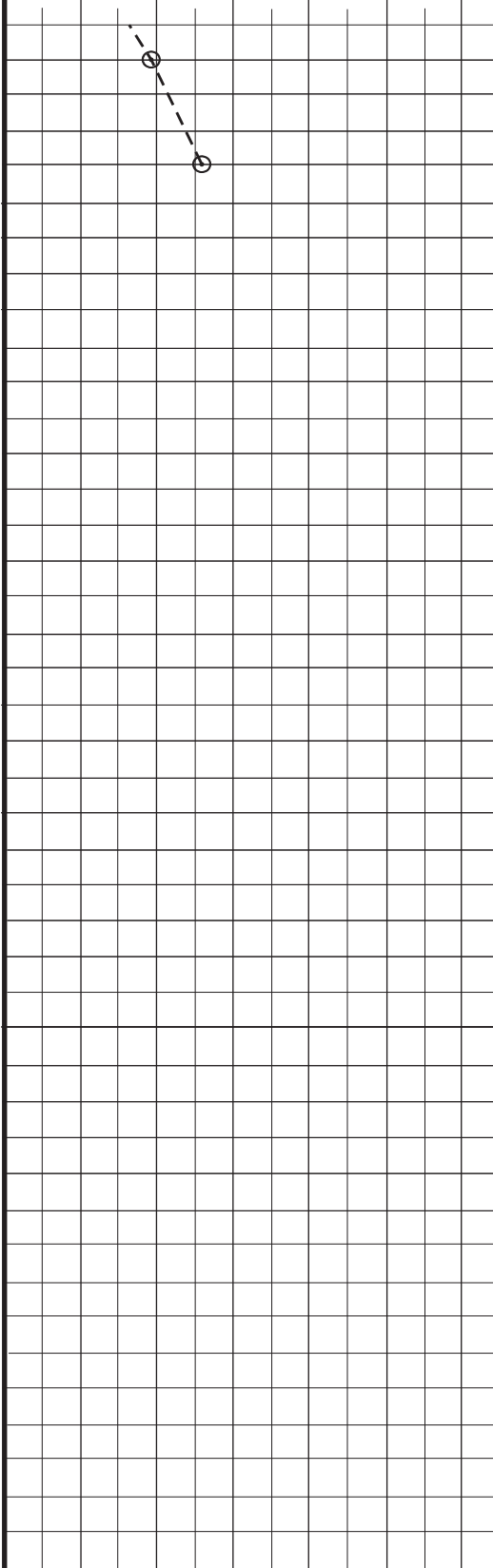
PLATE
No. 12



MOISTURE CONDITIONS
ATTERBERG LIMITS

MOISTURE CONTENT %

10 20 30 40 50 60



DRILL TYPE: B-61 Solid Stem Auger

SOIL PROFILE & DESCRIPTION

TEST RESULTS

DEPTH IN FEET	DEPTH (M)	DATUM: Local	SOIL SYMBOL	SAMPLE TYPE	BLOW COUNT-N	MISCELLANEOUS TESTS
11	11	SURFACE ELEVATION: 195.92 m				PP = 240 kPa
39	12	CLAY (Con't.); silty, moist, very stiff, low plasticity, light olive brown - no evidence of groundwater seepage 12.0 m				PP = 255 kPa
43	13	End of Borehole = 12.0 m Slough = 11.8 m, 0 hours Water level = 11.8 m (dry), 0 hours Water level = 11.1 m (dry), 3 hours later Water level = 9.8 m (dry), 26 days later				
46	14					
49	15					
52	16					
55	17					
59	18					
62	19					
66	20					
98	30					

⊙ MOISTURE CONTENT
□ LIQUID LIMIT
△ PLASTIC LIMIT

Q_u UNCONFINED COMPRESSION
γ_d DRY UNIT WEIGHT

SO₄ SULPHATE CONTENT
≡ WATER TABLE
N PENETRATION RESISTANCE

☒ STANDARD PENETRATION SAMPLE
☒ UNDISTURBED SAMPLE (SHELBY)
☒ BAG SAMPLE

PLATE
No. 12A