

APPENDIX 'A'

GEOTECHNICAL REPORT

APPENDIX 'A' - GEOTECHNICAL REPORT

GEOTECHNICAL REPORT FOR:

- i) Duncan Street from Galt Avenue to George Avenue
- ii) Hallet Street from Rover Avenue to Rover Avenue

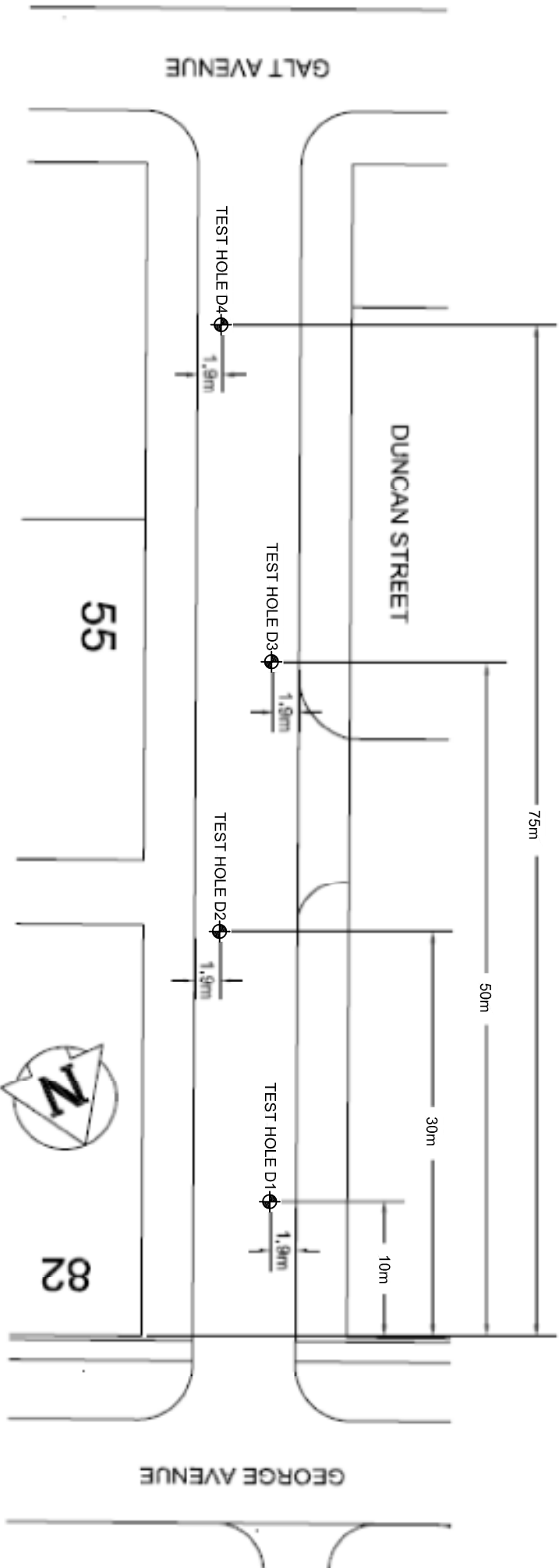
The geotechnical report is provided to aid in the Contractor's evaluation of the existing pavement structure and/or soil conditions. The information presented is considered accurate at the locations shown on the Drawings and at the time of drilling. However, variations in pavement structure and/or soil conditions may exist between test holes and fluctuations in groundwater levels can be expected seasonally and may occur as a result of construction activities. The nature and extent of variations may not become evident until construction commences.

TEST HOLE LOCATION PLANS AND TEST HOLE LOGS

DUNCAN STREET FROM GALT AVENUE TO GEORGE AVENUE

AND

HALLET STREET FROM ROVER AVENUE TO ROVER AVENUE



NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT No. WX10545.1000 DATED JANUARY 2010.

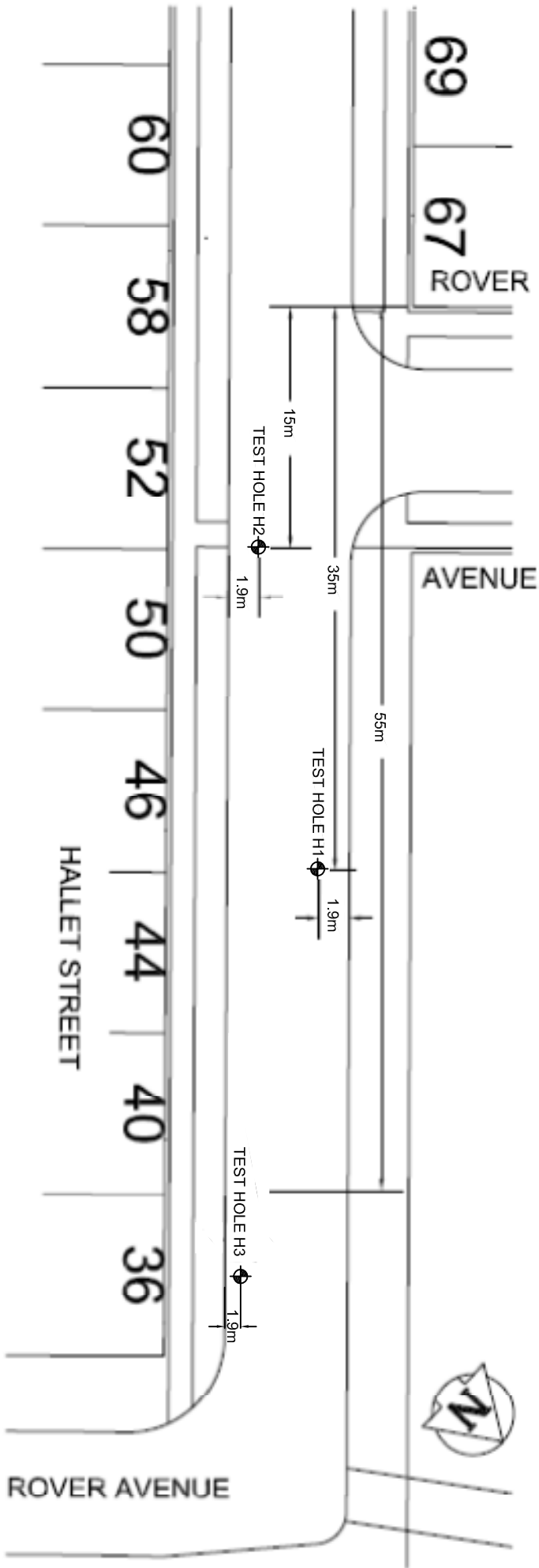
CLIENT LOGO

CLIENT: THE CITY OF WINNIPEG
 PUBLIC RECORDS DEPARTMENT
 DEVELOPMENT SERVICES DIVISION
 440 DOVERCOURT DRIVE
 WINNIPEG, MANITOBA R3T 1M4
 PHONE: 204-489-2587 FAX: 204-489-2681

DWN BY: MD
 CHK'D BY: RB
 DATE: N/A
 PROJECTION: UTM Zone 0
 SCALE: AS SHOWN

PROJECT: 2010 RESIDENTIAL STREET RENEWALS
 TITLE: TESTHOLE LOCATION PLAN
 DUNCAN STREET
 GALT AVENUE TO GEORGE AVENUE

DATE: JANUARY 2010
 PROJECT NO: WX10545.1000
 REV. NO.:
 FIGURE NO. A
 FIGURE 2



NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT No. WX10545.1000 DATED JANUARY 2010.



CLIENT: THE CITY OF WINNIPEG
 PUBLIC WORKS DEPARTMENT
 DEVELOPMENT SERVICES DIVISION
 MUNICIPAL SERVICES DIVISION
 440 DOVERCOURT DRIVE
 WINNIPEG, MANITOBA R3T 1M4
 PHONE: 204-489-2587 FAX: 204-489-2681



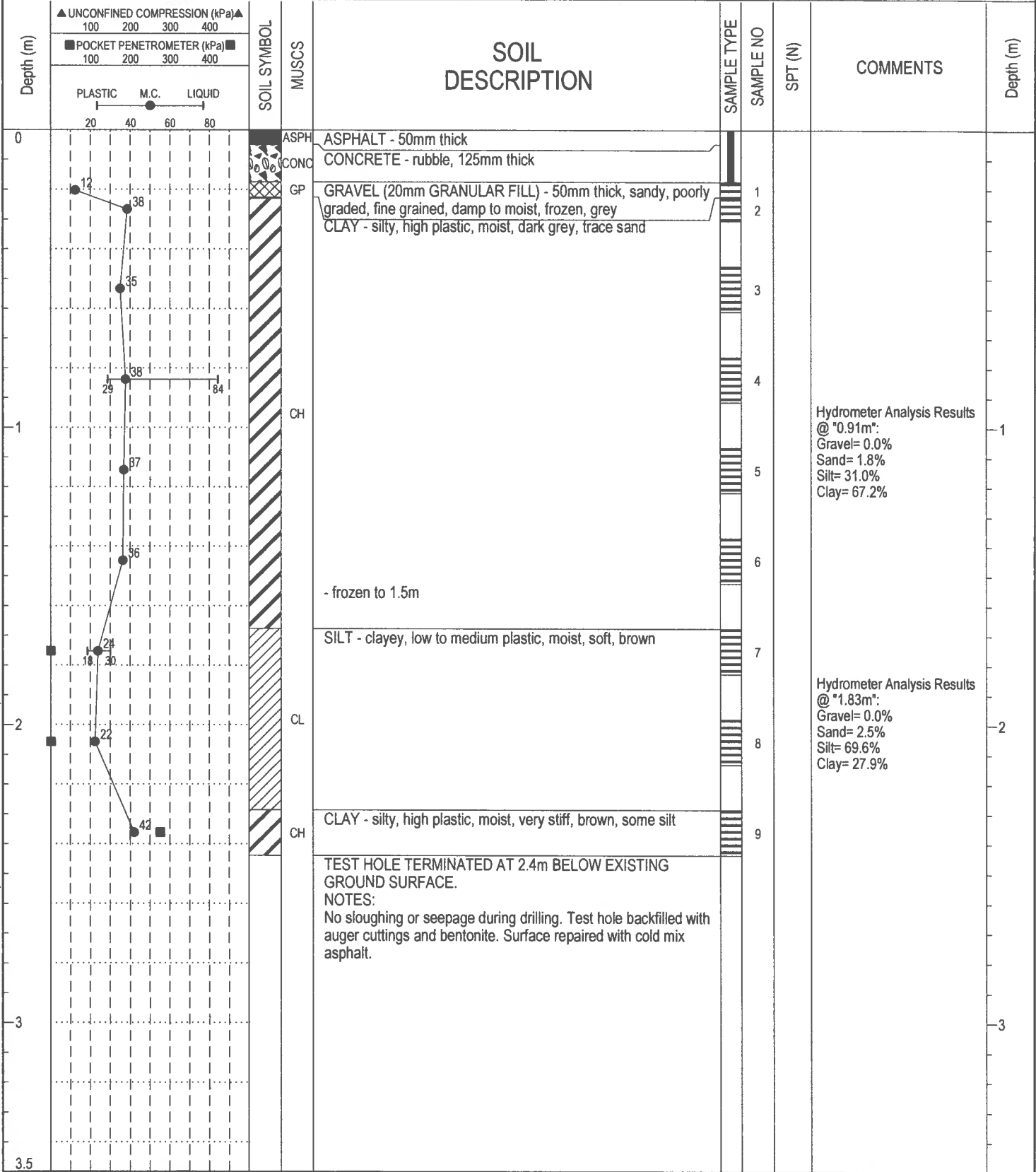
DWN BY: MD
 CHKD BY: RB
 DATUM: NAD89
 PROJECTION: UTM Zone 0
 SCALE: AS SHOWN

PROJECT: 2010 RESIDENTIAL STREET RENEWALS
 TITLE: TESTHOLE LOCATION PLAN
 HALLET STREET
 ROVER AVENUE TO ROVER AVENUE

DATE: JANUARY 2010
 PROJECT NO: WX10545.1000
 REV. NO.:
 FIGURE No. A
 FIGURE 3

PROJECT: Geotechnical Investigation	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: D1
CLIENT: City of Winnipeg	DRILL TYPE: Truck Mounted B-40	PROJECT NO: WX10545
LOCATION: Winnipeg, Manitoba	DRILL METHOD: 125mm Solid Stem Auger	ELEVATION:

SAMPLE TYPE	<input checked="" type="checkbox"/> Shelby Tube	<input type="checkbox"/> No Recovery	<input checked="" type="checkbox"/> SPT (N)	<input type="checkbox"/> Grab Sample	<input type="checkbox"/> Split-Pen	<input type="checkbox"/> Core
BACKFILL TYPE	<input checked="" type="checkbox"/> Bentonite	<input type="checkbox"/> Pea Gravel	<input type="checkbox"/> Drill Cuttings	<input type="checkbox"/> Grout	<input type="checkbox"/> Slough	<input type="checkbox"/> Sand



10545 BESANT DUNCAN HALLET YALE.GPJ 10/01/25 02:44 PM (GEOTECHNICAL - REVISED COW)

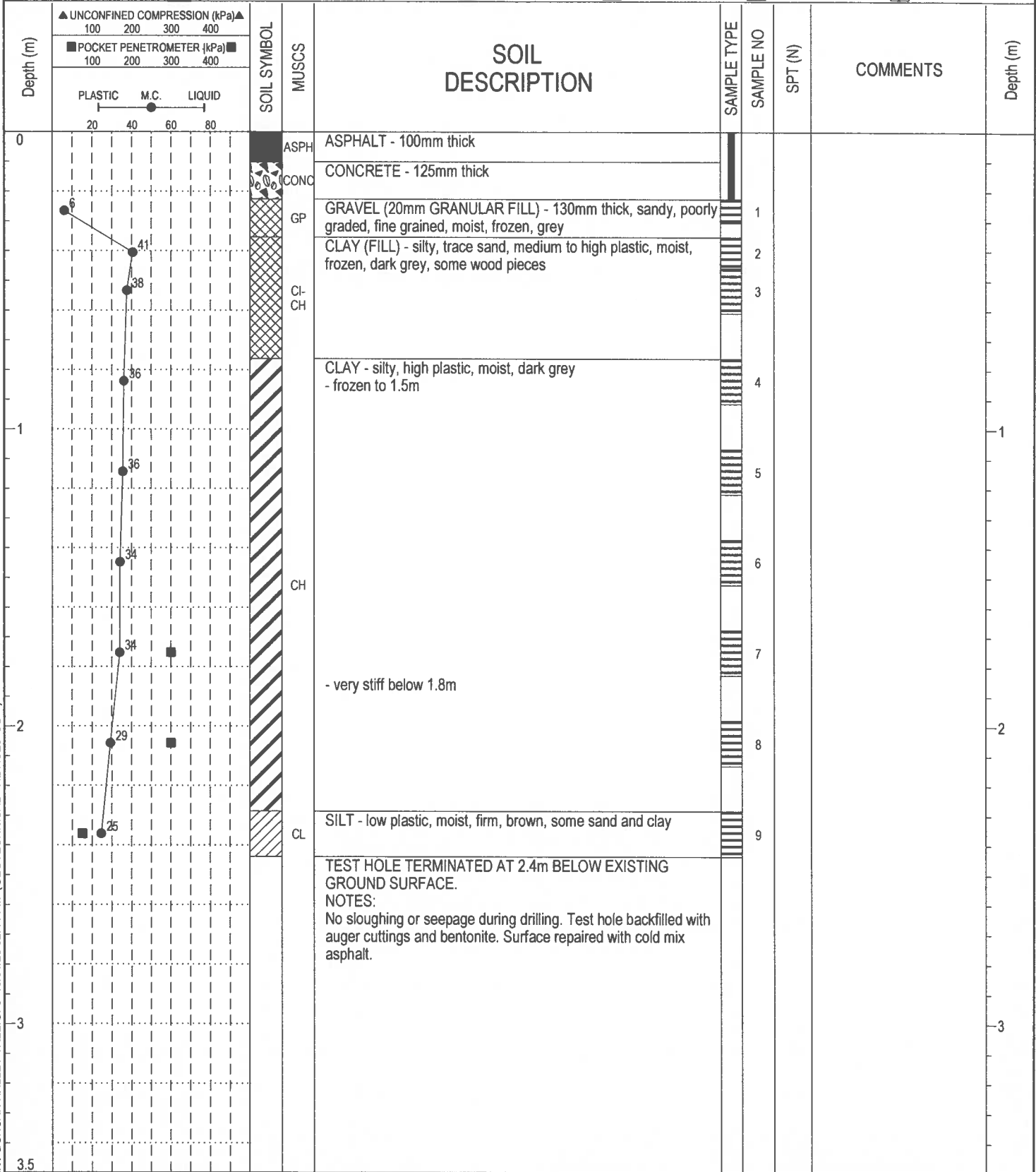


AMEC Earth and Environmental
Winnipeg, Manitoba

LOGGED BY: AL
REVIEWED BY: RB
Figure No. 9

COMPLETION DEPTH: 2.4 m
COMPLETION DATE: 22 December 2009

PROJECT: Geotechnical Investigation	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: D2
CLIENT: City of Winnipeg	DRILL TYPE: Truck Mounted B-40	PROJECT NO: WX10545
LOCATION: Winnipeg, Manitoba	DRILL METHOD: 125mm Solid Stem Auger	ELEVATION:
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BACKFILL TYPE	<input checked="" type="checkbox"/> Bentonite <input type="checkbox"/> Pea Gravel <input type="checkbox"/> Drill Cuttings <input type="checkbox"/> Grout <input type="checkbox"/> Slough <input type="checkbox"/> Sand	



10545 BESANT DUNCAN HALLET YALE.GPJ 10/01/25 02:44 PM (GEOTECHNICAL - REVISED COW)



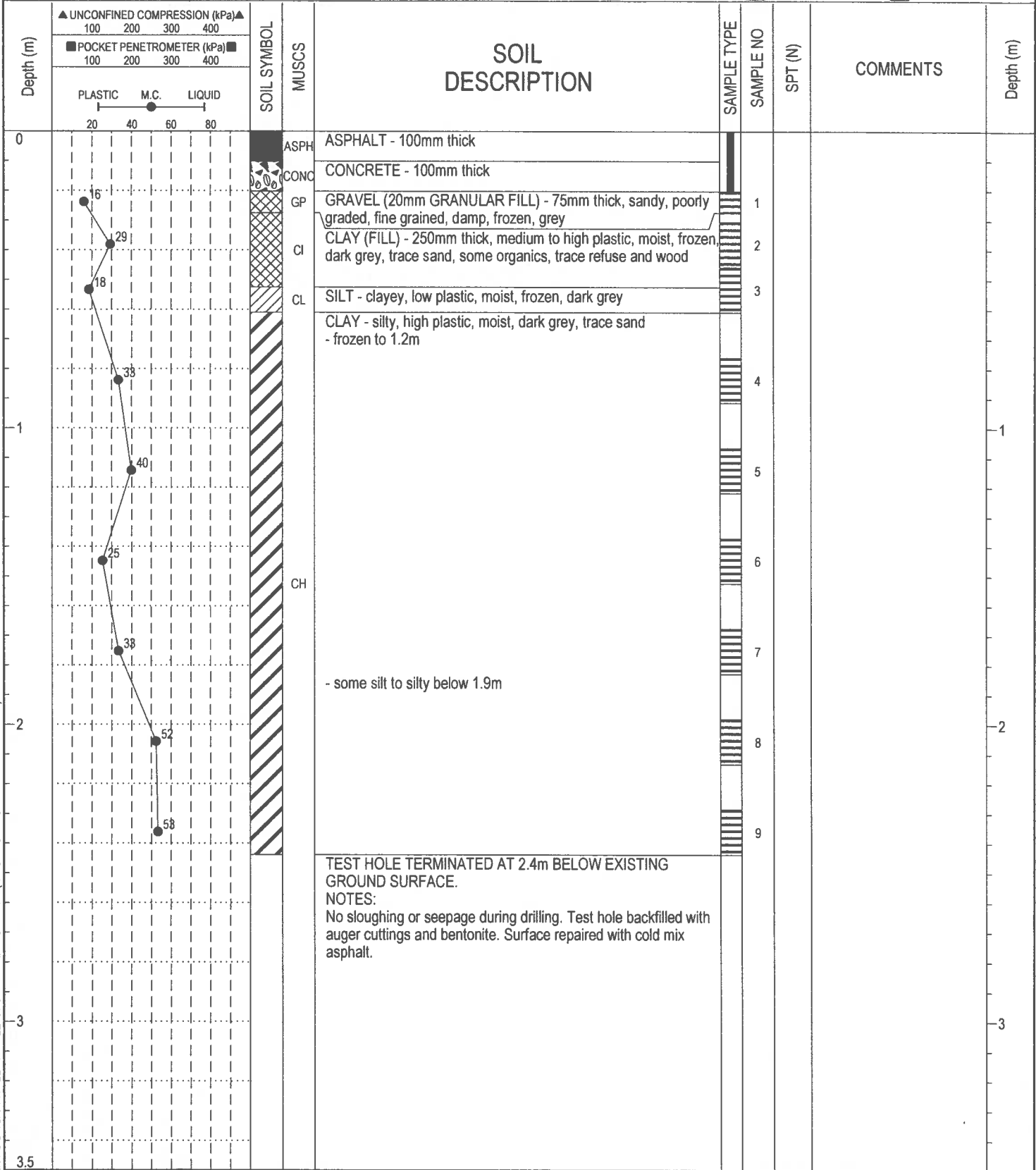
AMEC Earth and Environmental
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LOGGED BY: AL
 REVIEWED BY: RB
 Figure No. 10

COMPLETION DEPTH: 2.4 m
 COMPLETION DATE: 22 December 2009

PROJECT: Geotechnical Investigation	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: D3
CLIENT: City of Winnipeg	DRILL TYPE: Truck Mounted B-40	PROJECT NO: WX10545
LOCATION: Winnipeg, Manitoba	DRILL METHOD: 125mm Solid Stem Auger	ELEVATION:

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BACKFILL TYPE	<input checked="" type="checkbox"/> Bentonite	<input type="checkbox"/> Pea Gravel	<input checked="" type="checkbox"/> Drill Cuttings	<input type="checkbox"/> Grout	<input type="checkbox"/> Slough	<input type="checkbox"/> Sand



10545 BESANT DUNCAN HALLET YALE GP J 10/01/25 02:44 PM (GEOTECHNICAL - REVISED COW)



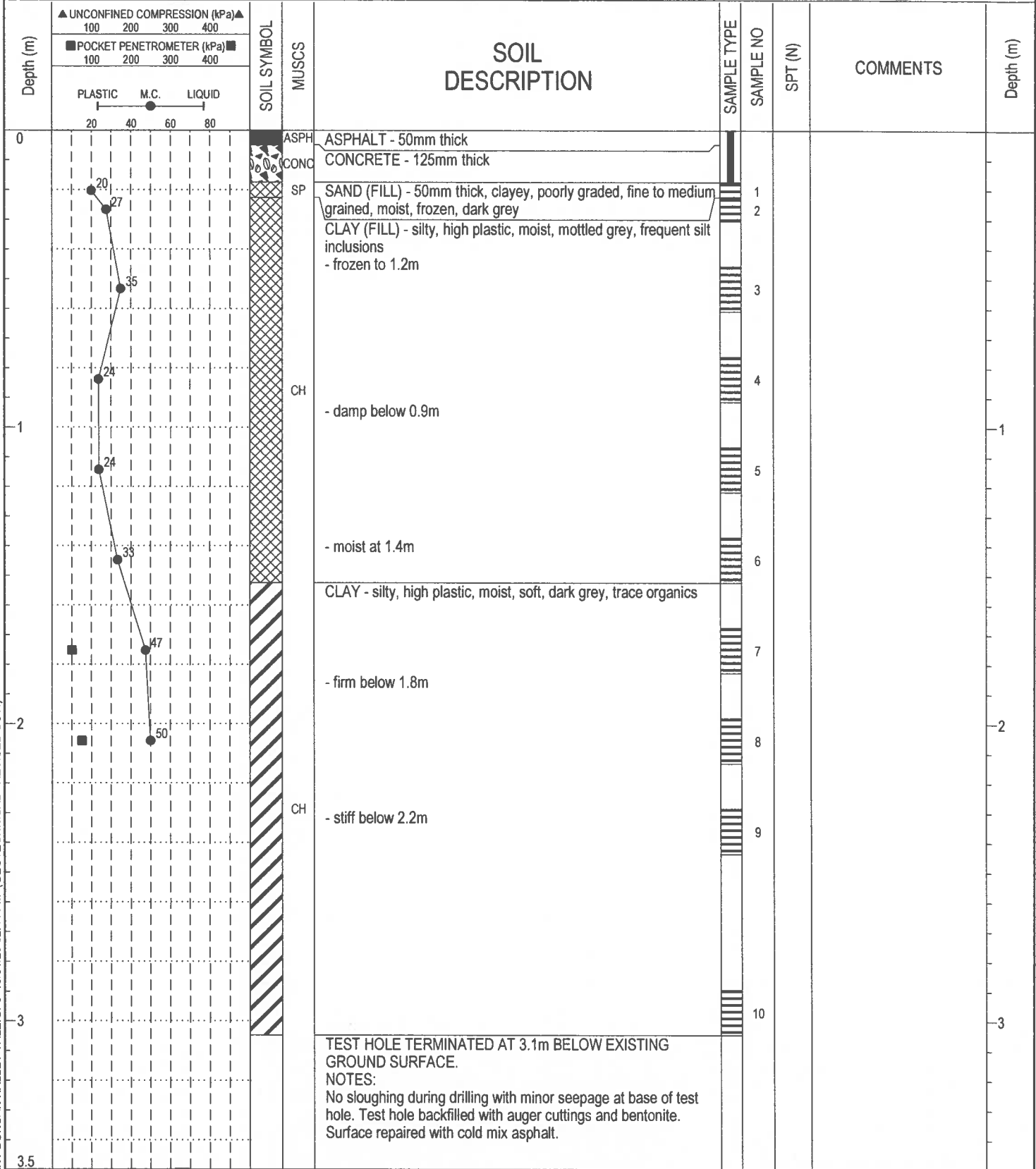
AMEC Earth and Environmental
Winnipeg, Manitoba

LOGGED BY: AL
REVIEWED BY: RB
Figure No. 11

COMPLETION DEPTH: 2.4 m
COMPLETION DATE: 22 December 2009

PROJECT: Geotechnical Investigation	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: D4
CLIENT: City of Winnipeg	DRILL TYPE: Truck Mounted B-40	PROJECT NO: WX10545
LOCATION: Winnipeg, Manitoba	DRILL METHOD: 125mm Solid Stem Auger	ELEVATION:

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BACKFILL TYPE	<input checked="" type="checkbox"/> Bentonite	<input type="checkbox"/> Pea Gravel	<input checked="" type="checkbox"/> Drill Cuttings	<input type="checkbox"/> Grout	<input type="checkbox"/> Slough	<input type="checkbox"/> Sand



10545 BESANT DUNCAN HALLET YALE.GPJ 10/01/25 02:44 PM (GEOTECHNICAL - REVISED COW)

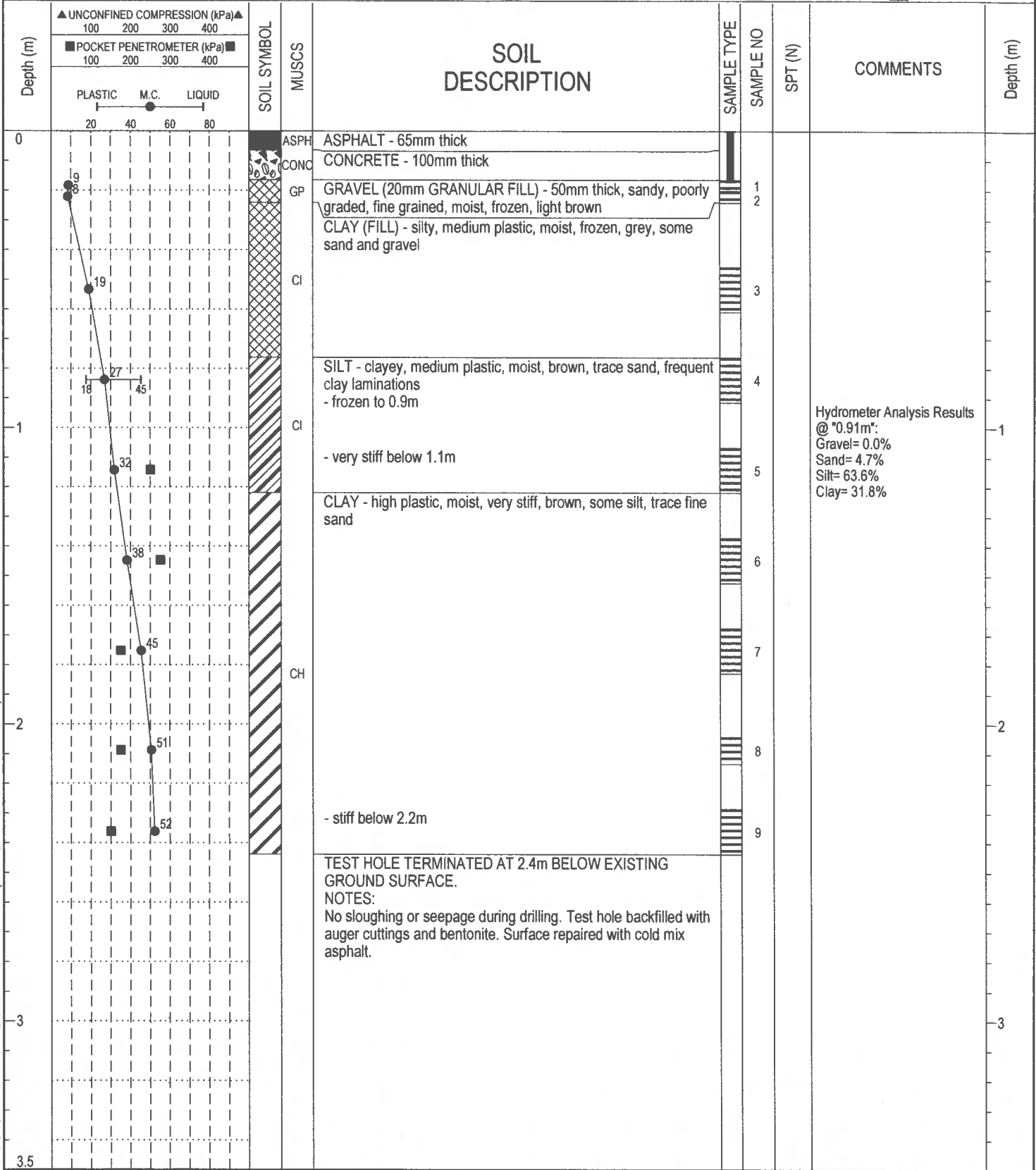


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 REVIEWED BY: RB
 Figure No. 12

COMPLETION DEPTH: 3.1 m
 COMPLETION DATE: 22 December 2009

PROJECT: Geotechnical Investigation	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: H1				
CLIENT: City of Winnipeg	DRILL TYPE: Truck Mounted B-40	PROJECT NO: WX10545				
LOCATION: Winnipeg, Manitoba	DRILL METHOD: 125mm Solid Stem Auger	ELEVATION:				
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BACKFILL TYPE	<input checked="" type="checkbox"/> Bentonite	<input type="checkbox"/> Pea Gravel	<input checked="" type="checkbox"/> Drill Cuttings	<input type="checkbox"/> Grout	<input type="checkbox"/> Slough	<input type="checkbox"/> Sand



10545 BESANT DUNCAN HALLET YALE.GPJ 10/01/25 02:44 PM (GEOTECHNICAL - REVISED COW)



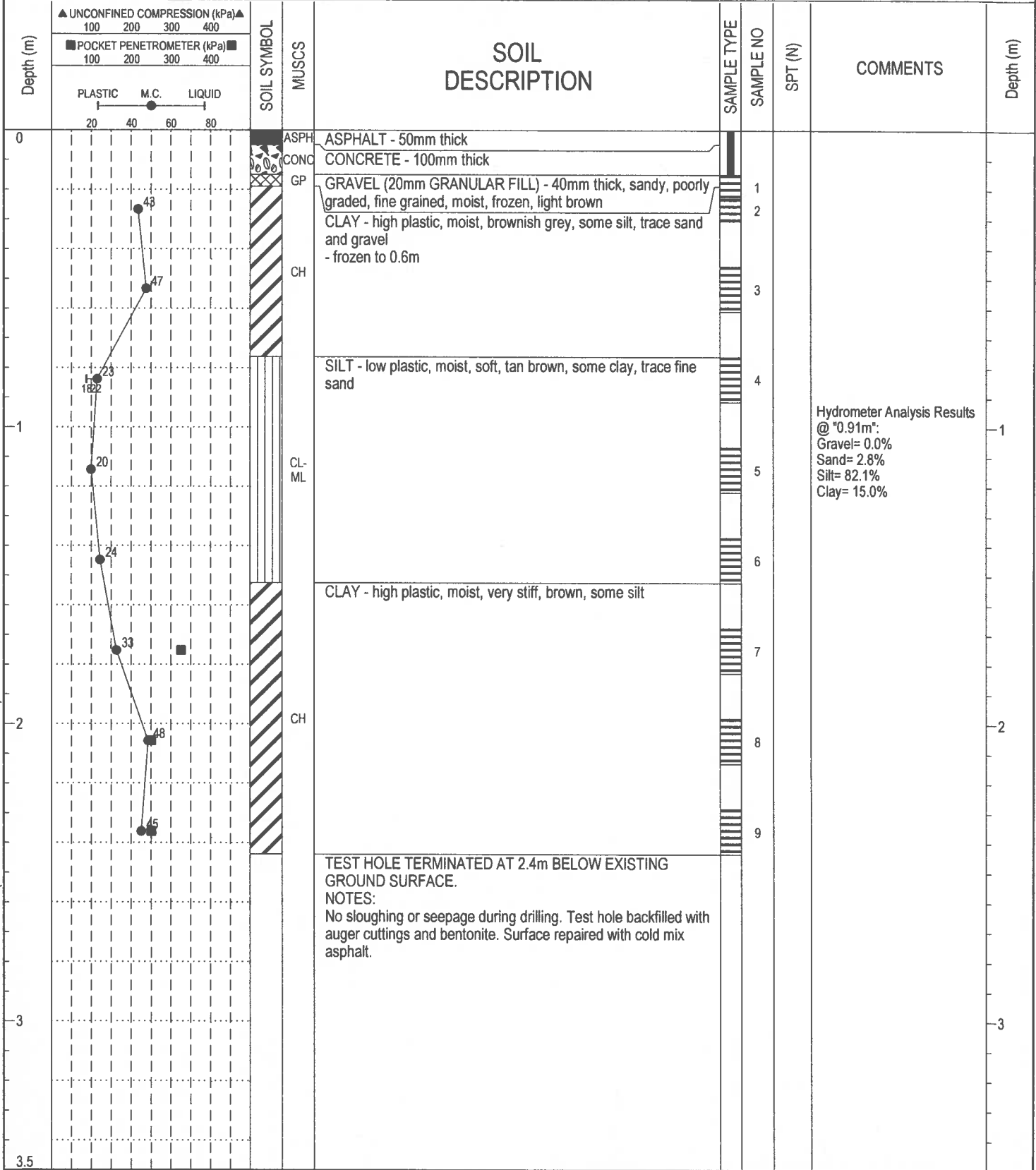
AMEC Earth and Environmental
Winnipeg, Manitoba

LOGGED BY: AL
 REVIEWED BY: RB
 Figure No. 13

COMPLETION DEPTH: 2.4 m
 COMPLETION DATE: 22 December 2009

PROJECT: Geotechnical Investigation	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: H2
CLIENT: City of Winnipeg	DRILL TYPE: Truck Mounted B-40	PROJECT NO: WX10545
LOCATION: Winnipeg, Manitoba	DRILL METHOD: 125mm Solid Stem Auger	ELEVATION:

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BACKFILL TYPE	<input checked="" type="checkbox"/> Bentonite	<input type="checkbox"/> Pea Gravel	<input checked="" type="checkbox"/> Drill Cuttings	<input type="checkbox"/> Grout	<input type="checkbox"/> Slough	<input type="checkbox"/> Sand



10545 BESANT DUNCAN HALLET YALE.GPJ 10/01/25 02:44 PM (GEOTECHNICAL - REVISED COW)



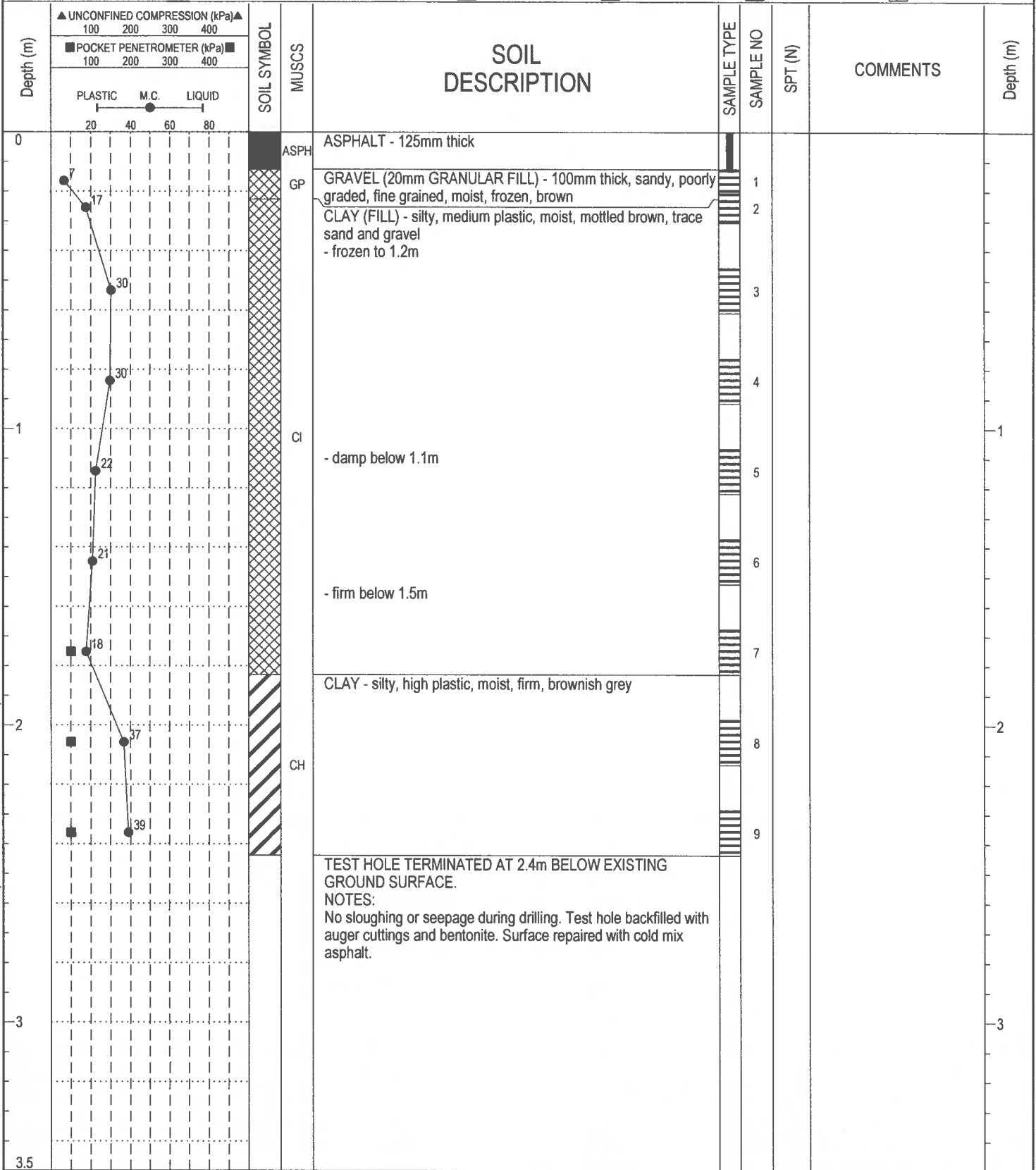
AMEC Earth and Environmental
Winnipeg, Manitoba

LOGGED BY: AL
REVIEWED BY: RB
Figure No. 14

COMPLETION DEPTH: 2.4 m
COMPLETION DATE: 22 December 2009

PROJECT: Geotechnical Investigation	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: H3
CLIENT: City of Winnipeg	DRILL TYPE: Truck Mounted B-40	PROJECT NO: WX10545
LOCATION: Winnipeg, Manitoba	DRILL METHOD: 125mm Solid Stem Auger	ELEVATION:

SAMPLE TYPE	<input checked="" type="checkbox"/> Shelby Tube	<input type="checkbox"/> No Recovery	<input checked="" type="checkbox"/> SPT (N)	<input type="checkbox"/> Grab Sample	<input type="checkbox"/> Split-Pen	<input type="checkbox"/> Core
BACKFILL TYPE	<input checked="" type="checkbox"/> Bentonite	<input type="checkbox"/> Pea Gravel	<input checked="" type="checkbox"/> Drill Cuttings	<input type="checkbox"/> Grout	<input type="checkbox"/> Slough	<input type="checkbox"/> Sand



10545 BESANT DUNCAN HALLET YALE.GPJ 10/01/25 02:44 PM (GEOTECHNICAL - REVISED COW)



AMEC Earth and Environmental
 Winnipeg, Manitoba

LOGGED BY: AL
 REVIEWED BY: RB
 Figure No. 15

COMPLETION DEPTH: 2.4 m
 COMPLETION DATE: 22 December 2009
 Page 1 of 1

CORE PHOTOGRAPHS

DUNCAN STREET FROM GALT AVENUE TO GEORGE AVENUE

AND

HALLET STREET FROM ROVER AVENUE TO ROVER AVENUE

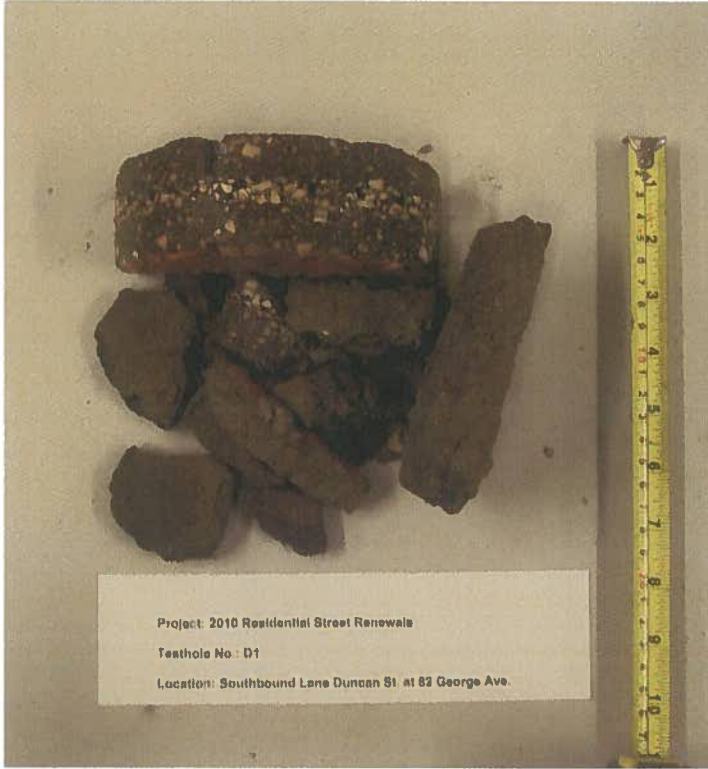


Photo 5: Test Hole D1: Duncan St. Southbound Lane, 10 m S of S sidewalk at George Ave, 1.9m E of W curb

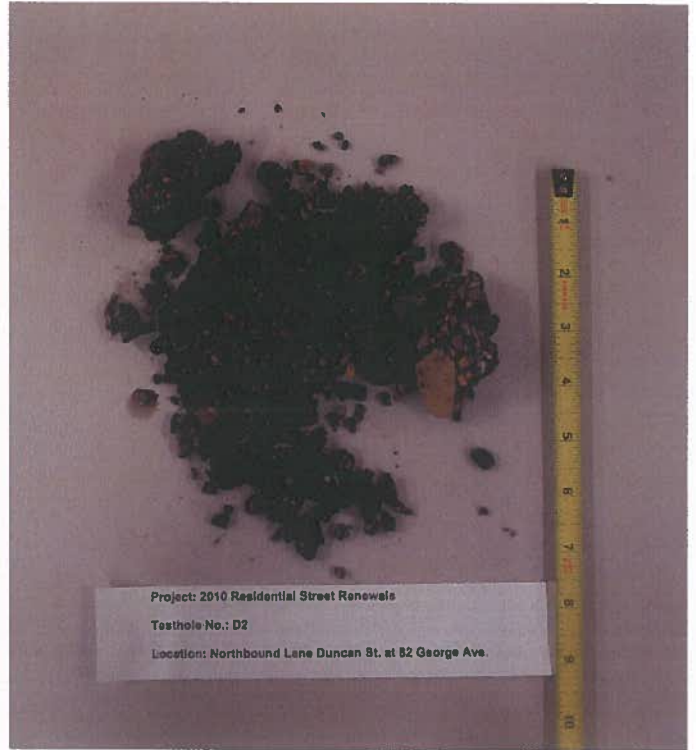


Photo 6: Test Hole D2: Duncan St. Northbound Lane, 30m S of S sidewalk at George Ave., 1.9m W of E curb


 Earth & Environmental CITY OF WINNIPEG		GEOTECHNICAL INVESTIGATION DUNCAN STREET WINNIPEG, MANITOBA		
Drawn: N/A	Scale: N/A	December 2009	Project No.: WX10545	Figure: B3



Photo 7: Test Hole D3: Duncan St. Southbound Lane, 50 m S of S sidewalk at George Ave, 1.9m E of W curb

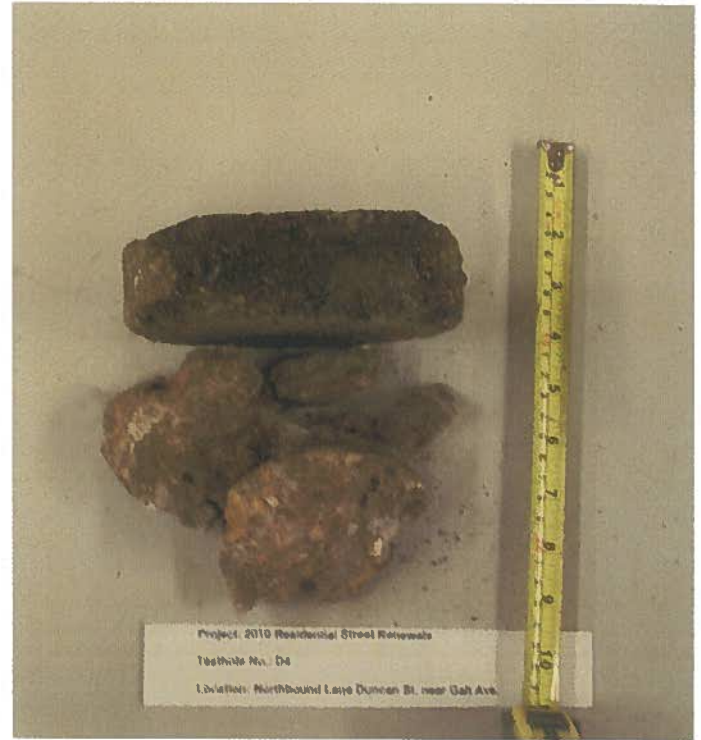


Photo 8: Test Hole D4: Duncan St. Northbound Lane, 75m S of S sidewalk at George Ave., 1.9m W of E curb


 Earth & Environmental CITY OF WINNIPEG		GEOTECHNICAL INVESTIGATION DUNCAN STREET WINNIPEG, MANITOBA		
Drawn: N/A	Scale: N/A	December 2009	Project No.: WX10545	Figure: B4



Photo 9: Test Hole H1: 44 Hallet St., Westbound Lane, 35 m E of W sidewalk at Rover Ave., 1.9m S of N curb

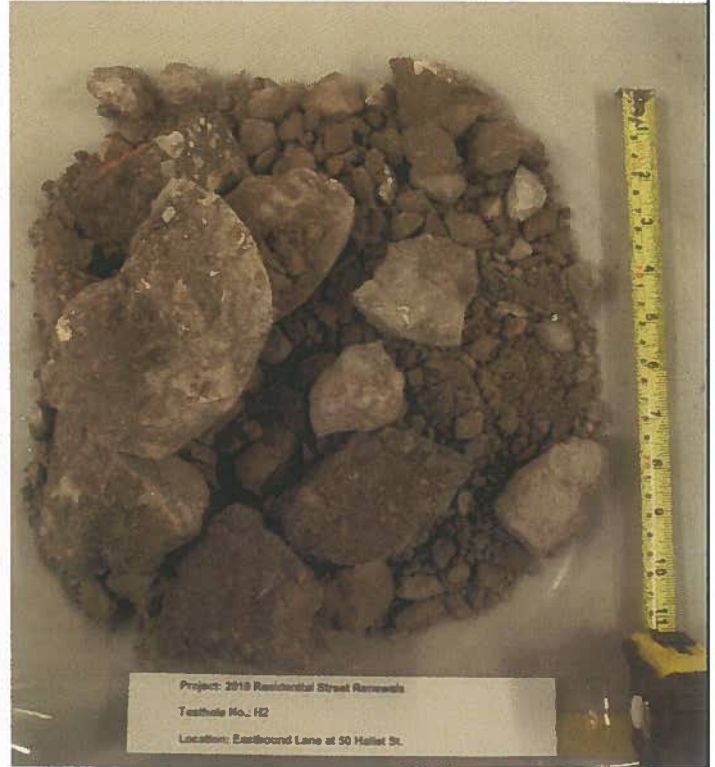



Photo 10: Test Hole H2: 50 Hallet St. Eastbound Lane, 15m E of W sidewalk at George Ave., 1.9m N of S curb

 Earth & Environmental CITY OF WINNIPEG		GEOTECHNICAL INVESTIGATION HALLET STREET WINNIPEG, MANITOBA		
Drawn: N/A	Scale: N/A	December 2009	Project No.: WX10545	Figure: B5

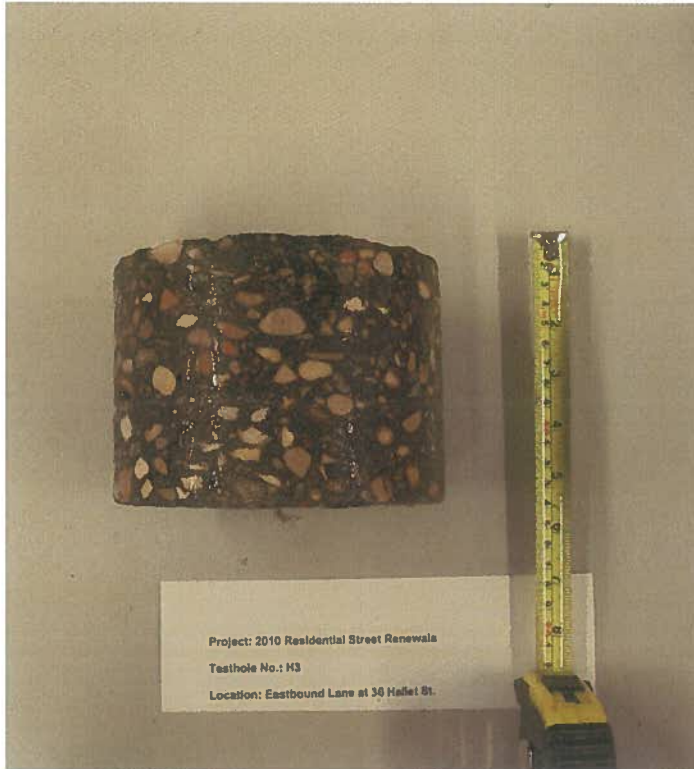



Photo 11: Test Hole H3: 36 Hallet St., Eastbound Lane, 55 m E of W sidewalk at Rover Ave., 1.9m N of S curb

 Earth & Environmental CITY OF WINNIPEG		GEOTECHNICAL INVESTIGATION HALLET STREET WINNIPEG, MANITOBA		
Drawn: N/A	Scale: N/A	December 2009	Project No.: WX10545	Figure: B6