Geotechnical Survey Report

FSI Ref:	27501
Issue Date:	November 2023
Risk Address:	60 Smithbarn Horsham West Sussex RH13 6DU
Engineer:	Neil Crawford
Company:	
Claim Ref:	SU2206852

Managing Director:	Martin Rush MSc FGS
Finance Director:	Louise Banks BSc (Hons)
Geotechnical Compliance & Logistics Supervisor:	Perry Martin MCIHT
Laboratory Manager:	Jade McLellan
Senior Geologist:	Thomas Lee BSc (Hons)
Assistant Geologist:	Sarah Brand
Geotechnical Assistant:	Bradley Webb

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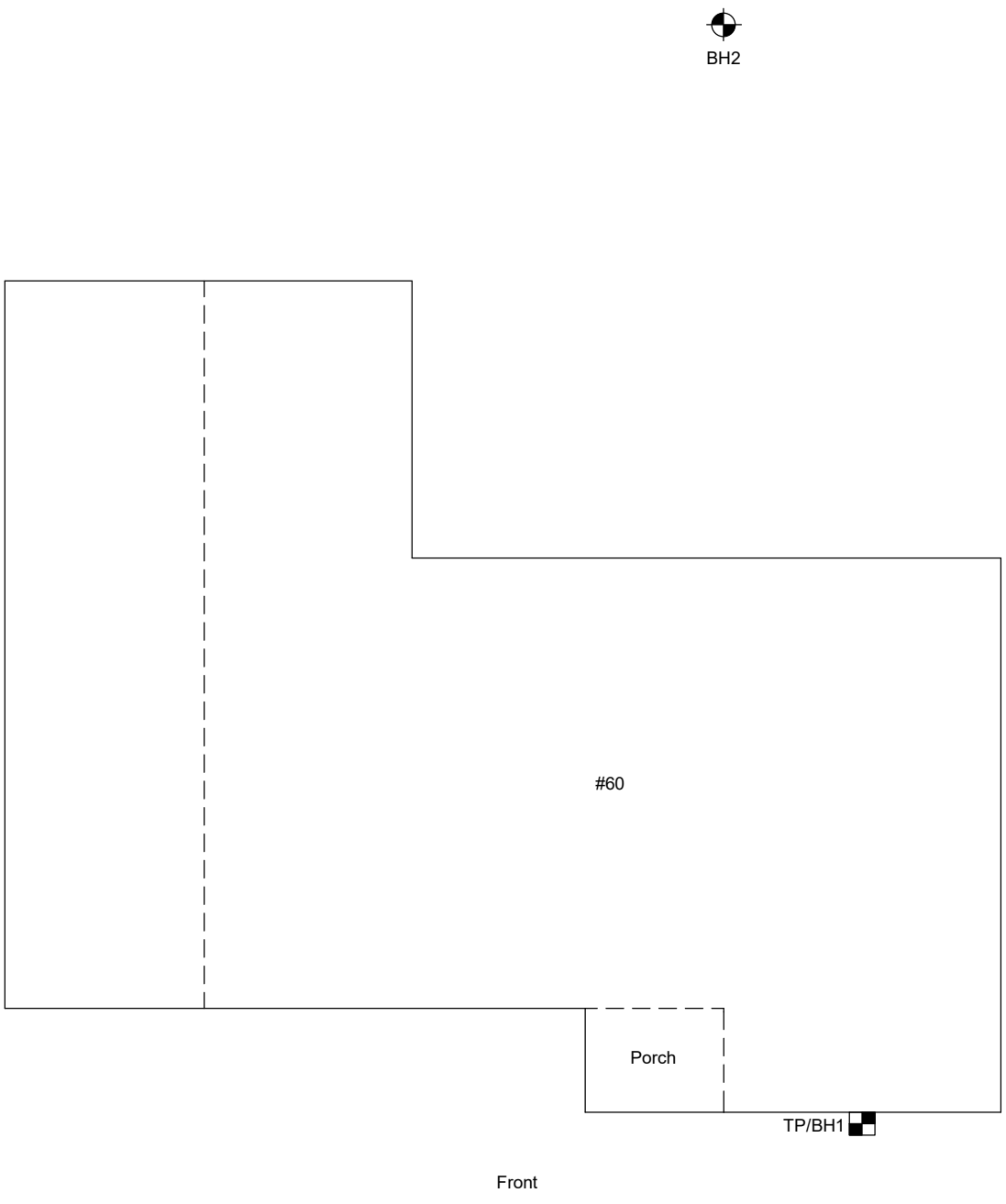
Appendix No: 1
FSI Ref: 27501

SITE PLAN

Property Address: 60 Smithbarn, Horsham, West Sussex, RH13 6DU
Client Claim Ref: SU2206852 **Survey date:** 28/1/2023 **Operative:** SE1



Scale:	Drawn by:	Key:
NTS	SB	Trial Pit, Borehole, Manholes, Rain Water Pipe, Soil & Vent Pipe, Surface Water Gully, Foul Water Gully, Shrub, Tree (Conifer), Tree (Deciduous)

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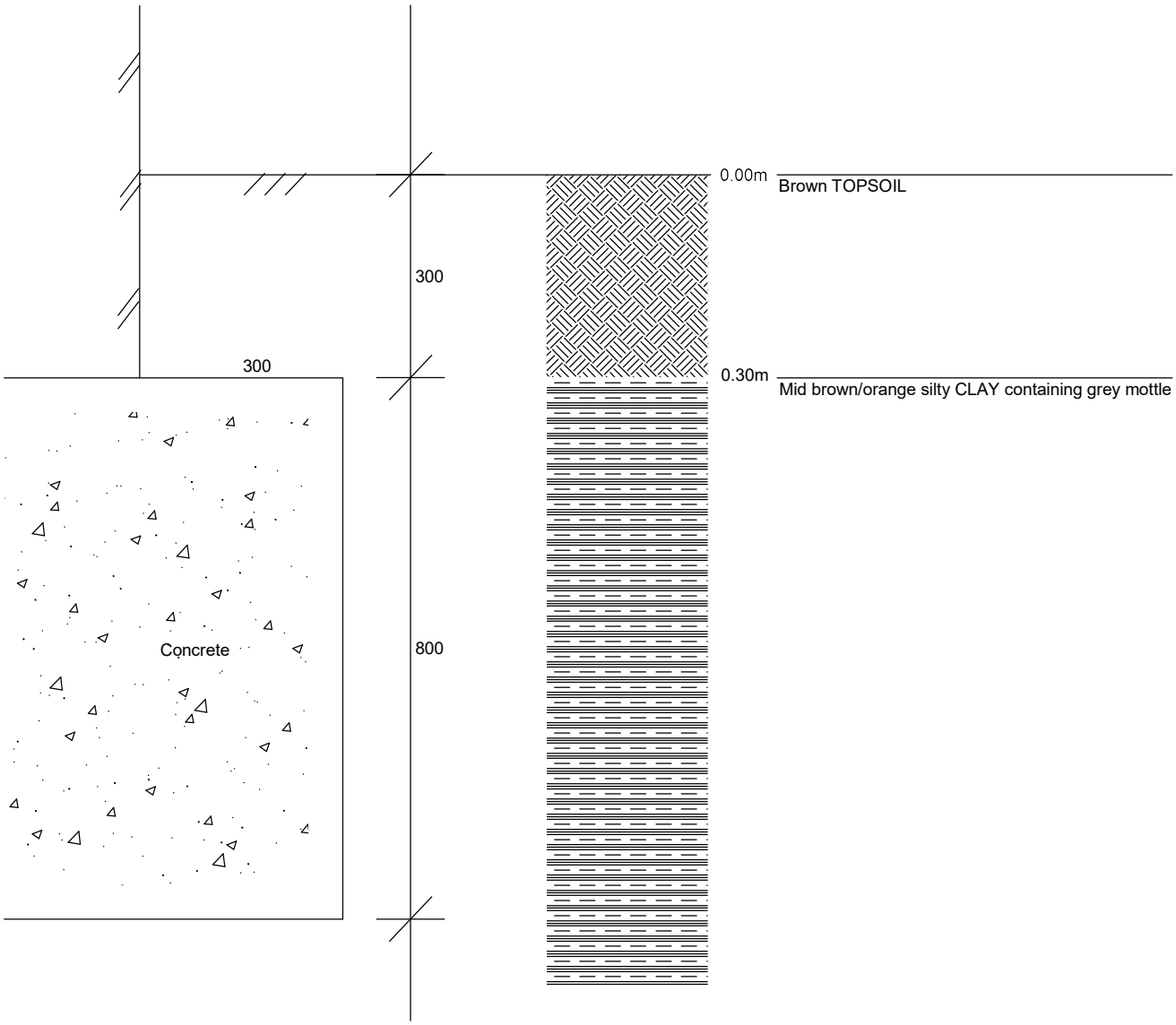
Appendix No: 2
FSI Ref: 27501

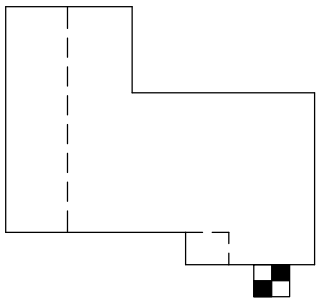
TRIAL PIT 1

Property Address: 60 Smithbarn, Horsham, West Sussex, RH13 6DU
Client Claim Ref: SU2206852 **Survey date:**28/11/2023 **Operative:** SE1



D1 @ F.L. (1.20m)
V = 110-114kPa
Founding strata: Mid brown/orange silty CLAY containing grey mottle

Trial Pit Location:



Drawn by: SB

Scale: 1:10

D= small disturbed sample, B= large bulk sample, U= undisturbed sample,
MP= mackintosh proble blow counts, V= shear vane reading (kPa)

FASTRACK	Fastrack Site Investigations Ltd Unit 9, Tyndales Farm Southend Road Maldon CM9 6TQ	Borehole Log	Borehole No. **BH1** Sheet 1 of 1

Project Name:	SU2206852	Project No. 27501	Site Date:	28/11/2023	Hole Type BH
Location:	60 Smithbarn, Horsham, West Sussex, RH13 6DU				Scale 1:21
Client:	Crawford				Logged By SE1

Water Strikes	Sample and In Situ Testing			Depth (m)	Legend	Stratum Description	
	Depth (m)	Type	Results				
						Brown TOPSOIL	
				0.30		Mid brown/orange silty CLAY containing grey mottle *Foundation top-0.30m (Concrete construct projects 300mm with a thickness of 800mm)*	
	1.00	D	V (kPa) = 110 V (kPa) = 114			*Foundation level-1.10m* *Noted to contain hairlike roots at F/L*	1
	1.50	D	V (kPa) = 140			*Noted to contain hairlike roots at 1.50m*	
				1.60		Mid brown/orange silty CLAY containing siltstone	
	2.00	D	MP = 11/75mm MP = 13/75mm MP = 13/75mm MP = 14/75mm				2
	2.50	D	MP = 14/75mm MP = 14/75mm MP = 15/75mm MP = 15/75mm				
	3.00	D	MP = 23/75mm MP = 24/75mm MP = 25/75mm MP = 25/75mm				3
				3.60		End of Borehole at 3.600m	
							4

Key: D - Disturbed Sample V - Insitu Vane Test MP - Mackintosh Probe Test

Remarks: Borehole closed at 3.60m due to an obstruction.
Standing water noted at 1.60m below ground level on completion.

AGS

FASTRACK	Fastrack Site Investigations Ltd Unit 9, Tyndales Farm Southend Road Maldon CM9 6TQ	Borehole Log	Borehole No. **CBH** Sheet 1 of 1

Project Name: SU2206852	Project No. 27501	Site Date: 28/11/2023	Hole Type BH
Location:	60 Smithbarn, Horsham, West Sussex, RH13 6DU		Scale 1:21
Client:	Crawford		Logged By SE1

Water Strikes	Sample and In Situ Testing			Depth (m)	Legend	Stratum Description	
	Depth (m)	Type	Results				
						Grass onto brown TOPSOIL	
				0.30		Mid brown/orange silty CLAY containing grey mottle	
	1.00	D	V (kPa) = 116 V (kPa) = 120				1
	1.50	D	V (kPa) = 140				
				1.90		Mid brown/orange silty CLAY containing siltstone	
	2.00	D	MP = 10/75mm MP = 10/75mm MP = 12/75mm MP = 13/75mm				2
	2.50	D	MP = 15/75mm MP = 17/75mm MP = 17/75mm MP = 19/75mm			*Clay noted to become mid brown in colour at 2.50m*	
	3.00	D	MP = 25/75mm MP = 25/75mm MP = 27/75mm MP = 29/75mm				3
				3.50		End of Borehole at 3.500m	
							4

Key: D - Disturbed Sample V - Insitu Vane Test MP - Mackintosh Probe Test

Remarks: Borehole closed at 3.50m due to an obstruction.
Standing water noted at 1.50m below ground level on completion.
No roots found.

AGS

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Appendix No: 3
FSI Ref: 27501

LABORATORY RESULTS

Property Address: 60 Smithbarn, Horsham, Surrey, RH13 6DU
Client Claim Ref: SU2206852 **Client:** Crawford & Company

SAMPLE DETAILS

Investigation date:	**28/11/2023**
Sample details:	**Bags as received**
Samples received:	**30/11/2023**
Schedule recieved:	**30/11/2023**
Samples tested:	**04/12/2023-07/12/2023**
Results reported:	**07/12/2023**

ANALYSIS REQUESTED

Moisture Content	☑	PSD	☐
Liquid Limit	☑	Soil Suction	☑
Plastic Limit	☑	Shear Strength	☐
Plasticity Index	☑	Contamination	☐
Root ID	☑	Root/Tree DNA	☐
		Roots obtained	

TEST DETAILS

General

Sample descriptions were written in accordance with BS 5930:1999.

Samples were prepared in accordance with BS 1377: Part 1: 1990, section 7

Samples from this contract will be retained for 1 calender month following the issue of this report unless otherwise notified

Written approval is required from Fastrack Site Investigations Limited to reproduce report in full. The results shown within this report only relate to the samples tested

Moisture Content

Samples were tested in accordance with BS 1377: Part 2: 1990, section 3.2 (Oven drying method)

In accordance with Note 1 to paragraph 3.2.4 of BS 1377 Part 2 1990; these moisture contents have been corrected to give the equivalent moisture content of the fraction passing the 425µm sieve, to enable comparison with the liquid & plastic limits. (If condition of test is 'natural' the retained percentage is an estimated value, if condition is 'washed' the percentage is a measured value).

Samples are dried at 105-110°C unless otherwise stated.

Atterberg Limits

Samples were tested in accordance with BS 1377: Part 2: 1990, section 4.3 (4 drop LL), 4.4 (1 drop LL), 5.3 (PL) and 5.4 (PI)
Test results on samples with a sand content, may show less accurate results. If condition of test is 'washed' results relate to the fraction passing the 425µm sieve only.

* *Driscoll's rules deem the soil to be desicated where the moisture content is less than the value calculated using driscoll's rule 1 and/or 2*

Particle Size Distribution

Samples were tested in accordance with BS 1377: Part 2: 1990 section 9.2 (Wet sieving method)

Undrained Shear Stength

Samples were prepared in accordance with BS 1377: Part 7: 1990 section 8.3 and testing in accordance with BS 1377: Part 7: 1990: section 8.4 (undrained shear strength in triaxial compression without measurement of pore pressure (UU))

Soil Suction

Samples were prepared and tested based on the BRE digest No:IP4/93 (Corrected). 'A method of determining the state of desiccation in clay soils.' (Filter paper method).

Test results on samples with a sand or silt content, may show less accurate results. Deviation to standard procedure - Polythene bags are not used from weighing filter papers.

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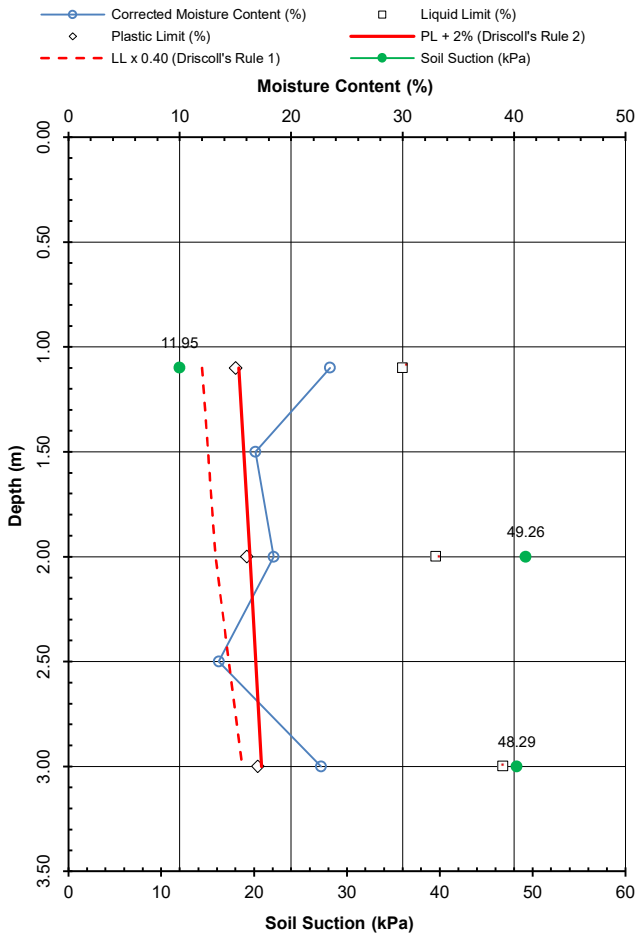
Appendix No: 3
FSI Ref: 27501

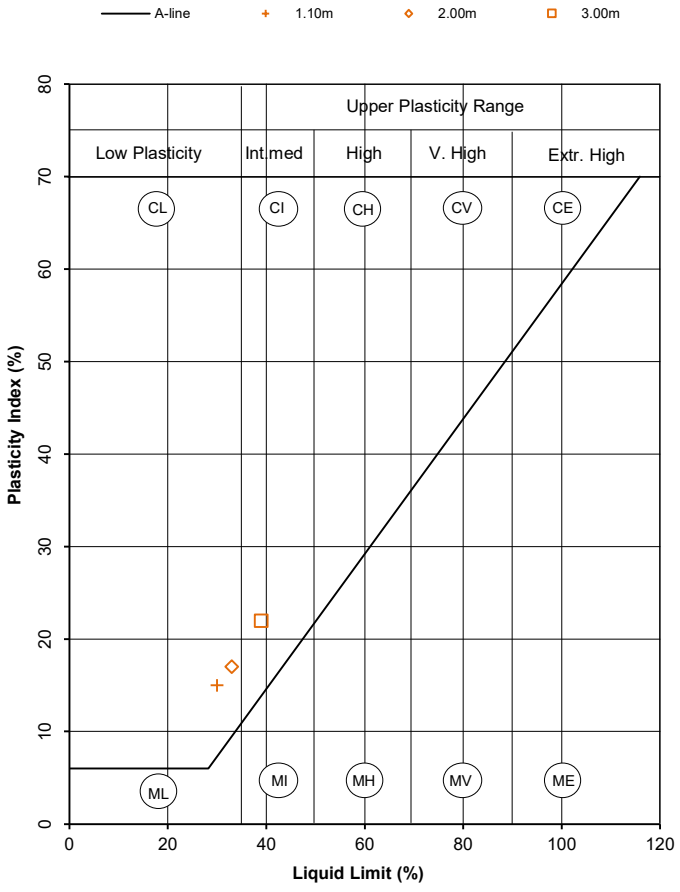
LABORATORY RESULTS

Property Address: 60 Smithbarn, Horsham, Surrey, RH13 6DU
Client Claim Ref: SU2206852

BOREHOLE 1

Depth (m)	MC (%)	Corr. MC (%)	LL (%)	PL	PI (%)	Class	% Retained (425µm)	Soil Suction (kPa)	Condition of test	Soil Description
1.10	18.9	23.48	30	15	15	CL	19.5	11.95	Natural	Orange sandy, silty CLAY containing grey mottle and gravel
1.50	16.3	16.8					3		Natural	Orange sandy, silty CLAY containing grey mottle and gravel
2.00	17.4	18.42	33	16	17	CL	5.53	49.26	Natural	Orange sandy, silty CLAY containing grey mottle and gravel
2.50	13.5	13.5					0		Natural	Pale brown silty CLAY
3.00	22.7	22.7	39	17	22	CI	0	48.29	Natural	Brown silty CLAY containing grey mottle





Comments:

Reported by: Issy Acerbis

Checked by: Jade McLellan

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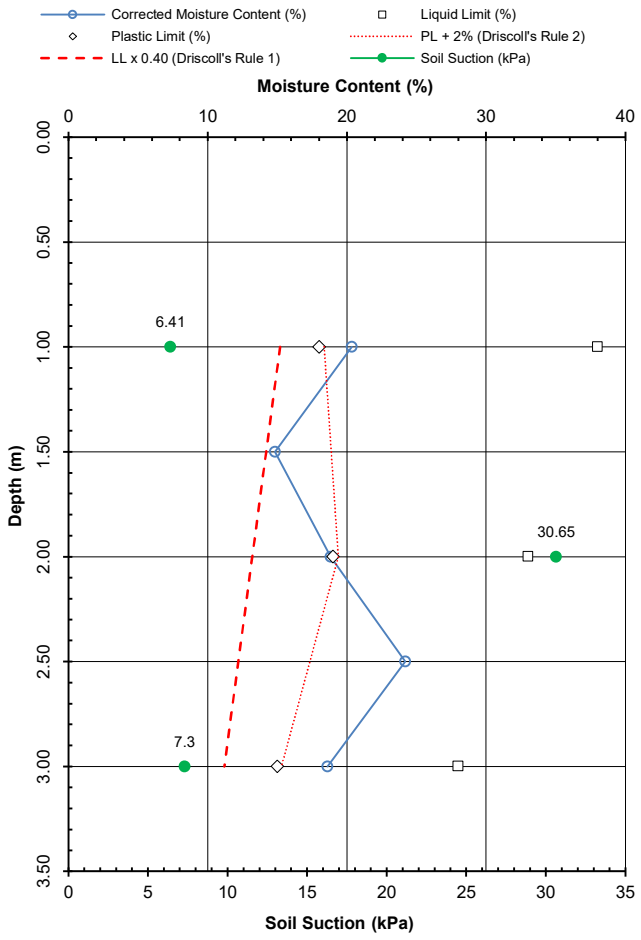
Appendix No: 3
FSI Ref: 27501

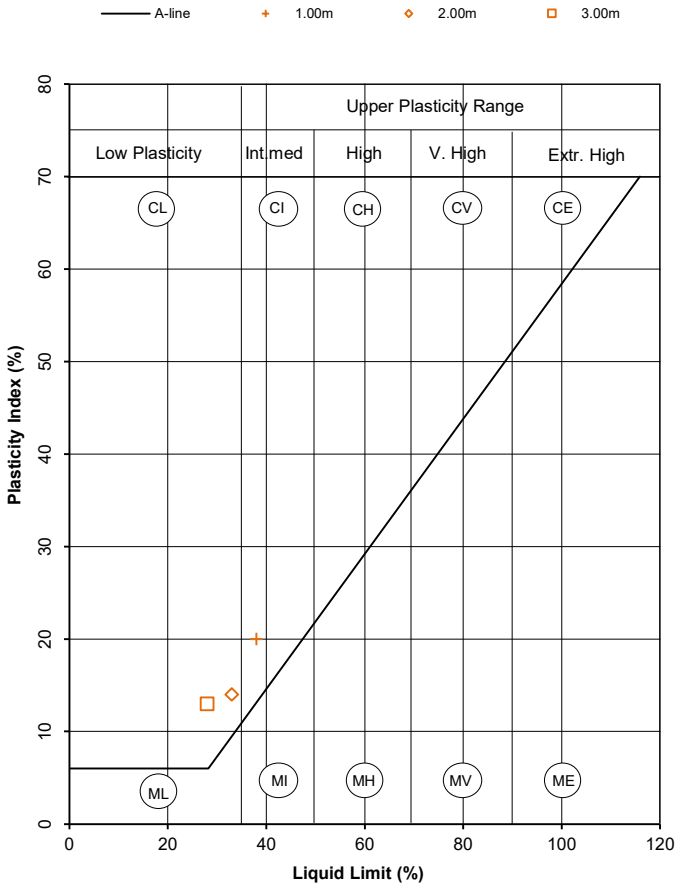
LABORATORY RESULTS

Property Address: 60 Smithbarn, Horsham, Surrey, RH13 6DU
Client Claim Ref: SU2206852

CONTROL BOREHOLE

Depth (m)	MC (%)	Corr. MC (%)	LL (%)	PL (%)	PI (%)	Class	% Retained (425µm)	Soil Suction (kPa)	Condition of test	Soil Description
1.00	19.8	20.36	38	18	20	CI	2.75	6.41	Natural	Brown silty CLAY containing grey mottle
1.50	14.4	14.85					3		Natural	Brown silty CLAY containing grey mottle and gravel
2.00	16.8	18.85	33	19	14	CL	10.88	30.65	Natural	Brown silty CLAY containing grey mottle and gravel
2.50	24.2	24.2					0		Natural	Brown silty CLAY containing grey mottle
3.00	18.6	18.6	28	15	13	CL	0	7.3	Natural	Brown silty CLAY containing grey mottle





Comments:

Reported by: Issy Acerbis

Checked by: Jade McLellan

EPSL
Independent Scientific Analysis

European Plant Science Laboratory

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ROOT IDENTIFICATION

60 Smithbarn,

Client Reference: 27501
Report Date: 4 December 2023
Our Ref: R56176

Sub Sample	Species Identified		Root Diameter	Starch
BH1:				
FL	either *Quercus* spp. or *Castanea* spp.	1	1.5 mm	Moderate
FL	Monocotyledon spp.		<1 mm	Absent
1.5m	either *Quercus* spp. or *Castanea* spp.	2	<1 mm	Moderate

Comments:

1 - Plus 1 other the same.
2 - Plus 2 others the same.

Quercus spp. are oaks. *Castanea* spp. include sweet chestnut.
Monocotyledon spp. include palms, grasses, bamboos and lilies.

Signed: M D Mitchell

Unless we are otherwise instructed in writing, the above sample material will normally be disposed of 6 years after the date of this report.