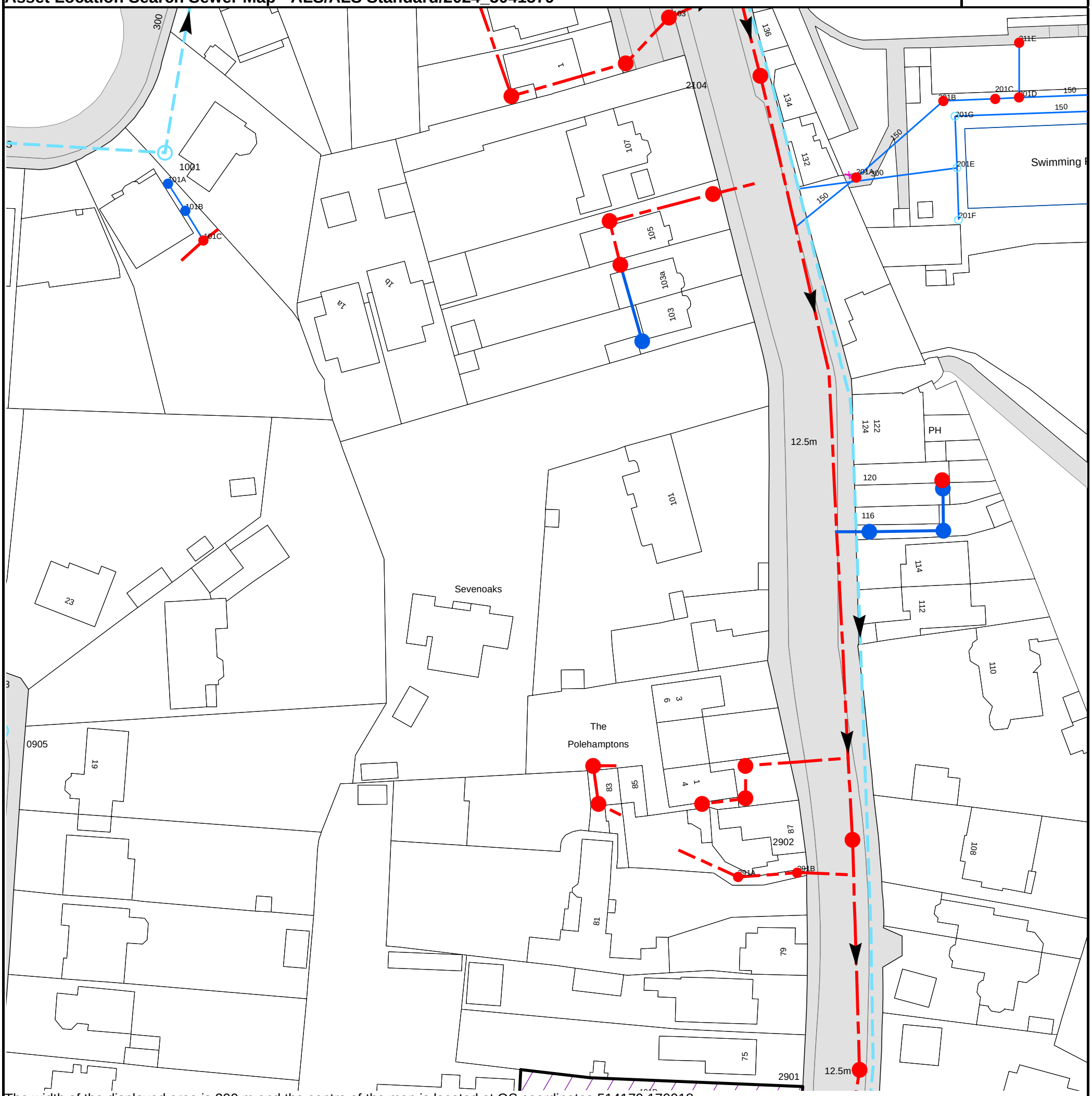
APPENDIX A

Asset Location Search Sewer Map - ALS/ALS Standard/2024_5041579



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 514179,170018

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
11ZV	n/a	n/a
10ZY	n/a	n/a
2103	12.6	10.85
20ZT	n/a	n/a
2104	12.42	n/a
201A	12.553	10.753
2003	n/a	n/a
20ZY	n/a	n/a
20ZX	n/a	n/a
201B	12.297	11.107
201G	12.411	10.241
201E	12.508	10.058
201F	12.494	11.704
201C	12.284	11.254
201D	12.303	11.313
211E	n/a	n/a
19ZV	n/a	n/a
19ZW	n/a	n/a
10ZX	n/a	n/a
101C	n/a	n/a
10ZW	n/a	n/a
101B	n/a	n/a
101A	n/a	n/a
1001	12.67	10.93
11ZW	n/a	n/a
2901	12.34	9.7
291A	n/a	n/a
291B	n/a	n/a
2902	n/a	n/a
29ZV	n/a	n/a
29ZT	n/a	n/a
29ZS	n/a	n/a
20ZW	n/a	n/a

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

Foul Sewer: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.

Surface Water Sewer: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.

Combined Sewer: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.

- Storm Sewer
- Sludge Sewer
- Foul Trunk Sewer
- Surface Trunk Sewer
- Combined Trunk Sewer
- Foul Rising Main
- Surface Water Rising Main
- Combined Rising Main
- Vacuum
- Thames Water Proposed
- Vent Pipe
- Gallery

Other Sewer Types (Not operated and maintained by Thames Water)

- Sewer
- Culverted Watercourse
- Proposed
- Decommissioned Sewer
- Content of this drainage network is currently unknown
- Ownership of this drainage network is currently unknown

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

- Air Valve
- Meter
- Dam Chase
- Vent
- Fitting

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

- Ancillary
- Drop Pipe
- Control Valve
- Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol. Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

- Inlet
- Outfall
- Undefined End

Other Symbols

Symbols used on maps which do not fall under other general categories.

- Change of Characteristic Indicator
- Public / Private Pumping Station
- Invert Level
- Summit

Areas

Lines denoting areas of underground surveys, etc.

- Agreement
- Chamber
- Operational Site

Ducts or Crossings

- Casement

Ducts may contain high voltage cables. Please check with Thames Water.

- Conduit Bridge
- Subway
- Tunnel

Notes:

1) All levels associated with the plans are to Ordnance Datum Newlyn.
2) All measurements on the plan are metric.
3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the direction of flow.
4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
5) 'na' or '0' on a manhole indicates that data is unavailable.
6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.

Sewer Flooding
History Enquiry

Thames Water Property Searches

History of Sewer Flooding

Is the requested address or area at risk of flooding due to overloaded public sewers?

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- A sewer is “overloaded” when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- “Internal flooding” from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- “At Risk” properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company’s reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water on Tel: 0800 316 9800 or website www.thameswater.co.uk

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0800 009 4540

APPENDIX B

create

Project: Sevenoaks, 101A High Street, Hampton
Drawing Title: Exploratory Hole Locat ion Plan
Drawing: 1 of 1
Project No.: P24-3285
Date: 13/09/2024

Legend

Site Boundary

Borehole

Borehole Log

Borehole No. **BH01**

Sheet 1 of 1

Project:	Sevenoaks, 101A High Street,	Project No:	P24-3285	Co-ords:	E514172.70 N170011.80
Location:	Hampton			Level:	12.50m aOD
Client:	James & Charlie Bradley Ross			Date:	03/09/2024

Hole Type: BH | Scale: 1:50 | Logged: CB

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
					0.30	12.20		Soft brown humic slightly silty clay. With fine brown rootlets. TOPSOIL.
		0.50	D					Soft brown slightly silty clay. Trace brick fragments. MADE GROUND.
		1.00	D		0.90	11.60		Firm brown slightly gravelly sandy CLAY. Gravel is subrounded to subangular fine to medium siltstone. HEAD.
		1.50 - 2.00	B					
		1.50	CPT	N=15 (1,2/3,4,4,4)				
		2.00	D					
	▼				2.30	10.20		
		2.50 - 3.00	B		2.45	10.05		Medium dense brown subangular to subrounded fine to coarse SAND AND GRAVEL. KEMPTON PARK GRAVEL MEMBER.
		2.50	CPT	N=22 (3,4/4,6,6,6)				
		3.00	D					
		3.50 - 4.00	B					
		3.50	CPT	N=26 (4,4/6,7,6,7)				
		4.00	D					
		4.50 - 5.00	B					
		4.50	CPT	N=24 (4,4/7,8,5,4)				
					4.80	7.70		Firm grey mottled brown slightly silty CLAY. LONDON CLAY.
		5.50	D					
		5.50	SPT	N=21 (2,3/4,5,6,6)				
		6.00	D		6.00	6.50		End of Borehole at 6.00m

Borehole Diameter		Casing Diameter		Chiselling		
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration

Remarks

1. BH01 terminated at 6.0m, target depth.
2. Moderate groundwater at 2.45m.

Borehole Log

Borehole No. **BH02**

Sheet 1 of 1

Project:	Sevenoaks, 101A High Street,	Project No:	P24-3285	Co-ords:	E514154.70 N170028.00
Location:	Hampton			Level:	12.50m aOD
Client:	James & Charlie Bradley Ross			Date:	03/09/2024

Hole Type: BH | Scale: 1:50 | Logged: CB

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.40	D		0.30	12.20		Soft brown humic slightly silty clay. With fine brown rootlets. TOPSOIL.
					0.90	11.60		Soft brown slightly silty clay. Trace brick fragments. MADE GROUND.
		1.50	D					Firm brown slightly gravelly sandy CLAY. Gravel is subrounded to subangular fine to medium siltstone. HEAD.
		1.50	CPT	N=14 (3,4/3,4,4,3)	1.70	10.80		
	▼				2.16	10.34		Medium dense brown subangular to subrounded fine to coarse SAND AND GRAVEL. KEMPTON PARK GRAVEL MEMBER.
		2.50 - 3.00	B					
		2.50	CPT	N=17 (4,4/4,4,4,5)				
		3.00	D					
		3.50 - 4.00	B					
		3.50	CPT	N=27 (4,5/6,7,7,7)				
		4.00	D					
		4.50 - 5.00	B					
		4.50	CPT	N=12 (4,5/5,3,2,2)	4.70	7.80		Firm grey mottled brown slightly silty CLAY. LONDON CLAY.
		5.50	SPT	N=22 (3,3/5,5,6,6)				
		6.00	D					
		6.50	SPT	N=23 (3,4/4,5,7,7)				
		7.00	D					
		7.50	SPT	N=27 (4,5/6,7,7,7)				
		8.00	D					
		8.50	SPT	N=28 (4,5/6,7,7,8)				
		9.00	D					
		9.50	SPT	N=30 (4,4/6,7,8,9)				
		10.00	D		10.00	2.50		End of Borehole at 10.00m

Borehole Diameter		Casing Diameter		Chiselling		
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration

Remarks

1. BH02 terminated at 10.0m, target depth.
2. Moderate groundwater at 2.16m.

APPENDIX C

GEOLABS Limited
Bucknalls Lane
Garston
Watford
Hertfordshire
WD25 9XX

Tel: +44(0) 1923 892 190
Fax: +44(0) 1923 892 191
email: admin@geolabs.co.uk
web: www.geolabs.co.uk

Create Consulting Engineers
109-112 Temple Chambers
3-7 Temple Avenue
London
EC4Y 0HP

26 September 2024
Report No : GEO/41171/01

For the attention of Mr A Warren

		Date samples received	04/09/2024
Our ref	**GEO / 41171**	Date written instructions received	06/09/2024
Your ref	**3285**	Date testing commenced	07/09/2024
Order ref	**5589**	**Date of sample disposal**	**24/10/2024**

Project **SEVENOAKS - 101A HIGH ST, HAMPTON**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

LABORATORY TEST REPORT

Item No	Test Quantity	Description
1	~	Liquid & Plastic Limits Summary
~	2	Water Content
~	2	Liquid & Plastic Limits
2	~	Geochemical Test Summary
~	2	BRE SD1 Suite B - Natural ground + pyrite
3	2	Particle Size Distribution

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory. The results reported are applicable only to the test items received by the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**

S Burke
Senior Technician

BS EN ISO 17892-12 : 2018+A2:2022

SUMMARY OF LIQUID AND PLASTIC LIMIT TESTS

Location	Depth m	Sample Ref	Sample Type	Description	Water Content BS EN ISO 17892-1 : 2014 +A1:2022 %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Percentage Passing 425µm %	Atterberg Classification	Test Type	Sample Condition
BH01	5.00		D	Brownish grey slightly sandy gravelly silty CLAY.	23.8	71	26	45	99	CV	1	1
BH02	6.00		D	Brownish grey slightly sandy silty CLAY with rare roots.	31.3	74	33	41	100	CV	1	1

Test Type: 1 - 1 point 80g / 30° fall cone method.

Sample condition: 1 - As Received
2 - Air Dried
3 - Washed & Air Dried

Checked and Approved by:

S Burke

S Burke - Senior Technician
26/09/2024

Project Number:

GEO / 41171

Project Name:

SEVENOAKS - 101A HIGH ST, HAMPTON

3285

GEOLABS

UKAS TESTING 1982

1240 - Chemical Test Summary - 41171.XLSM

SUMMARY OF CHEMICAL TESTS ON SOIL

Location	Depth m	Sample Ref	Sample Type	pH Value	Total Acid Soluble Sulphate as SO4 %	Water Soluble Sulphate as SO4 2:1 Water:Soil Extract g/l	Total Sulphur %	Water Soluble Chloride g/l	Water Soluble Nitrate g/l	Magnesium g/l	Organic Content %	Mass Loss on Ignition %	Carbonate Content %
BH01	3.00		D	8.4	< 0.010	< 0.010	0.13	-	-	-	-	-	-
BH01	5.50		D	8.3	0.031	0.053	0.40	-	-	-	-	-	-

Tested by Eurofins Chemtest Ltd : MCERTS / UKAS No 2183

Checked and Approved by:

S Burke

S Burke - Senior Technician
26/09/2024

Project Number:

GEO / 41171

Project Name:

SEVENOAKS - 101A HIGH ST, HAMPTON

3285

GEOLABS®

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

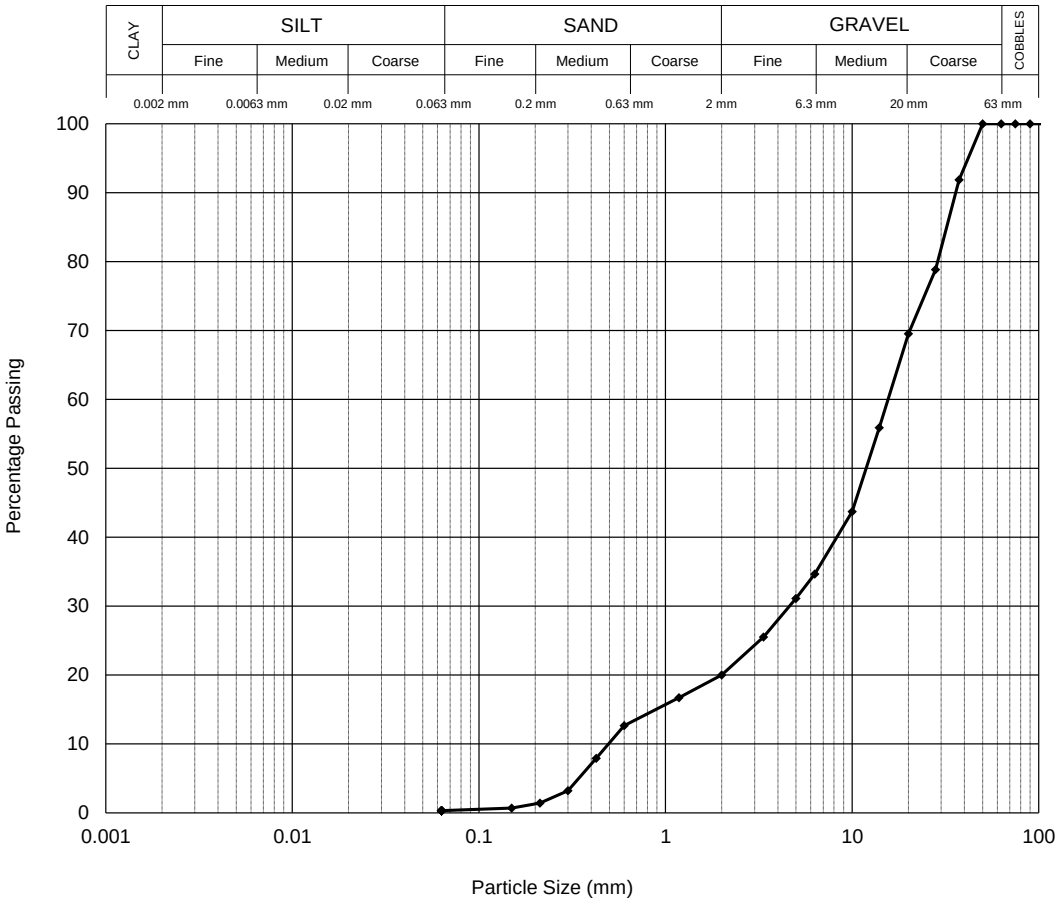
Location	BH01
Sample Depth	3.50-4.00 m
Sample Type	B

Description

Orange brown sandy GRAVEL.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	92
28.0 mm	79
20.0 mm	70
14.0 mm	56
10.0 mm	44
6.30 mm	35
5.00 mm	31
3.35 mm	26
2.00 mm	20
1.18 mm	17
600 µm	13
425 µm	8
300 µm	3
212 µm	1
150 µm	1
63 µm	0



Particle Proportions	
Cobbles	0.0
Gravel	80.0
Sand	19.7
Silt & Clay	0.3

Tested by TH
Checked and Approved by

S Burke

S Burke - Senior Technician
26/09/2024

Project Number:

GEO / 41171

Project Name:

SEVENOAKS - 101A HIGH ST, HAMPTON
3285

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

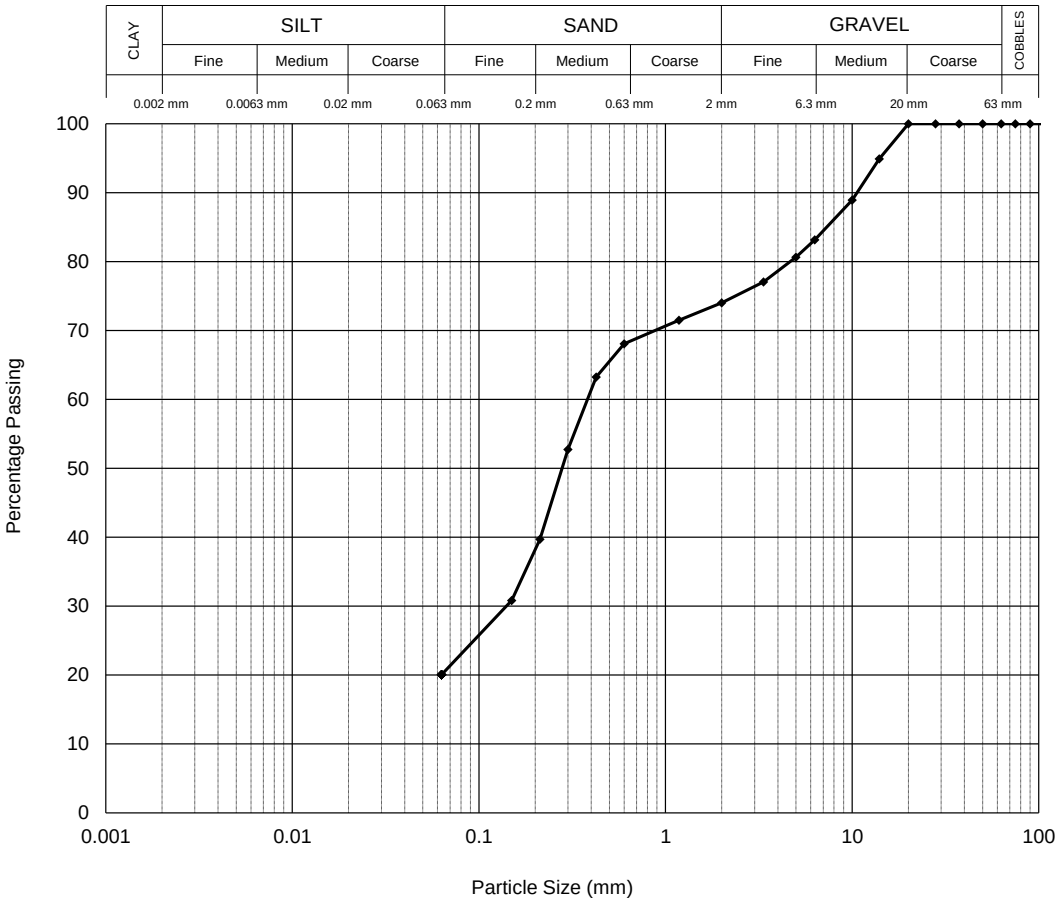
Location	BH02
Sample Depth	2.50-3.00 m
Sample Type	B

Description

Brown gravelly sandy silty CLAY with rare roots. Gravel is fine to medium.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	95
10.0 mm	89
6.30 mm	83
5.00 mm	81
3.35 mm	77
2.00 mm	74
1.18 mm	72
600 µm	68
425 µm	63
300 µm	53
212 µm	40
150 µm	31
63 µm	20



Particle Proportions	
Cobbles	0.0
Gravel	26.0
Sand	54.0
Silt & Clay	20.0

Tested by TH
Checked and Approved by

S Burke

S Burke - Senior Technician
26/09/2024

Project Number:

GEO / 41171

Project Name:

SEVENOAKS - 101A HIGH ST, HAMPTON
3285

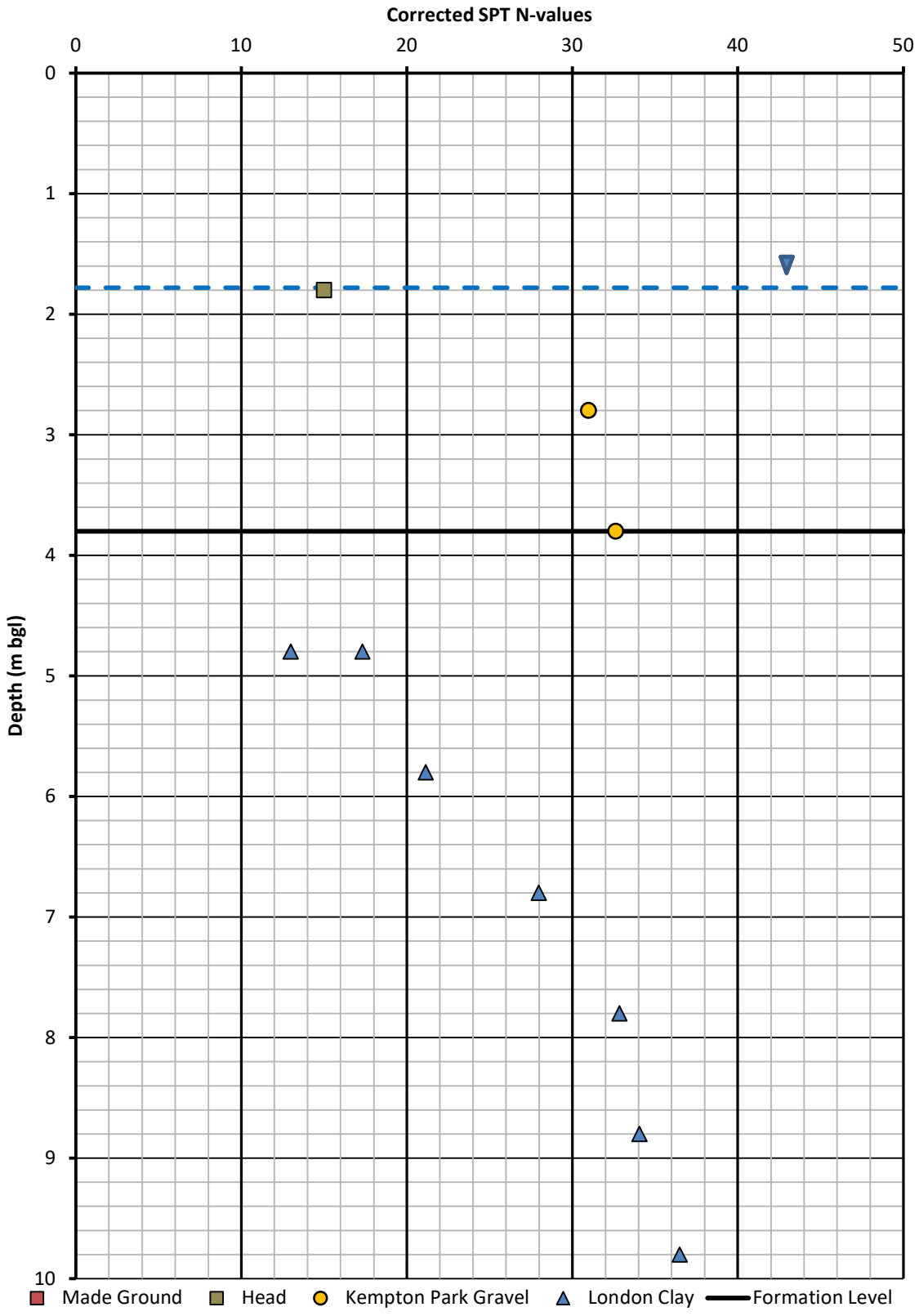
GEOLABS

UKAS TESTING 1982

APPENDIX D

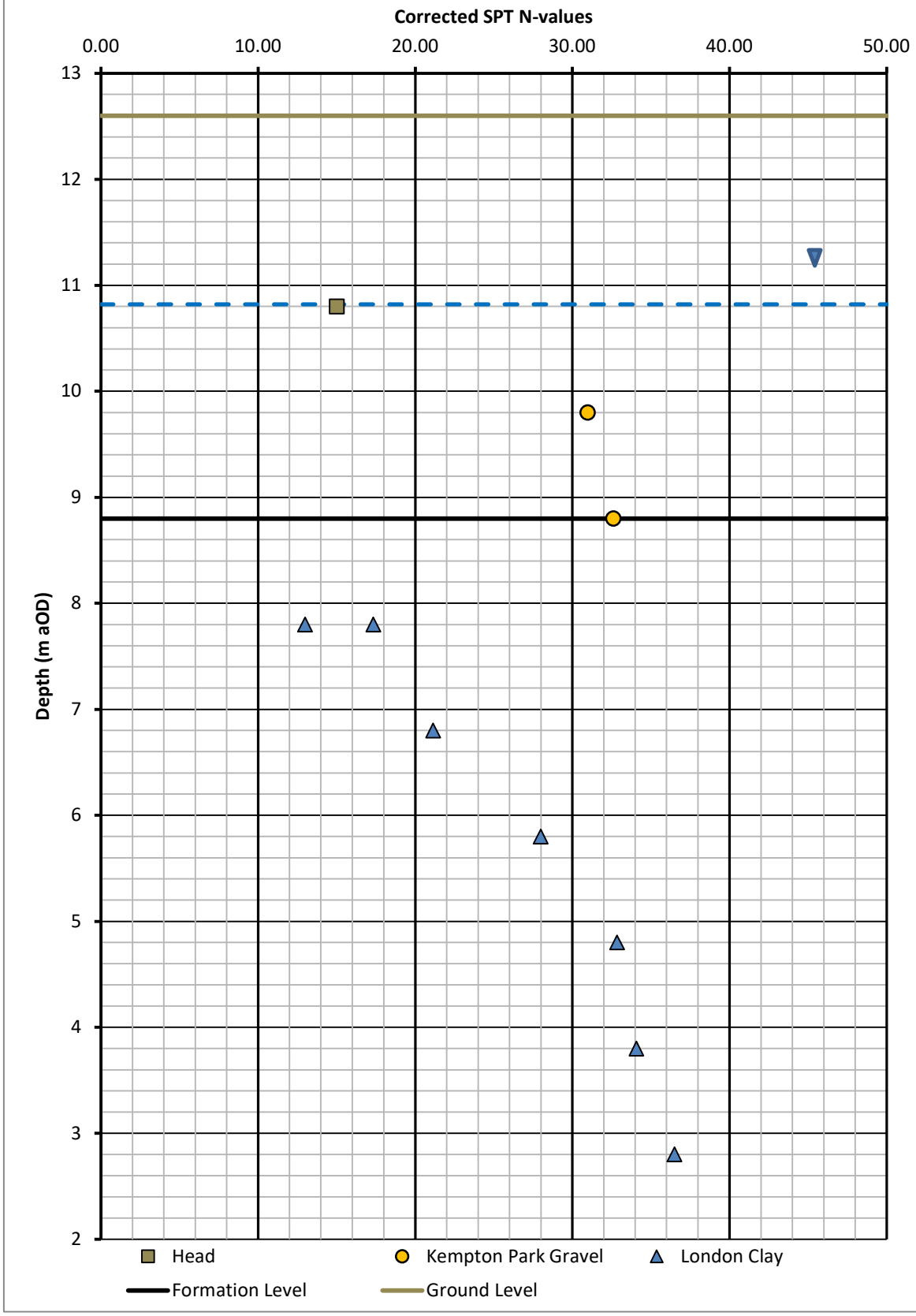
create
CONSULTING ENGINEERS LTD

SPT depth plot



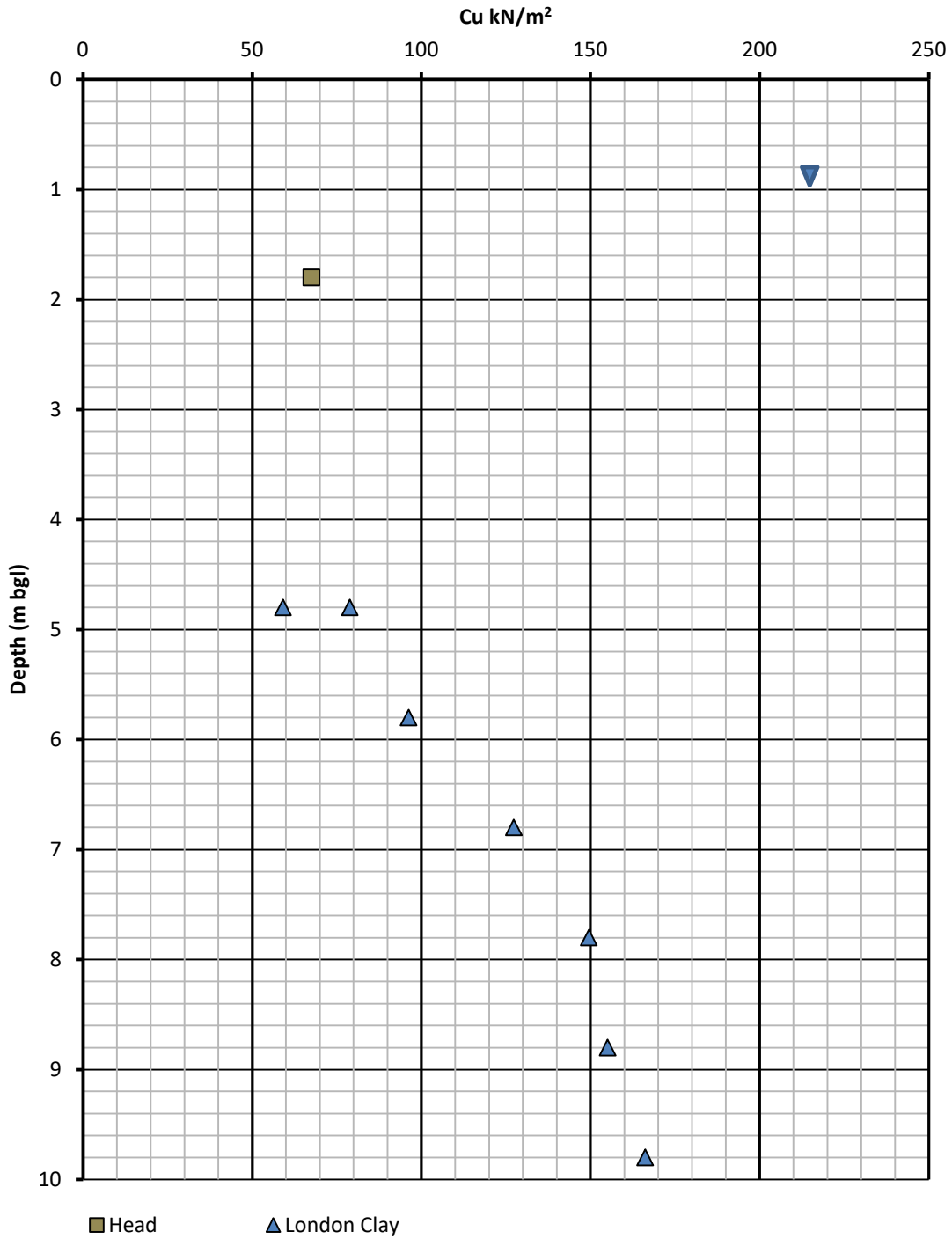
create
CONSULTING ENGINEERS LTD

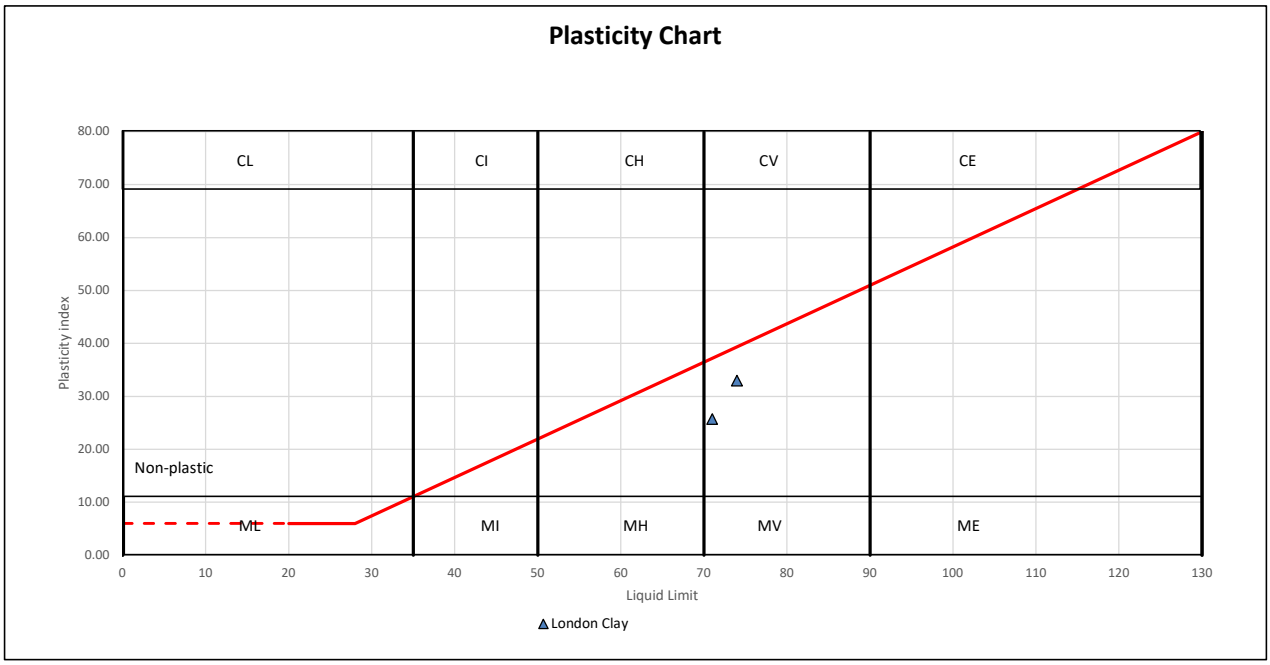
SPT depth plot



create
CONSULTING ENGINEERS LTD

Undrained Shear Strength depth plot




Plasticity Chart
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Plasticity index
CL
CI
CH
CV
CE
Non-plastic
ML
MI
MH
MV
ME
0
10
20
30
40
50
60
70
80
90
100
110
120
130
Liquid Limit
London Clay

APPENDIX E

Report Date:	28/10/2024						
Report User Name:	Andy Warren						
Report Computer Name	FYJL1Z2						
Application:	WinSitu.exe						
Application Version:	5.7.6.1						
Log File Properties							
File Name	BH02_BaroMerge_PostLevelCorrection_20241028_172851.wsl						
Create Date	28/10/2024						
Device Properties							
Device	Rugged TROLL 100						
Site	3285 Sevenoaks						
Device Name							
Serial Number	823575						
Firmware Version	1.04						
Hardware Version	0						
Device Address	1						
Device Comm Cfg	19200	8	Even	1	(Modbus-RTU)		
Used Memory	0						
Used Battery	24						
Log Configuration							
	Log Name	BH02 - monitored groundwater levels					
	Created By	andrew.warren					
	Computer Nam	CYVT1Z2					
	Application	WinSitu.exe					
	Application Ver	5.7.6.1					
	Create Date	06/09/2024 16:25:19 GMT Summer Time					
	Log Setup Time	GMT Summer Time					
	Notes Size(byte	4096					
	Overwrite wher	Disabled					
	Scheduled Star	08/09/2024 17:00:00 GMT Summer Time					
	Scheduled Stop	No Stop Time					
	Type	Linear					
	Interval	Days: 0 hrs: 12 mins: 00 secs: 00					
Other Log Settings							
	Depth of Probe	0.0760669 (m)					
	Head Pressure	7.45215 (mBar)					
	Temperature:	23.8474 (C)					
Log Data:							

Record Count	90						
Sensors	2						
	1	823575	Pressure/Temp PSIA (9m/30ft)				
	2	0	Baro-Adjustment Calc				
Time Zone: GMT Summer Time							
		Sensor: Pre	Sensor: Pre	Sensor: Pre	Sensor: Baro-Adj Calc		
		SN#: 82357	SN#: 82357	SN#: 82357	SN#: 000000		
	Elapsed Time	Corrected		Corrected			
Date and Time	Seconds	Pressure (m	Temperatur	Level Depth	Barometric Pressure (mBar)		
10/09/2024 17:00	172800.001	684.156	14.582	1.97	1001.044		
11/09/2024 05:00	216000.001	683.38	12.273	1.978	1003.263		
11/09/2024 17:00	259200.001	682.501	12.325	1.987	1004.66		
12/09/2024 05:00	302400.001	683.086	12.325	1.981	1007.732		
12/09/2024 17:00	345600.001	683.091	12.273	1.981	1012.418		
13/09/2024 05:00	388800.001	682.638	12.325	1.986	1021.144		
13/09/2024 17:00	432000.001	681.954	12.273	1.993	1024.29		
14/09/2024 05:00	475200.001	682.108	12.325	1.991	1025.896		
14/09/2024 17:00	518400.001	680.686	12.273	2.006	1024.626		
15/09/2024 05:00	561600.001	681.64	12.325	1.996	1022.825		
15/09/2024 17:00	604800.001	680.374	12.273	2.009	1021.153		
16/09/2024 05:00	648000.001	680.535	12.325	2.007	1021.51		
16/09/2024 17:00	691200.001	679.076	12.325	2.022	1024.458		
17/09/2024 05:00	734400.001	679.496	12.325	2.018	1026.335		
17/09/2024 17:00	777600.001	677.645	12.325	2.037	1024.773		
18/09/2024 05:00	820800.001	677.537	12.325	2.038	1024.073		
18/09/2024 17:00	864000.001	676.263	12.273	2.051	1020.983		
19/09/2024 05:00	907200.001	676.566	12.325	2.048	1020.639		
19/09/2024 17:00	950400.001	675.325	12.325	2.06	1017.973		
20/09/2024 05:00	993600.001	675.569	12.325	2.058	1016.923		
20/09/2024 17:00	1036800.001	673.888	12.325	2.075	1014.698		
21/09/2024 05:00	1080000.001	674.986	12.325	2.064	1012.98		
21/09/2024 17:00	1123200.001	673.163	12.325	2.082	1011.457		
22/09/2024 05:00	1166400.001	676.789	12.325	2.045	1008.388		
22/09/2024 17:00	1209600.001	680.572	12.325	2.007	1004.791		
23/09/2024 05:00	1252800.001	693.747	12.325	1.872	999.118		
23/09/2024 17:00	1296000.001	694.023	12.325	1.869	998.593		
24/09/2024 05:00	1339200.001	694.901	12.325	1.86	996.351		
24/09/2024 17:00	1382400.001	694.457	12.325	1.865	999.648		
25/09/2024 05:00	1425600.001	695.123	12.325	1.858	998.051		
25/09/2024 17:00	1468800.001	695.919	12.273	1.85	991.654		
26/09/2024 05:00	1512000.001	700.803	12.325	1.8	981.524		
26/09/2024 17:00	1555200.001	711.745	12.325	1.688	979.693		
27/09/2024 05:00	1598400.001	713.06	12.325	1.675	985.882		

27/09/2024 17:00	1641600.001	714.75	12.325	1.658	1002.88		
28/09/2024 05:00	1684800.001	713.572	12.325	1.67	1015.122		
28/09/2024 17:00	1728000.001	712.736	12.325	1.678	1020.436		
29/09/2024 05:00	1771200.001	712.968	12.273	1.676	1020.057		
29/09/2024 17:00	1814400.001	712.461	12.325	1.681	1011.632		
30/09/2024 05:00	1857600.001	713.339	12.273	1.672	996.63		
30/09/2024 17:00	1900800.001	714.73	12.325	1.658	997.682		
01/10/2024 05:00	1944000.001	713.392	12.325	1.672	1002.934		
01/10/2024 17:00	1987200.001	716.266	12.325	1.642	999.625		
02/10/2024 05:00	2030400.001	717.291	12.325	1.632	1004.502		
02/10/2024 17:00	2073600.001	716.132	12.325	1.644	1010.945		
03/10/2024 05:00	2116800.001	716.04	12.325	1.645	1014.83		
03/10/2024 17:00	2160000.001	714.997	12.325	1.655	1016.558		
04/10/2024 05:00	2203200.001	714.966	12.325	1.656	1016.401		
04/10/2024 17:00	2246400.001	714.474	12.325	1.661	1015.152		
05/10/2024 05:00	2289600.001	713.837	12.325	1.667	1013.551		
05/10/2024 17:00	2332800.001	713.722	12.325	1.668	1007.263		
06/10/2024 05:00	2376000.001	714.148	12.325	1.664	999.134		
06/10/2024 17:00	2419200.001	714.013	12.325	1.665	993.059		
07/10/2024 05:00	2462400.001	713.398	12.325	1.672	993.364		
07/10/2024 17:00	2505600.001	711.585	12.273	1.69	992.673		
08/10/2024 05:00	2548800.001	713.948	12.325	1.666	988.47		
08/10/2024 17:00	2592000.001	716.075	12.273	1.644	988.058		
09/10/2024 05:00	2635200.001	718.53	12.325	1.619	982.584		
09/10/2024 17:00	2678400.001	718.446	12.325	1.62	981.117		
10/10/2024 05:00	2721600.001	716.296	12.325	1.642	993.818		
10/10/2024 17:00	2764800.001	715.029	12.273	1.655	1004.319		
11/10/2024 05:00	2808000.001	713.976	12.325	1.666	1010.676		
11/10/2024 17:00	2851200.001	713.601	12.325	1.67	1011.735		
12/10/2024 05:00	2894400.001	713.746	12.325	1.668	1006.494		
12/10/2024 17:00	2937600.001	714.264	12.377	1.663	1000.406		
13/10/2024 05:00	2980800.001	712.23	12.377	1.684	1010.517		
13/10/2024 17:00	3024000.001	710.588	12.325	1.7	1015.494		
14/10/2024 05:00	3067200.001	712.034	12.325	1.686	1009.076		
14/10/2024 17:00	3110400.001	718.819	12.325	1.616	1011.056		
15/10/2024 05:00	3153600.001	717.955	12.325	1.625	1011.858		
15/10/2024 17:00	3196800.001	718.205	12.325	1.623	1006.758		
16/10/2024 05:00	3240000.001	718.291	12.325	1.622	999.649		
16/10/2024 17:00	3283200.001	717.569	12.325	1.629	997.079		
17/10/2024 05:00	3326400.001	717.559	12.325	1.629	1000.008		
17/10/2024 17:00	3369600.001	715.462	12.325	1.651	1007.449		
18/10/2024 05:00	3412800.001	714.723	12.325	1.658	1011.173		
18/10/2024 17:00	3456000.001	714.549	12.325	1.66	1008.301		
19/10/2024 05:00	3499200.001	716.128	12.325	1.644	1003.987		
19/10/2024 17:00	3542400.001	716.66	12.325	1.638	1008.49		
20/10/2024 05:00	3585600.001	716.445	12.325	1.64	1008.456		
20/10/2024 17:00	3628800.001	717.307	12.325	1.632	1003.491		
21/10/2024 05:00	3672000.001	715.165	12.325	1.654	1012.969		

21/10/2024 17:00	3715200.001	713.681	12.325	1.669	1017.251		
22/10/2024 05:00	3758400.001	712.495	12.377	1.681	1021.196		
22/10/2024 17:00	3801600.001	712.02	12.325	1.686	1024.449		
23/10/2024 05:00	3844800.001	710.956	12.325	1.697	1027.505		

APPENDIX F

CALCULATION SHEET

Project: **Sevenoaks, 101A High Street, Hampton**	Job No: P24-3285	Sheet No: 1	Rev. A
Subject: **Ground Movement Assessment**	AW	Checked by: CB	
	Date: 04.11.2023	Date: 05/11/2024	

Ground movement calculations for proposed basement
At Sevenoaks, 101A High Street, Hampton

A basement to provide additional living space within a proposed residential property

Ground movement estimates have been made using the guide CIRIA C760: Guidance on Embedded Retaining Wall Design, Gaba et al., CIRIA, 2017. Some tables and graphs are reproduced in the calculations.

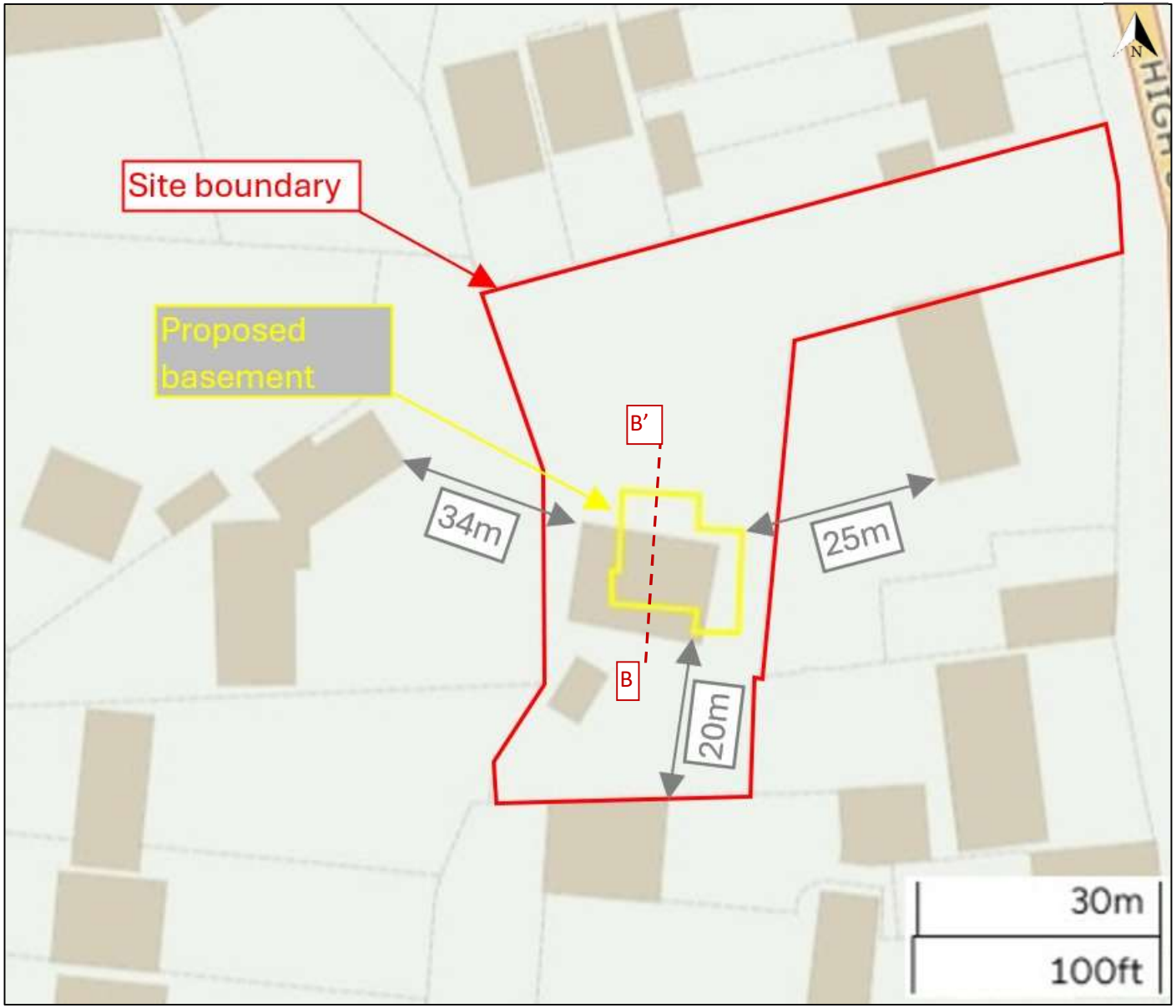


Figure 1.1 Site Plan with proposed basement layout

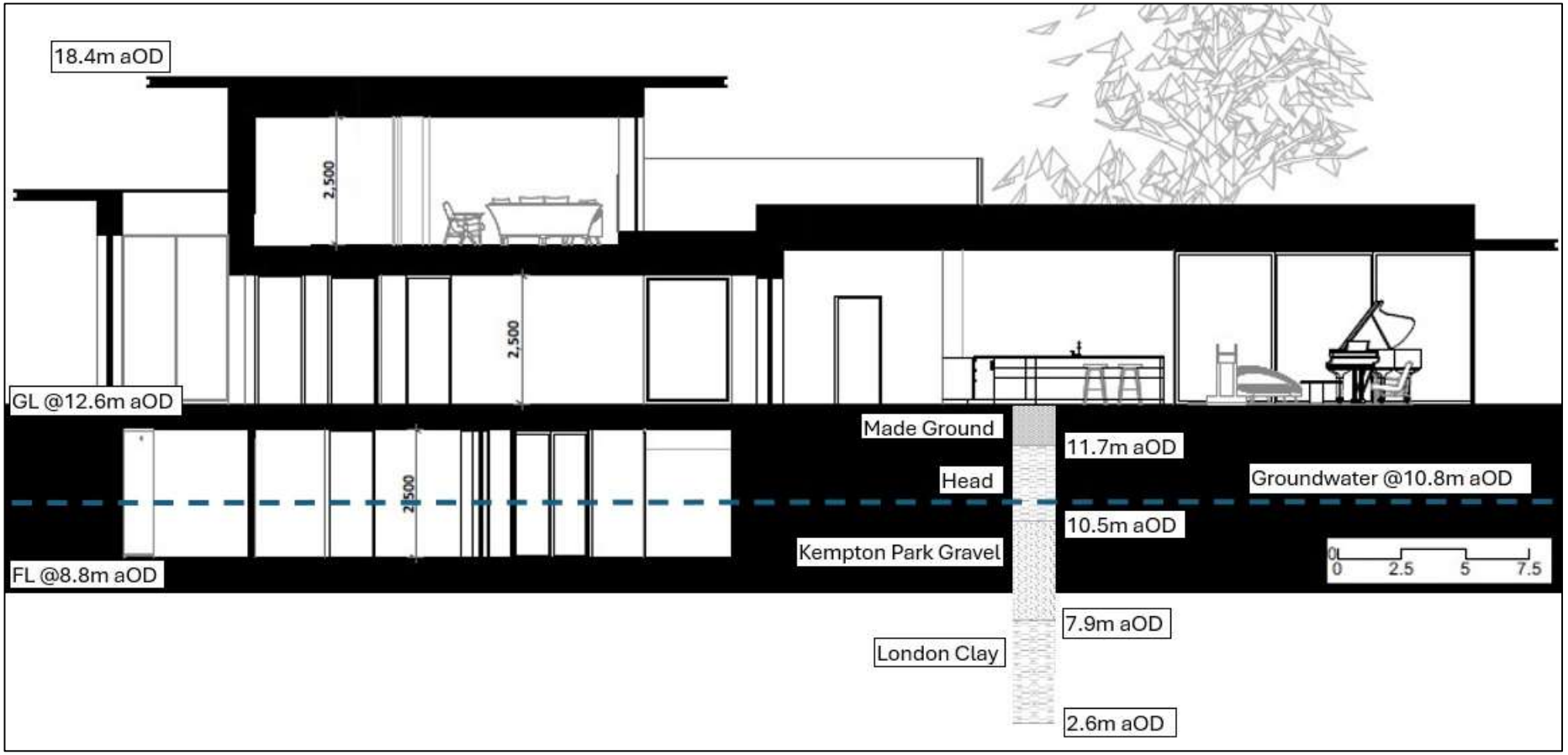


Figure 1.2: Section B-B' - Proposed Elevations

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CALCULATION SHEET

Project:	Job No:	Sheet No:	Rev.
Sevenoaks, 101A High Street, Hampton	P24-3285	4	A
Subject: **Ground Movement Assessment**	AW	Checked by: CB	
	Date: 04.11.2024	Date: 05/11/2024	

Levels

Building roof is approximately		18.4m aOD
Site ground level is		12.6m aOD
Groundwater is at 1.78m bgl		10.82m aOD
Formation Level is 3.8m bgl		8.8m aOD

Depth to base:

Made Ground	0.90m bgl	11.7m aOD
Head	2.1m bgl	10.5m aOD
Kempton Park Gravel	4.7m bgl	7.9m aOD
London Clay	>10.0m bgl	<2.6m aOD

Finished floor level is indicated to be 3.0m bgl (9.6m aOD). With an allowance of 800mm for waterproof concrete, basement slab, insultation and blinding, basement formation level is indicated to be 3.8m bgl (8.8m aOD).

The proposed method of basement construction is to excavate to formation level with excavation sides battered back at 45°. However, formation level is approximately 2.0m below groundwater levels. Excavating below the water table would likely involve expanding the width of the excavation beyond the Site boundary and an expensive dewatering programme. Therefore, to facilitate the excavation and help control groundwater entering the excavation, some form of temporary works, i.e. sheet-piles, embedded within the impermeable London Clay will be required.

Foundation formation level of adjacent buildings is assumed at 0.80m bgl (11.8m aOD).

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CALCULATION SHEET

Project: **Sevenoaks, 101A High Street, Hampton**	Job No: P24-3285	Sheet No: 5	Rev. A
Subject: **Ground Movement Assessment**	AW	Checked by: CB	
	Date: 04.11.2024	Date: 05/11/2024	

CIRIA C760

Table 6.1 Ground surface movements due to bored pile and diaphragm wall installation in stiff clay

Wall type	Horizontal movements		Vertical movements	
	Surface movement at wall (per cent of wall depth)	*Distance behind wall to negligible movement (multiple of wall depth)*	*Surface movement at wall (per cent of wall depth)*	*Distance behind wall to negligible movement (multiple of wall depth)*
Bored piles				
Contiguous	0.04	1.5	0.04	2
Secant	0.08	1.5	0.05	2
Diaphragm walls				
Planar	0.05	1.5	0.05	1.5
Counterfort	0.1	1.5	0.05	1.5

Notes

1 Maximum surface movement occurs close to the wall and is calculated as a percentage of the pile depth/diaphragm wall trench depth, as appropriate.

2 Extent of movement is calculated non-dimensionally by dividing by the pile depth/diaphragm wall trench depth, as appropriate.

CIRIA C760

Table 6.2 Support stiffness categories (after Carder, 1995)

Support stiffness	Description/examples
High	Top-down construction, temporary props installed before permanent props at high level.
Moderate	Temporary props of high stiffness installed before permanent props at low level.
Low	Cantilever walls, temporary props of low stiffness or temporary props installed at low level.

Ground Surface Movement Due To Wall Construction – CIRIA C760

Table 6.1

Distance to negligible horizontal movement due to wall insertion: 1.5 x 3.8m = 5.70m

Table 6.1

Distance to negligible vertical movement due to wall insertion: 1.5 x 3.8m = 5.70m

Distance to adjacent properties = 20m. At 20m, the property is out of influencing distance from wall construction and negligible impact from basement wall construction calculated, as per the Burland category of damage (Table 6.4, below)..

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CALCULATION SHEET

Project: **Sevenoaks, 101A High Street, Hampton**	Job No: P24-3285	Sheet No: 6	Rev. A
Subject: **Ground Movement Assessment**	AW	Checked by: CB	
	Date: 04.11.2024	Date: 05/11/2024	

Table 6.3 Ground surface movements due to excavation in front of bored pile, diaphragm wall and sheet pile walls wholly embedded in competent ground (stiff clays)

Movement type	High support stiffness (high propped wall, top-down construction)		Low support stiffness (cantilever or low-stiffness temporary props or temporary props installed at low level)	
	Surface movement at wall (per cent of max excavation depth)	*Distance behind wall to negligible movement (multiple of max excavation depth)*	*Surface movement at wall (per cent of max excavation depth)*	*Distance behind wall to negligible movement (multiple of max excavation depth)*
Horizontal	0.15	4	0.4	4
Vertical	0.1	3.5	0.35	3.5

Notes

1 Maximum surface movement occurs close to the wall and is expressed as a percentage of maximum excavation depth in front of the wall.
2 Extent of movement is calculated non-dimensionally by dividing by maximum excavation depth.
3 Movements exclude those arising from wall installation effects.
4 Movements are for good workmanship and walls wholly embedded in stiff clays, retaining stiff clays or other competent soils.
5 Movements will be greater where soft soils are encountered at formation level (see Figure 6.14 and Appendix A6).

Ground Surface Movement Due To Excavation – CIRIA C760

Max depth of excavation relative to adjacent properties 3.10m – 0.80m = 2.3m

A low support stiffness category has been adopted, based on propped walls installed at a low level.

Distance to negligible horizontal movement due to excavation: 4 x 2.3m = 9.20m

Distance to vertical horizontal movement due to excavation: 4 x 2.3m = 9.20m

Distance to adjacent properties = 20m. Therefore, out of influencing distance from excavation and any impact upon properties will be negligible, as per the Burland category of damage (Table 6.4, below).

Services within the High Street are outside the zone of influence from basement construction, with negligible impact calculated.

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CALCULATION SHEET

Project: **Sevenoaks, 101A High Street, Hampton**	Job No: P24-3285	Sheet No: 7	Rev. A
Subject: **Ground Movement Assessment**	AW	Checked by: CB	
	Date: 04.11.2024	Date: 05/11/2024	

Table 6.4 Classification of visible damage to walls (after Burland et al, 1977, Boscardin and Cording, 1989, and Burland, 2001)

Category of damage	Description of typical damage (ease of repair is underlined)	Approximate crack width (mm)	Limiting tensile strain, ε_{lim} (%)
0 Negligible	Hairline cracks of less than about 0.1 mm are classed as negligible	<0.1	0.0 to 0.05
1 Very slight	Fine cracks that can easily be treated during normal decoration. Perhaps isolated slight fracture in building. Cracks in external brickwork visible on inspection	<1	0.05 to 0.075
2 Slight	Cracks easily filled. Redecoration probably required. Several slight fractures showing inside of building. Cracks are visible externally and some repointing may be required externally to ensure weathertightness. Doors and windows may stick slightly.	<5	0.075 to 0.15
3 Moderate	The cracks require some opening up and can be patched by a mason. Recurrent cracks can be masked by suitable lining. Repointing of external brickwork and possibly a small amount of brickwork to be replaced. Doors and windows sticking. Service pipes may fracture. Weathertightness often impaired.	5 to 15 or a number of cracks >3	0.15 to 0.3
4 Severe	Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows. Windows and frames distorted, floor sloping noticeably. Walls leaning or bulging noticeably, some loss of bearing in beams. Services pipes disrupted.	15 to 25, but also depends on number of cracks	>0.3
5 Very severe	This requires a major repair, involving partial or complete rebuilding. Beams lose bearings, walls lean badly and require shoring. Windows broken with distortion. Danger of instability.	Usually >25, but depends on numbers of cracks	

Notes

1 In assessing the degree of damage, account must be taken of its location in the building or structure.

2 Crack width is only one aspect of damage and should not be used on its own as a direct measure of it.

APPENDIX G

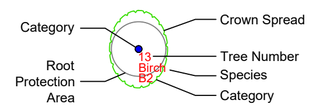
Merewood
Arboricultural Consultancy Services

Merewood, Gregory Road, Hedgerley, Bucks, SL2 3XW
Tel: 01753 647236 Mob: 07784 915944
email: s_imon.hawkins@hotmail.co.uk

Site: Sevenoaks 101 High Street Hampton	1:250 at A2
Drawing Title: Plan of Tree Constraints	July 2024

Key:

- Category A
- Category B
- Category C
- Category U



NOTE: Tree/group numbers marked with an * have approximate locations.