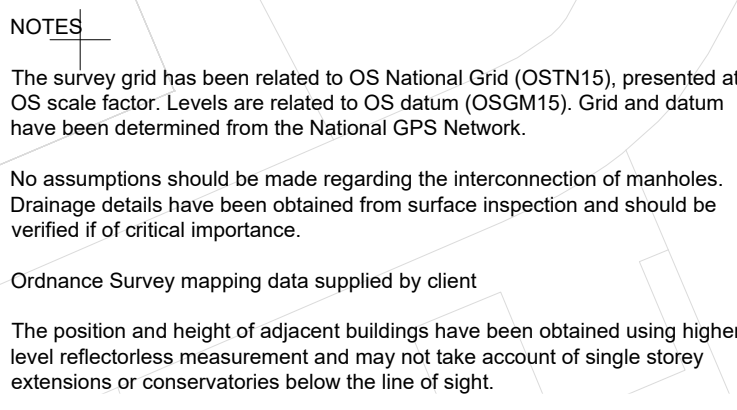


Species / Dia / Spread (max) / Ht
e.g. OK / 0.6 / 8 / 15

ABBREVIATIONS

BT	British Telecom
BOL	Bollard
CB	Control Box
CL	Cover Level
CTV	Cable Television
EL	Electric
EP	Electricity Pole
FI	Fire Hydrant
GSV	Gas Stop Valve
HVC	Height
I	High Voltage Cable
IPC	Inspection Cover
IL	Invert Level
LP	Lamp Post
MP	Man-hole
MKR	Marker
MW	Monitoring Well
OH	Overhead
GR	Ground Gully
WB	Work Box
PC	Pan Crossing
RNP	Road Name Plate
RS	Road Sign
SA	Soakaway
ST	Stay / Strut
SV	Stop Valve (Unidentified)
TB	Telephone Box
TE	Telecon
TH	Trail Hole
TL	Traffic Light
TP	Telephone Pole
UTL	Unable to Lift
VV	Vent pipe
WM	Water Meter
WSV	Water Stop Valve



<p>Geomatic Surveyors</p>	<div data-bbox="2828 1705 2908 1738">  </div> <div data-bbox="2828 1743 2908 1789"> Unit E, Woodside 34 Parham Drive Eastleigh SO50 4NU </div> <div data-bbox="2828 1797 2908 1822"> t: 023 8081 1081 w: siteline.co.uk </div>
<p>BLOOR HOMES SOUTHERN</p>	<p>Client</p>
<p>SOUTHLEIGH HAVANT</p>	<p>Contract</p>
<p>SITE SURVEY</p>	<p>Title</p>
<p>01SQ01 (Sheet 25 of 34)</p>	<p>Drawing Number</p>
<p>MARCH TO JUNE 2023</p>	<p>Date</p>
<p>1:250 (at A0)</p>	<p>Scale</p>
<p>HB AB BT</p>	<p>Surveyor(s)</p>

TREES

A

AL

AP

B

BA

BB

BC

BD

BE

BF

BG

BH

BI

BJ

BK

BL

BM

BN

BO

BP

BQ

BR

BS

BT

BU

BV

BW

BY

Ash

Alder

Apple

Beech

Blackthorn

Cedar

Copper Beech

Cherry

Cypress

Elder

Eucalyptus

Field Maple

Fruit

HB

HC

HO

HW

HY

HZ

IBT

JM

LS

LM

LO

LR

LS

MG

MP

OK

PA

PL

PM

PO

PR

RD

RH

RS

SB

SC

SP

SW

TU

U

W

WB

WN

Y

Species / Dia / Spread (max) / Ht

e.g. OK / 0.6 / 8 / 15

ABBREVIATIONS

BT

BOL

CB

CL

CTV

EL

EP

FR

GSV

HT

HVC

IC

IL

LP

MH

MKR

MW

O/H

G

PB

PC

RNP

RS

S/A

SV

ST

SVA

TB

TC

TH

TL

TP

UTL

VP

WM

WSV

British Telecom

Bollard

Control Box

Cover Level

Cable Television

Electric Pole

Fire Hydrant

Gas Stop Valve

Height

High Voltage Cable

Inspection Cover

Invert Level

Lamp Post

Man-Hole

Marker

Monitoring Well

Overhead

Road Gully

Post Box

Pram Crossing

Road Name Plate

Road Sign

Soakaway

Stay / Strut

Stop Valve (Unidentified)

Telephone Box

Telecom

Trail Hole

Traffic Light

Telegraph Pole

Unable to Lift

Vent pipe

Water Meter

Water Stop Valve

FENCES

BWF

CBF

CP

CPF

CWF

IRF

PKF

PRF

PWF

SCF

SP

WMF

WPF

Barbed Wire Fence

Closed Board Fence

Concrete Post

Chestnut Paling Fence

Chicken Wire Fence

Picket Fence

Iron Railing Fence

Post & Rail Fence

Post & Wire Fence

Security Fence

Steel Post

Wire Mesh Fence

Wood Panel Fence



NOTES

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Geomatic Surveyors

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BLOOR HOMES SOUTHERN

Client

SOUTHLEIGH HAVANT

Contract

SITE SURVEY

Title

01SQ01 (Sheet 26 of 34)

Drawing Number

MARCH TO JUNE 2023

Date

1:250 (at A0)

Scale

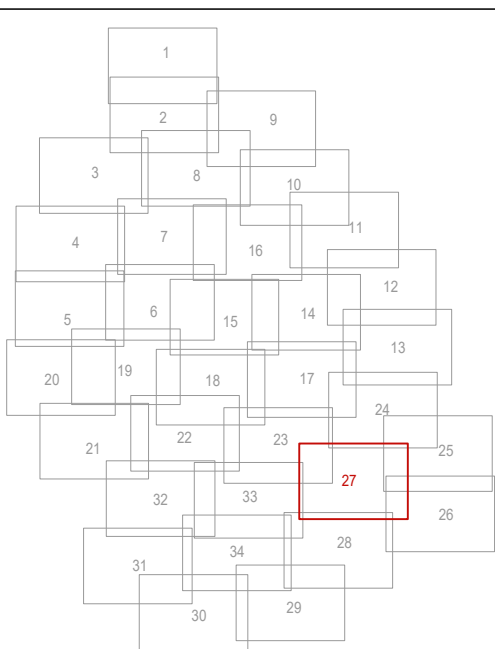
HB AB BT

Surveyor(s)

TREES
A Ash
AL Alder
B Apple
BA Beech
BT Blackthorn
CB Cedar
CO Copper Beech
CY Cypress
E Elder
EL Eucalyptus
F Field Maple
FR Hornbeam
H Holm Oak
HO Hawthorn
HW Holly
H Hazel
IB Indian Bean Tree
JM Japanese Maple
L Laburnum
LM Lime
LO Locust Tree
LR Laurel
M Maple
MG Magnolia
MP Monkey Puzzle
OK Oak
P Pine
PL Plane
PM Plum
PO Poplar
PR Pear
R Redwood
RO Red Oak
RH Rhododendron
RW Rowan
SB Silver Birch
SC Sweet Chestnut
SP Scots Pine
SU Spruce
T Tulip Tree
U Unidentified
W Willow
WB Whitebeam
WN Walnut
Y Yew

ABBREVIATIONS
BT British Telecom
BOL Bollard
CB Control Box
CL Cover Level
CTV Cable Television
EP Electric Pole
FH Fire Hydrant
GSV Gas Stop Valve
HT Height
HVC High Voltage Cable
IC Inspection Cover
IL Invert Level
LP Lamp Post
MH Man-Hole
MKR Marker
MW Monitoring Well
O/H Overhead
G Road Gully
PB Post Box
PC Pram Crossing
RNP Road Name Plate
RS Road Sign
S/A Sotakaway
SV Stop Valve (Unidentified)
TB Telephone Box
TC Telecom
TH Trial Hole
TL Traffic Light
TP Telegraph Pole
UTL Unable to Lift
VP Vent pipe
WM Water Meter
WSV Water Stop Valve

FENCES
BWF Barbed Wire Fence
CBF Closed Board Fence
CP Concrete Post
CPF Chestnut Paling Fence
CWF Chicken Wire Fence
IRF Iron Railing Fence
PKF Picket Fence
PRF Post & Rail Fence
PVF Post & Wire Fence
SCF Security Fence
SP Steel Post
WMF Wire Mesh Fence
WPF Wood Panel Fence



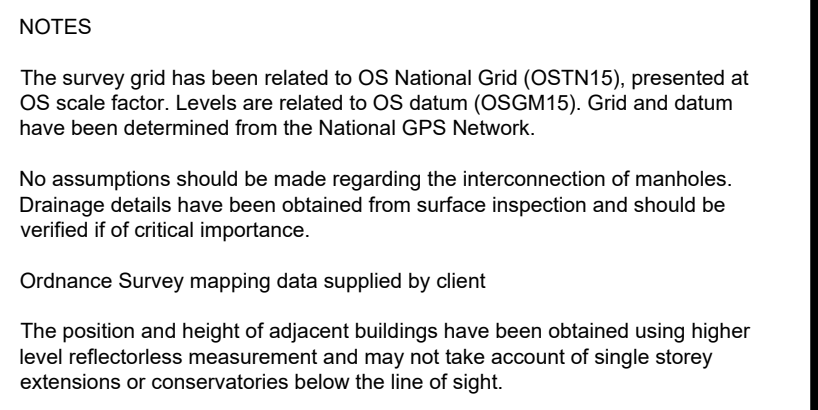
Species / Dia / Spread (max) / Ht
e.g. OK / 0.6 / 8 / 15



NOTES
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Ordnance Survey mapping data supplied by client.
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Geomatic Surveyors
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BLOOR HOMES SOUTHERN	Client
SOUTHLEIGH HAVANT	Contract
SITE SURVEY	Title
01SQ01 (Sheet 27 of 34)	Drawing Number
MARCH TO JUNE 2023	Date
1:250 (at A0)	Scale
HB AB BT	Surveyor(s)



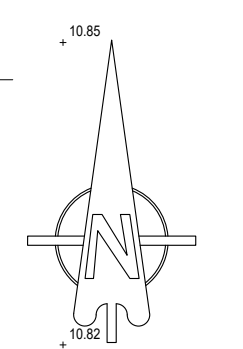
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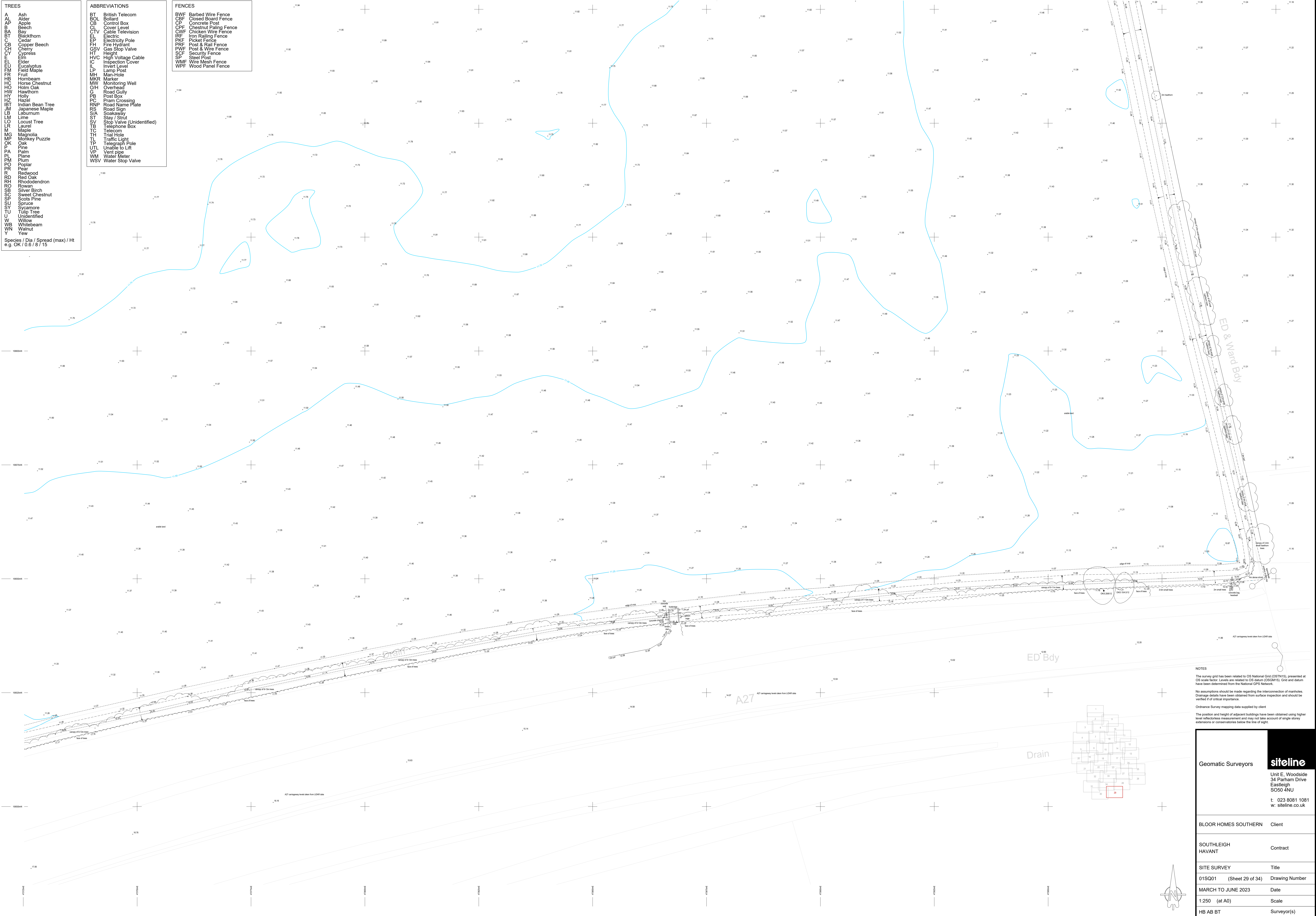
t: 023 8081 1081
w: siteline.co.uk

BLOOR HOMES SOUTHERN	Client
SOUTHLEIGH HAVANT	Contract
SITE SURVEY	Title
01SQ01 (Sheet 28 of 34)	Drawing Number
MARCH TO JUNE 2023	Date
1:250 (at A0)	Scale
HB AB BT	Surveyor(s)



TREES		ABBREVIATIONS	
AL	Ash	BT	British Telecom
AL	Alder	BOL	Bollard
AL	Apple	CB	Control Box
AL	Alum	CL	Cover Level
ALBA	Bairn	CTV	Cable Television
AL	Blackthorn	EL	Electric
AL	Cedar	EPT	Electricity Pole
AL	Copp	EH	Fire Hydrant
AL	Cypress	GSV	Gas Stop Valve
CH	Cherry	HT	Height
CH	Elder	RVC	High Voltage Cable
EL	Elm	IC	Inspection Cover
EL	Juniper	ILU	Invert Level
FM	Field Maple	LP	Lamp Post
FR	Fruit	MH	Man-Hole
FR	Mountain	MKR	Marker
HC	Horse Chestnut	MM	Monitoring Well
HC	Field Oak	OH	Overhead
HC	Hawthorn	G	Road Gully
H	Hazel	PC	Post Box
H	Hawthorn	PC	Panel Crossing
IBT	Indian Bean Tree	RNP	Road Name Plate
IBT	Japanese Maple	R	Road Sign
LB	Laburnum	SA	Soakaway
LB	Larch	S/S	Stair / Stair
LO	Locust Tree	SV	Stop Valve (Unide)
LR	Laural	TB	Telephone Box
LR	Maple	TC	Telecom
LR	Malus	TH	Trail Hole
MG	Magnolia	TL	Traffic Light
MG	Malus Puzelle	TP	Telegraph Pole
OK	Oak	UP	Unable to Lift
OK	Osage	UP	Under Pipe
PA	Palm	WM	Water Meter
PA	Plane	WSV	Water Stop Valve
PL	Plum		
PO	Poplar		
PO	Redwood		
R	Red Oak		
RH	Rhododendron		
RH	Red Oak		
SB	Silver Birch		
SC	Sweet Chestnut		
SC	Sweet Pine		
SU	Spruce		
SU	Sycamore		
SU	Tulip Tree		
U	Unidentified		
W	Willow		
WB	Whitebeam		
WB	Walnut		
W	Yew		

FENCES	
BWF	Barbed Wire Fence
CBF	Closed Board Fence
CP	Concrete Post
CPF	Chestnut Paling Fence
CWF	Chicken Wire Fence
IRF	Iron Railing Fence
PKF	Picket Fence
PRF	Post & Rail Fence
PWF	Post & Wire Fence
SCF	Security Fence
SP	Steel Post
WMF	Wire Mesh Fence
WPF	Wood Panel Fence



NOTES

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Geomatic Surveyors

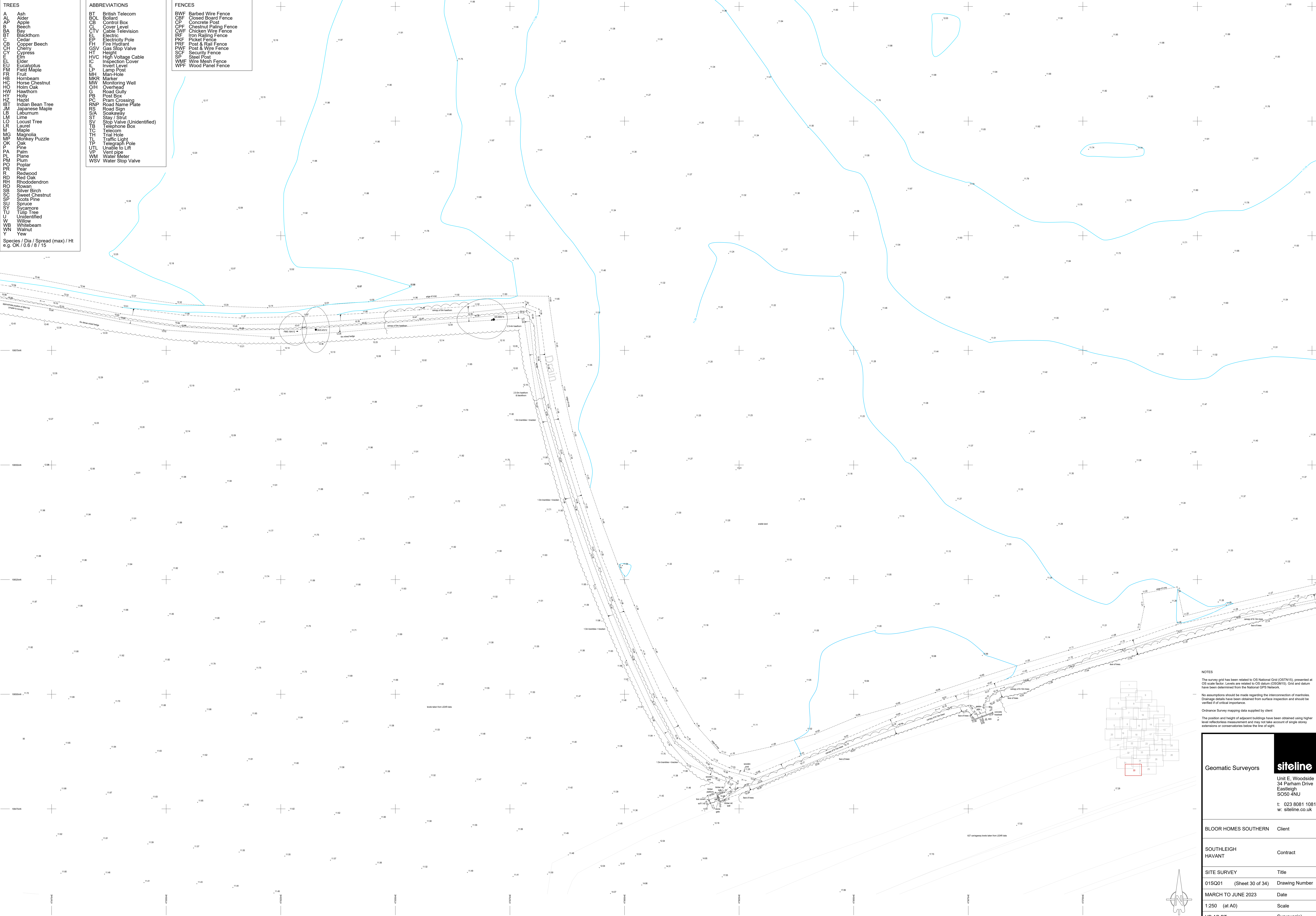
Unit E, Woodside
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w: siteline.co.uk

BLOOR HOMES SOUTHERN	Client
SOUTHLEIGH HAVANT	Contract
SITE SURVEY	Title
01SQ01 (Sheet 29 of 34)	Drawing Number
MARCH TO JUNE 2023	Date
1:250 (at A0)	Scale
HB AB BT	Surveyor(s)

TREES		ABBREVIATIONS		FENCES	
A	Ash	BT	British Telecom	BWF	Barbed Wire Fence
AL	Alder	BOL	Bollard	CBF	Closed Board Fence
AP	Apple	CB	Control Box	CP	Concrete Post
B	Beech	CL	Cover Level	CPF	Chestnut Paling Fence
BA	Bay	CTV	Cable Television	CWF	Chicken Wire Fence
BB	Blackthorn	EL	Electric	IRF	Iron Railing Fence
BC	Cedar	EP	Electric Pole	PKF	Picket Fence
CB	Copper Beech	FH	Fire Hydrant	PRF	Post & Rail Fence
CH	Cherry	GSV	Gas Stop Valve	PWF	Post & Wire Fence
CY	Cypress	HT	Height	SCF	Security Fence
EN	Elder	HVC	High Voltage Cable	SP	Steel Post
EU	Eucalyptus	IC	Inspection Cover	WMF	Wire Mesh Fence
FI	Field Maple	IL	Invert Level	WPF	Wood Panel Fence
FR	Fruit	LP	Lamp Post		
HB	Hornbeam	MH	Man-Hole		
HC	Horse Chestnut	MKR	Marker		
HO	Horn Oak	MW	Monitoring Well		
HW	Hawthorn	O/H	Overhead		
HY	Holly	G	Road Gully		
HZ	Hazel	PB	Post Box		
IBT	Indian Bean Tree	PC	Pram Crossing		
JM	Japanese Maple	RNP	Road Name Plate		
LS	Laburnum	RS	Road Sign		
LM	Lime	S/A	Soakaway		
LO	Locust Tree	SV	Stop Valve (Unidentified)		
LR	Laurel	TB	Telephone Box		
M	Maple	TC	Telecom		
MG	Magnolia	TH	Trial Hole		
MP	Monkey Puzzle	TL	Traffic Light		
OK	Oak	TP	Telegraph Pole		
P	Pine	UTL	Unable to Lift		
PL	Plane	VP	Vent pipe		
PM	Plum	WM	Water Meter		
PO	Poplar	WSV	Water Stop Valve		
PR	Pear				
R	Redwood				
RD	Red Oak				
RH	Rhododendron				
SB	Silver Birch				
SC	Sweet Chestnut				
SP	Scots Pine				
SU	Spruce				
SY	Sycamore				
TU	Tulip Tree				
U	Unidentified				
W	Willow				
WB	Whitebeam				
WN	Walnut				
Y	Yew				

Species / Dia / Spread (max) / Ht
e.g. OK 10.6 / 8 / 15



NOTES

The survey grid has been related to OS National Grid (OSTN15), presented at OS scale factor. Levels are related to OS datum (OSGM15). Grids and datum have been determined from the National GPS Network.

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Geomatic Surveyors

siteline
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w: siteline.co.uk

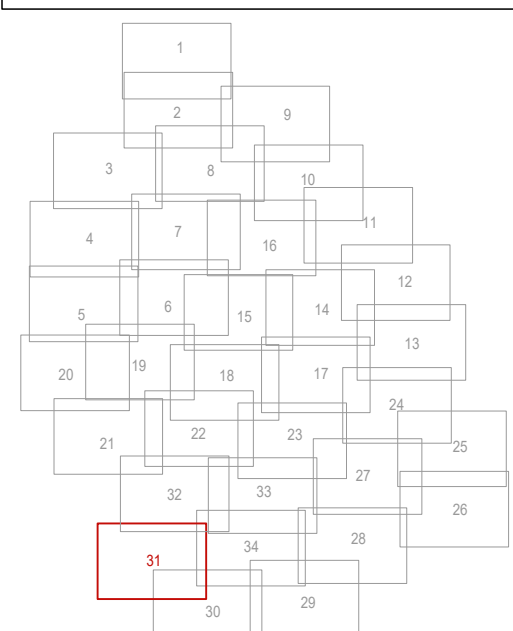
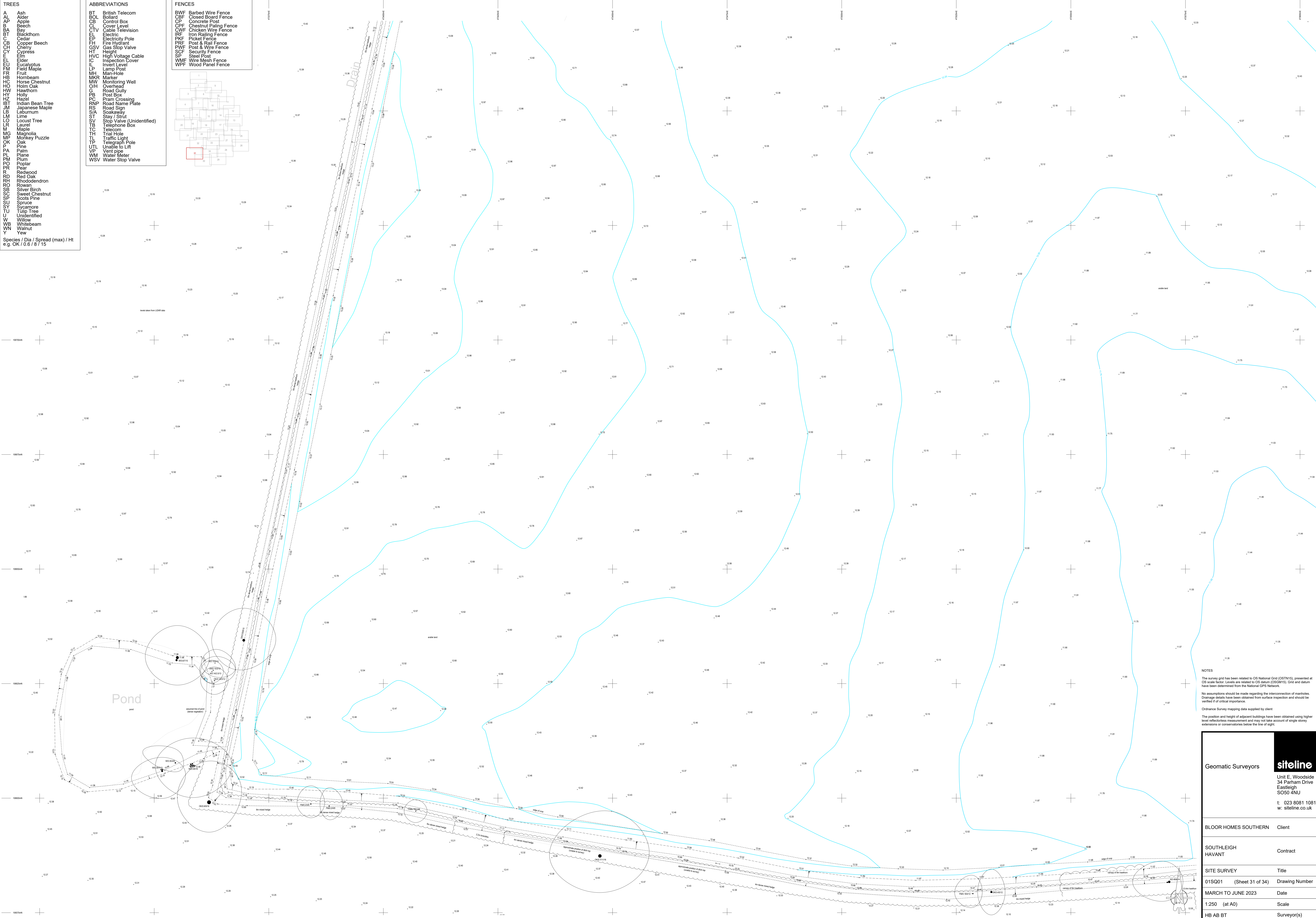
BLOOR HOMES SOUTHERN	Client
SOUTHLEIGH HAVANT	Contract
SITE SURVEY	Title
01SQ01 (Sheet 30 of 34)	Drawing Number
MARCH TO JUNE 2023	Date
1:250 (at A0)	Scale
HB AB BT	Surveyor(s)

TREES
A Ash
AL Alder
B Beech
BA Bay
BT Blackthorn
C Cedar
CB Copper Beech
CH Cherry
CY Cypress
E Elm
EU Eucalyptus
F Field Maple
FR Fruit
HB Hornbeam
HC Horse Chestnut
HO Holm Oak
HW Hawthorn
H Holly
HZ Hazel
IB Indian Bean Tree
JM Japanese Maple
LS Laburnum
LM Lime
LO Locust Tree
LR Laurel
M Maple
MG Magnolia
MP Monkey Puzzle
OK Oak
P Pine
PL Plane
PM Plum
PO Poplar
PR Pear
RD Redwood
RO Rhododendron
R Rowan
SB Silver Birch
SC Sweet Chestnut
SP Scots Pine
SU Spruce
T Tulip Tree
U Unidentified
W Willow
WB Whitebeam
WN Walnut
Y Yew

Species / Dia / Spread (max) / Ht
e.g. OK / 0.6 / 8 / 15

ABBREVIATIONS
BT British Telecom
BOL Bollard
CB Control Box
CL Cover Level
CTV Cable Television
EP Electric Pole
FH Fire Hydrant
GSV Gas Stop Valve
HT Height
HVC High Voltage Cable
IC Inspection Cover
IL Invert Level
LP Lamp Post
MH Man-Hole
MKR Marker
MW Monitoring Well
O/H Overhead
G Road Gully
PB Post Box
PC Pram Crossing
RNP Road Name Plate
RS Road Sign
S/A Sootaway
SV Stop Valve (Unidentified)
TB Telephone Box
TC Telecom
TH Trial Hole
TL Traffic Light
TP Telegraph Pole
UTL Unable to Lift
VP Vent pipe
WM Water Meter
WSV Water Stop Valve

FENCES
BWF Barbed Wire Fence
CBF Closed Board Fence
CP Concrete Post
CPF Chestnut Paling Fence
CWF Chicken Wire Fence
IRF Iron Railing Fence
PKF Picket Fence
PRF Post & Rail Fence
PWF Post & Wire Fence
SCF Security Fence
SP Steel Post
WMF Wire Mesh Fence
WPF Wood Panel Fence



NOTES

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BLOOR HOMES SOUTHERN Client

SOUTHLEIGH HAVANT Contract

SITE SURVEY Title
01SQ01 (Sheet 31 of 34) Drawing Number

MARCH TO JUNE 2023 Date

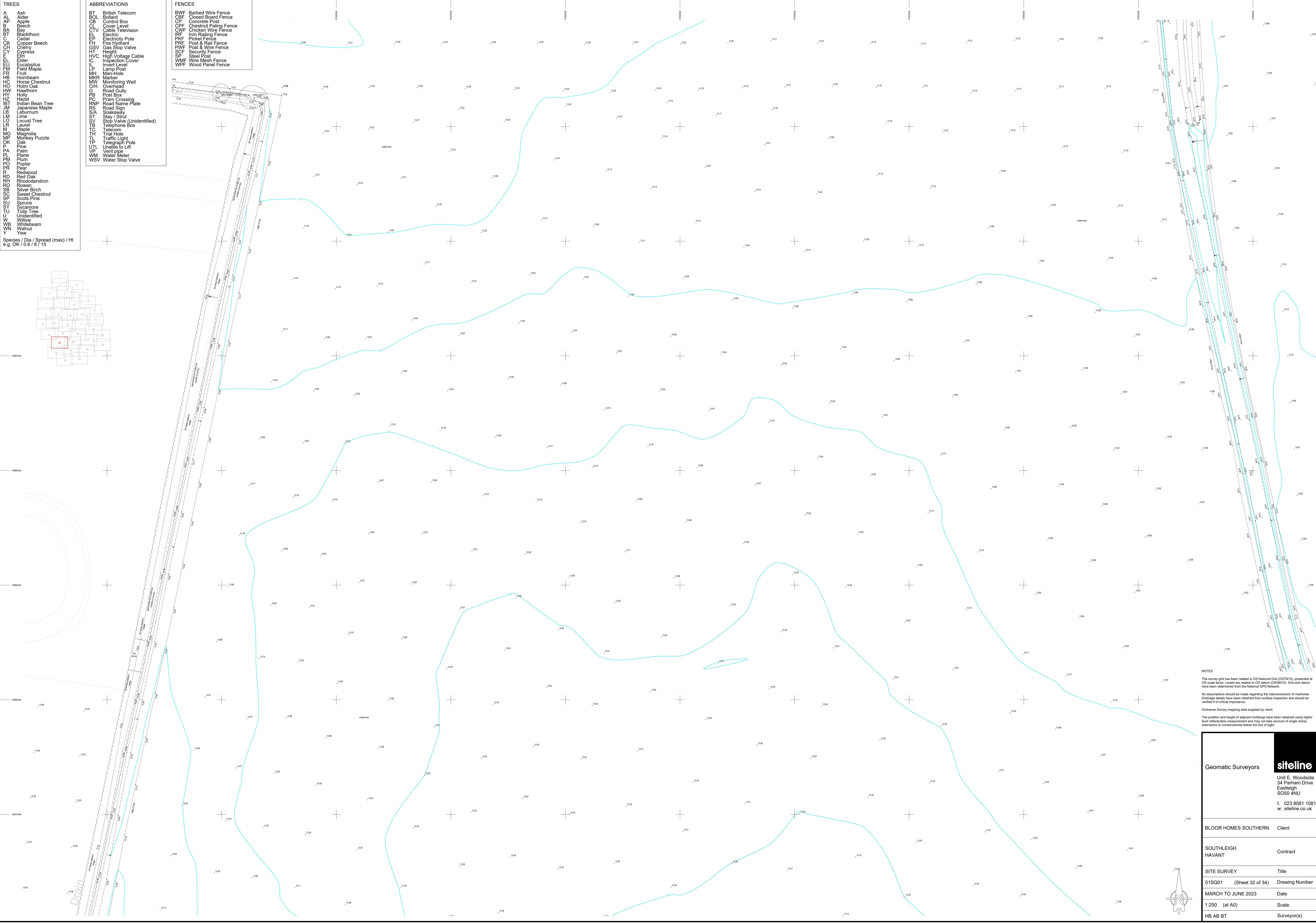
1:250 (at A0) Scale

HB AB BT Surveyor(s)

TREES
A Ash
AL Alder
AP Apple
B Beech
BA Bay
BT Blackthorn
C Cedar
CB Copper Beech
CH Cherry
CY Cypress
E Elm
EL Eucalyptus
EM Field Maple
FR Fruit
HB Hornbeam
HC Horse Chestnut
HO Holm Oak
HW Hawthorn
HY Holly
HZ Hazel
IBT Indian Bean Tree
JM Japanese Maple
LS Laburnum
LM Lime
LO Locust Tree
LR Laurel
M Maple
MG Magnolia
MP Monkey Puzzle
OK Oak
P Pine
PA Palm
PL Plane
PM Plum
PO Poplar
PR Pear
RD Redwood
RO Red Oak
RH Rhododendron
R Rowan
SB Silver Birch
SC Sweet Chestnut
SP Scots Pine
SU Spruce
T Tulip Tree
U Unidentified
W Willow
WB Whitebeam
WN Walnut
Y Yew
Species / Dia / Spread (max) / Ht
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ABBREVIATIONS
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BOL Bollard
CB Control Box
CL Cover Level
CTV Cable Television
EP Electric Pole
FH Fire Hydrant
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IC Inspection Cover
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LP Lamp Post
MH Man-Hole
MKR Marker
MW Monitoring Well
O/H Overhead
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PB Post Box
PC Pram Crossing
RNP Road Name Plate
RS Road Sign
S/A Sootyaway
ST Stay / Strut
SV Stop Valve (Unidentified)
TB Telephone Box
TC Telecom
TH Trial Hole
TL Traffic Light
TP Telegraph Pole
UTL Unable to Lift
VP Vent pipe
WM Water Meter
WSV Water Stop Valve

FENCES
BWF Barbed Wire Fence
CBF Closed Board Fence
CP Concrete Post
CPF Chestnut Paling Fence
CWF Chicken Wire Fence
IRF Iron Railing Fence
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PWF Post & Rail Fence
SCF Security Fence
SP Steel Post
WMF Wire Mesh Fence
WPF Wood Panel Fence



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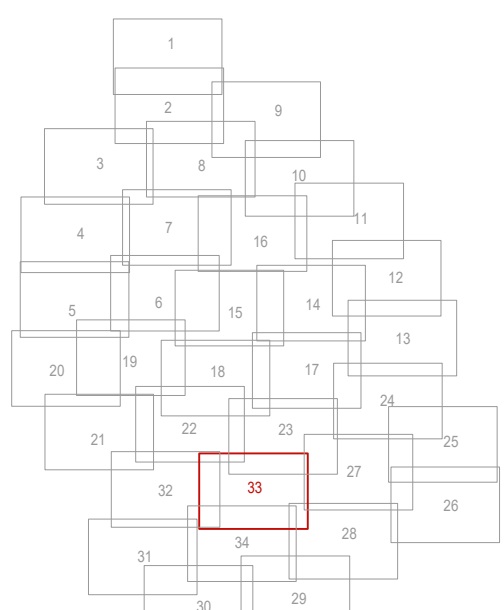
Geomatic Surveyors		siteline Unit E, Woodside 34 Parham Drive Eastleigh SO50 4NU t: 023 8081 1081 w: siteline.co.uk	
BLOOR HOMES SOUTHERN		Client	
SOUTHLEIGH HAVANT		Contract	
SITE SURVEY		Title	
01SQ01 (Sheet 32 of 34)		Drawing Number	
MARCH TO JUNE 2023		Date	
1:250 (at A0)		Scale	
HB AB BT		Surveyor(s)	

- TREES
- A Ash
 - AL Alder
 - AP Apple
 - B Beech
 - BA Bay
 - Blackthorn
 - C Cedar
 - CB Copper Beech
 - CH Cherry
 - CY Cypress
 - E Elder
 - EU Eucalyptus
 - F Field Maple
 - FR Fruit
 - H Hornbeam
 - HC Horse Chestnut
 - HO Holm Oak
 - HW Hawthorn
 - HY Holly
 - HZ Hazel
 - IBT Indian Bean Tree
 - JM Japanese Maple
 - LS Laburnum
 - LM Lime
 - LO Locust Tree
 - LR Laurel
 - M Maple
 - MG Magnolia
 - MP Monkey Puzzle
 - OK Oak
 - P Pine
 - PL Plane
 - PM Plum
 - PO Poplar
 - PR Pear
 - R Redwood
 - RO Red Oak
 - RH Rhododendron
 - Rowan
 - S Silver Birch
 - SC Sweet Chestnut
 - Scots Pine
 - Spruce
 - U Upright
 - T Tulip Tree
 - U Unidentified
 - W Willow
 - WB Whitebeam
 - WN Walnut
 - Y Yew

Species / Dia / Spread (max) / Ht
e.g. OK 10.6 / 8 / 15

- ABBREVIATIONS
- BT British Telecom
 - BOL Bollard
 - CB Control Box
 - CL Cover Level
 - CTV Cable Television
 - EP Electric Pole
 - FH Fire Hydrant
 - GSV Gas Stop Valve
 - HT Height
 - HVC High Voltage Cable
 - IC Inspection Cover
 - L Lamp Post
 - LP Lamp Post
 - MH Man-Hole
 - MR Marker
 - MW Monitoring Well
 - O/H Overhead
 - G Road Gully
 - PB Post Box
 - PC Pram Crossing
 - RNP Road Name Plate
 - RS Road Sign
 - S/A Sootaway
 - ST Stay / Strut
 - SV Stop Valve (Unidentified)
 - TB Telephone Box
 - TC Telecom
 - TH Trial Hole
 - TL Traffic Light
 - TP Telegraph Pole
 - UTL Unable to Lift
 - VP Vent pipe
 - WM Water Meter
 - WSV Water Stop Valve

- FENCES
- BWF Barbed Wire Fence
 - CBF Closed Board Fence
 - CP Concrete Post
 - CPF Chestnut Paling Fence
 - IRF Iron Railing Fence
 - PKF Picket Fence
 - PRF Post & Rail Fence
 - PWF Post & Wire Fence
 - SCF Security Fence
 - SP Steel Post
 - WMF Wire Mesh Fence
 - WPF Wood Panel Fence



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BLOOR HOMES SOUTHERN	Client
SOUTHLEIGH HAVANT	Contract
SITE SURVEY	Title
01SQ01 (Sheet 33 of 34)	Drawing Number
MARCH TO JUNE 2023	Date
1:250 (at A0)	Scale
HB AB BT	Surveyor(s)

TREES

A

AL

Ash

B

BOL

Bollard

BA

B

Apple

CB

CB

Beech

CBT

CB

Blackthorn

CH

CH

Cedar

COY

COY

Copper Beech

CU

CU

Cherry

CUY

CUY

Cypress

EL

EL

Elder

EU

EU

Eucalyptus

EU

EU

Field Maple

FR

FR

Fruit

HB

HB

Hornbeam

HC

HC

Horse Chestnut

HO

HO

Horn Oak

HW

HW

Hawthorn

HY

HY

Holly

HZ

HZ

Hazel

IBT

IBT

Indian Bean Tree

JM

JM

Japanese Maple

LS

LS

Lime

LM

LM

Laburnum

LO

LO

Locust Tree

LR

LR

Laurel

M

M

Maple

MG

MG

Magnolia

MP

MP

Monkey Puzzle

OK

OK

Oak

P

P

Pine

PL

PL

Plane

PM

PM

Plum

PO

PO

Poplar

PR

PR

Pear

RD

RD

Redwood

RD

RD

Red Oak

RD

RD

Rhododendron

RO

RO

Rowan

SB

SB

Silver Birch

SB

SB

Sweet Chestnut

SP

SP

Scots Pine

SU

SU

Spruce

SU

SU

Sycamore

TU

TU

Tulip Tree

U

U

Unidentified

W

W

Willow

WB

WB

Whitebeam

WN

WN

Walnut

Y

Y

Yew

Species / Dia / Spread (max) / Ht
e.g. OK 10.6 / 8 / 15

ABBREVIATIONS

BT

BT

British Telecom

BOL

BOL

Bollard

CB

CB

Control Box

CL

CL

Cover Level

CTV

CTV

Cable Television

EP

EP

Electric Pole

EH

EH

Electric Pole

GSV

GSV

Gas Stop Valve

HT

HT

Height

HVC

HVC

High Voltage Cable

IC

IC

Inspection Cover

IL

IL

Invert Level

LP

LP

Lamp Post

MH

MH

Man-Hole

MKR

MKR

Marker

MW

MW

Monitoring Well

O/H

O/H

Overhead

G

G

Road Gully

PB

PB

Post Box

PRM

PRM

Prism Crossing

RNP

RNP

Road Name Plate

RS

RS

Road Sign

S/A

S/A

Soakaway

ST

ST

Stay / Strut

SV

SV

Stop Valve (Unidentified)

TB

TB

Telephone Box

TC

TC

Telecom

TH

TH

Trail Hole

TL

TL

Traffic Light

TP

TP

Telegraph Pole

UTL

UTL

Unable to Lift

VP

VP

Vent pipe

WM

WM

Water Meter

WSV

WSV

Water Stop Valve

FENCES

BWF

BWF

Barbed Wire Fence

CBF

CBF

Closed Board Fence

CP

CP

Concrete Post

CPF

CPF

Chestnut Paling Fence

CWF

CWF

Chicken Wire Fence

IRF

IRF

Iron Railing Fence

PRF

PRF

Picket Fence

PPF

PPF

Post & Rail Fence

PWF

PWF

Post & Wire Fence

SCF

SCF

Security Fence

SP

SP

Steel Post

WVF

WVF

Wire Mesh Fence

WPF

WPF

Wood Panel Fence

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NOTES

The survey grid has been related to OS National Grid (OSTN15), presented at OS scale factor. Levels are related to OS datum (OSGM15). Grids and datum have been determined from the National GPS Network.

No assumptions should be made regarding the interconnection of manholes. Drainage details have been obtained from surface inspection and should be verified if of critical importance.

Ordnance Survey mapping data supplied by client.

The position and height of adjacent buildings have been obtained using higher level reflectorless measurement and may not take account of single storey extensions or conservatories below the line of sight.

Geomatic Surveyors		siteline Unit E, Woodside 34 Parham Drive Eastleigh SO50 4NU t: 023 8081 1081 w: siteline.co.uk	
BLOOR HOMES SOUTHERN	Client		
SOUTHLEIGH HAVANT	Contract		
SITE SURVEY	Title		
01SQ01 (Sheet 34 of 34)	Drawing Number		
MARCH TO JUNE 2023	Date		
1:250 (at A0)	Scale		
HB AB BT	Surveyor(s)		



GROUND INVESTIGATION REPORT (FACTUAL)

Southleigh Road,
Havant,
Portsmouth,
Hampshire,
PO9 2NX

Client: Stantec (UK) Ltd

September 2023

Report No: END23-058
332310755-SP-3501-V02

Endeavour Drilling Ltd
Unit 7,
Mapledean Industrial Estate
Maldon Road
Latchingdon
Essex
CM3 6LG

GROUND INVESTIGATION REPORT (FACTUAL)

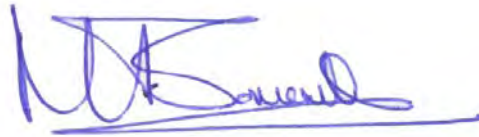
Southleigh Road, Havant, Portsmouth

Author: Jay Spires BSc (Hons), FGS



Signed:

Checked By: Matthew Somerville BSc (Hons), FGS, CGeol



Signed:

Revision	Date	Description	Prepared	Checked
Final	26.09.23	Factual Report	JS	MJS

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2. LIMITATIONS	5
3. FIELDWORK.....	6
4. LABORATORY TESTING	9

APPENDIX: -

APPENDIX A:	SITE LOCATION PLAN
APPENDIX B:	WINDOWLESS SAMPLE LOGS
APPENDIX C:	MACHINE DUG TRIAL PIT LOGS
APPENDIX D:	INFILTRATION TEST DATA
APPENDIX E:	SPT HAMMER CALIBRATION
APPENDIX F:	GROUNDWATER MONITORING RESULTS
APPENDIX G:	GEOTECHNICAL ANALYSIS RESULTS
APPENDIX H:	CHEMICAL ANALYSIS RESULTS

1. INTRODUCTION

Endeavour Drilling Ltd received instruction to carry out a ground investigation to inform the design of the proposed Southleigh Road residential development. The area currently comprises of agricultural fields, accessed from multiple points across Southleigh Road, Havant, Portsmouth. The nearest postcode for the site is PO9 2NX.

The ground investigation was instructed by the client, Stantec (UK) Ltd. The technical objectives of this ground investigation as outlined by the client were to determine the geotechnical characteristics of the ground for the design of foundations, infrastructure, and other geotechnical elements of the proposed redevelopment.

In summary the ground investigation comprises nine (9) windowless sampler boreholes with associated sampling and in-situ testing, eighteen (18) machine dug trial pits, with three (3) infiltration tests within selected trial pit locations. Semi-permanent groundwater standpipes were installed within all boreholes with the exception of WS102.

Laboratory testing, comprising of geotechnical and chemical analysis, was also undertaken. This report presents the factual findings from the intrusive investigation and results of the laboratory testing carried out.

The work was carried out in general accordance with BS EN 1997-2, BS EN ISO 22475-1, BS EN ISO 22475-2, BS EN ISO 22475-3, BS 1377:1990, BS 5930:2015+A1:2020, BS10175, BS EN ISO 2282-2:2012 and other relevant standards that are referenced within the text.

2. LIMITATIONS

This report is based on the results of the windowless sampler boreholes, machine dug trial pits, associated in-situ testing and the laboratory testing carried out on samples recovered from the exploratory holes and on details of the scheme provided by the client.

This report has been prepared for the benefit of Stantec (UK) Ltd and its contents should not be relied upon by others without the written authority of Endeavour Drilling Ltd. (ED). If any unauthorised third party makes use of this report, they do so at their own risk and ED owes them no duty of care or skill.

All information provided by others is taken as being in good faith accurate, but ED cannot, and does not accept any liability for the detailed accuracy, errors or omissions in such information.

Subsoils are by their nature hidden from view and no investigation can be exhaustive to the extent that all soil conditions are revealed. Conditions may well be present beneath the site which was not evident from the investigations carried out.

Groundwater levels can be subject to considerable seasonal variations, and the conditions encountered in the exploratory borehole may not reflect long-term conditions.

3. FIELDWORK

The fieldwork was undertaken between the 19th June and the 31st July 2023 and comprised of the following:

- Nine (9) windowless sample boreholes (WS101 – WS109)
- Eighteen (18) Machine dug trial pits (TP101-TP118)
- Three (3) Infiltration Tests (TP103, TP104, TP106a)

The exploratory positions were predetermined by the client prior to undertaking the fieldwork and the coordinates were provided and subsequently surveyed into position by Endeavour Drilling Ltd using a Topcon DGPS. An exploratory hole location plan is included as Figure 1 in Appendix A.

In addition to the utility service trace, each exploratory borehole was CAT scanned for the presence of underground buried services and an inspection pit excavated to a depth of 1.20mbgl to identify the presence of any buried services prior to commencing drilling. Whilst drilling the exploratory holes were also scanned for unexploded ordnance (UXO) by a trained operative.

3.1. Windowless Sampling

Nine windowless sample boreholes (WS101 – WS109) were drilled to depths ranging from 2.45mbgl to 6.45mbgl.

The window sampling utilised a two-man crew, operating a track mounted hydraulic power pack and percussive hammer to drive a series of small diameter tubes into the ground. Liner samples were then recovered from within the small diameter tubes for subsequent logging and sub sampling.

Disturbed samples were recovered throughout the window samples for possible future geotechnical testing and chemical analysis. The chemical samples were recovered in air-tight plastic containers and then stored in refrigerated cool boxes for transport to the analytical laboratory.

Within all soils, standard penetration tests (SPT's) were carried out at 1m centres to the base of the window sample, using an automatic trip hammer. The number of blows required to advance the cone over the final 300mm of a 450mm total drive was recorded and is shown as the penetration resistance ("N" value).

Groundwater was encountered whilst drilling and to allow for a longer-term assessment, a 50mm diameter HDPE groundwater standpipes were installed and finished at surface with a flush cover. Table 1, overleaf summarises the design details:

Table 1: Standpipe Design (Windowless Sampler Boreholes)

BH No.	Piezometer Section (mbgl)	Plain Section (mbgl)	Gravel Surround (mbgl)	Bentonite Seal (mbgl)
WS101	5.00m to 6.00m	GL to 5.00m	5.00m to 6.45m	0.30m to 5.00m
WS103	1.00m to 4.00m	GL to 1.00m	1.00m to 4.00m	0.30m to 1.00m & 4.00m to 4.20m
WS104	1.00m to 3.00m	GL to 1.00m	1.00m to 3.00m	0.30m to 1.00m & 3.00m to 3.20m
WS105	0.80m to 1.80m	GL to 0.80m	0.30m to 1.00m & 4.00m to 4.20m	0.30m to 0.80m
WS106	1.00m to 4.00m	GL to 1.00m	1.00m to 4.00m	0.30m to 1.00m & 4.00m to 4.45m
WS107	1.00m to 3.50m	GL to 1.00m	1.00m to 3.50m	0.30m to 1.00m & 3.50m to 3.60m
WS108	1.00m to 3.30m	GL to 1.00m	1.00m to 3.30m	0.30m to 1.00m & 3.30m to 3.50m
WS109	1.50m to 2.50m	GL to 1.50m	1.50m to 2.50m	0.30m to 1.50m & 2.50m to 2.80m

The borehole records and groundwater monitoring are presented in Appendix B and E respectively and give both descriptions and depths of strata encountered, together with details of samples taken, in-situ tests and any other relevant information.

3.2. Machine Dug Trial Pits

In total, eighteen (TP101 – TP118) trial pits were mechanically excavated utilising a JCB 3CX/ 8T tracked excavator. The trial pits were formed to depths ranging from 1.9mbgl to 3.80mbgl.

Small disturbed and larger bulk samples were recovered from throughout the trial pits for chemical and geotechnical testing. Samples required for chemical analysis were recovered in plastic containers and then stored in refrigerated cool boxes for transport to the analytical laboratory.

A note was made of any groundwater encountered, and of the stability of the trial pit sides during excavation.

Upon completion the trial pits were backfilled with arisings and reinstated at surface with Type 1 and compacted using the excavator.

The trial pit logs are presented in Appendix C and give both descriptions and depths of the strata encountered, together with details of samples taken, insitu tests, and any other relevant information.

3.3. Soakaway Testing in Trial Pits

Soakaway testing was undertaken in general accordance with BRE Digest 365 “Soakaway Design” 2016 within trial pit TP103, 104, and 106a. The dimensions of the pit were measured and then filled with water, the fall in water level was measured at regular intervals in order that infiltration rates may be calculated.

Results of the soakaway testing are presented in Appendix D.

3.4. Groundwater Post Fieldwork Monitoring

Post fieldwork monitoring does forms part of the brief for this investigation and is currently ongoing at the time of this report.

The readings taken to date are presented in Appendix F respectively.

4. LABORATORY TESTING

The laboratory testing programme comprised of both geotechnical testing and chemical analysis for use in assessing the soil conditions encountered.

All laboratory testing was undertaken by UKAS / MCERTS accredited laboratories; the geotechnical testing I2 Analytical Ltd and chemical analysis by ALS and I2 Analytical Ltd. The results are included in Appendices G and H, respectively.

4.1. Geotechnical Testing

A total of twenty-one samples were tested for moisture content to enable the materials to be classified and their engineering behaviour assessed in accordance with BS1377, Part 2:1990; clause 3.2, 4.4, 5.3 and 5.4.

Atterberg limits were determined for twenty-one samples of cohesive material to enable the materials to be classified and their engineering behaviour assessed in accordance with BS1377, Part 2:1990; clause 3.2, 4.4, 5.3 and 5.4.

Twenty particle size distribution tests were carried out using both the wet and dry sieve methods and in accordance with BS1377, Part 2:1990; clause 9.

The quantitative determination of the particle size distribution for fine soils, from coarse silt to clay was undertaken on eighteen samples, assessed in accordance with BS1377, Part 2: 1990, clause 9.5, using the sedimentation by hydrometer method. It should be noted to increase sampling volumes in accordance with BS1377 guidelines, disturbed samples of the same material have been combined.

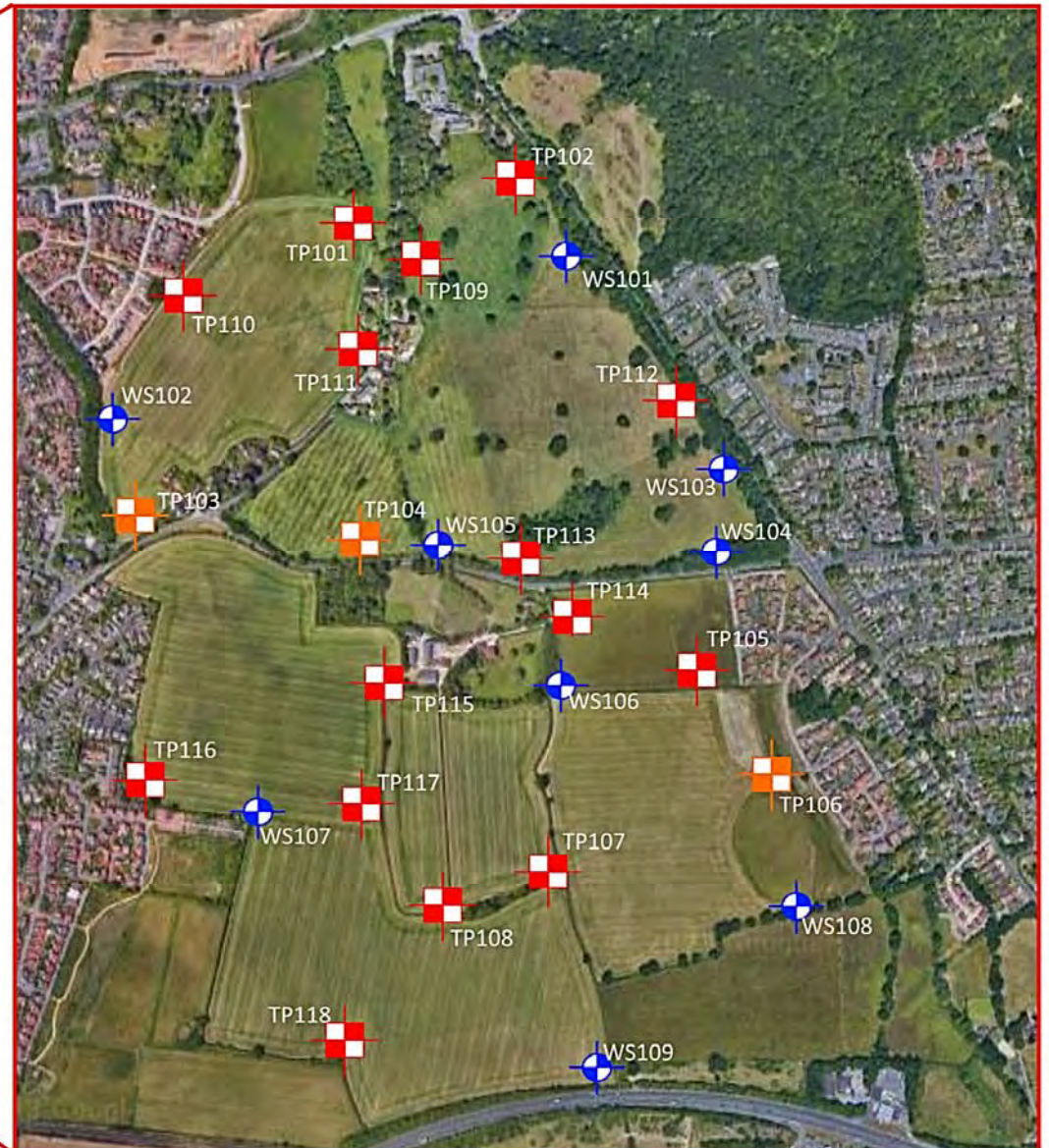
4.2. Chemical Analysis

A total of twelve samples of soil were analysed for Basic Soil Suite, comprising of the following determinants on selected samples:

<i>Arsenic</i>	<i>Zinc</i>
<i>Cadmium</i>	<i>pH</i>
<i>Chromium III</i>	<i>Asbestos</i>
<i>Chromium VI</i>	<i>Soil Organic matter</i>
<i>Copper</i>	<i>Phenols</i>
<i>Lead</i>	<i>BTEX/MTBE</i>
<i>Mercury</i>	<i>Total Petroleum Hydrocarbons (TPH-CWG)</i>
<i>Nickel</i>	<i>Speciated Polyaromatic Hydrocarbons (PAH)</i>
<i>Selenium</i>	<i>Water Soluble Sulphate</i>
<i>Vanadium</i>	

APPENDIX A

Site Location Plan



PROJECT:
SOUTHLEIGH ROAD, HAVANT

CLIENT:
STANTEC UK LTD

SCALE:
NTS

JOB NO:
J5443

DRAWN: MG
CHECKED: OW

DATE:
20/09/23

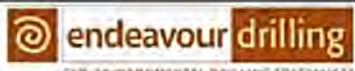
TITLE:
EXPLORATORY WINDOW SAMPLE AND TRIAL PIT LOCATION PLAN

DWG NO:

KEY:
[Red and white checkered square] TRIAL PIT LOCATION

[Blue and white circle] WINDOW SAMPLE LOCATION

[Orange and white checkered square] TRIAL PIT WITH SOAKAWAY



APPENDIX B

Windowless Sampler Logs

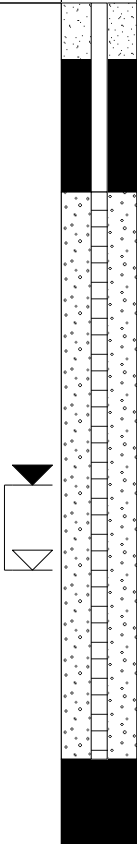
		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS101						
		Contract Number: J5443	Date Started: 21/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1							
Window Sample Log		Easting:		Northing:		Ground Level:		Plant Used: Dando Terrier		Print Date: 26/09/2023		Scale: 1:40		
Weather: Sunny				Termination: Reached Target Depth				SPT Hammer: DT0769 Energy Ratio: 66%						
Samples & In Situ Testing				Strata Details							Groundwater			
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description					Water Strike	Backfill/ Installation		
0.10	ES1	SPT(S) 1.20m, N=16 (1,3/3,4,4,5)		0.20		TOPSOIL - Greyish brown slightly gravelly sandy clay. Gravel is fine to coarse sub-angular to sub-rounded of flint.								
0.20	D1			(0.50)		Soft brown slightly sandy gravelly CLAY, with occasional rootlets (<2mm, dead) and medium cobble content. Gravel is fine to coarse sub-angular to sub-rounded of flint.								
0.50	D2			0.70		Firm orangish brown mottled grey slightly gravelly sandy CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.								
0.60	ES2													
0.90	D3													
		SPT(S) 2.00m, N=27 (1,4/5,8,7,7)		(1.70)		...locally gravelly clayey sand between 1.70m and 1.80mbgl								
1.70	D4			2.40		Stiff dark brown mottled orangish brown slightly sandy silty CLAY, with occasional pockets of fine to medium orange sand.								
1.90	D5													
		SPT(S) 3.00m, N=25 (1,3/5,6,6,8)		(1.60)		Stiff dark grey silty CLAY.								
2.50	D6			4.00										
3.90	D7	SPT(S) 4.00m, N=22 (3,3/4,5,6,7)		4.00										
4.10	D8													
		SPT(S) 5.00m, N=21 (2,3/4,5,6,6)		(2.45)										
4.90	D9													
		SPT(S) 6.00m, N=25 (3,4/5,5,7,8)		6.45		End of Borehole at 6.45m								
5.90	D10													
Start & End of Shift Observations			Borehole Diameter		Casing Diameter		Remarks:							
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.20mbgl prior to drilling. 2. No groundwater encountered. 3. Water monitoring well installed to 2.50mbgl 4. Borehole reinstated with bentonite and cement upon					
21-06-2023	16:00	6.45			1.20	300								
					2.00	101								
					3.00	87								
					4.00	77								
					6.00	67								
Chiselling				Installation				Water Strikes						
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks	
				0.00	5.00	PLAIN	50							
				5.00	6.00	SLOTTED	50							
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015														

		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS102					
		Contract Number: J5443	Date Started: 28/06/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1						
Window Sample Log		Easting: 473200.2	Northing: 107488.9	Ground Level: 16.91mOD	Plant Used: Archway Dart	Print Date: 26/09/2023	Scale: 1:40						
Weather: Dry and Sunny			Termination: SPT Refusal			SPT Hammer: 488 Energy Ratio: 61%							
Samples & In Situ Testing				Strata Details				Groundwater					
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation					
0.10 - 0.20	B1	SPT(S) 1.20m, N=3 (1,0/0,1,1,1)	16.71	0.20		TOPSOIL - Firm to stiff brown silty sandy clay.	1						
0.10 - 0.20	ES1			(1.20)		Soft to firm brown slightly sandy CLAY, with rare rootlets (<2mm diameter, live).							
0.30 - 0.40	B2												
0.30 - 0.70	ES2												
1.30	D1	SPT(S) 2.00m, N=50 (9,11/10,12,13,15)	15.51	1.40		Loose brown slightly sandy fine to coarse sub-rounded flint GRAVEL	2						
1.40 - 2.00	B3			(0.65)		... Borehole collapse from 2.0mbgl to 1.6mbgl Very stiff gravelly CLAY, locally very dense very clayey gravel. Gravel is fine to coarse sub-angular to sub-rounded flint.							
2.00	D2								15.11	1.80			
											(0.65)		
14.46	2.45		End of Borehole at 2.45m	3									
										4			
				5									
										6			
				7									
										8			
Start & End of Shift Observations		Borehole Diameter		Casing Diameter								Remarks:	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.2mbgl prior to drilling. 2. No ground water encountered during drilling. 3. Borehole collapse from 2.0m up to 1.60mbgl. Re-drill resulting in further collapse back up to 1.5mbgl. 4. No water monitoring well installed 5. Borehole reinstated with bentonite and cement upon completion.				
28-06-2023	17:30	2.45			1.20	300							
					2.00	101							
					2.45	49							
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015													

		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS103					
		Contract Number: J5443	Date Started: 26/06/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1						
Window Sample Log		Easting:	Northing:	Ground Level:	Plant Used: Archway Dart	Print Date: 26/09/2023	Scale: 1:40						
Weather: Dry and sunny			Termination: Hole Collapse.			SPT Hammer: 488 Energy Ratio: 61%							
Samples & In Situ Testing			Strata Details					Groundwater					
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	Backfill/ Installation				
0.10	B1	SPT(S) 1.20m, N=40 (1,2/8,12,11,9)		(0.30)		TOPSOIL - Stiff light grey gravelly silty fine to coarse sand. Gravel is fine to coarse sub-angular to sub-rounded flint.		1					
0.10 - 0.30	D1												
0.10 - 0.30	ES1												
0.40	B2												
0.40 - 0.80	D2												
0.50 - 0.60	ES2	SPT(S) 2.00m, N=19 (2,4/5,4,5,5)		(0.75)		MADE GROUND - Firm to stiff light grey gravelly silty fine to coarse sand, with rare rootlets (<2mm diameter, live) and cobbles. Gravel is fine to coarse sub-angular to sub-rounded flint.		2					
1.10	B3	SPT(S) 3.00m, N=14 (3,4/3,3,4,4) HV 3.30m, 70kPa		1.05		Stiff to very stiff brown slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint.		3					
1.10 - 1.20	D3												
1.10 - 1.30	ES3												
1.30 - 1.70	B4												
2.00	D4	HV 2.80m, 86kPa SPT(S) 4.00m, N=13 (0,1/2,3,4,4)		(1.65)		... Very gravelly sandy clay between 1.3-1.7mbgl		4					
2.50	D5	HV 3.70m, 22kPa		2.70		Firm locally stiff brown mottled orange and grey slightly sandy CLAY, with rare black mottling.		5					
2.75	D6												
3.00	D7												
3.55	D8												
3.90	D9												
4.10	D10	SPT(S) 5.00m, N=18 (11,5/4,4,5,5)		(0.80)		Soft to firm brown sandy CLAY		6					
4.60	D11	... No recovery below 5.00m		3.50		Medium dense brown gravelly slightly silty fine to coarse SAND.		7					
5.00	D12	... Borehole unstable/ collapsing below 4.00mbgl End of Borehole at 6.00m		4.00		Stiff brown slightly sandy silty CLAY.		8					
				4.50		... Borehole unstable/ collapsing below 4.00mbgl							
				6.00		End of Borehole at 6.00m							
Start & End of Shift Observations			Borehole Diameter		Casing Diameter		Remarks:						
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.2mbgl prior to drilling. 2. Ground water encountered at 4.0mbgl, rising to 2.37mbgl after 20 minutes of monitoring. 3. Borehole collapse from 6.00m up to 4.00mbgl. 4. Water monitoring well installed to 4.00mbgl 5. Borehole reinstated with bentonite and cement upon completion.				
26-06-2023	13:15	6.00			1.20	300							
					2.00	117							
					3.00	107							
					4.00	87							
					5.00	77							
Chiselling			Installation		Water Strikes								
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	1.00	PLAIN	50	4.00			20	2.37	Fast inflow
				1.00	4.00	SLOTTED	50						
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015													

		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS104						
		Contract Number: J5443	Date Started: 21/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1							
Window Sample Log		Easting:		Northing:		Ground Level:		Plant Used: Dando Terrier		Print Date: 26/09/2023		Scale: 1:40		
Weather: Sunny				Termination: Hole Collapse.				SPT Hammer: DT0769 Energy Ratio: 66%						
Samples & In Situ Testing				Strata Details								Groundwater		
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/ Installation	
0.10	D1	HV 0.50m, 70kPa		(0.30)		TOPSOIL - Greyish brown slightly gravelly sandy clay, with rare rootlets (4mm, dead). Gravel is fine to coarse sub-angular to sub-round of flint. Firm orangish brown and grey slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.								
0.20	ES1			0.30										
0.60	ES2			SPT(S) 1.20m, N=30 (3,4/5,8,8,9)	(1.30)		...very stiff below 1.20mbgl							
0.70	D2													
1.70	D3	SPT(S) 2.00m, N=6 (1,1/1,1,2,2)		1.60		Firm orangish brown mottled grey sandy silty CLAY, with rare fine to coarse black sand pockets. ...becoming soft at 2.00mbgl						1		
1.90	D4													
2.90	D5	SPT(S) 3.00m, N=8 (2,1/1,2,2,3)		(2.40)		...locally clayey fine to coarse sand between 3.00 and 3.50mbgl						2		
3.40	D6													
3.90	D7													
						End of Borehole at 4.00m						3		
												4		
												5		
												6		
												7		
												8		
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.20mbgl prior to drilling. 2. Ground water encountered at 3.00mbgl, rising to 2.48mbgl after 20 minutes of monitoring. 3. Borehole collapse from 4.m to 3.00mbgl. 4. Water monitoring well installed to 3.00mbgl 5. Borehole reinstated with bentonite and cement upon					
21-06-2023	12:00	4.00			1.20	300								
					2.00	101								
					3.00	87								
					4.00	77								
Chiselling					Installation				Water Strikes					
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks	
				0.00	1.00	PLAIN	50	3.00			0			
				1.00	3.00	SLOTTED	50							
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015														

		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS105						
		Contract Number: J5443	Date Started: 20/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1							
Window Sample Log		Easting:		Northing:		Ground Level:		Plant Used: Dando Terrier		Print Date: 26/09/2023		Scale: 1:40		
Weather: Cloudy				Termination: Hole Collapse.				SPT Hammer: DT0769 Energy Ratio: 66%						
Samples & In Situ Testing				Strata Details								Groundwater		
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/ Installation	
0.10	B1	HV 0.70m, 60kPa		0.15		TOPSOIL - Greyish brown sandy clay, with occasional rootlets (>2mm, living)								
0.10	D1			0.15		MADE GROUND - Firm brown slightly gravelly sandy clay. Gravel is fine to coarse sub-angular to sub-rounded of brick, pottery and flint.								
0.10 - 0.40	ES1			0.35										
0.40	D2			0.50										
0.40	ES2			0.50										
0.60 - 0.90	B2	HV 1.30m, 70kPa		0.90		Firm brown and grey slightly gravelly sandy CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.								
0.70	ES3			0.90										
0.80	D3			0.90										
1.30	D4	SPT(S) 1.20m, N=29 (0,2/5,7,7,10)		1.40		...becoming stiff below 1.20mbgl								
				1.40		Stiff light grey mottled brown slightly sandy very gravelly CLAY, with occasional pockets of fine to coarse silty clay. Gravel is fine to coarse sub-angular of flint.								
				2.00		Soft brown mottled grey slightly sandy gravelly CLAY, with pockets of fine to coarse sand. Gravel is fine to coarse sub-angular of flint.								
2.40	D6			2.00		...poor recovery between 2.00m and 3.00mbgl								
2.60	D7			2.00										
3.20	D8	SPT(S) 3.00m, N=6 (1,1/1,1,2,2)		3.00		Soft brown mottled grey slightly sandy silty CLAY. ...poor recovery between 3.00m and 4.00mbgl								
				3.00										
				3.60		Stiff grey slightly sandy silty CLAY. ...becoming grey below 3.60mbgl								
3.70	D9	SPT(S) 4.00m, N=20 (2,2/5,4,5,6)		3.60										
				3.60										
				4.45		End of Borehole at 4.45m								
												5		
												6		
												7		
												8		
Start & End of Shift Observations				Borehole Diameter		Casing Diameter		Remarks:						
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.20mbgl prior to drilling. 2. Ground water encountered at 2.20mbgl, rising to 1.00mbgl after 20 minutes of monitoring. 3. Borehole collapse from 4.m to 1.80mbgl. 4. Water monitoring well installed to 1.80mbgl 5. Borehole reinstated with bentonite and cement upon completion.					
20-06-2023	16:00	4.45			1.20	300								
					2.00	101								
					3.00	87								
					4.00	77								
					4.45	49								
								Water Strikes						
Chiselling				Installation				Strike (m) Casing (m) Sealed (m) Time (mins) Rose to (m) Remarks						
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	2.20			0		Moderate Inflow	
				0.00	0.80	PLAIN	50							
				0.80	1.80	SLOTTED	50							
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015														

		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS106	
		Contract Number: J5443	Date Started: 27/06/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1		
Window Sample Log		Easting: 473894.6	Northing: 107131.1	Ground Level: 12.28mOD	Plant Used: Archway Dart	Print Date: 26/09/2023	Scale: 1:40		
Weather: Dry and sunny			Termination: Hole Collapse.			SPT Hammer: 488 Energy Ratio: 61%			
Samples & In Situ Testing				Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation	
0.10 - 0.30	B1	SPT(S) 1.20m, N=17 (2,3/3,5,5,4) HV 1.50m, 50kPa	11.98	(0.30)		TOPSOIL - Firm greyish brown gravelly sandy CLAY, with rootlets (<2mm diameter, live). Gravel is fine to coarse sub-angular to sub-rounded flint.	1		
0.10 - 0.30	ES1			(0.40)		Firm to stiff greyish brown gravelly sandy CLAY, with rare rootlets (<2mm diameter, live). Gravel is fine to coarse sub-angular to sub-rounded flint.			
0.20	D1			(0.70)		Firm brown slightly gravelly slightly sandy CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint.			
0.40 - 0.50	B2			(0.90)		Firm greyish brown gravelly CLAY, locally very clayey GRAVEL. Gravel is fine to coarse sub-angular to sub-rounded flint.			
0.40 - 0.60	ES2			(0.80)		Structureless CHALK composed of slightly gravelly sandy SILT. Gravel is weak, low density, white (Grade Dm).			
0.50	D2			(0.40)		Firm brown mottled orange sandy CLAY.			
0.80 - 1.20	B3			(0.30)		Soft brown sandy slightly silty CLAY.			
0.90	D3			(0.50)		Soft to firm brown sandy silty CLAY.			
0.90 - 1.00	ES3			(0.95)		End of Borehole at 4.45m			
1.40	D4			(0.95)		End of Borehole at 4.45m			
1.60 - 2.00	B4	SPT(S) 2.00m, N=11 (1,2/3,3,2,3) HV 2.70m, 30kPa	10.68	1.60		Firm greyish brown gravelly CLAY, locally very clayey GRAVEL. Gravel is fine to coarse sub-angular to sub-rounded flint.	2		
2.00	D5			(0.80)		Structureless CHALK composed of slightly gravelly sandy SILT. Gravel is weak, low density, white (Grade Dm).			
2.10	D6			(0.40)		Firm brown mottled orange sandy CLAY.			
2.50	D7			(0.30)		Soft brown sandy slightly silty CLAY.			
3.00	D8			(0.50)		Soft to firm brown sandy silty CLAY.			
3.50	D9			(0.95)		End of Borehole at 4.45m			
3.80	D10			(0.95)		End of Borehole at 4.45m			
4.00	D11			(0.95)		End of Borehole at 4.45m			
4.00	D11			(0.95)		End of Borehole at 4.45m			
4.00	D11			(0.95)		End of Borehole at 4.45m			
7.83		4.45					5		
							6		
							7		
							8		
Start & End of Shift Observations			Borehole Diameter		Casing Diameter		Remarks:		
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	
27-06-2023	11:00	4.45			1.20	300			
					2.00	101			
					3.00	87			
					4.00	77			
					4.45	49			
Chiselling			Installation		Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	
				0.00	1.00	PLAIN	50	3.00	
				1.00	4.00	SLOTTED	50		
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015									

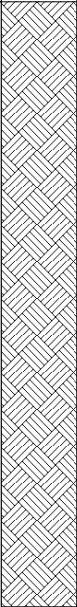
		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS107					
		Contract Number: J5443		Date Started: 28/06/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1					
Window Sample Log		Easting: 473437.7		Northing: 106932.8		Ground Level: 13.36mOD		Plant Used: Archway Dart		Print Date: 26/09/2023		Scale: 1:40	
Weather: Dry and Sunny				Termination: Hole Collapse				SPT Hammer: 488 Energy Ratio: 61%					
Samples & In Situ Testing				Strata Details						Groundwater			
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation		
0.00 - 0.20 0.10	B1 D1		13.06	(0.30)		TOPSOIL - Firm to stiff brown slightly gravelly slightly sandy clay. Gravel is fine to coarse sub-angular to sub-rounded flint.							
0.10 - 0.20 0.30 - 0.40	ES1 B2			0.30		Firm locally stiff brown mottled orange sandy CLAY, with rare rootlets (<2mm diameter, live) and rare black mottling.							
0.30 - 0.90 0.40	ES2 D2												
1.40	D3	SPT(S) 1.20m, N=12 (2,3/2,3,3,4)		(1.50)						1			
1.70 - 2.00	B3	HV 1.70m, 80kPa	11.56	1.80		Firm slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint.				2			
2.00	D4	SPT(S) 2.00m, N=10 (2,2/1,4,3,2)		(0.50)		Loose brown clayey fine to coarse sub-angular to sub-rounded flint GRAVEL.							
2.40 - 3.00	B4		11.06	2.30									
				(1.10)		... Borehole unstable/ collapsing below 3.00mbgl.				3			
3.50	D5		9.96	3.40		Loose light brown clayey gravelly fine to coarse SAND. Gravel is sub-angular to sub-rounded flint.							
3.70	D6	HV 3.70m, 70kPa	9.76	3.60		Stiff red mottled light brown slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint.							
4.00	D7	SPT(S) 4.00m, N=43 (7,12/10,12,11,10)		(0.85)		... Becoming very stiff below 4.00mbgl.				4			
			8.91	4.45		End of Borehole at 4.45m							
										5			
										6			
										7			
										8			
Start & End of Shift Observations				Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.2mbgl prior to drilling. 2. Ground water encountered at 4.0mbgl, rising to 2.15mbgl after 20 minutes of monitoring. 3. Borehole collapse from 4.00m up to 3.00mbgl. Re-drill twice resulting in further collapse back up to 3.90mbgl and 3.5mbgl thereafter. 4. Water monitoring well installed to 3.5mbgl 5. Borehole reinstated with bentonite and cement upon completion.				
28-06-2023	14:45	4.45			1.20	300							
					2.00	101							
					3.00	87							
					4.00	77							
					4.45	49							
Chiselling				Installation				Water Strikes					
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	1.00	PLAIN	50	4.00			20	2.15	Fast inflow.
				1.00	3.50	SLOTTED	50						
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015													

		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS108					
		Contract Number: J5443	Date Started: 27/06/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1						
Window Sample Log		Easting: 474248.2	Northing: 106807.7	Ground Level: 10.16mOD	Plant Used: Archway Dart	Print Date: 26/09/2023	Scale: 1:40						
Weather: Dry and Sunny			Termination: Hole Collapse.			SPT Hammer: 488 Energy Ratio: 61%							
Samples & In Situ Testing			Strata Details				Groundwater						
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation					
0.10	B1	SPT(S) 1.20m, N=12 (5,5/4,3,3,2)	9.76	0.40		TOPSOIL - Stiff brown slightly gravelly sandy clay. Gravel fine to coarse sub-angular to sub-rounded flint.	1						
0.10 - 0.20	D1												
0.10 - 0.30	ES1												
0.40 - 0.50	B2												
0.40 - 0.80	ES2												
0.50	D2	SPT() 2.00m, N=10 (1,2/2,3,3,3)	8.56	(1.20)		Firm brown mottled orange slightly gravelly sandy CLAY, with rare rootlets (<2mm diameter, live). Gravel fine to coarse sub-angular to sub-rounded flint.	2						
1.00	D9												
1.30	D3												
1.70	D4												
2.00	D5												
2.60	D6	HV 2.60m, 45kPa	7.46	(1.10)		Firm brown slightly sandy silty CLAY.	3						
2.80	D7												
3.00	D8												
		HV 3.60m, 95kPa		(1.75)		Firm dark grey slightly sandy silty CLAY.	4						
		SPT(S) 3.00m, N=12 (2,1/2,3,3,4)	5.71	4.45		End of Borehole at 4.45m	5						
		SPT(S) 4.00m, N=13 (2,1/3,2,4,4)					6						
							7						
							8						
Start & End of Shift Observations			Borehole Diameter		Casing Diameter		Remarks:						
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.2mbgl prior to drilling. 2. Ground water encountered at 4.45mbgl, rising to 2.30mbgl after 20 minutes of monitoring. 3. Borehole collapse from 4.45m up to 3.40mbgl. Re-drill resulting in further collapse back up to 3.3mbgl. 4. Water monitoring well installed to 3.30mbgl 5. Borehole reinstated with bentonite and cement upon completion.				
27-06-2023	12:45	4.45			1.20	300							
					2.00	101							
					3.00	87							
					4.00	77							
					4.45	49							
Chiselling			Installation		Water Strikes								
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	1.00	PLAIN	50	4.45			20	2.30	Fast inflow.
				1.00	3.30	SLOTTED	50						
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015													

		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS109					
		Contract Number: J5443	Date Started: 28/06/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1						
Window Sample Log		Easting: 473989.0	Northing: 106555.0	Ground Level: 10.82mOD	Plant Used: Archway Dart	Print Date: 26/09/2023	Scale: 1:40						
Weather: Dry and Sunny			Termination: Hole Collapse			SPT Hammer: 488 Energy Ratio: 61%							
Samples & In Situ Testing			Strata Details				Groundwater						
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation					
0.00 - 0.20 0.10	B1 D1	SPT(S) 1.20m, N=39 (10,11/10,9,10,10)	10.62	0.20		TOPSOIL - Light brown slightly gravelly sandy clay. Gravel is fine to coarse sub-angular to sub-rounded flint and rare brick.	1						
0.10 - 0.20 0.30 - 0.60	ES1 B2			(0.50)		Firm locally stiff brown mottled orange slightly gravelly slightly sandy CLAY, with rare rootlets (<2mm diameter, live). Gravel is fine to coarse sub-angular to sub-rounded flint.							
0.40 - 0.50	D2 ES2			0.70		Very stiff brown slightly sandy gravelly CLAY, locally clayey gravel. Gravel is fine to coarse sub-angular to sub-rounded flint.							
0.80 - 1.20 0.90	B3 D3			1.20		Soft brown slightly sandy silty CLAY. ... Borehole unstable/ collapsing from 2.0mbgl.							
1.30 - 1.90	B4												
2.00	D1	SPT() 2.00m, N=5 (1,1/1,1,2,1)	8.93	1.90		Stiff dark grey silty CLAY.	3						
2.70	D2	SPT(S) 3.00m, N=17 (2,2/3,5,4,5)	7.92	2.90		End of Borehole at 3.45m	4						
3.00	D3			(0.55)									
				7.38					3.45				
							5						
							6						
							7						
							8						
Start & End of Shift Observations			Borehole Diameter		Casing Diameter		Remarks:						
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.2mbgl prior to drilling. 2. Ground water encountered at 4.45mbgl, rising to 2.30mbgl after 20 minutes of monitoring. 3. Borehole collapse from 3.45m up to 2.30mbgl. 4. Water monitoring well installed to 2.50mbgl 5. Borehole reinstated with bentonite and cement upon completion.				
28-06-2023	11:30	3.45			1.20	300							
					2.00	101							
					3.00	87							
					3.45	49							
Chiselling			Installation		Water Strikes								
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	1.50	PLAIN	50	3.45			20	2.30	Moderate inflow.
				1.50	2.50	SLOTTED	50						
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015													

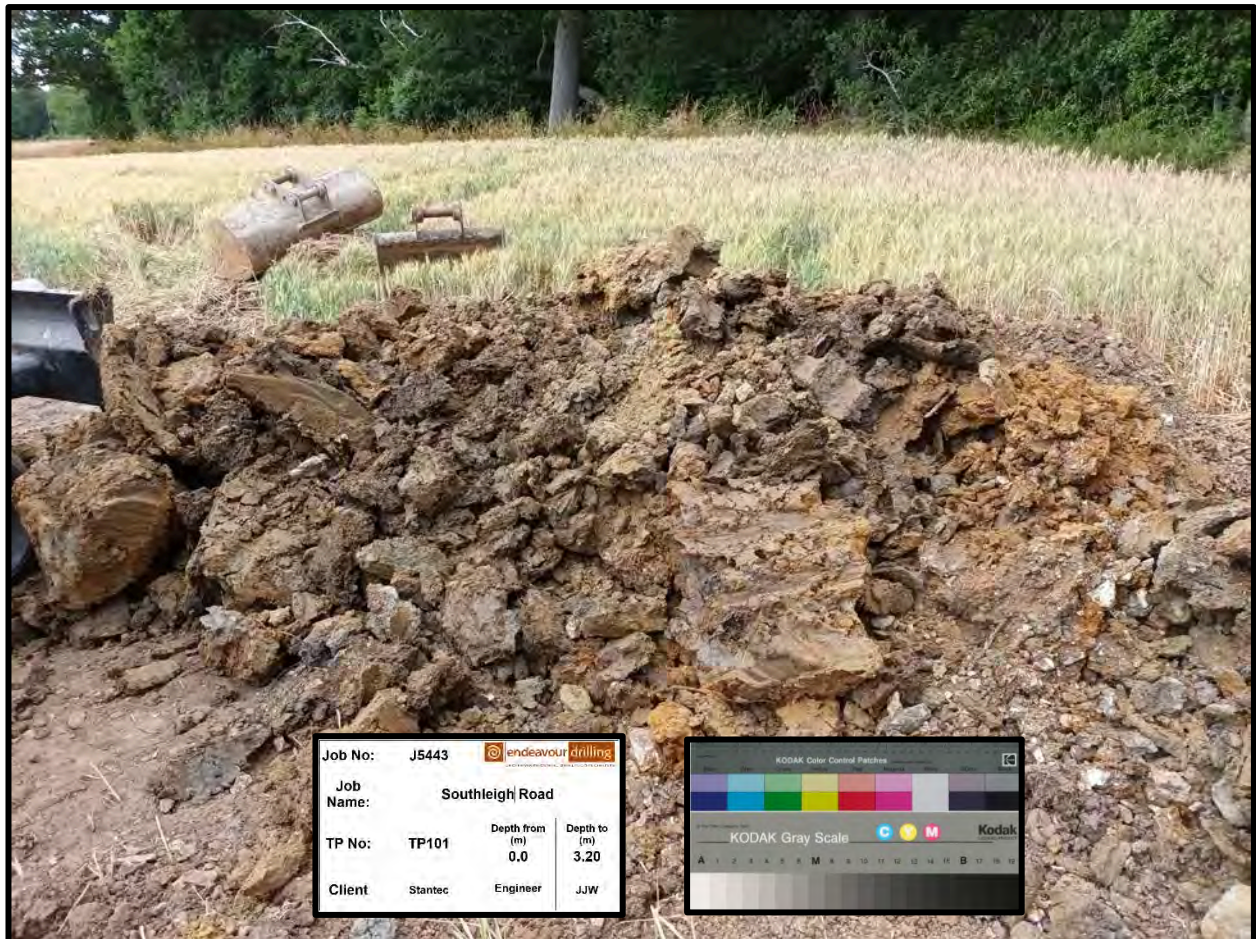
APPENDIX C

Machine Dug Trial Pit Logs

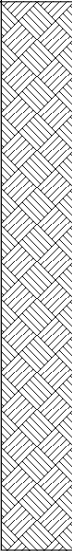
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP101		
	Contract Number: J5443	Date Started: 29/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
Trial Pit Log	Easting: 473587.4	Northing: 107814.7	Ground Level: 28.78mOD	Plant Used: 8T Excavtor	Date Printed: 26/09/2023	Scale: 1:40			
Weather: Sunny		Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable				
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10	ES1		28.58	0.20		TOPSOIL - Greyish brown sandy clay, with occasional rootlets (<2mm, living).		1	
0.20	D1			(0.40)		Soft to firm brown slightly gravelly sandy CLAY, with rare rootlets (6mm, dead). Gravel is fine to coarse sub-angular to sub-rounded of flint.			
0.30 - 0.60	B1					Firm light grey slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.			
0.40	D2								
0.50	ES2			0.60					
0.80 - 1.10	B2	HV125(125)kPa	27.48	(0.70)				2	
0.90	D3			1.30		Stiff dark brown mottled grey slightly sandy silty CLAY, with frequent gleying.			
1.20	D4					...layer of fine to coarse orange sand between 1.40m and 1.50mbgl			
1.40	D5					...becoming very stiff below 2.00mbgl			
1.60 - 1.80	B3			(1.90)					
2.00	D6	HV150(150)kPa							
2.50	D7	HV150(150)kPa							
3.00	D8	HV150(150)kPa	25.58	3.20		End of Trial Pit at 3.20m		3	
								4	
								5	
								6	
Dimensions:						General Remarks:			
Final Depth: 3.20m						1. Position machine excavated to 3.20mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.			
<div><div>← Length (m) →</div><div>2.50m</div><div>↑ Width (m) ↓</div><div>0.50m</div><div>Orientation: °</div><div>←</div></div>									
Inclination: °									
						Water Strikes			
						Strike (m)	Time (mins)	Rose to (m)	Remarks
						HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015			



TP101 – 0.0mbgl to 3.20mbgl

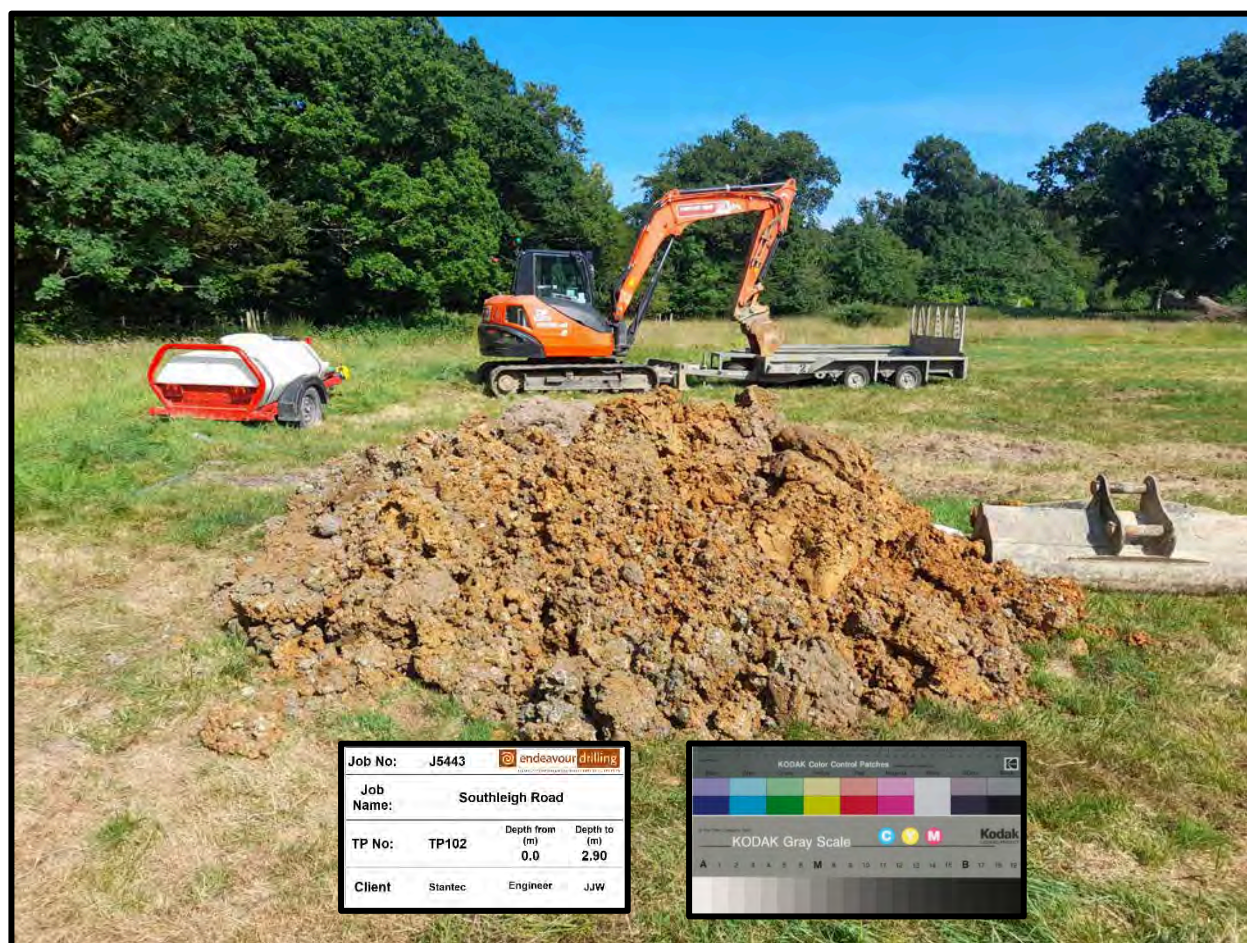


TP101 – 0.0mbgl to 3.20mbgl

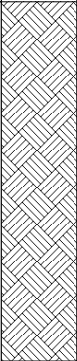
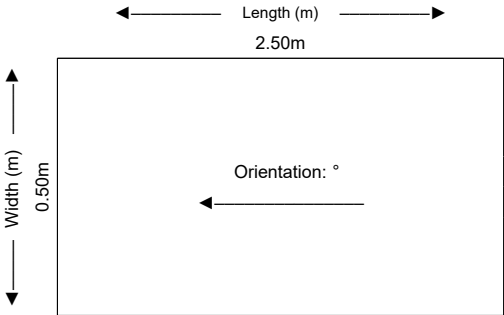
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP102										
	Contract Number: J5443	Date Started: 19/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1											
Trial Pit Log		Easting: 473226.1	Northing: 107871.7	Ground Level: 30.93mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40										
Weather: Sunny			Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable											
Samples & In Situ Testing				Strata Details				Water	Backfill								
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description											
0.30 0.30	D1 ES1	HV68(68)kPa	30.53	(0.40)		TOPSOIL - Greyish brown slightly gravelly sandy clay, with occasional rootlets (<2mm, living). Gravel is fine to coarse sub-angular to sub-rounded of flint.		1									
0.60 0.70 0.70 - 1.00	ES2 B1 D2			(0.60)		Brown mottled grey slightly silty clayey sandy fine to coarse subangular GRAVEL of flint, with medium cobble content.											
1.50	D3		29.93	1.00		Firm brown mottled grey slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.											
2.00	D4			(1.50)													
2.50	D5		28.23	2.70		Firm brown and grey slightly sandy silty CLAY, with occasional laminations of sandy clay.											
2.80	D6		28.03	2.90		End of Trial Pit at 2.90m											
								3									
								4									
								5									
								6									
Dimensions:					General Remarks:												
Final Depth: 2.90m					1. Position machine excavated to 2.90mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.												
<div><div>← Length (m) →</div><div>3.50m</div><div><div>↑ Width (m) ↓</div><div>0.50m</div></div><div>Orientation: °</div><div>←</div></div>																	
Inclination: °					Water Strikes												
					<table><tr><th>Strike (m)</th><th>Time (mins)</th><th>Rose to (m)</th><th>Remarks</th></tr><tr><td></td><td></td><td></td><td></td></tr></table>					Strike (m)	Time (mins)	Rose to (m)	Remarks				
Strike (m)	Time (mins)	Rose to (m)	Remarks														
HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015																	



TP102 – 0.0mbgl to 2.90mbgl



TP102 – 0.0mbgl to 2.90mbgl

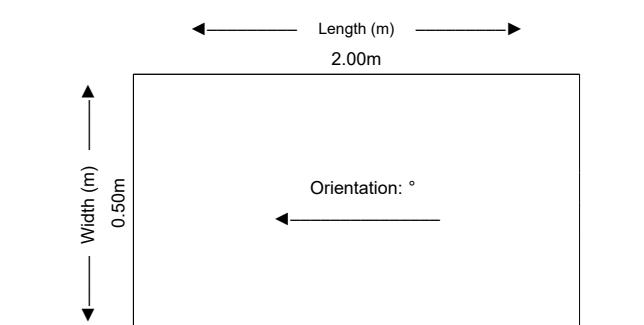
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd		Trial Pit ID: TP103						
	Contract Number: J5443	Date Started: 29/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1						
Trial Pit Log		Easting: 473226.1	Northing: 107336.7	Ground Level: 14.98mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40					
Weather: Sunny			Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Unstable						
Samples & In Situ Testing			Strata Details					Water	Backfill			
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description						
0.10	D1	HV32(32)kPa	14.68	(0.30)		TOPSOIL - Greyish brown sandy clay, with occasional rootlets (<2mm, living).		1				
0.20	ES1			0.30		Soft orangish brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.						
0.40 - 0.80	B1		14.08	(0.60)		Grey and brown slightly clayey slightly sandy GRAVEL, with medium cobble content. Gravel is fine to coarse sub-angular to sub-rounded of flint.						
0.60	D2											
0.80	ES2											
1.00	B2		13.08	0.90		End of Trial Pit at 1.90m						
1.00 - 1.40	D3											
1.50	D4											
					(1.00)					2		
					1.90					3		
								4				
								5				
								6				
Dimensions:					General Remarks:							
Final Depth: 1.90m					1. Position machine excavated to 1.90mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.							
												
Inclination: °												
					Water Strikes							
					Strike (m)		Time (mins)	Rose to (m)	Remarks			
					HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015							

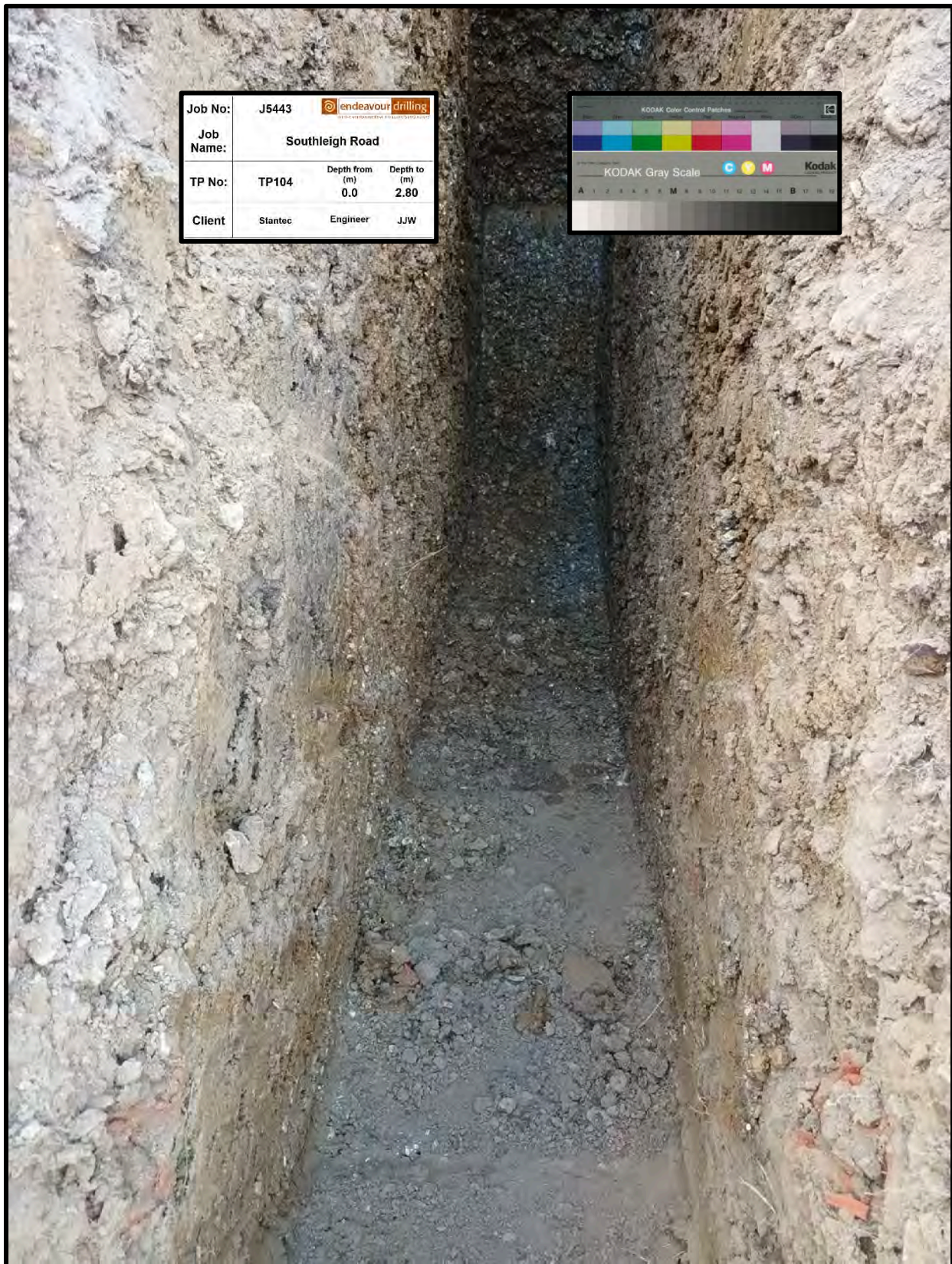


TP103 – 0.0mbgl to 1.90mbgl



TP103 – 0.0mbgl to 1.90mbgl

		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP104	
		Contract Number: J5443	Date Started: 19/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1		
Trial Pit Log		Easting: 473588.7	Northing: 107314.7	Ground Level: 13.30mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40		
Weather: Sunny			Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable			
Samples & In Situ Testing				Strata Details				Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10 - 0.40 0.20 0.30	B1 D1 ES1	HV68(68)kPa	12.90	(0.40)		TOPSOIL - Soft greyish brown fine to coarse sandy clay, with occasional rootlets (<2mm, living).	1		
0.50 0.50	D2 ES2			0.40		MADE GROUND - Firm brown slightly sandy slightly gravelly clay. Gravel is fine to coarse sub-angular of clay pottery.			
0.80 0.80 - 1.10 1.00	B2 ES3 D3			0.65		Brown clayey silty sandy fine to coarse angular GRAVEL of flint.			
1.50	D4			1.10		Firm brown mottled orange and light grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.			
2.00	D5			(1.30)					
2.40 - 2.80 2.50	B3 D6			2.40		Light grey clayey silty sandy fine to coarse sub-angular GRAVEL of flint.			
			10.90	(0.40)			2		
			10.50	2.80		End of Trial Pit at 2.80m	3		
							4		
							5		
							6		
Dimensions:					General Remarks:				
Final Depth: 2.80m					1. Position machine excavated to 2.80mbgl. 2. Groundwater encountered at 2.80mbgl (slow infill, no rise). 3. Position backfilled with arisings and compacted upon completion.				
									
Inclination: °									
					Water Strikes				
					Strike (m)		Time (mins)	Rose to (m)	Remarks
					2.80		20	2.80	
					HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015				

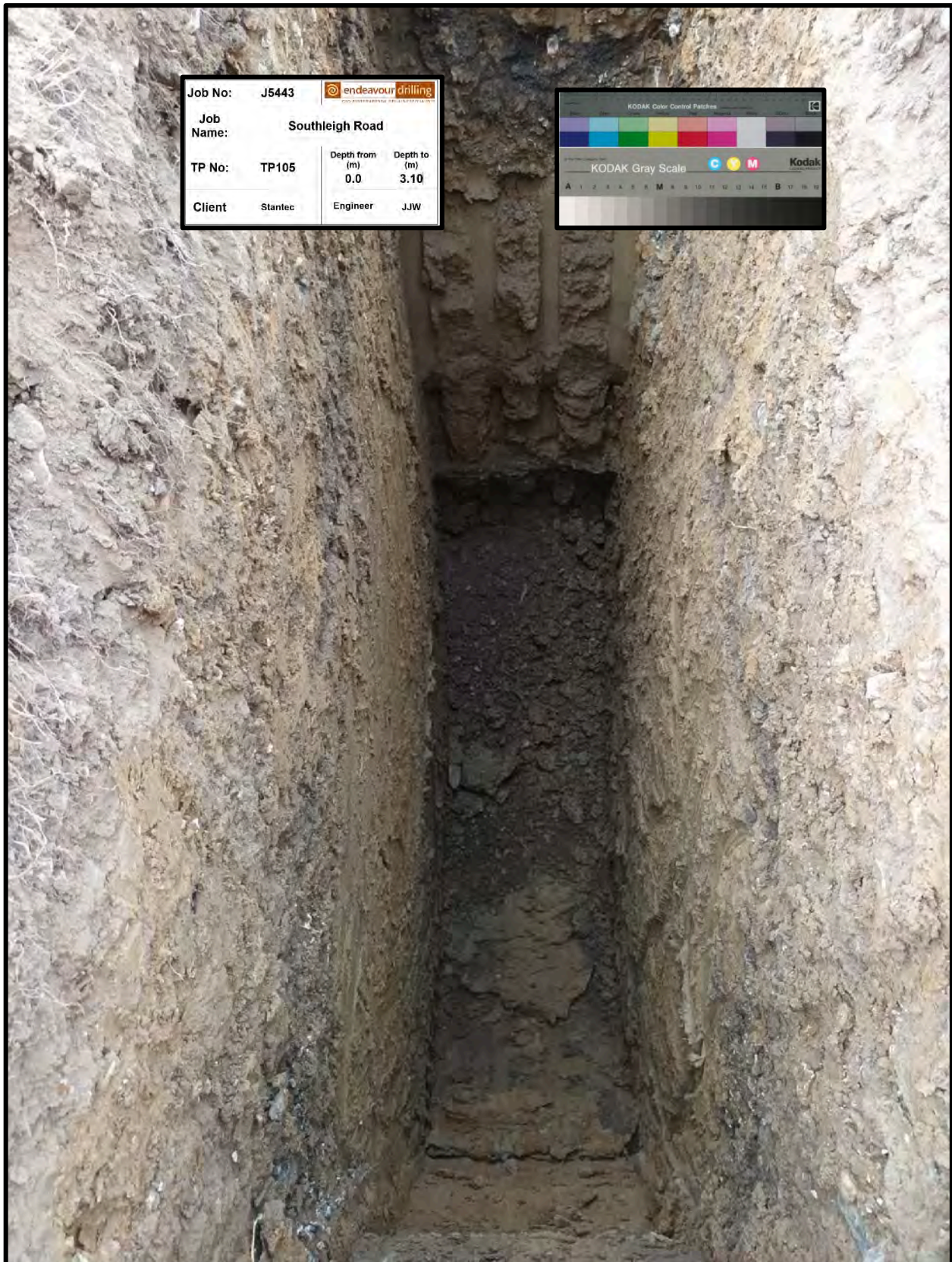


TP104 – 0.0mbgl to 2.80mbgl

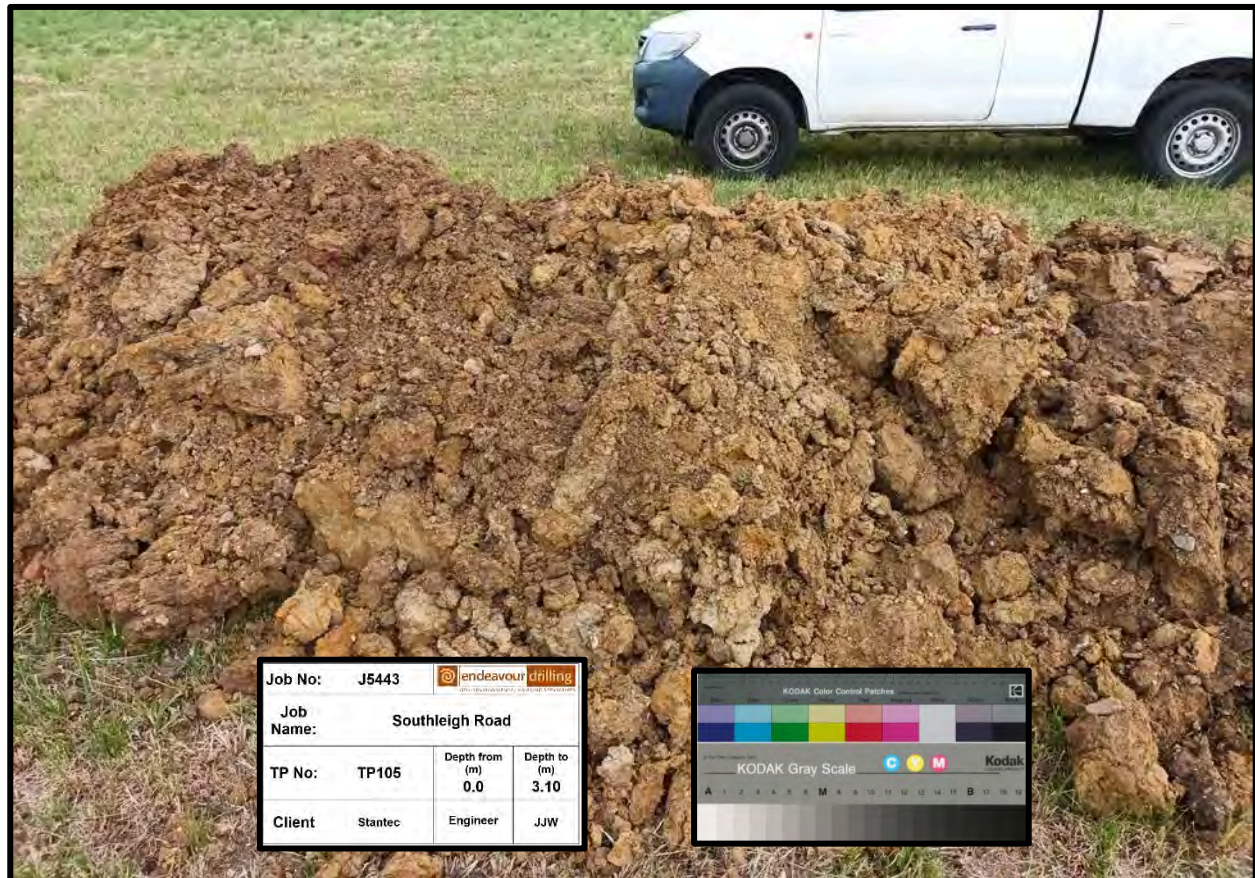


TP104 – 0.0mbgl to 2.80mbgl

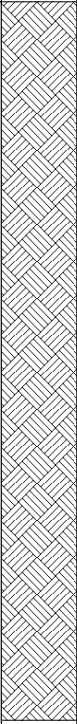
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd		Trial Pit ID: TP105									
	Contract Number: J5443	Date Started: 27/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1									
Trial Pit Log		Easting: 474129.6	Northing: 107137.7	Ground Level: 11.17mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40								
Weather: Sunny			Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable									
Samples & In Situ Testing				Strata Details			Water	Backfill							
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description									
0.20 0.20 0.40 - 0.80	D1 ES1 B1	HV60(60)kPa HV55(55)kPa	10.87	(0.30) 0.30		TOPSOIL - Greyish brown slightly gravelly sandy clay, with occasional rootlets (<2mm, living). Gravel is fine to coarse sub-angular of flint.	1								
0.70 0.80	ES2 D2			(0.90)		MADE GROUND - Soft to firm orangish brown sandy gravelly clay. Gravel is fine to coarse sub-angular to sub-rounded of flint, brick and plastic.									
1.20 - 1.50 1.30	B2 D3			9.97		1.20			Firm orangish brown mottled grey slightly sandy silty CLAY, with occasional pockets of fine to coarse black sand.						
1.50 1.50	D4 ES3			(1.60)		8.37 2.80 (0.30)			...becoming silty below 1.80mbgl						
1.80 - 2.30 1.90	B3 D5								Stiff dark brown mottled orange slightly sandy silty CLAY.						
2.40	D6	8.07	3.10	End of Trial Pit at 3.10m	3										
2.90	D7			HV115(115)kPa	4										
							5								
							6								
Dimensions:				General Remarks:											
Final Depth: 3.10m				1. Position machine excavated to 3.10mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.											
<div><div>← Length (m) →</div><div>2.50m</div><div>↑ Width (m) ↓</div><div>0.50m</div><div>Orientation: °</div></div>															
Inclination: °				Water Strikes											
				<table><tr><th>Strike (m)</th><th>Time (mins)</th><th>Rose to (m)</th><th>Remarks</th></tr><tr><td></td><td></td><td></td><td></td></tr></table>				Strike (m)	Time (mins)	Rose to (m)	Remarks				
Strike (m)	Time (mins)	Rose to (m)	Remarks												
HBSI TP Template				Issue Number: 1 Issue Date: 09/06/2015											



TP105 – 0.0mbgl to 3.10mbgl

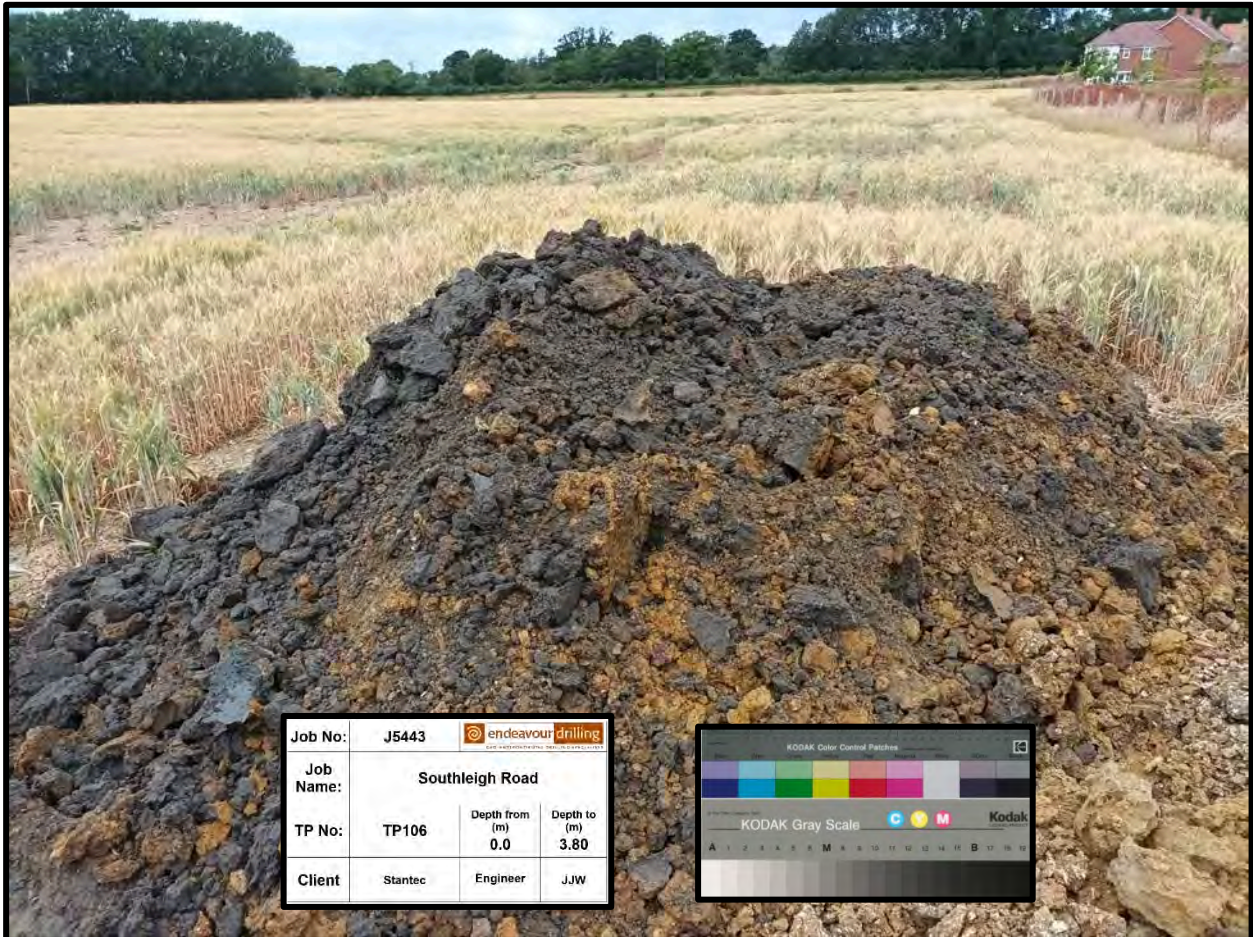


TP105 – 0.0mbgl to 3.10mbgl

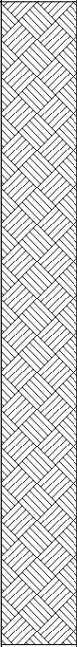
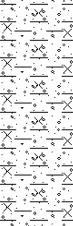
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP106									
	Contract Number: J5443	Date Started: 27/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1										
Trial Pit Log	Easting: 474218.8	Northing: 107004.5	Ground Level: 9.85mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40										
Weather: Sunny		Termination: Refusal due to excavator at limit of capability within ground conditions			Stability: Stable											
Samples & In Situ Testing			Strata Details				Water	Backfill								
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description										
0.10 0.20 0.30 - 0.60	D1 ES1 B1	HV30(30)kPa	9.60	0.25 (0.35)		TOPSOIL - Greyish brown sandy gravelly clay, with occasional rootlets (2mm, living). Gravel is fine to medium sub-angular of flint.	1									
0.50 0.50 0.70 - 1.00 0.80 0.90	D2 ES2 B2 D3 ES3			0.60 (0.50)		MADE GROUND - Soft to firm greyish brown slightly sandy gravelly clay. Gravel is fine to coarse sub-angular of flint, porcelain and pottery. Soft orangish brown slightly sandy silty CLAY.										
1.20	D4			1.10		Firm orangish brown mottled grey slightly sandy to sandy silty CLAY.										
1.70	D5			(1.20)												
2.30 - 2.60 2.40	B3 D6			7.55 (0.40)		Stiff brown slightly sandy to sandy CLAY, with occasional pockets of silty fine to coarse sand.										
2.80 - 3.10 2.90	B4 D7	HV125(125)kPa	7.15	2.70 (1.10)		Stiff dark blueish grey silty CLAY, with thinly bedded laminations of clay.	3									
3.40	D8			3.80												
			6.05			End of Trial Pit at 3.80m	4									
							5									
							6									
Dimensions:					General Remarks:											
Final Depth: 3.80m					1. Position machine excavated to 3.80mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.											
<div><div>← Length (m) →</div><div>2.30m</div><div>↑ Width (m) ↓</div><div>0.50m</div><div>Orientation: °</div></div>																
Inclination: °					Water Strikes											
					<table><tr><th>Strike (m)</th><th>Time (mins)</th><th>Rose to (m)</th><th>Remarks</th></tr><tr><td></td><td></td><td></td><td></td></tr></table>				Strike (m)	Time (mins)	Rose to (m)	Remarks				
Strike (m)	Time (mins)	Rose to (m)	Remarks													
					HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015											



TP106 – 0.0mbgl to 3.80mbgl

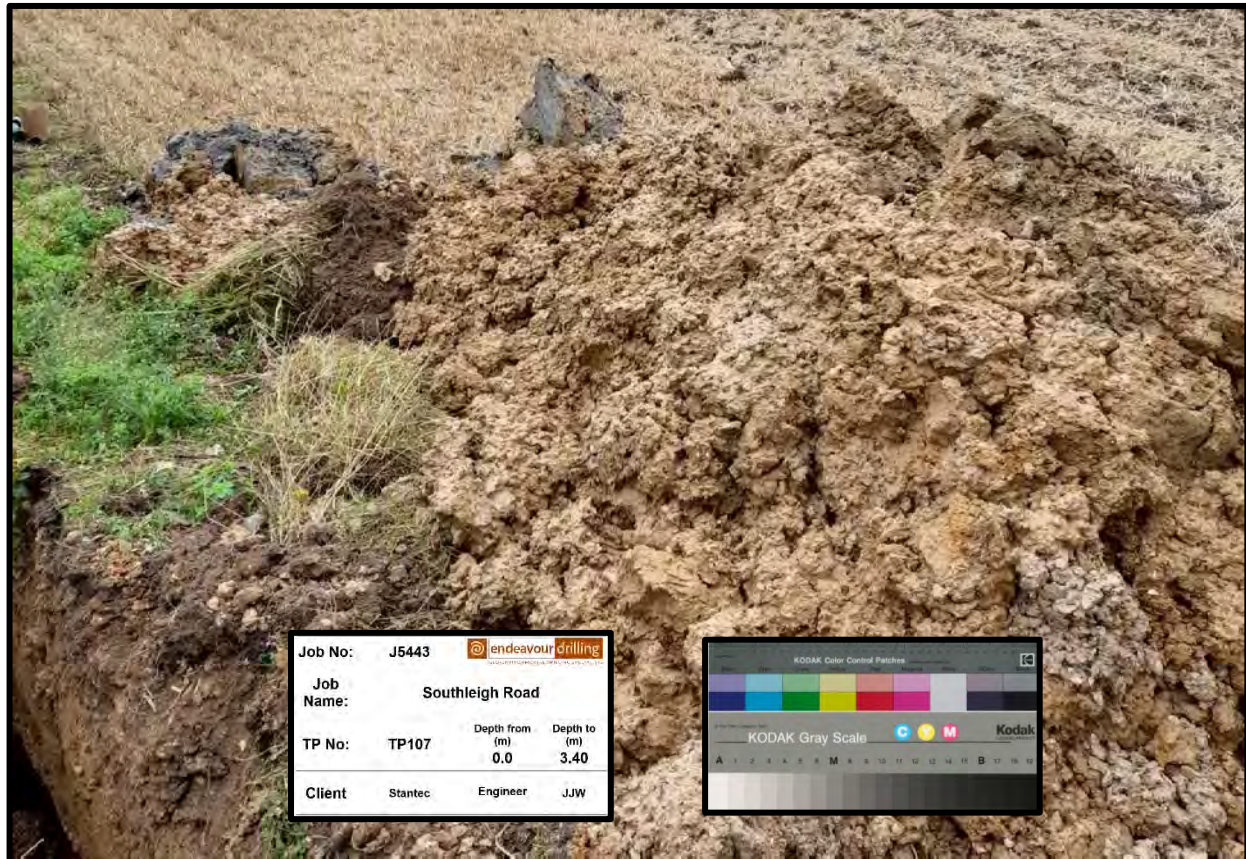


TP106 – 0.0mbgl to 3.80mbgl

	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd		Trial Pit ID: TP107									
	Contract Number: J5443	Date Started: 31/07/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1									
Trial Pit Log		Easting: 473908.6	Northing: 106857.4	Ground Level: 11.55mOD	Plant Used: JCB 3CX	Date Printed: 26/09/2023	Scale: 1:40								
Weather: Wet and overcast			Termination: Hole collapse		Stability: Stable from 0.0-1.5mbgl, unstable below 1.5mbgl										
Samples & In Situ Testing			Strata Details				Water	Backfill							
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description									
0.10	B1	HV15(15)kPa	11.25	(0.30)		TOPSOIL - Soft to firm brown slightly slightly sandy slightly gravelly silty clay, with rootlets (<2mm diameter, live). Gravel is fine to coarse, sub-angular to sub-rounded flint and brick	1								
0.10 - 0.30	D1			(0.30)		MADE GROUND - Brown slightly silty slightly sandy fine to coarse sub-angular to sub-rounded gravel of flint and brick.									
0.10 - 0.30	ES1														
0.40	B2														
0.40 - 0.60	D2														
0.40 - 0.60	ES2		10.95	0.60		Firm light brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint.									
0.70	D3														
0.70 - 1.00	ES3														
1.20	D4		(1.60)		... Becoming very gravelly clay below 1.0mbgl	2									
1.70	D5														
2.20 - 2.50	B3	9.35					2.20	Soft brown mottled orange slightly sandy silty CLAY, with rare pockets of slightly gravelly clay.							
2.30	D6														
2.80	D7														
3.20 - 3.40	B4	8.35	3.20	Soft dark grey slightly sandy CLAY, with rare fossil fragments.	3										
3.30	D8														
		8.15	3.40	End of Trial Pit at 3.40m	4										
						5									
						6									
Dimensions:				General Remarks:											
Final Depth: 3.40m				1. Position machine excavated to 3.40mbgl. 2. Groundwater encountered at 2.0mbgl, no rise after 20 minutes monitoring. 3. Position backfilled with arisings and compacted upon completion.											
<div><div>← Length (m) →</div><div>3.00m</div><div>↑ Width (m) ↓</div><div>0.45m</div><div>Orientation: °</div><div>←</div></div>															
Inclination: °				Water Strikes											
				<table><tr><th>Strike (m)</th><th>Time (mins)</th><th>Rose to (m)</th><th>Remarks</th></tr><tr><td>2.00</td><td>20</td><td>2.00</td><td>No Rise</td></tr></table>				Strike (m)	Time (mins)	Rose to (m)	Remarks	2.00	20	2.00	No Rise
Strike (m)	Time (mins)	Rose to (m)	Remarks												
2.00	20	2.00	No Rise												
				HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015											



TP107 – 0.0mbgl to 3.40mbgl

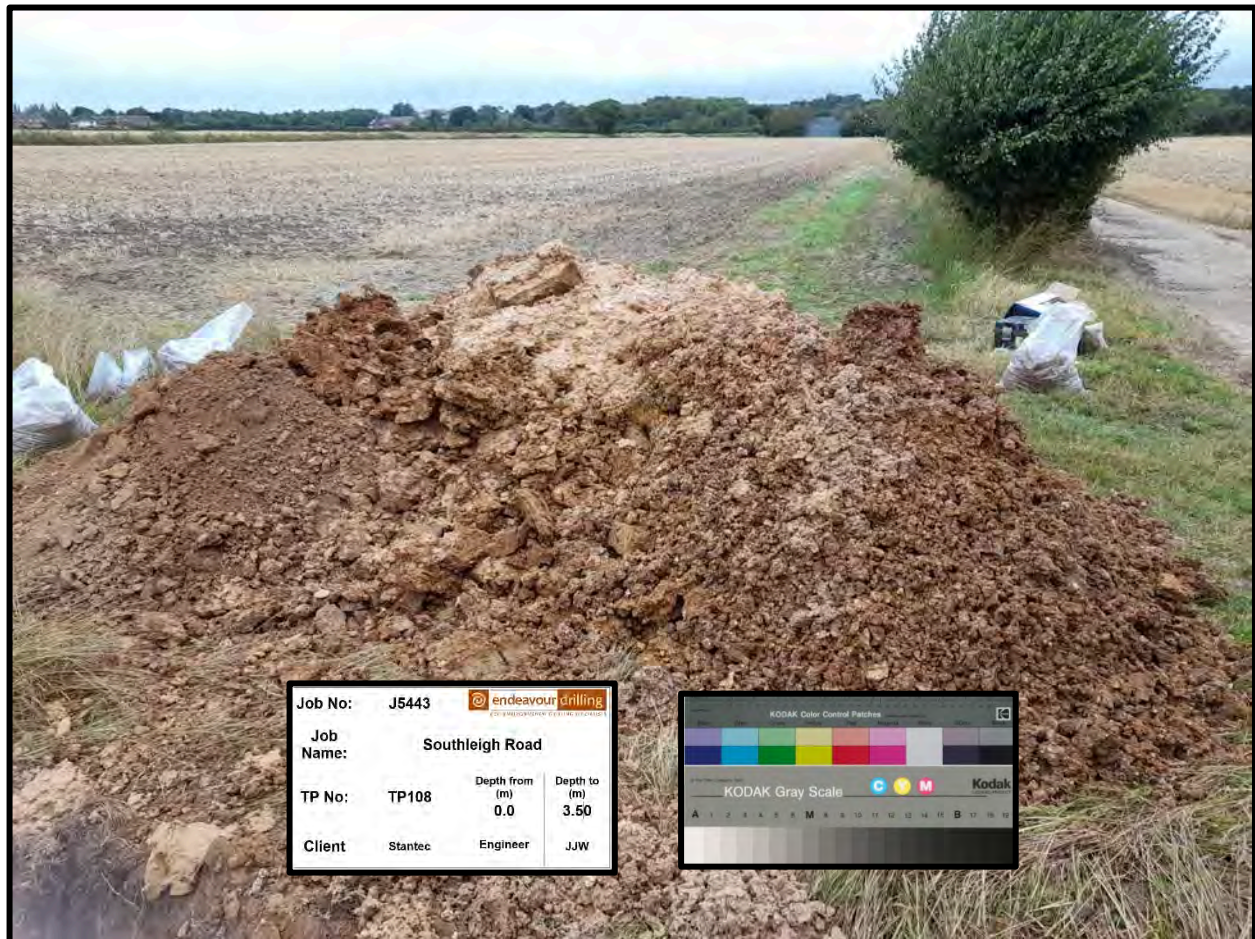


TP107 – 0.0mbgl to 3.40mbgl

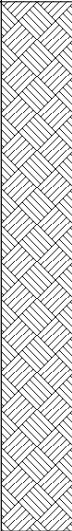
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP108				
	Contract Number: J5443	Date Started: 31/07/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1					
	Easting: 473738.8	Northing: 106792.2	Ground Level: 12.71mOD	Plant Used: JCB 3CX	Date Printed: 26/09/2023	Scale: 1:40					
Trial Pit Log				Weather: Wet and overcast		Termination: Hole collapse		Stability: Stable between 0.0-2.0, unstable below 2.0mbgl			
Samples & In Situ Testing			Strata Details						Water	Backfill	
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description					
0.10	B1	HV5(5)kPa	12.51	0.20		TOPSOIL - Soft brown slightly gravelly slightly sandy slightly silty clay, with rootlets (<2mm diameter, live).		1			
0.10 - 0.20	D1	HV10(10)kPa		(0.30)		Very soft light brown slightly gravelly sandy CLAY. Gravel is fine to coarse flint.					
0.10 - 0.20	ES1			12.21		0.50	Soft brown mottled orange slightly sandy silty CLAY.				
0.20 - 0.40	B2		10.71		(1.50)	... Rare flint gravels present below 1.5mbgl					
0.20 - 0.40	ES2	2.00				Brown slightly silty clayey sandy fine to coarse sub-angular to sub-rounded GRAVEL of flint.					
0.30	D2			(1.10)		Soft light brown slightly sandy silty CLAY, with rare partings of grey clay.					
0.50 - 0.70	B3		9.61		3.10	End of Trial Pit at 3.50m					
0.60	D3	9.21				3.50					
1.10	D4			HV18(18)kPa							
1.60	D5		HV17(17)kPa								
2.00 - 2.30	B4										
2.10	D6										
2.60	D7	HV12(12)kPa	9.61	3.10							
3.10 - 3.40	B5										
3.20	D8										
								4			
								5			
								6			
Dimensions:					General Remarks:						
Final Depth: 3.50m					1. Position machine excavated to 3.50mbgl. 2. Groundwater encountered at 2.5mbgl, no rise after 20 minutes monitoring. 3. Position backfilled with arisings and compacted upon completion.						
Inclination: °											
					Water Strikes						
					Strike (m)				Time (mins)	Rose to (m)	Remarks
					2.50				20	2.50	No rise
					HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015						



TP108 – 0.0mbgl to 3.50mbgl



TP108 – 0.0mbgl to 3.50mbgl

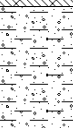
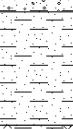
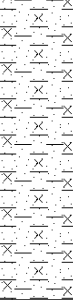
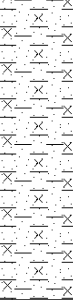
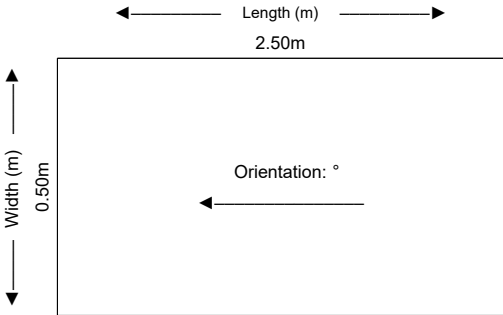
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd		Trial Pit ID: TP109					
	Contract Number: J5443	Date Started: 20/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1					
Trial Pit Log		Easting: 473683.8	Northing: 107757.6	Ground Level: 26.84mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40				
Weather: Overcast			Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable					
Samples & In Situ Testing				Strata Details			Water	Backfill			
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description					
0.20 0.20	D1 ES1	HV35(35)kPa HV90(90)kPa	26.44	(0.40)		TOPSOIL - Greyish brown sandy clay, with occasional rootlets (<2mm, living).	1				
0.50 0.50	B1 D2			0.40		MADE GROUND - Soft dark greyish brown sandy gravelly clay. Gravel is fine to coarse sub-angular of concrete and flint.					
0.50 - 0.80	ES2			0.80		Orangish brown clayey silty sandy fine to coarse angular GRAVEL of flint.					
0.90 0.90	B2 D3			(0.60)							
0.90 - 1.40	ES3		1.40								
1.50	D4		25.44	(1.00)		Firm orangish brown mottled grey slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.			2		
2.00	D5		24.44	2.40		Soft light brown mottled grey slightly silty slightly sandy slightly gravelly CLAY. Gravel is fine to medium sub-angular to sub-rounded of flint.			3		
2.40 - 2.60 2.50	B3 D6			(0.30)		Stiff dark brown slightly sandy silty CLAY, with frequent gleying and occasional rootlets (2mm, dead).					
2.70	B4			2.70							
2.70 - 2.80	D7			24.14 24.04		2.80				End of Trial Pit at 2.80m	
										4	
										5	
										6	
Dimensions:						General Remarks:					
Final Depth: 2.80m						1. Position machine excavated to 2.80mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.					
<div><div>← Length (m) →</div><div>4.00m</div><div>↑ Width (m) ↓</div><div>0.50m</div><div>Orientation: °</div><div>←</div></div>											
Inclination: °											
						Water Strikes					
						Strike (m)	Time (mins)	Rose to (m)	Remarks		
						HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015					

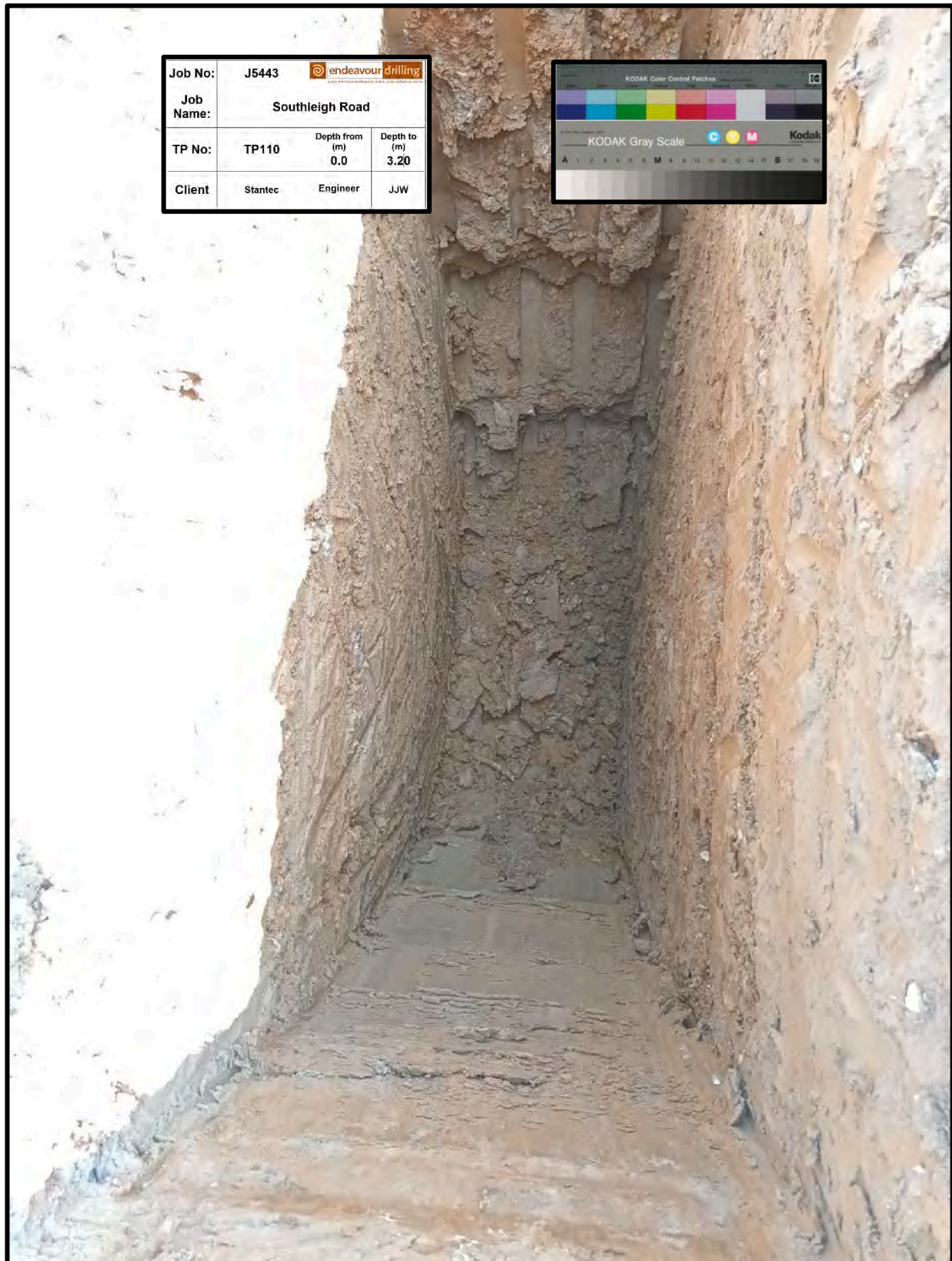


TP109 – 0.0mbgl to 2.80mbgl



TP109 – 0.0mbgl to 2.80mbgl

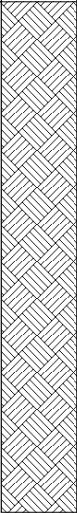
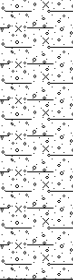
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP110			
	Contract Number: J5443	Date Started: 29/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1				
Trial Pit Log	Easting: 473304.2	Northing: 107683.8	Ground Level: 19.42mOD	Plant Used: 8T Excavtor	Date Printed: 26/09/2023	Scale: 1:40				
Weather: Sunny		Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable					
Samples & In Situ Testing			Strata Details					Water	Backfill	
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description				
0.10 0.20 0.30 - 0.80	ES1 D1 B1	HV60(60)kPa	19.12	(0.30)		TOPSOIL - Greyish brown sandy clay, with occasional rootlets (<2mm, living).		1		
0.50 0.60	D2 ES2			(0.70)		Firm brown slightly gravelly sandy CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.				
1.00 - 1.30 1.10	B2 D3			18.42	1.00		Firm brown mottled grey slightly sandy silty CLAY.			
1.70 1.70 - 2.00	B3 D4			17.82	1.60		Stiff orangish brown mottled brown slightly sandy silty CLAY, with rare fine to medium sand laminations.			2
2.20	D5	HV100(100)kPa	16.22	(1.60)				3		
2.70	D6									
3.20	D7	HV95(95)kPa		3.20		End of Trial Pit at 3.20m		4		
								5		
								6		
Dimensions:					General Remarks:					
Final Depth: 3.20m					1. Position machine excavated to 3.20mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.					
										
Inclination: °										
					Water Strikes					
					Strike (m)		Time (mins)	Rose to (m)	Remarks	
					HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015					

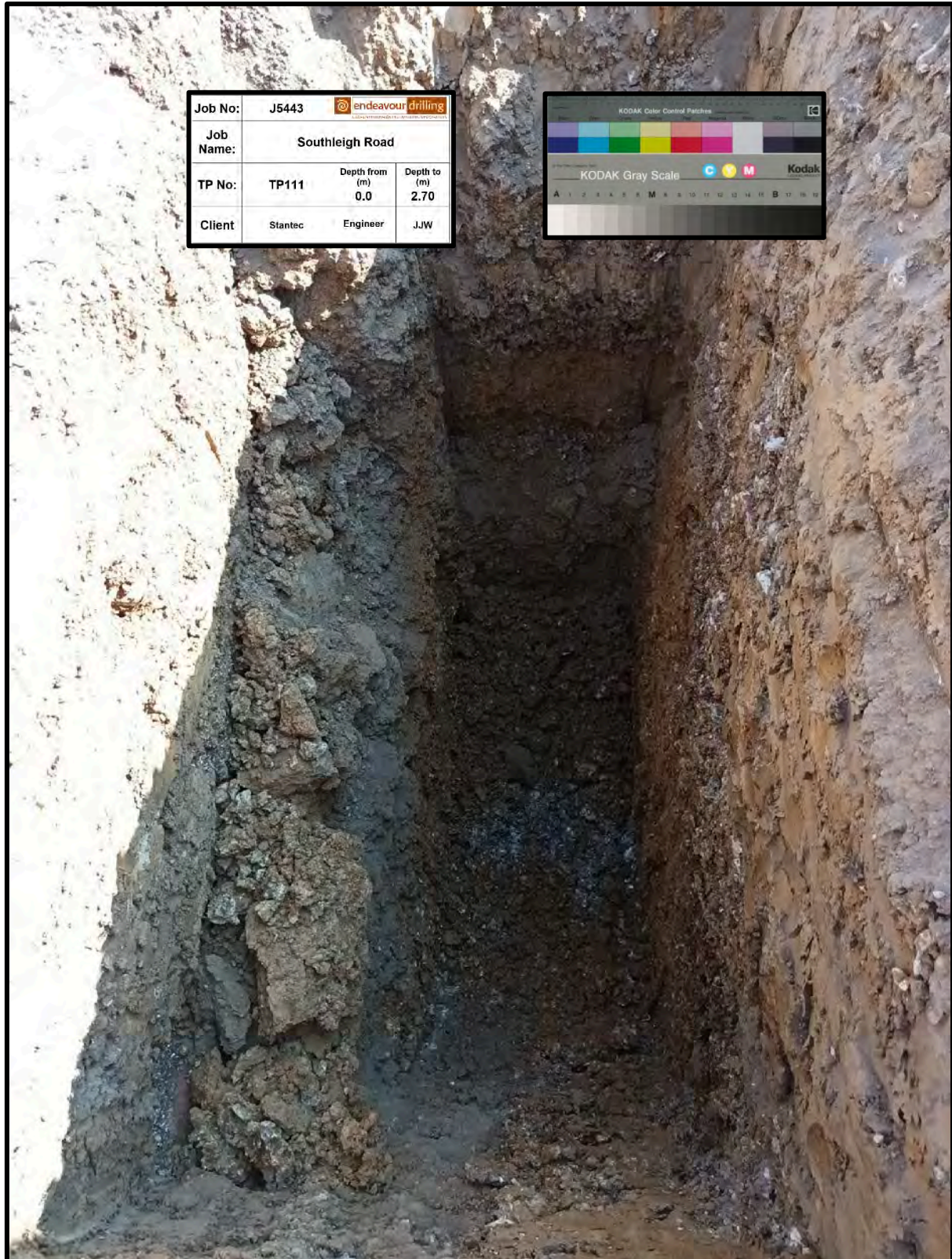


TP110 – 0.0mbgl to 3.20mbgl



TP110 – 0.0mbgl to 3.20mbgl

	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP111		
	Contract Number: J5443	Date Started: 29/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
	Easting: 473597.7		Northing: 107613.6		Ground Level: 20.30mOD	Plant Used: 8T Excavtor	Date Printed: 26/09/2023	Scale: 1:40	
Trial Pit Log				Weather: Sunny		Termination: Refusal due to excavator at limit of capability within ground conditions.		Stability: Stable	
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10 0.20 0.40 - 0.70 0.60	D1 ES1 B1 D2	HV55(55)kPa	20.00	(0.30) 0.30		TOPSOIL - Greyish brown slightly gravelly sandy clay, with occasional rootlets (<2mm, living). Gravel is fine to coarse sub-angular to sub-rounded of flint. Firm orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.	1		
1.00 1.00 1.30 - 1.60 1.50	D3 ES2 B2 D4			19.10					(0.90) 1.20
2.00 2.50	D5 D6	17.60	(1.50) 2.70			End of Trial Pit at 2.70m	3		
							5		
							6		
Dimensions:						General Remarks:			
Final Depth: 2.70m						1. Position machine excavated to 2.70mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.			
<div><div>← Length (m) →</div><div>2.50m</div><div><div>↑ Width (m) ↓</div><div>0.90m</div></div><div>Orientation: °</div><div>←</div></div>									
Inclination: °						Water Strikes			
						Strike (m)	Time (mins)	Rose to (m)	Remarks
HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015									

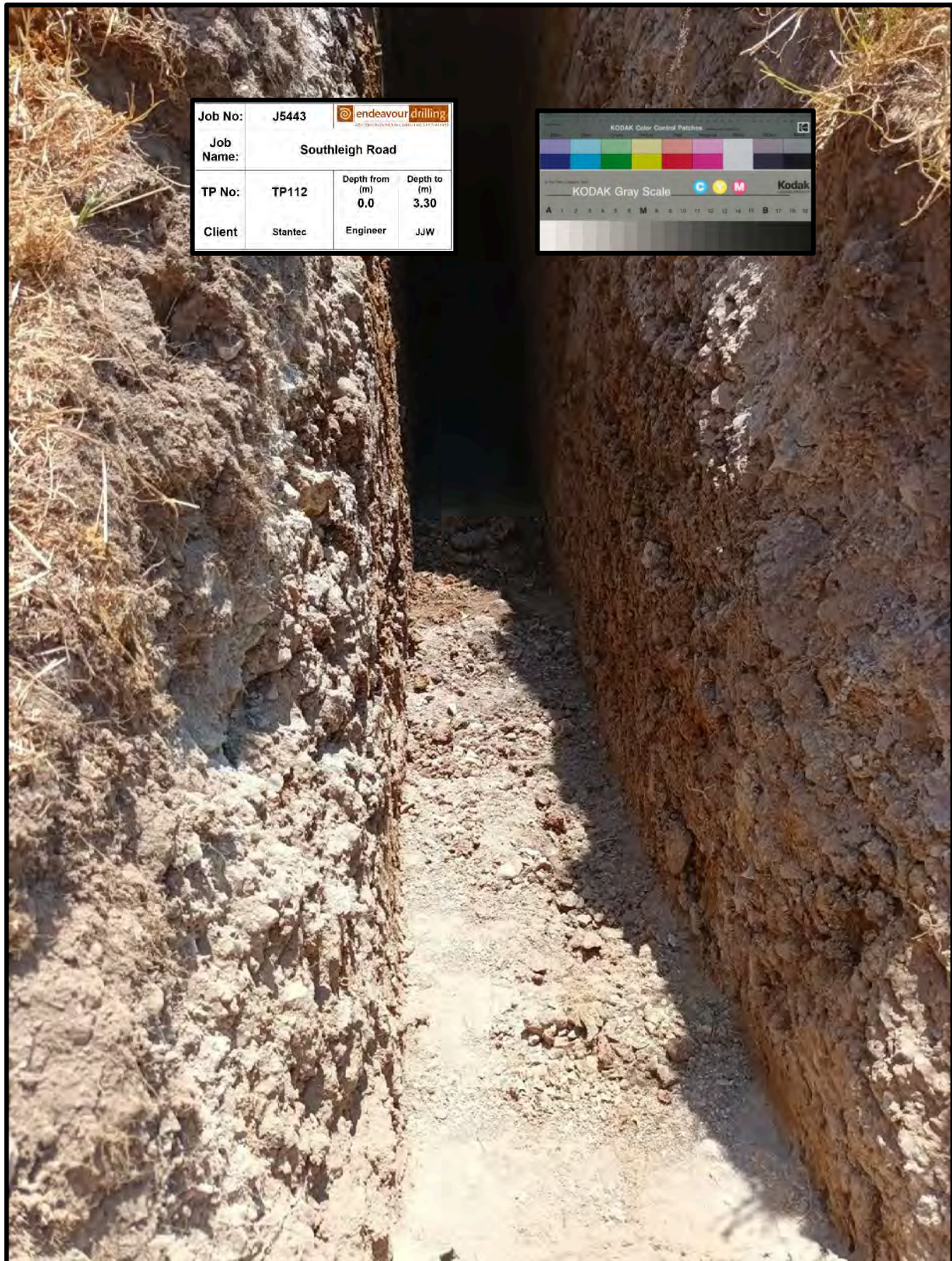


TP111 – 0.0mbgl to 2.70mbgl



TP111 – 0.0mbgl to 2.70mbgl

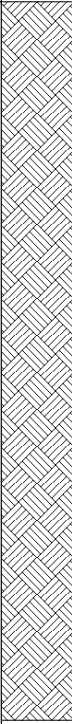
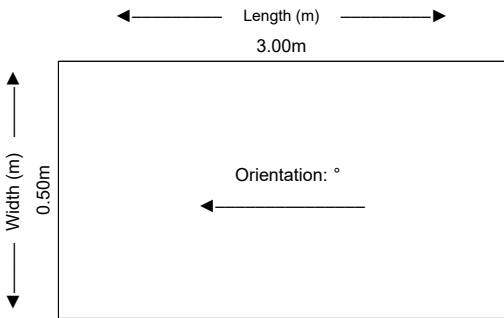
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP112		
	Contract Number: J5443	Date Started: 19/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
Trial Pit Log		Easting: 474088.5	Northing: 107524.5	Ground Level: 16.61mOD	Plant Used: 8T Excavtor	Date Printed: 26/09/2023	Scale: 1:40		
Weather: Sunny			Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable			
Samples & In Situ Testing				Strata Details				Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.20 0.20 0.30 - 0.70 0.40 0.50	D1 ES1 B1 ES2 D2	HV38(38)kPa	16.41	0.20 (0.60)		TOPSOIL - Dark greyish brown sandy clay, with occasional rootlets (<2mm, living).			
0.90 1.00 1.00 - 1.40	ES3 B2 D3		15.81	0.80 (0.60)		Brown mottled grey clayey silty sandy fine to coarse angular to subrounded GRAVEL of flint.			
1.50	D4		15.21	1.40		Soft to firm brown mottled grey slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular of flint.			
2.00	D5		14.01	2.60 (0.70)		Soft light brown slightly silty slightly sandy slightly gravelly CLAY, with occasional pockets of clayey fine to coarse sand. Gravel is fine to medium sub-angular to sub-rounded of flint.			
2.50	D6								
2.70 2.70 - 3.00	B3 D7								
3.20	D8		13.31	3.30	End of Trial Pit at 3.30m				
Dimensions:					General Remarks:				
Final Depth: 3.30m					1. Position machine excavated to 3.30mbgl. 2. Damp below 2.90mbgl. 3. Position backfilled with arisings and compacted upon completion.				
Inclination: °									
					Water Strikes				
					Strike (m)		Time (mins)	Rose to (m)	Remarks
					2.90		20	2.90	
					HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015				



TP112 – 0.0mbgl to 3.30mbgl

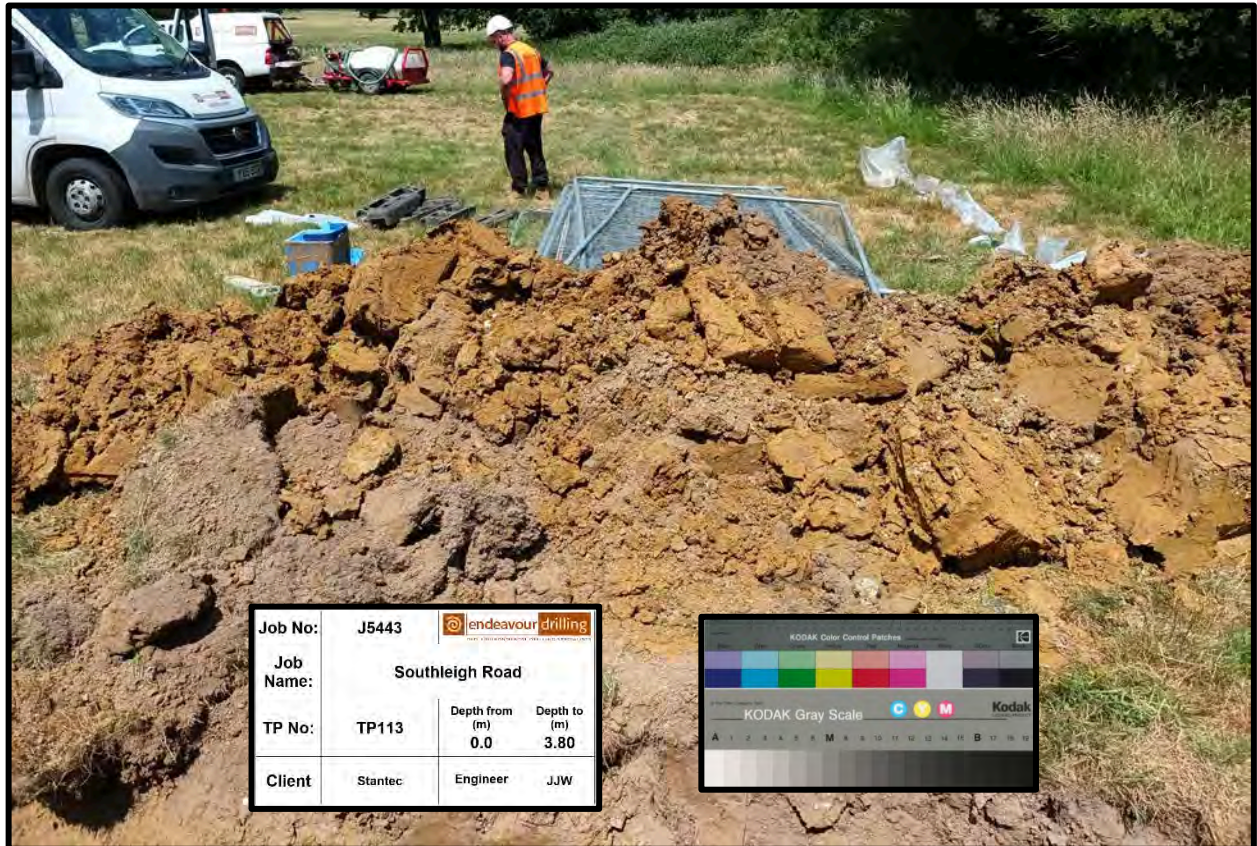


TP112 – 0.0mbgl to 3.30mbgl

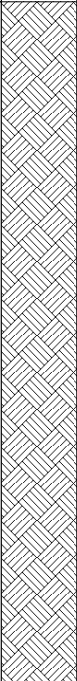
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP113		
	Contract Number: J5443	Date Started: 19/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
Trial Pit Log	Easting: 473840.8	Northing: 107298.8	Ground Level: 12.77mOD	Plant Used: 8T Excavtor	Date Printed: 26/09/2023	Scale: 1:40			
Weather: Sunny		Termination: Refusal due to excavator at limit of capability within ground conditions			Stability: Stable				
Samples & In Situ Testing			Strata Details				Water	Backfill	
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10 - 0.40 0.20 0.30	B1 ES1 D1		12.27	(0.50)		TOPSOIL - Greyish brown fine to coarse sandy clay, with occasional rootlets (<2mm, living).	1		
0.50 - 0.90 0.60 0.60	B2 D2 ES2			0.50		Soft brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint. ...very gravelly between 0.7m and 1.50mbgl			
1.00	D3								
1.50	D4				(2.20)				
2.00	D5								
2.50	D6	HV35(35)kPa	10.07	2.70		Soft brown mottled grey slightly sandy silty CLAY.	2		
2.80 - 3.20	D7			(0.90)			3		
3.30	D8	HV38(38)kPa	9.17	3.60		Firm grey and brown slightly sandy silty CLAY, with occasional thin laminations of clay.	4		
3.60 - 3.80 3.70	B4 D9	HV57(57)kPa		3.80	End of Trial Pit at 3.80m	5			
								6	
Dimensions:						General Remarks:			
Final Depth: 3.80m						1. Position machine excavated to 3.80mbgl. 2. Groundwater encountered at 3.80mbgl (slow infill, rising to 3.70mbgl). 3. Position backfilled with arisings and compacted upon completion.			
									
Inclination: °						Water Strikes			
						Strike (m)	Time (mins)	Rose to (m)	Remarks
						3.80	20	3.70	
						HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015			

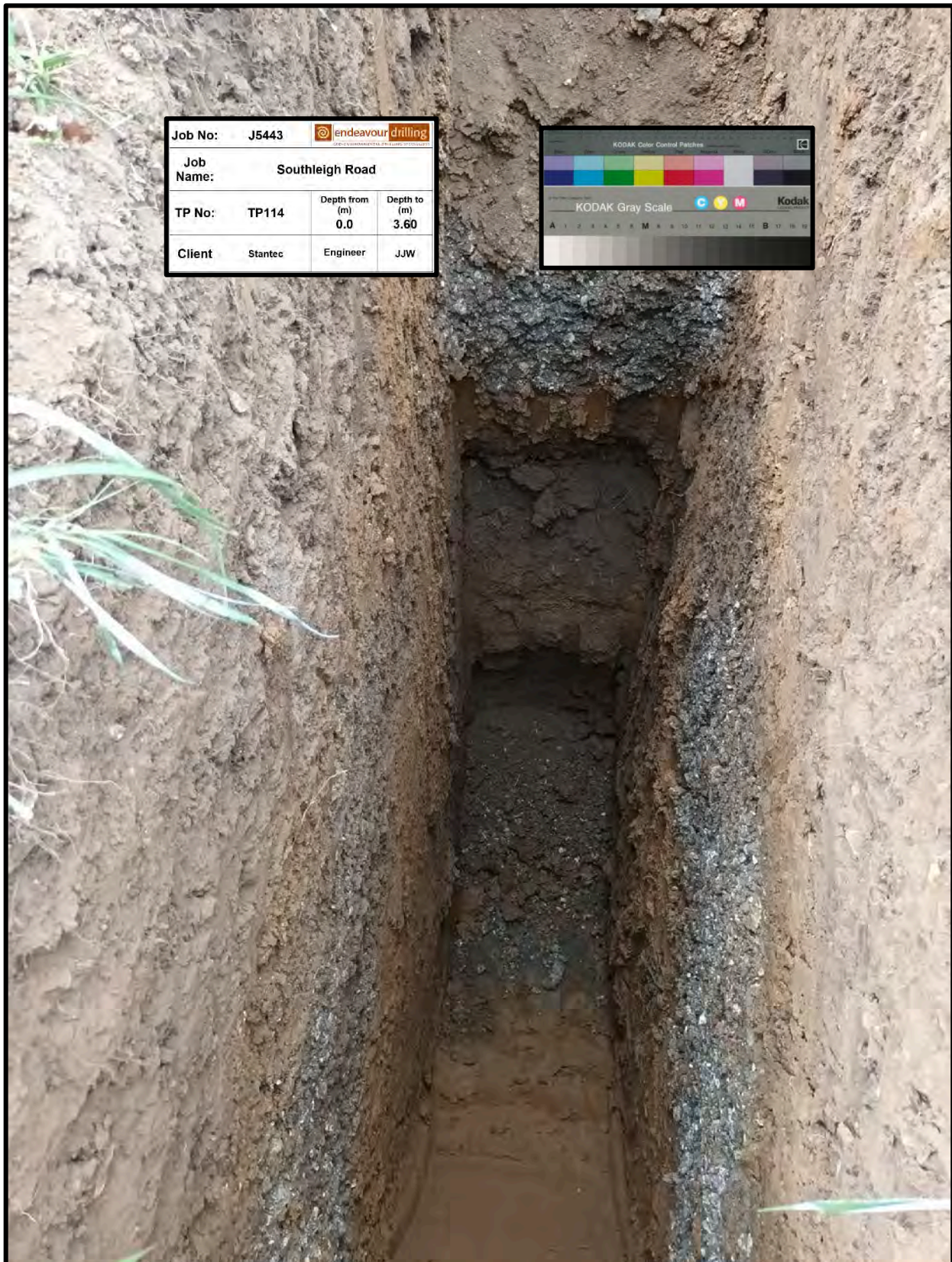


TP113 – 0.0mbgl to 3.80mbgl

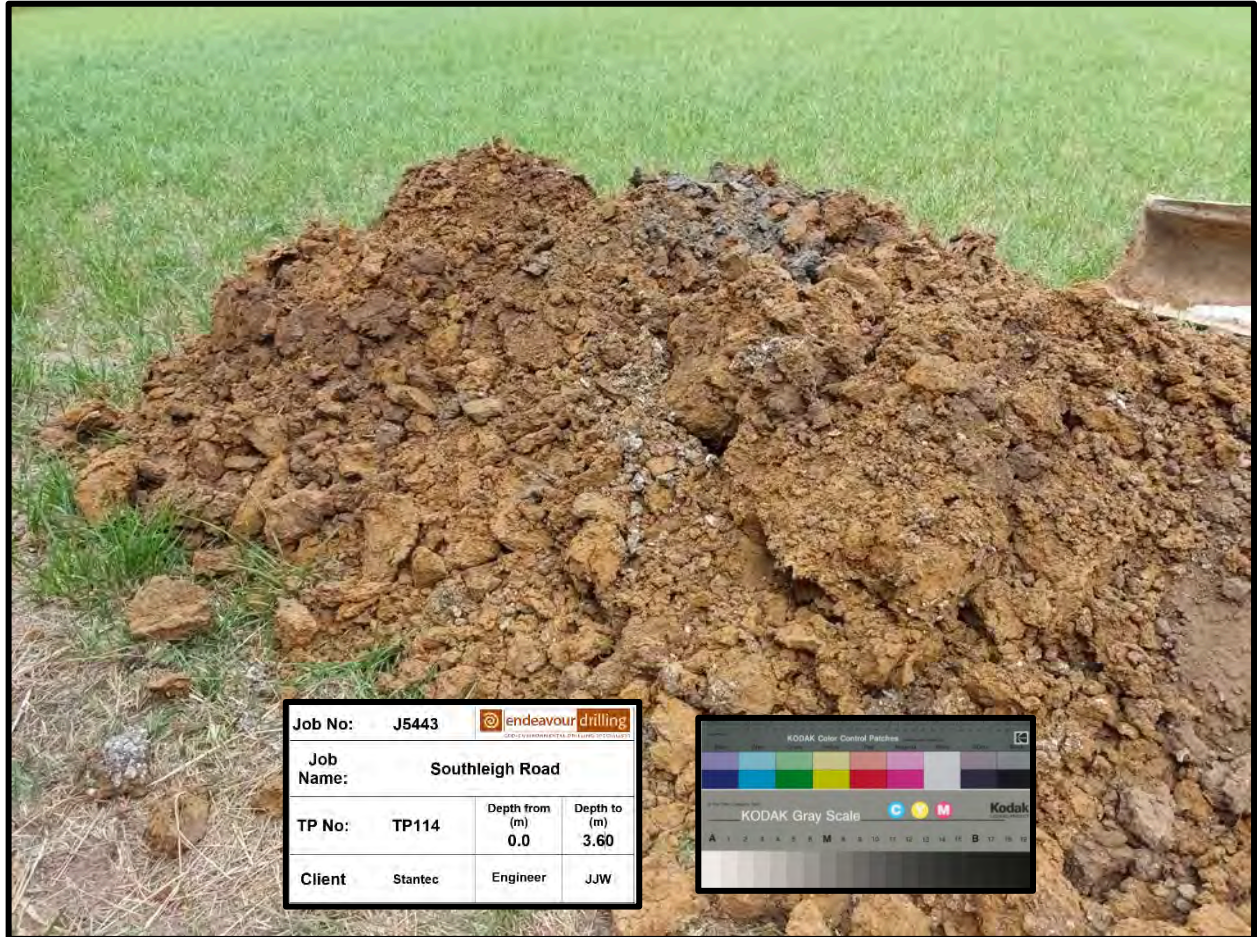


TP113 – 0.0mbgl to 3.80mbgl

	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP114									
	Contract Number: J5443	Date Started: 28/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1										
Trial Pit Log	Easting: 473894.6	Northing: 107229.2	Ground Level: 12.40mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40										
Weather: Sunny		Termination: Refusal due to excavator at limit of capability within ground conditions			Stability: Stable											
Samples & In Situ Testing			Strata Details					Water	Backfill							
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description										
0.20 0.30	ES1 D1	HV30(30)kPa	12.00	(0.40)		TOPSOIL - Greyish brown slightly gravelly sandy clay, with occasional rootlets (<2mm, living). Gravel is fine to medium sub-angular of flint.		1								
0.50 - 0.90	B1			0.40		Soft to firm brown slightly gravelly sandy CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.										
0.70 0.80	D2 ES2			(0.60)		Firm grey and brown slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.										
1.00 - 1.50	B2 D3			1.00												
1.10	D4			(0.80)												
1.60	D4	HV65(65)kPa	10.60	1.80		Soft orangish brown mottled grey slightly sandy silty CLAY, with occasional pockets of silty fine to coarse sand.		2								
1.90 1.90 - 2.30	B3 D5			(1.60)		Firm dark grey slightly sandy silty CLAY.		3								
2.40	D6			(1.60)												
2.90	D7			(1.60)		End of Trial Pit at 3.60m		4								
3.40 3.50 - 3.60 3.60	D8 B4 D9			9.00 8.80	3.40 3.60				5							
								6								
Dimensions:					General Remarks:											
Final Depth: 3.60m					1. Position machine excavated to 3.60mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.											
<div><div>← Length (m) →</div><div>2.50m</div><div><div>↑ Width (m) ↓</div><div>0.50m</div></div><div>Orientation: °</div><div>←</div></div>																
Inclination: °					Water Strikes											
					<table><tr><th>Strike (m)</th><th>Time (mins)</th><th>Rose to (m)</th><th>Remarks</th></tr><tr><td></td><td></td><td></td><td></td></tr></table>				Strike (m)	Time (mins)	Rose to (m)	Remarks				
Strike (m)	Time (mins)	Rose to (m)	Remarks													
HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015																

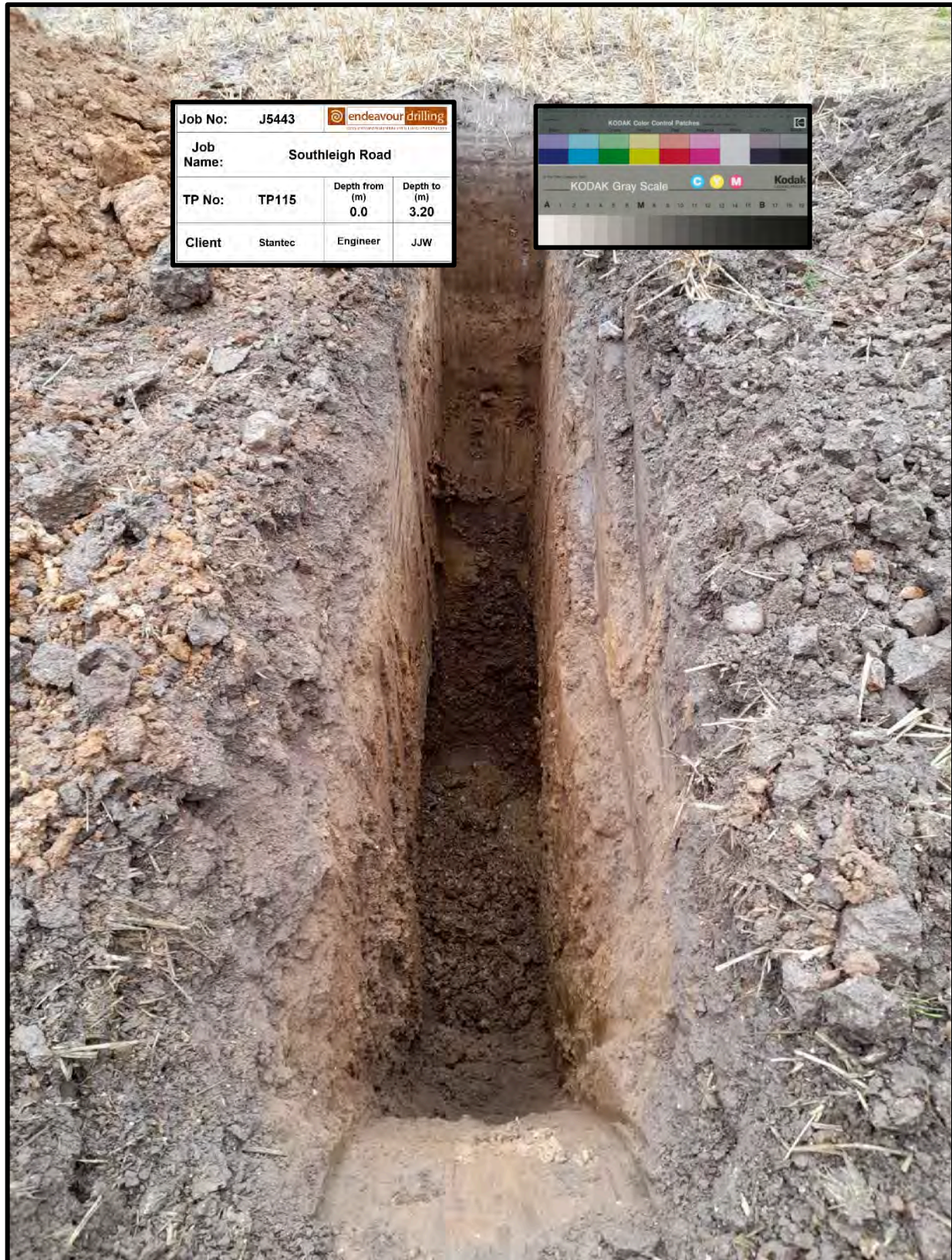


TP114 – 0.0mbgl to 3.60mbgl



TP114 – 0.0mbgl to 3.60mbgl

	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP115										
	Contract Number: J5443	Date Started: 31/07/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1											
	Easting: 473659.5	Northing: 107141.0	Ground Level: 13.03mOD	Plant Used: JCB 3CX	Date Printed: 26/09/2023	Scale: 1:40											
Trial Pit Log																	
Weather: Wet and overcast		Termination: Hole collapse			Stability: Stable between 0.0 and 2.0mbgl, unstable below 2.0mbgl												
Samples & In Situ Testing			Strata Details					Water	Backfill								
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description											
0.10	B1	HV12(12)kPa	12.83	0.20 (0.30)		TOPSOIL - Soft dark brown slightly gravelly slightly sandy slightly silty clay, with rootlets (<2mm diameter, live). Gravel is fine to coarse sub-angular to sub-rounded flint and brick. Very soft brown slightly sandy silty CLAY.	1										
0.10 - 0.20	D1																
0.10 - 0.20	ES1																
0.20 - 0.50	B2																
0.30	D2	HV18(18)kPa	12.53	0.50		Soft orange brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to sub-rounded.	2										
0.30 - 0.50	ES2																
0.50 - 0.80	B3																
0.60	D3																
1.10	D4	HV16(16)kPa	11.33	1.70		Firm slightly silty gravelly CLAY, locally clayey gravel. Gravel is fine to coarse sub-angular to sub-rounded flint.	3										
1.60	D5																
1.70 - 2.00	B4																
1.80	D6																
2.30	D7		9.83	3.20		... Damp below 2.2mbgl	4										
2.80	D8																
						End of Trial Pit at 3.20m	5										
							6										
Dimensions:						General Remarks:											
Final Depth: 3.20m						1. Position machine excavated to 3.40mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.											
<div><div>← Length (m) →</div><div>3.00m</div><div><div>↑ Width (m) ↓</div><div>0.45m</div></div><div>Orientation: °</div><div>←</div></div>						<div>Water Strikes</div> <table><tr><th>Strike (m)</th><th>Time (mins)</th><th>Rose to (m)</th><th>Remarks</th></tr><tr><td></td><td></td><td></td><td></td></tr></table>				Strike (m)	Time (mins)	Rose to (m)	Remarks				
Strike (m)	Time (mins)	Rose to (m)	Remarks														
Inclination: °						HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015											

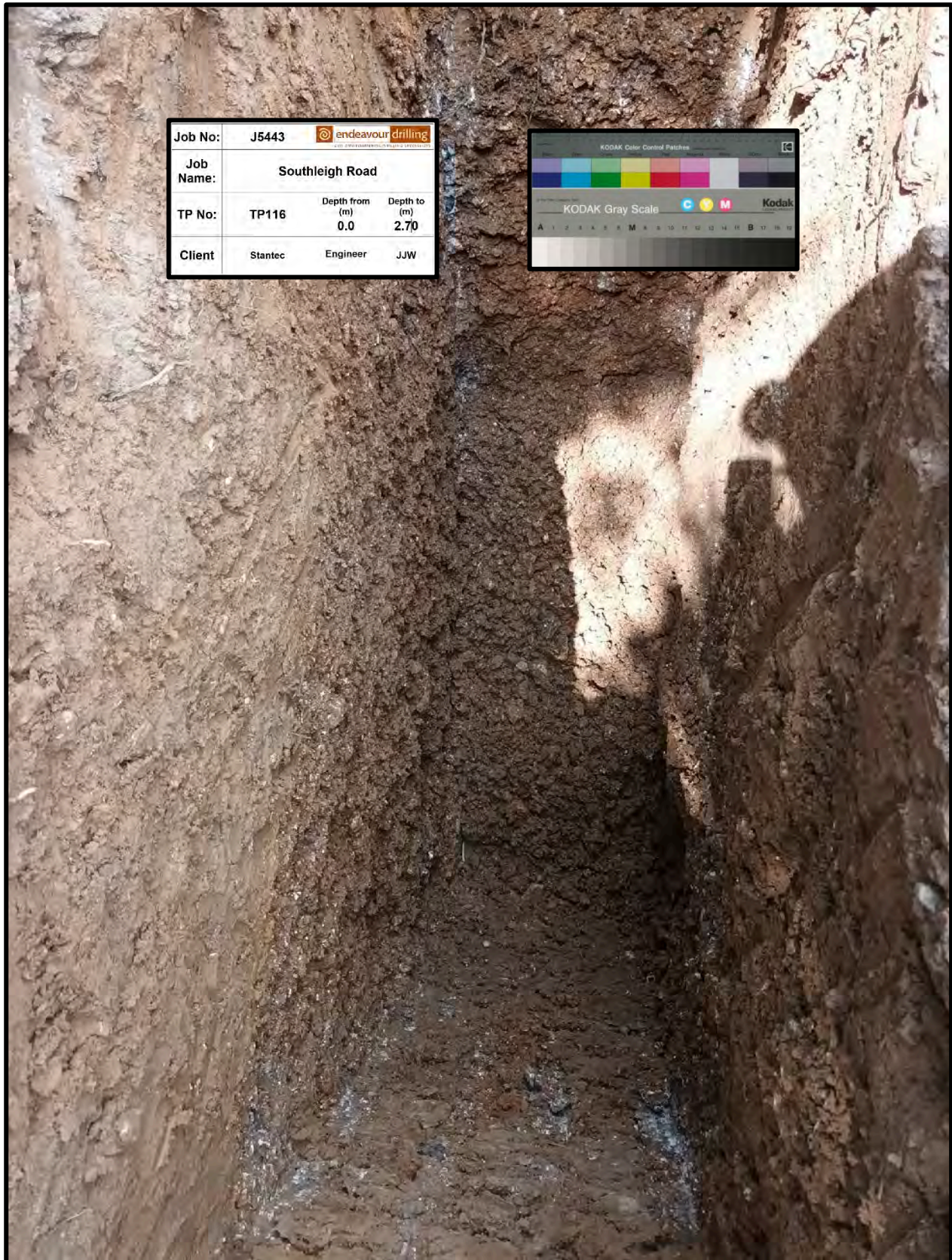


TP115 – 0.0mbgl to 3.20mbgl

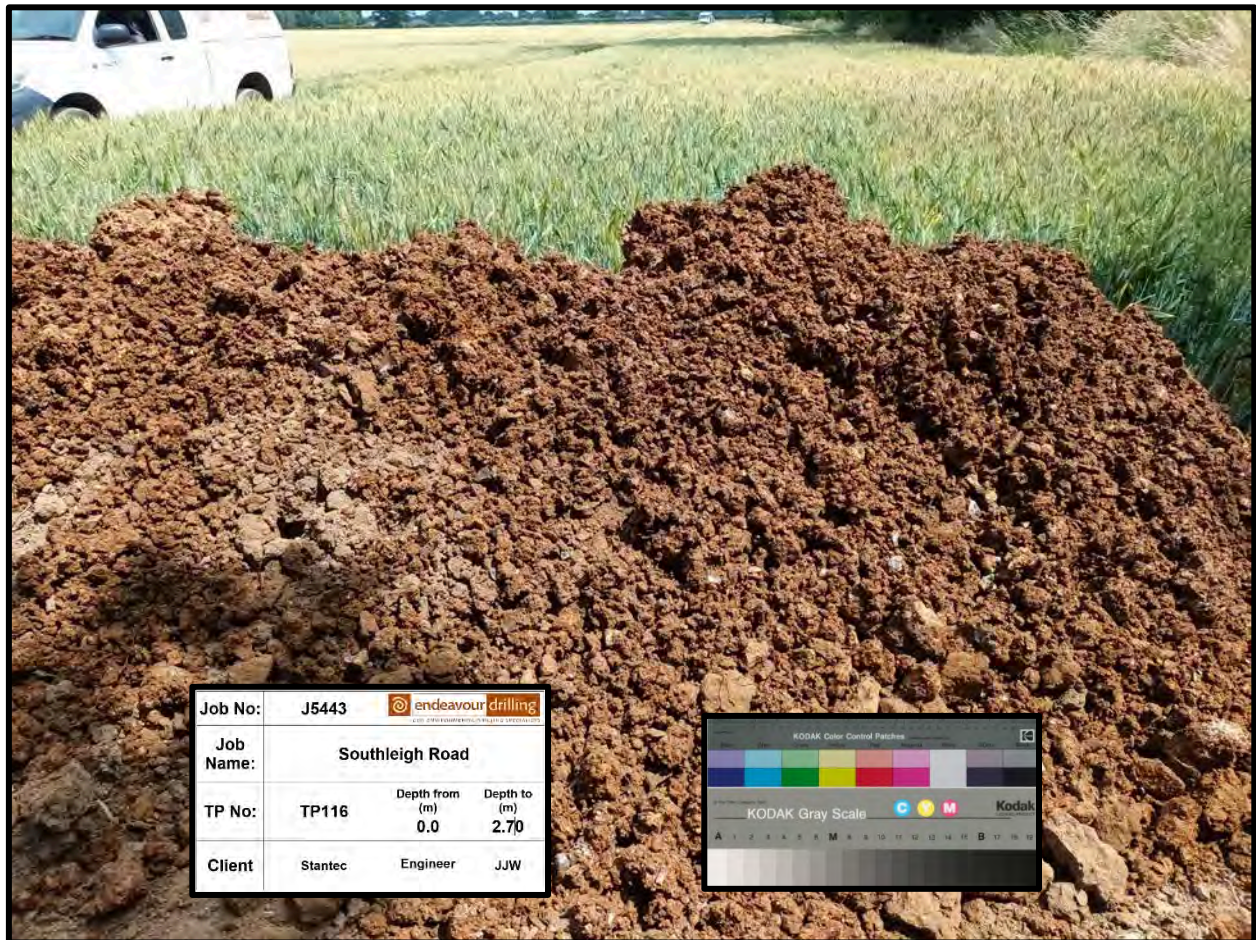


TP115 – 0.0mbgl to 3.20mbgl

[illegible]

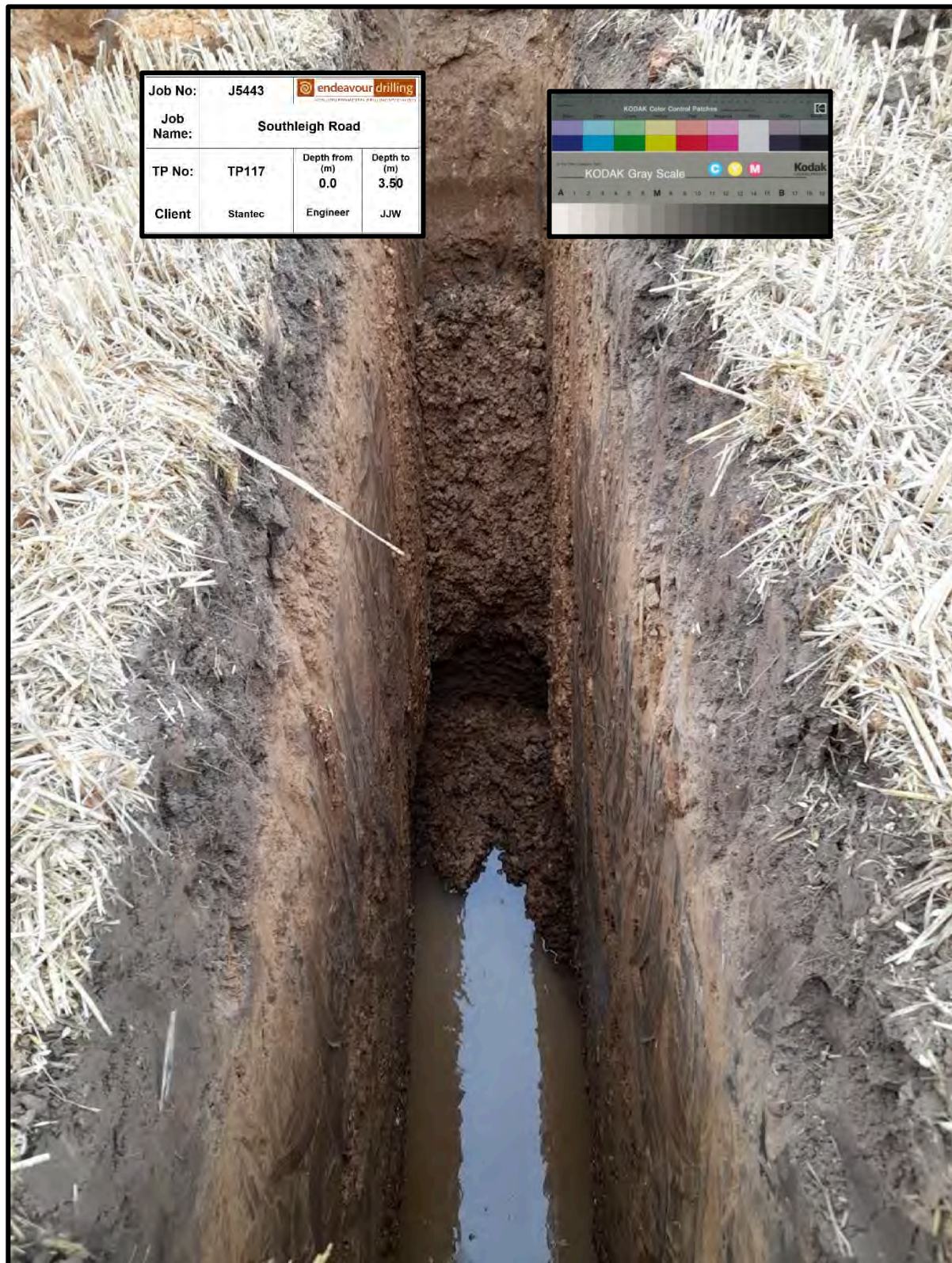


TP116 – 0.0mbgl to 2.70mbgl



TP116 – 0.0mbgl to 2.70mbgl

	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP117									
	Contract Number: J5443	Date Started: 31/07/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1										
	Easting: 473629.5	Northing: 106871.0	Ground Level: 12.86mOD	Plant Used: JCB 3CX	Date Printed: 26/09/2023	Scale: 1:40										
Weather: Wet and overcast		Termination: Hole collapse			Stability: Stable from 0.0 to 1.9mbgl, unstable below 1.9mbgl											
Samples & In Situ Testing			Strata Details					Water	Backfill							
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description										
0.10	B1	HV9(9)kPa	12.66	0.20		TOPSOIL - Soft brown slightly gravelly slightly sandy slightly silty clay, with rootlets (<2mm diameter, live). Gravel is fine to coarse sub-angular to sub-rounded flint and rare brick.	1									
0.10 - 0.20	D1			(0.30)		Soft brown slightly sandy silty CLAY, with rare rootlets (<2mm diameter, live).										
0.10 - 0.20	ES1			12.36	0.50					Very soft to soft brown slightly sandy silty CLAY.						
0.20 - 0.40	B2															
0.20 - 0.50	ES2															
0.30	D2	HV10(10)kPa	12.36	(1.20)		... Rare gravels of flint present below 1.5mbgl	2									
0.50 - 0.70	B3															
0.50 - 0.80	ES3															
0.60	D3															
1.20	D4															
1.70 - 2.00	B4	HV21(21)kPa	11.16	1.70		Firm light brown slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint.	3									
1.80	D5			(1.80)		... Locally off-white structureless chalk recovered as gravelly sandy SILT below 3.00mbgl. Gravel is fine to coarse sub-angular to sub-rounded flint										
2.30	D6															
2.80	D7															
3.30	D8															
		9.36	3.50				End of Trial Pit at 3.50m	4								
					5											
					6											
Dimensions:					General Remarks:											
Final Depth: 3.50m					1. Position machine excavated to 3.40mbgl. 2. Groundwater encountered at 2.6mbgl, rising to 2.5mbgl after 20 minutes monitoring. 3. Position backfilled with arisings and compacted upon completion.											
Inclination: °																
					Water Strikes											
					<table><tr><th>Strike (m)</th><th>Time (mins)</th><th>Rose to (m)</th><th>Remarks</th></tr><tr><td>2.60</td><td>20</td><td>2.50</td><td>Slow inflow.</td></tr></table>				Strike (m)	Time (mins)	Rose to (m)	Remarks	2.60	20	2.50	Slow inflow.
Strike (m)	Time (mins)	Rose to (m)	Remarks													
2.60	20	2.50	Slow inflow.													
					HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015											



TP117 – 0.0mbgl to 3.50mbgl

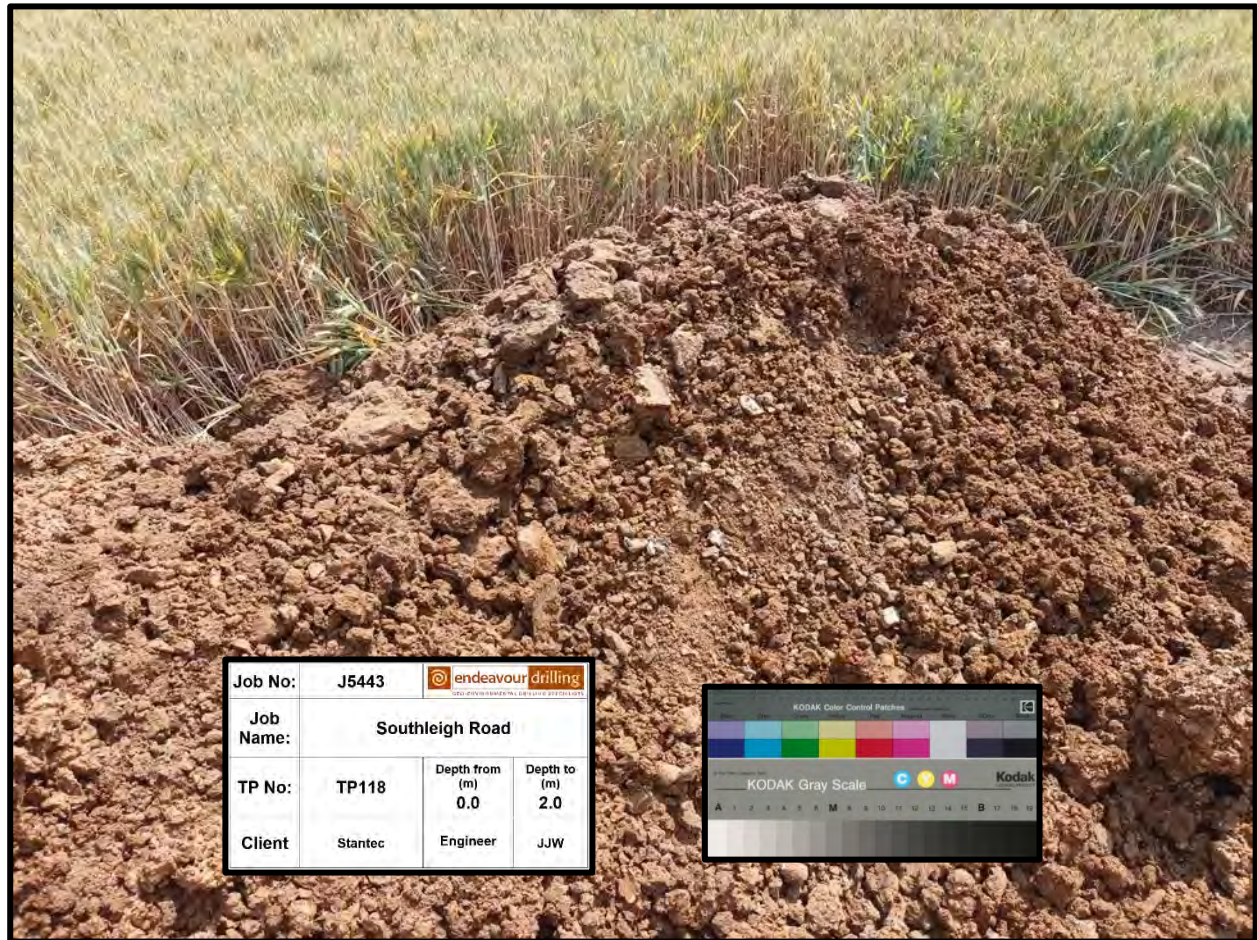


TP117 – 0.0mbgl to 3.50mbgl

	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd		Trial Pit ID: TP118										
	Contract Number: J5443	Date Started: 28/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1										
Trial Pit Log		Easting: 473583.2	Northing: 106589.1	Ground Level: 11.62mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40									
Weather: Sunny			Termination: Groundwater strike at 2.00mbgl		Stability: Stable											
Samples & In Situ Testing			Strata Details				Water	Backfill								
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description										
0.10	ES1		11.32	(0.30)		TOPSOIL - Greyish brown sandy clay, with frequent rootlets (<2mm, living).	1									
0.20	D1			0.30		Soft to firm light brown slightly gravelly sandy CLAY, with occasional rootlets (2mm, living). Gravel is fine to medium sub-angular of flint										
0.40 - 0.70	B1			(0.50)												
0.60	D2			0.80												
0.60	ES2			10.82	(1.20)				Brown mottled orangish brown and grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.							
0.90	B2															
0.90 - 1.20	D3															
1.50	D4		9.62	2.00		...pockets of fine to coarse brown sand below 1.70mbgl	2									
1.80 - 2.00	B3															
1.90	D5															
						End of Trial Pit at 2.00m	3									
							4									
							5									
							6									
Dimensions:						General Remarks:										
Final Depth: 2.00m						1. Position machine excavated to 2.00mbgl. 2. Groundwater encountered at 2.00mbgl (slow infill, rising to 1.90mbgl). 3. Position backfilled with arisings and compacted upon completion.										
<div><div>← Length (m) →</div><div>2.80m</div><div>↑ Width (m) ↓</div><div>0.50m</div><div>Orientation: °</div><div>←</div></div>						<div>Water Strikes</div> <table><tr><th>Strike (m)</th><th>Time (mins)</th><th>Rose to (m)</th><th>Remarks</th></tr><tr><td>2.00</td><td>20</td><td>1.90</td><td></td></tr></table>			Strike (m)	Time (mins)	Rose to (m)	Remarks	2.00	20	1.90	
Strike (m)	Time (mins)	Rose to (m)	Remarks													
2.00	20	1.90														
Inclination: °						HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015										



TP118 – 0.0mbgl to 2.0mbgl



TP118 – 0.0mbgl to 2.0mbgl

APPENDIX D

Infiltration Test Data

Project No.: J5443
 Site: Southleigh Rd
 Test Location: TP103 Test 1
 Date 29/06/23

Endeavour Drilling Ltd

Infiltration Test

Analysis using method as described in
 BRE Digest 365 and
 CIRIA Report C697-The SUDS Manual

test pit top dimensions width (m) length (m)
 0.5 2.2

test pit base dimensions 0.5 2.2

test pit depth 1.9 m

Infiltration rate (q) is very fast - unable to maintain head of water to complete test

depth to groundwater before adding water (m) = DRY

time (mins)	depth to water surface (m)	depth of water in pit (m)
0	1.8	0.1
0.5	1.9	0
1		1.9
1.5		1.9
2		1.9
2.5		1.9
3		1.9
3.5		1.9
4		1.9
5		1.9
6		1.9
8		1.9
10		1.9
15		1.9
20		1.9
25		1.9
30		1.9
40		1.9
50		1.9
60		1.9

From graph below:

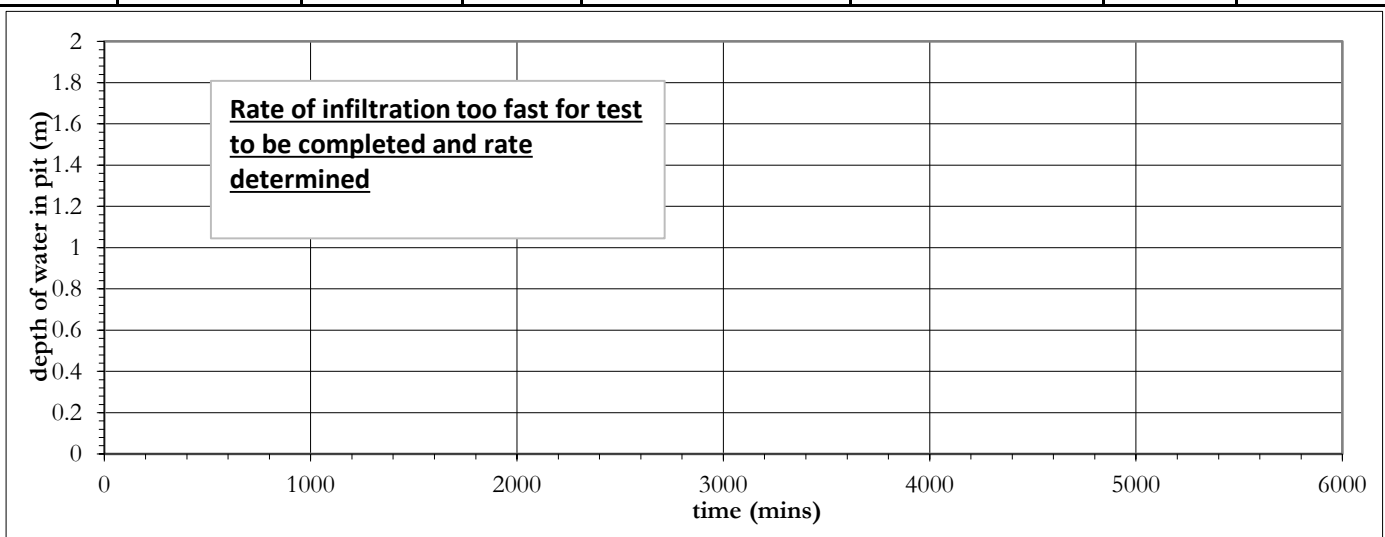
test start - 75% depth at

Unable to determine m water depth
 time is not determined

test end - 25% depth at

Unable to determine m water depth
 time is not determined

time (mins)	depth to water surface (m)	depth of water in pit (m)	time elapsed (mins)	volume of water lost (m3)	Area of walls and base at 50% drop (m2)	q (m/min)	q (m/h)



Project No.: J5443

Site: Southleigh Rd

Test Location: TP104 Test 1

Date 19/06/23

Endeavour Drilling Ltd

Infiltration Test

Analysis using method as described in
BRE Digest 365 and
CIRIA Report C697-The SUDS Manual

	width (m)	length (m)
test pit top dimensions	0.5	2
test pit base dimensions	0.5	2
test pit depth	2.8	m

Infiltration rate (q) is very low
depth to groundwater before adding water (m) = DRY

time (mins)	depth to water surface (m)	depth of water in pit (m)
0	1.74	1.06
0.5	1.75	1.05
1	1.75	1.05
1.5	1.75	1.05
2	1.74	1.06
2.5	1.74	1.06
3	1.74	1.06
3.5	1.74	1.06
4	1.74	1.06
5	1.74	1.06
6	1.74	1.06
8	1.74	1.06
10	1.74	1.06
15	1.74	1.06
20	1.74	1.06
25	1.74	1.06
30	1.74	1.06
40	1.74	1.06
50	1.74	1.06
60	1.73	1.07
90	1.73	1.07
120	1.73	1.07
150	1.73	1.07
180	1.73	1.07
210	1.73	1.07
240	1.73	1.07

From graph below:

test start - 75% depth at

Unable to determine m water depth

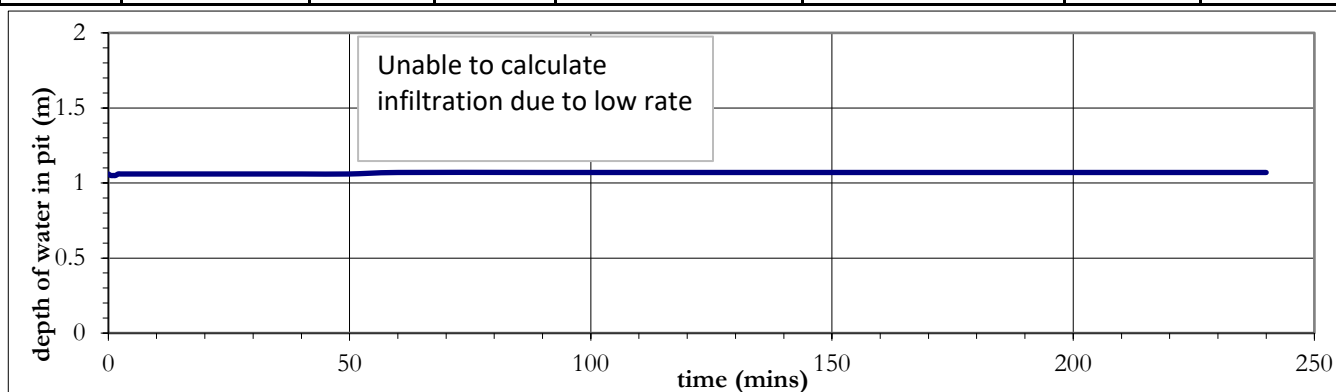
time is not determined

test end - 25% depth at

Unable to determine m water depth

time is not determined

time (mins)	depth to water surface (m)	depth of water in pit (m)	time elapsed (mins)	volume of water lost (m3)	Area of walls and base at 50% drop (m2)	q (m/min)	q (m/h)



Project No.: J5443

Site: Southleigh Rd

Test Location: TP106a Test 1

Date 27/06/23

Endeavour Drilling Ltd

Infiltration Test

Analysis using method as described in

BRE Digest 365 and

CIRIA Report C697-The SUDS

Manual

	width (m)	length (m)
test pit top dimensions	0.5	2
test pit base dimensions	0.5	2
test pit depth	2.3	m

infiltration rate (q) is very low

depth to groundwater before adding water (m) = DRY

time (mins)	depth to water surface (m)	depth of water in pit (m)
0	1.15	1.15
0.5	1.15	1.15
1	1.15	1.15
1.5	1.16	1.14
2	1.16	1.14
2.5	1.16	1.14
3	1.16	1.14
3.5	1.17	1.13
4	1.17	1.13
5	1.17	1.13
6	1.17	1.13
8	1.18	1.12
10	1.19	1.11
15	1.19	1.11
20	1.19	1.11
25	1.19	1.11
30	1.19	1.11
40	1.19	1.11
50	1.19	1.11
60	1.19	1.11
90	1.19	1.11

From graph below:

test start - 75% depth at

Unable to determine m water depth

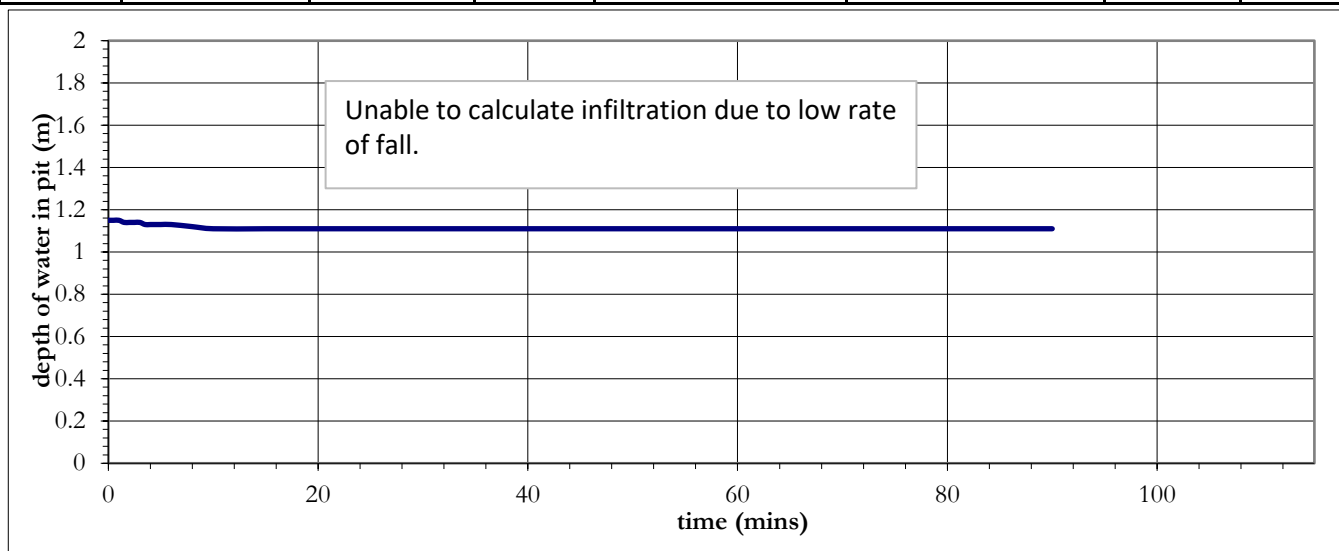
time is not determined

test end - 25% depth at

Unable to determine m water depth

time is not determined

time (mins)	depth to water surface (m)	depth of water in pit (m)	time elapsed (mins)	volume of water lost (m3)	Area of walls and base at 50% drop (m2)	q (m/min)	q (m/h)



APPENDIX E

SPT Hammer Calibration Certificates

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Southern Testing
Unit 11
Charlwoods Road
East Grinstead
West Sussex
RH19 2HU

SPT Hammer Ref: DT/0769
Test Date: 28/03/2023
Report Date: 28/03/2023
File Name: 0769.spt
Test Operator: BOB

Instrumented Rod Data

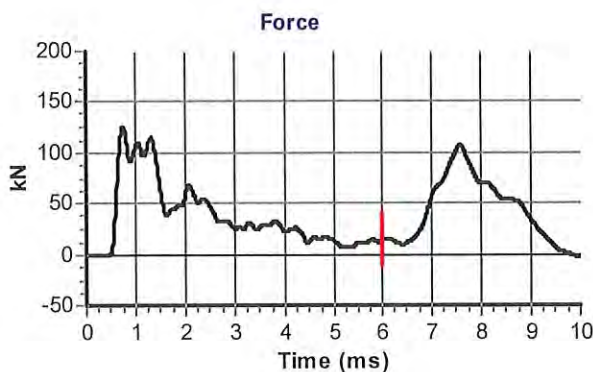
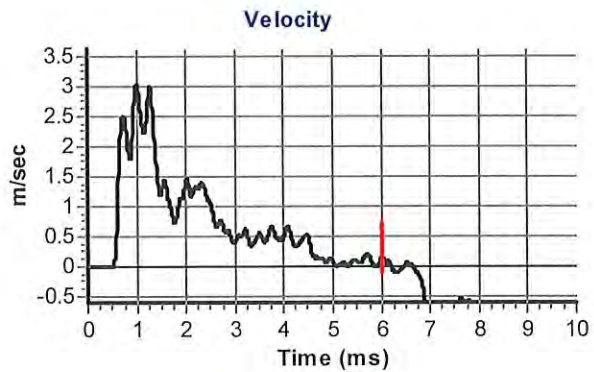
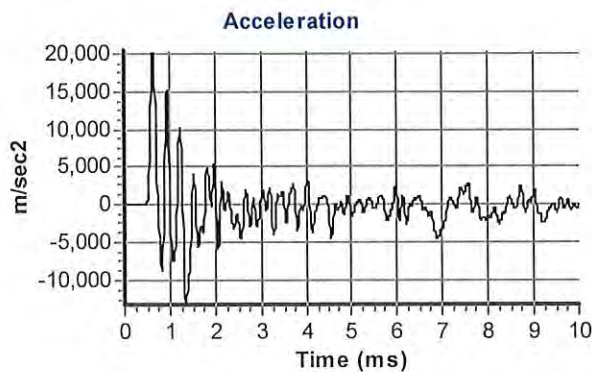
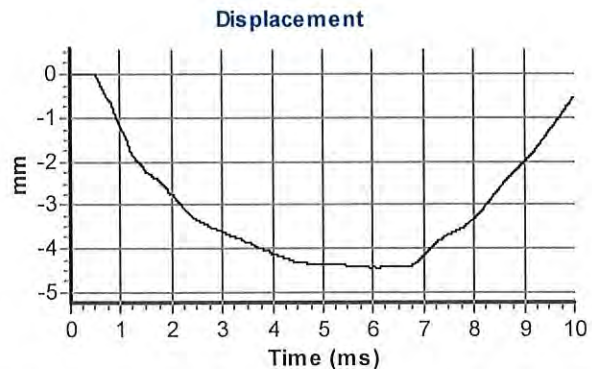
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.7
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 64786
Accelerometer No.2: 64789

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 14.7

Comments / Location

CHARLSWOOD



Calculations

Area of Rod A (mm^2): 996
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 310

Energy Ratio E_r (%): **66**

Signed: Bob

Title: Technician

The recommended calibration interval is 12 months

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Southern Testing
Unit 11
Charlwoods Road
East Grinstead
West Sussex
RH19 2HU

SPT Hammer Ref: DART488.
Test Date: 03/03/2023
Report Date: 03/03/2023
File Name: DART488..spt
Test Operator: RWS

Instrumented Rod Data

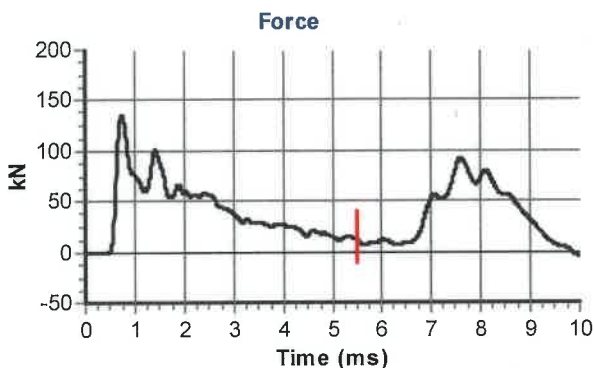
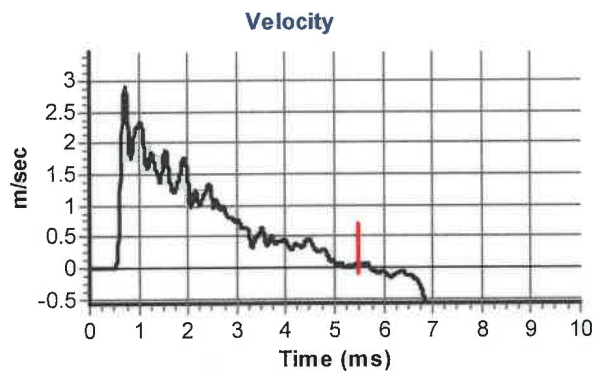
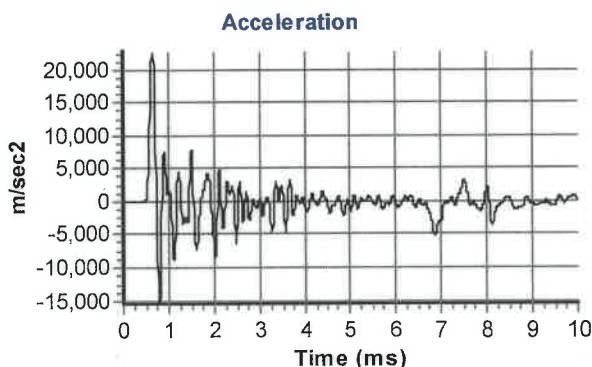
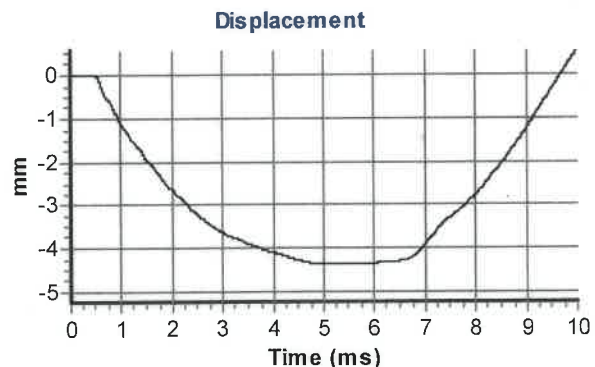
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.7
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 64786
Accelerometer No.2: 64789

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 14.7

Comments / Location

Southern Testing



Calculations

Area of Rod A (mm^2): 996
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 289

Energy Ratio E_r (%):

61

Signed: Bob Stewart
Title: Technician

The recommended calibration interval is 12 months

APPENDIX F

Groundwater Monitoring Results

Water Level Readings

Client: Stantec (UK) Ltd

Site: J5443 Southleigh Road, Havant

Date: 11th August 2023

Borehole No.	Install Depth (mbgl)	Dipped Depth (mbgl)	DATE	Water Level (mbgl)	Water Level (mAOD)
WS101	6.00	5.95	11.08.23	4.00	
WS103	4.00	4.00	11.08.23	2.30	
WS104	3.00	2.91	11.08.23	2.91	
WS105	1.80	1.80	11.08.23	1.05	
WS106	4.00	3.36	11.08.23	2.50	
WS107	3.50	3.23	11.08.23	1.97	

APPENDIX G

Geotechnical Laboratory Results

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 21/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client - MR

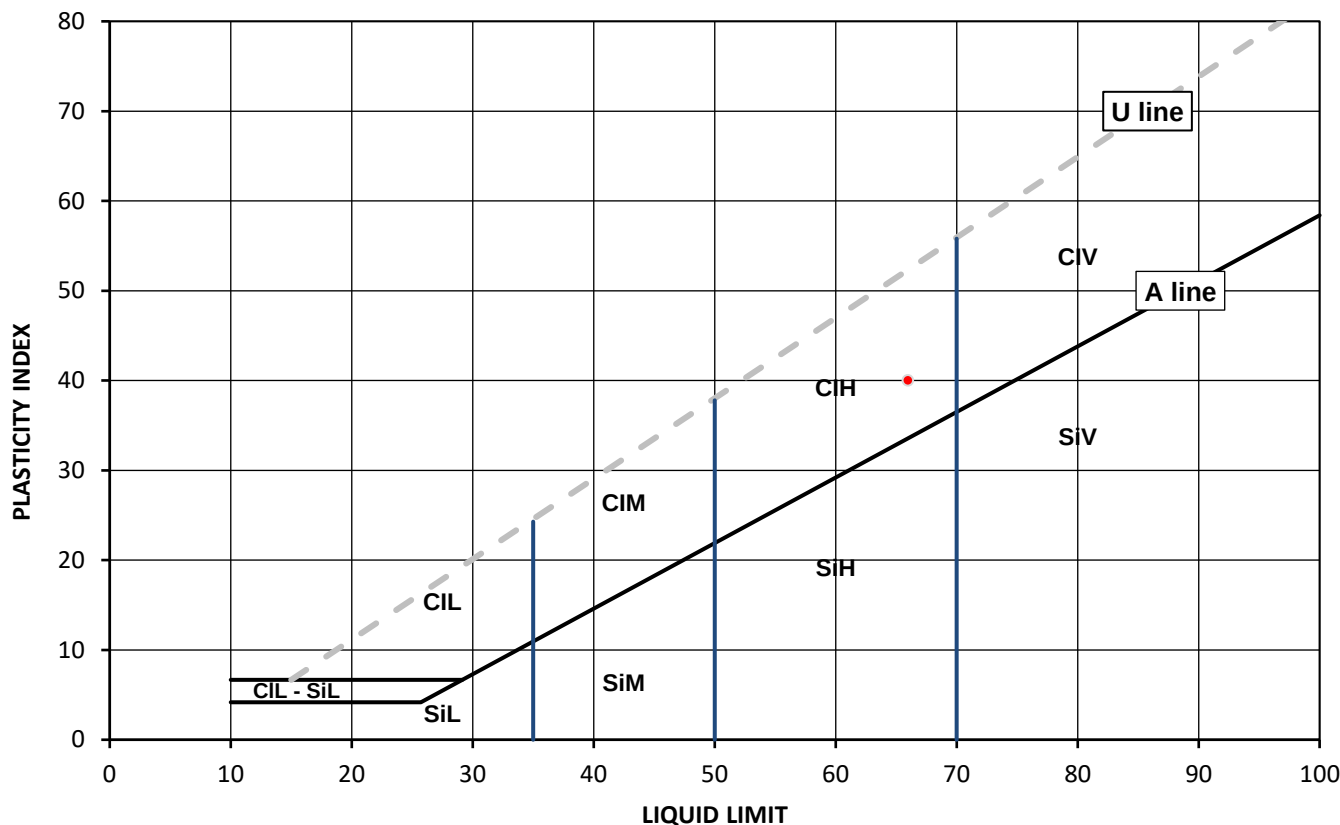
Test Results:

Laboratory Reference: 2783673
Hole No.: WS101
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly CLAY

Depth Top [m]: 2.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
24	66	26	40	99



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl Clay	L Low	below 35
Si Silt	M Medium	35 to 50
	H High	50 to 70
	V Very high	exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client - MR

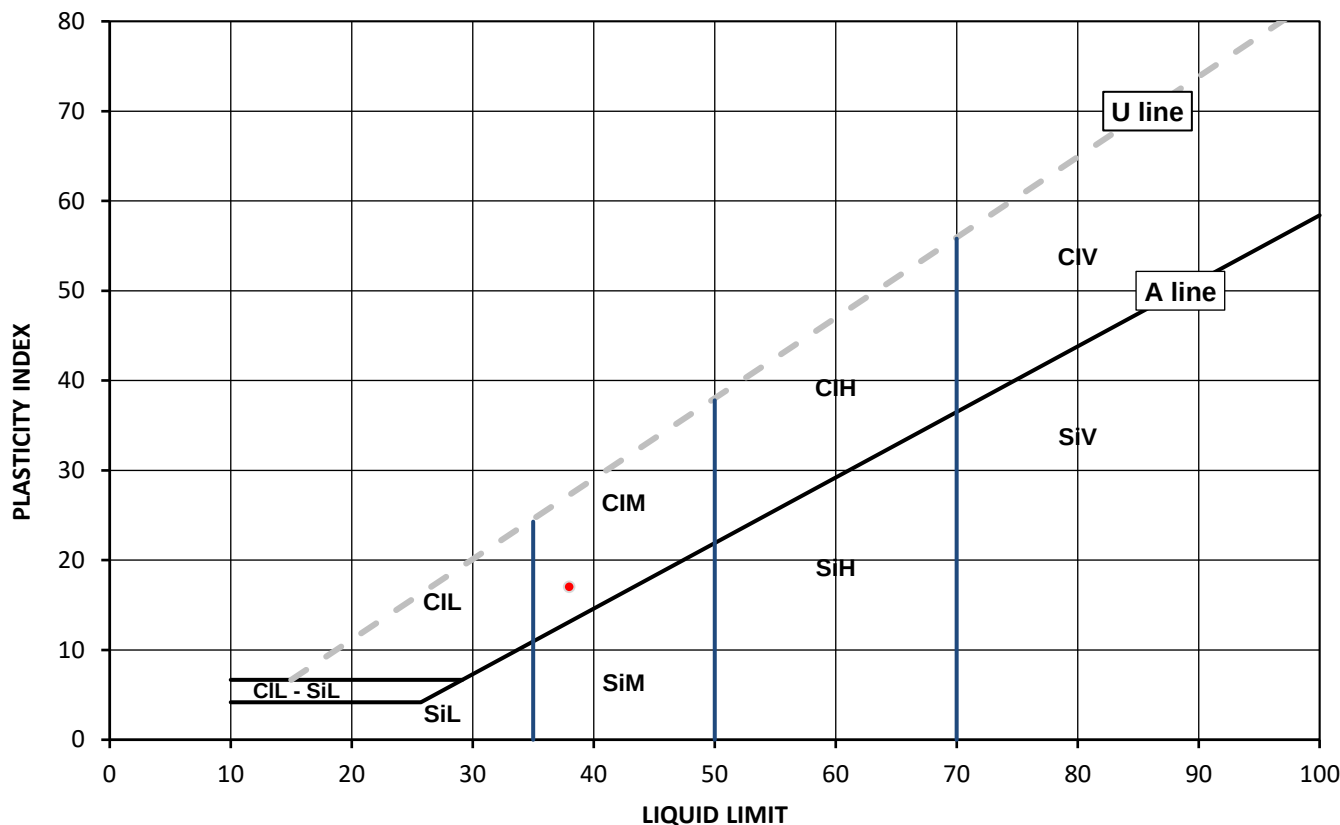
Test Results:

Laboratory Reference: 2783674
Hole No.: WS102
Sample Reference: Not Given
Sample Description: Brown slightly gravelly sandy CLAY

Depth Top [m]: 1.30
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
17	38	21	17	80



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl Clay	L Low	below 35
Si Silt	M Medium	35 to 50
	H High	50 to 70
	V Very high	exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.3 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 26/06/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client - MR

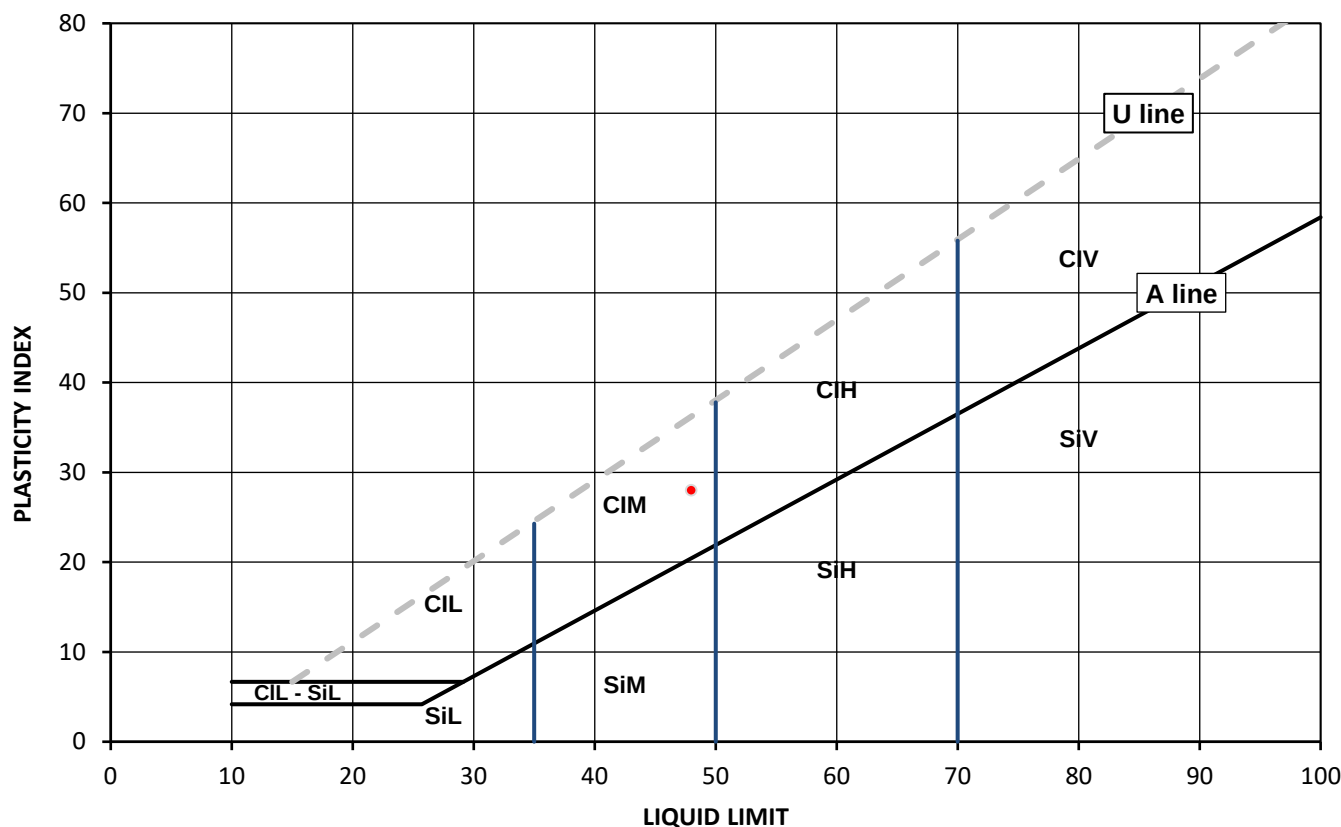
Test Results:

Laboratory Reference: 2783675
Hole No.: WS103
Sample Reference: Not Given
Sample Description: Orangish brown gravelly slightly sandy CLAY

Depth Top [m]: 1.30
Depth Base [m]: 1.70
Sample Type: B

Sample Preparation: Tested after washing to remove >425um

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
12	48	20	28	49



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
		50 to 70
		exceeding 70
		append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.3 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 21/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client - MR

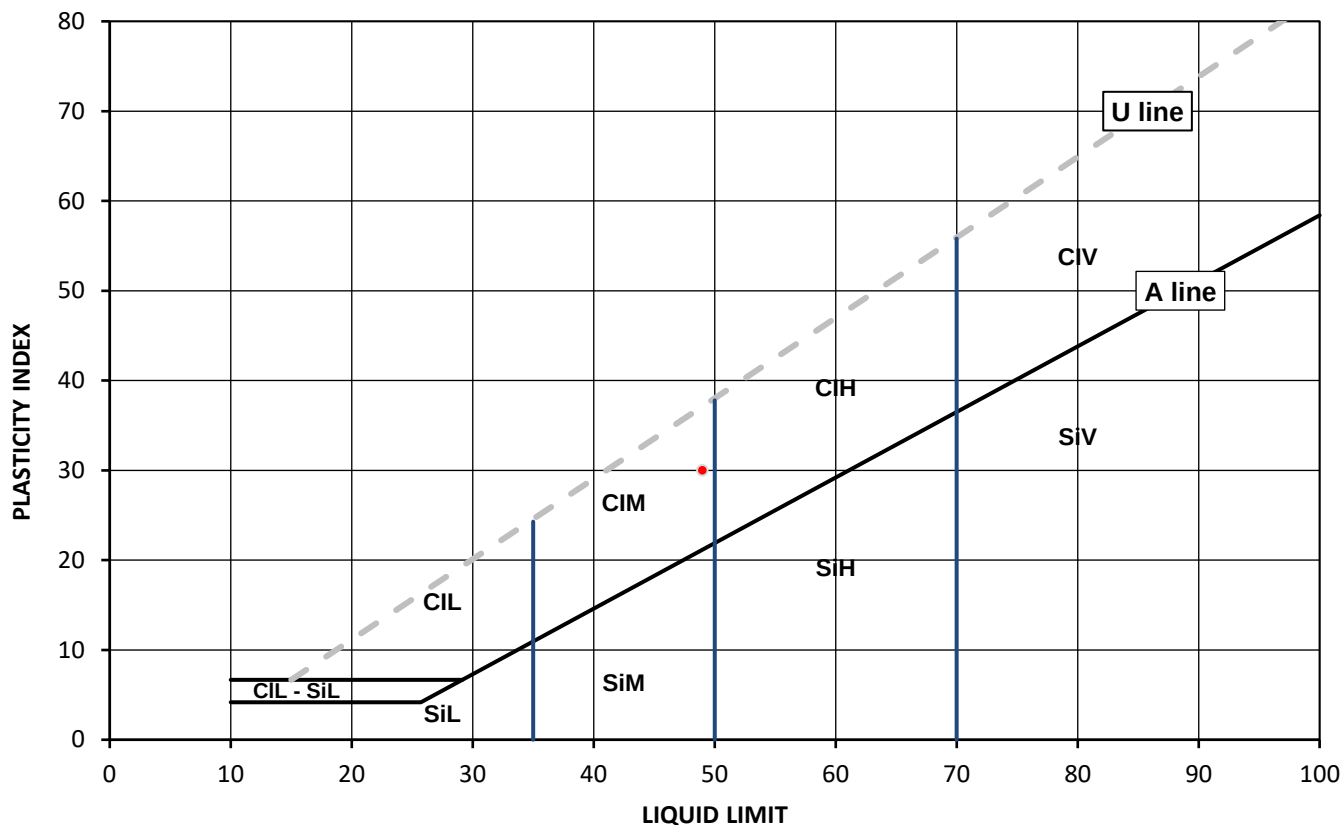
Test Results:

Laboratory Reference: 2783676
Hole No.: WS104
Sample Reference: Not Given
Sample Description: Yellowish brown slightly sandy CLAY

Depth Top [m]: 1.70
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
22	49	19	30	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
		50 to 70
		exceeding 70
		append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

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Reporting Specialist
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Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client - MR

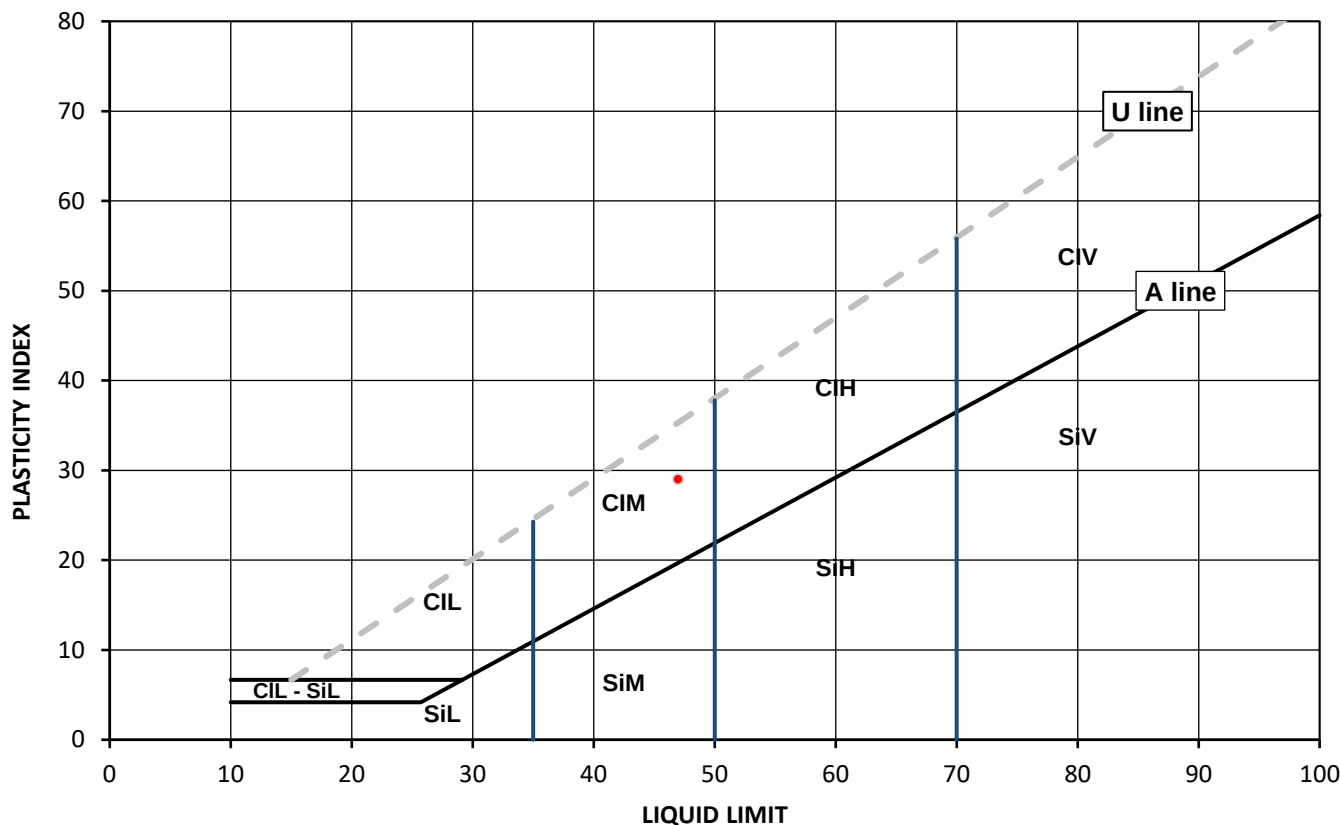
Test Results:

Laboratory Reference: 2783677
Hole No.: WS107
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly slightly sandy CLAY

Depth Top [m]: 1.40
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
16	47	18	29	97



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl Clay	L Low	below 35
Si Silt	M Medium	35 to 50
	H High	50 to 70
	V Very high	exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.3 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

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Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 27/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client - MR

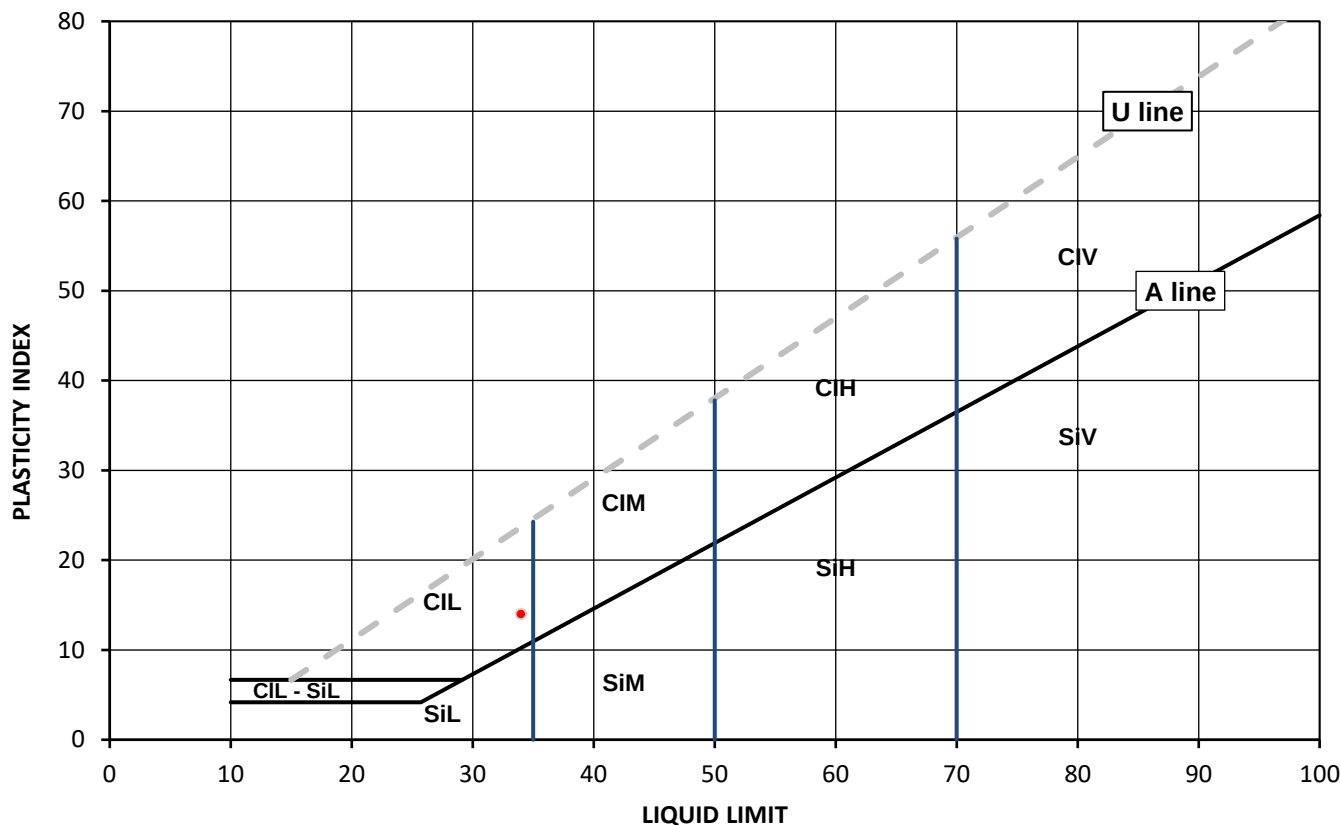
Test Results:

Laboratory Reference: 2783678
Hole No.: WS108
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly very sandy CLAY

Depth Top [m]: 1.70
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
26	34	20	14	97



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

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Reporting Specialist
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.3 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client - MR

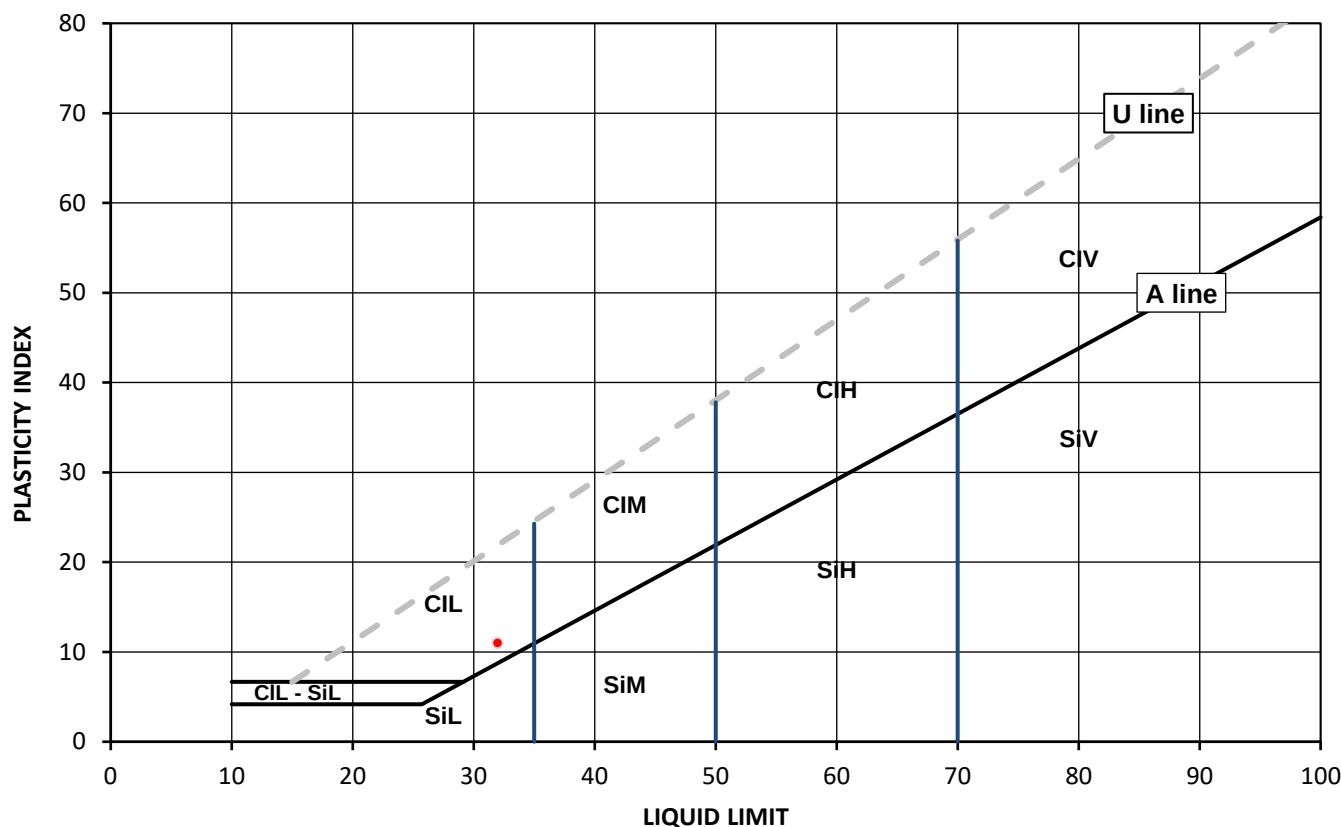
Test Results:

Laboratory Reference: 2783679
Hole No.: WS109
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly very sandy CLAY

Depth Top [m]: 2.00
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
24	32	21	11	99



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	L Low below 35
Si	Silt	M Medium 35 to 50
		H High 50 to 70
		V Very high exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Katarzyna Koziel

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SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road

Water Content by BS 1377-2:1990: Clause 3.2 Atterberg by BS 1377-2: 1990:
Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 21/06 - 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08 - 23/08/2023
Sampled By: Client - MR

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [W] %	Water Content BS EN ISO 17892-1 [W] %	Atterberg				Density			Total Porosity# %		
		Reference	Depth Top m	Depth Base m	Type					% Passing 425um	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD Mg/m3			
2783673	WS101	Not Given	2.50	Not Given	D	Yellowish brown slightly gravelly CLAY	Atterberg 4 Point	24		99	66	26	40						
2783674	WS102	Not Given	1.30	Not Given	D	Brown slightly gravelly sandy CLAY	Atterberg 4 Point	17		80	38	21	17						
2783675	WS103	Not Given	1.30	1.70	B	Orangish brown gravelly slightly sandy CLAY	Atterberg 4 Point	12		49	48	20	28						
2783676	WS104	Not Given	1.70	Not Given	D	Yellowish brown slightly sandy CLAY	Atterberg 4 Point	22		100	49	19	30						
2783677	WS107	Not Given	1.40	Not Given	D	Yellowish brown slightly gravelly slightly sandy CLAY	Atterberg 4 Point	16		97	47	18	29						
2783678	WS108	Not Given	1.70	Not Given	D	Yellowish brown slightly gravelly very sandy CLAY	Atterberg 4 Point	26		97	34	20	14						
2783679	WS109	Not Given	2.00	Not Given	D	Yellowish brown slightly gravelly very sandy CLAY	Atterberg 4 Point	24		99	32	21	11						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

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SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS 1377-2: 1990: Clause 3.2

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

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Date Sampled: 21/06 - 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08 - 23/08/2023
Sampled By: Client - MR

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC	Sample preparation / Oven temperature at the time of testing			
		Reference	Depth Top m	Depth Base m	Type							
2783673	WS101	Not Given	2.50	Not Given	D	Yellowish brown slightly gravelly CLAY		24	Sample was quartered, oven dried at 106.2 °C			
2783674	WS102	Not Given	1.30	Not Given	D	Brown slightly gravelly sandy CLAY		17	Sample was quartered, oven dried at 108.1 °C			
2783675	WS103	Not Given	1.30	1.70	B	Orangish brown gravelly slightly sandy CLAY		12	Sample was quartered, oven dried at 108.1 °C			
2783676	WS104	Not Given	1.70	Not Given	D	Yellowish brown slightly sandy CLAY		22	Sample was quartered, oven dried at 108.1 °C			
2783677	WS107	Not Given	1.40	Not Given	D	Yellowish brown slightly gravelly slightly sandy CLAY		16	Sample was quartered, oven dried at 106.2 °C			
2783678	WS108	Not Given	1.70	Not Given	D	Yellowish brown slightly gravelly very sandy CLAY		26	Sample was quartered, oven dried at 108.1 °C			
2783679	WS109	Not Given	2.00	Not Given	D	Yellowish brown slightly gravelly very sandy CLAY		24	Sample was quartered, oven dried at 108.1 °C			

Comments:

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