

2 SITE DESCRIPTION

2.1 Location and Topography

The site is located approximately 1.5km North of Burgess Hill Town Centre in West Sussex (see Site Location Map in Appendix A). The British National Grid Reference (NGR) of the site is centred on NGR TQ310209.

The site consists of a series of undeveloped arable farm field. The site is approximately 250 m east to west and by 500 m north to south (covering a total area of approximately 3 hectares) in size. The location from the southern extent (TP206) to the north (BH201) create an “S” bend across the fields.

The site is accessed from Issacs Lane (A273) at the eastern edge of the site (locally known as the Haywards Heath Road), through Woodfield Farm Offices. Access to the locations were limited to the edges of fields and the shortest route across the field, to limit any damage to the crops, as requested by the Tennant farmer.

At the time of investigation, the fields were planted with grass for silage. A number of mature deciduous trees were present along field boundaries. The site gently rises from the south to north, with approximate levels ranging from 20.50 m to 28 m Above Ordnance Datum (AOD).

The immediate surrounding area generally consists of farmland to the north and west. To the south east of the site a former sewage treatment works is currently being redeveloped. To the east of site is the River Adur, with the main Freeks Farm site beyond. Residential properties at the northern extent of Burgess Gill are located to the south of the site. For the site area, please see Exploratory Hole Location Plan in Appendix A.

Three of the locations (BH104, TP201 & WS119) were located on the eastern side of the River Adur, within the main Freeks Farm site. This area is a small field surrounded by ancient woodland on the south, east and west, and the river on the north. Access to this area was from the Freeks Farm fields.

2.2 Geology

Information on the geology of the site was obtained from the following sources published by the British Geological Survey (BGS):

- BGS map (sheet 318 & 333 scale 1:50,000, published 2006).
- The BGS digital geology map, which utilises the most up to date names for geological units (www.bgs.ac.uk/data).
- The BGS Lexicon of Named Rock Units, which provides typical descriptions for most geological units (www.bgs.ac.uk/lexicon).

The site is shown to be underlain by the following descending sequence of strata:

TABLE 1 : SUMMARY OF EXPECTED SITE GEOLOGY	
Geological Unit Name	Description
ANTHROPOGENIC GROUND	
Artificial Ground	No artificial ground is shown on the map
SUPERFICIAL / DRIFT DEPOSITS	
Alluvium	Clays, Silts, Sands & Gravels locally deposited in environments dominated by Rivers. Quaternary in age (up to 2 million years ago) This includes the Northern extent of the site around the River Adur
SOLID GEOLOGY	
Weald Clay Formation	Mudstone – Sedimentary Bedrock, formed in Cretaceous Period (126 to 134 million years ago). Local environment previously dominated by swamps estuaries and deltas. “Dark grey thinly bedded mudstones (shales) and mudstone with subordinate siltstones, fine to medium grained sandstones, including calcareous sandstone, shelly limestones and clay ironstones.”
Weald Clay Formation (bands up to 75m wide to North & South of site)	Clay – Ironstone, formed in Cretaceous Period (126 to 134 million years ago). Local environment previously dominated by swamps estuaries and deltas
Horsham Stone Member (bands up to 150m wide to Northern extent of site)	Sandstone, formed in Cretaceous (131 to 134 million years ago). Local environment previously dominated by swamps estuaries and deltas. “Sandstone, calcareous, generally fine grained, micaceous, locally well laminated, pale grey to greenish / olive grey. Contains clayey partings and lignite fragments and rootlet traces. Frequently shows internal slumping and deformation.”

Note: Information obtained from BGS digital records © NERC.

The site is predominantly underlain by the Weald Clay Formation comprising weathered mudstone and mudstone, with bands of clay – ironstone of the Weald Clay and bands of sandstone of the Horsham Stone Member crossing site from east to west. The Weald Clay, Weald Clay Ironstone and Horsham Stone Member are all Cretaceous in age.

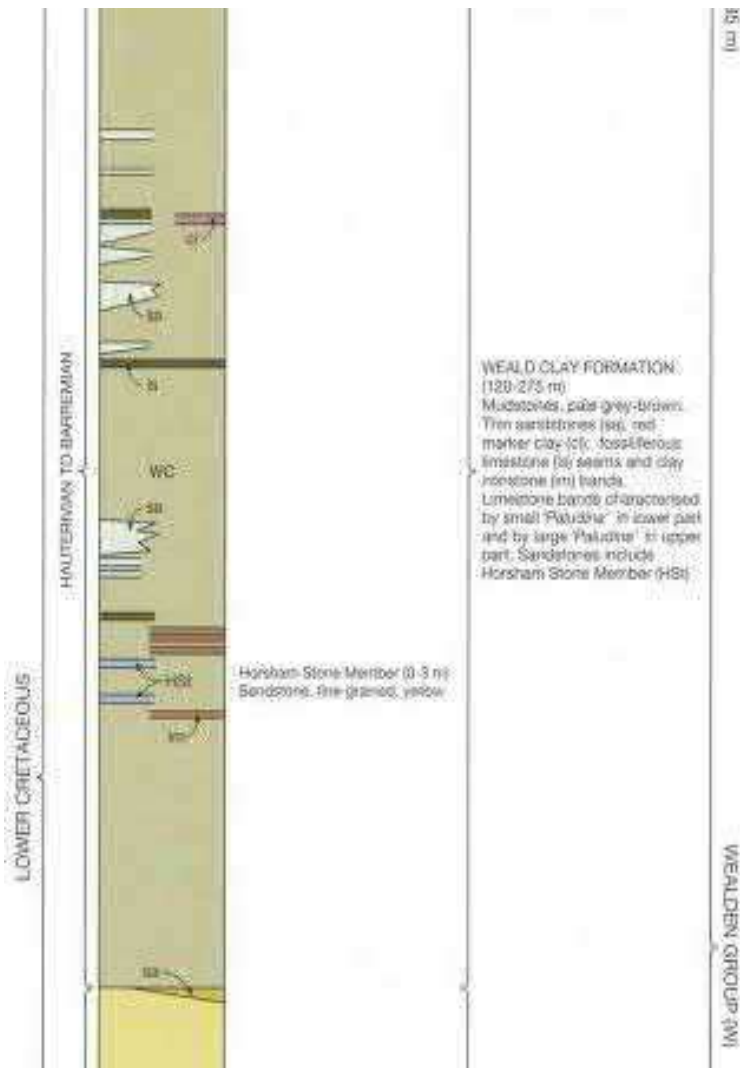
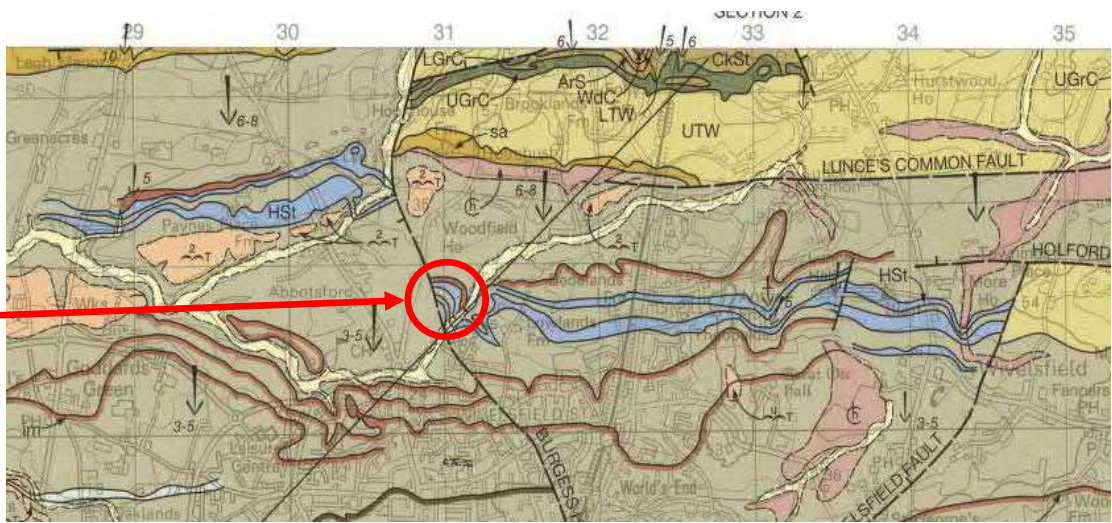
It is noted from the geological map, that the Burgess Hill Fault runs south east to north west (down the downthrow to the south west) through the site, near to locations TP206, TP205 and TP204. The bands of ironstone and sandstone are shown to be offset by ~250 m.

Quaternary age superficial deposits of alluvium are shown to follow the line of the River Adur to the west and north of the site. These are indicated to comprise clay, silts, sand and gravel.

1000m to the north west is the Upper Tunbridge Wells Sand Formation, a Cretaceous sandstone and siltstone group.

The BGS online maps portal provides access to scans of almost all maps produced by the BGS since 1932. An extract of the most recent available scanned map for the site is included overleaf:

Site



Note: Above images contain British Geological Survey materials ©NERC [2018].

3 FIELDWORK

3.1 General

The ground investigation was carried out by SSL between 3 April and 23 April 2019. The investigation was supervised by an engineer from SSL. The scope of works and positions were selected by AECOM, set out by SSL and adjusted where necessary to take account of buried or overhead services, or other restrictions. The exploratory hole and in-situ test locations are shown on the Exploratory Hole Location Plan presented in Appendix A.

3.2 Exploratory Holes

The exploratory holes are listed in the following table.

TABLE 2 : SCOPE OF INTRUSIVE WORKS			
Quantity	Exploratory Hole Type	Maximum depth (m)	Hole / Test Numbers
2	Rotary Dynamic Sample / Cored Boreholes.	35.00	BH201, BH104
6	Machine Excavated Trial Pits.	3.00	TP201-TP206
1	Percussive Windowless Sample Boreholes	3.80	WS119

The exploratory hole logs are presented in Appendix B. These provide information including the equipment and methods used, samples taken, tests carried out, water observations and descriptions of the strata encountered. Explanation of the terms and abbreviations used on the logs is given in the Key to Exploratory Hole Records in Appendix B, together with other explanatory information.

The holes were logged by an engineer in general accordance with the recommendations of BS 5930:2015 (which incorporates the requirements of BS EN ISO 14688-1, 14688-2 and 14689-1), Detailed descriptions, together with relevant comments, are given on the logs. Photographs of the rotary drilled core and trial pits are presented in Appendix B, alongside the exploratory hole logs.

Prior to the commencement of any exploratory hole or intrusive test all positions were checked for buried services by a specialist utility surveyor using a cable avoidance tool (CAT), signal generator ('genny'), and ground penetrating radar (GPR). Inspection pits were hand dug at exploratory locations where noted on the relevant exploratory hole logs.

On completion of the works, a survey of the exploratory hole locations was undertaken using specialist Global Positioning System (GPS) equipment. The coordinates of each exploratory hole were measured relative to British National Grid, and the level relative to Ordnance Datum. These are shown on the exploratory hole logs contained in Appendix B which have been printed with a reduced level column.

3.3 Artesian Water Conditions

During drilling of BH104 at the northern extent of the Freeks Farm site, artesian water was encountered.

This occurred at approximately 17.00m during drilling of BH104.

The borehole was subsequently cased from ground level (GL) to 17.00m with 125mm casing to attempt to seal the flow of water. As this did not seal the water off, additional casing was safely added above GL in order for the water to be captured within the raised casing. It was observed that water was still able to rise to GL through the casing string, so at the instruction of the investigation supervisor, the borehole was terminated and backfilled with cement bentonite grout. This sealed the water from rising to GL.

A second attempt at this location was undertaken approximately 5.00m away, using open hole techniques. From instruction of the investigation supervisor, this was installed with shallow groundwater and gas monitoring standpipes at 8.00m and 2.00m bgl respectively.

3.4 Backfill and Instrumentation

On completion 50mm diameter groundwater and 19mm gas monitoring wells were installed in both rotary boreholes, the design having been instructed by AECOM.

The installation details are shown on the exploratory hole logs and on a summary table presented within Appendix B.

As discussed above, BH104 was backfilled with cement bentonite grout (at a ratio of 2:1). The location referred to as BH104P, was installed with 50mm and 19mm pipes as mentioned above.

The trial pits were backfilled with arisings, compacted in layers by the excavator bucket.

The windowless sample borehole was backfilled with bentonite.

3.5 In-situ Testing

The in-situ tests are listed in the following table. The test methods used are detailed on the test result sheets included in Appendix C, unless otherwise noted. All test results shown on exploratory hole logs where appropriate.

TABLE 3 :SCOPE OF IN-SITU TESTING		
Quantity	In-situ Test	Remarks
30	Standard Penetration Tests (SPT)	Carried out in boreholes
2	Standard Penetration Tests (SPT)	Carried out in windowless sample borehole
10	Hand Vane (HV) *Direct Read (Vane 2 – 40 x 20mm)	Carried in suitable material where possible

TABLE 3 :SCOPE OF IN-SITU TESTING		
6	TRL Dynamic Cone Penetrometer (DCP)	Carried out adjacent to all trial pit locations
32	Photo-Ionisation Detector (PID) measurement of volatile hydrocarbons.	Carried out on all environmental samples where appropriate.

*All hand vane tests were completed using a hand vane tester which report an empirical measure of undrained shear strength. A correction factor may be applied to the test results to give a direct measurement of undrained shear strength based on the mathematical relationship between the applied torque and the cross-sectional area of the soil surface sheared. No correction factor has been applied to the results quoted.

3.6 Post Field Work Well Development

The well was purged of three well volumes of groundwater as requested by AECOM. This was carried out post intrusive fieldworks on 30 April and 1 May 2019. Results are included within Appendix E. No further monitoring or sampling was required of SSL as part of this contract.

4 LABORATORY TESTING

Samples for potential geotechnical testing were returned to one of the Company's UKAS accredited laboratories. Those samples taken for potential geo-environmental testing were sent to Exova Jones Laboratory, as instructed by AECOM.

Laboratory tests were scheduled by AECOM. Tests carried out in accordance with MCERTS/UKAS standards where noted on the results sheets.

4.1 Geotechnical Laboratory Testing

Geotechnical laboratory testing was generally carried out in accordance with the relevant part of BS1377: 1990, *Methods of Test for Soils for Civil Engineering Purposes*, or, where superseded, by the relevant part of BS EN ISO 17892:2014+ *Geotechnical investigation and testing – Laboratory Testing of Soil*.

The number of tests completed, and the test methods used are summarised below. Where non-standard procedures have been undertaken, this is recorded on the report sheet. The results are reported in tabular and/or graphical form and included as Appendix D of this report.

TABLE 4 :SUMMARY OF GEOTECHNICAL TESTING		
Number of tests	Test	Remarks
Classification Tests		
19	Moisture content.	
19	Liquid and plastic (Atterberg) limits (4 point).	
15	Particle size distribution by sieving.	
15	Particle size distribution by sedimentation.	
Compressibility, Permeability and Durability Tests		
2	One-dimensional consolidation test.	
Shear Strength - Total Stress		
2	Single stage unconsolidated undrained triaxial compression tests without the measurement of pore pressure.	
Rock Tests		
11	Uniaxial compressive strength tests.	
18	Point Load Index.	The natural ('as received') moisture content of the samples was determined.
Chemical Tests: Soil*		
2	Organic Matter Content	
16	Water soluble sulphate, total (acid soluble) sulphate and total sulphur contents and pH value – Pyritic Geology	
1	Water soluble sulphate, total (acid soluble) sulphate and total sulphur contents and pH value – Brownfield Pyritic Ground	

Note: * Test(s) carried out to method approved in BRE Special Digest 1.

4.2 Geo-environmental Laboratory Testing

All geoenvironmental testing was scheduled by AECOM and undertaken by Exova Jones. The results have been sent directly to AECOM and do not form part of this report.

5 REFERENCES

- 5.1 BS 5930:2015 *Code of practice for ground investigations*
- 5.2 BS EN 1997-1:2004 *Eurocode 7 — Geotechnical Design Part 1 - General Rules* incorporating corrigendum Feb 2009 and Amendment A1 2013
- 5.3 BS EN 1997-2:2007 *Eurocode 7 — Geotechnical design Part 2: Ground Investigation and testing*
- 5.4 BS 10175:2011 *Investigation of potentially contaminated sites: Code of practice*, including amendment A2 2017
- 5.5 British Geological Survey sheet 318 & 333 scale 1:50,000, published 2006
- 5.6 British Geological Survey online digital geological map, www.bgs.ac.uk/data
- 5.7 British Geological Survey Lexicon of Named Rock Units, www.bgs.ac.uk/lexicon
- 5.8 BS EN ISO 14688-1:2002 *Geotechnical investigation and testing – Identification and classification of soil: Part 1: Identification and description*, including Amendment A1 2013
- 5.9 BS EN ISO 14688-2:2004 *Geotechnical investigation and testing – Identification and classification of soil: Part 2: Principles for a classification*, including Amendment A1 2013
- 5.10 BS EN ISO 14689-1:2003 *Geotechnical investigation and testing – Identification and classification of rock: Part 1: Identification and description*
- 5.11 BS EN ISO 22475-1:2006 *Geotechnical Investigation and Testing – Sampling methods and groundwater measurements, Part 1 Technical principals for execution*
- 5.12 BS EN ISO 22476-3:2005 (updated February 2007) *Geotechnical Investigation and Testing – Field Testing Part 3: Standard Penetration Test*, including Amendment A1 (2011)
- 5.13 CIRIA Report R143 (1995) *The Standard Penetration Test (SPT) - Methods and Use*
- 5.14 BS 1377:1990 *Method of Test for Soils for Civil Engineering Purposes*
- 5.15 BS EN ISO 17892:2014 *Geotechnical investigation and testing – Laboratory Testing of Soil*

APPENDIX A - PLANS AND DRAWINGS

- (i) Site Location Plan
- (ii) Exploratory Hole Location Plan



LEGEND

- Trial Pit Location
- Borehole Location
- Window Sample Location

00	30.05.2019	-	NP	AH	-
REV	DATE	DESCRIPTION	BY	CHD	APR
DIMENSION		SCALE	ORIGIN SIZE		
m		1:2500	A3		



STRUCTURAL SOILS

18 Frogmore Road
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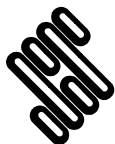
CLIENT	
Homes England	
PROJECT	
Link Road	
TITLE	
EXPLORATORY HOLE LOCATION PLAN	
JOB NO	FIGURE
562943	2B
DRAWING STATUS	REV
-	00

SCALE BAR

0 20 40 60 80 100m

APPENDIX B - EXPLORATORY HOLE RECORDS

- (i) Key to Exploratory Hole Logs
- (ii) Borehole Logs
- (iii) Trial Pit Logs
- (iv) Standpipe Summary Table



KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF ABBREVIATIONS

SAMPLING

Sample type codes

B	=	Bulk disturbed sample.
C	=	Core sample.
D	=	Small disturbed sample.
DSPT	=	Small disturbed sample originating from SPT test.
ES	=	Soil sample for environmental testing.
UT	=	Undisturbed thin wall sample.

IN-SITU TESTING

SPT _(c)	=	Standard Penetration Test using a solid 60 degree cone.
SPT	=	Standard Penetration Test using split spoon sampler. _(NR) indicates 'No Sample Recovery'.
	=	* denotes extrapolated N value. NP denotes 'No Penetration'.
HP	=	Hand Penetrometer Test. Value given as shear strength c_u , in kPa.
V	=	Field Vane Test. Peak value (c_u) & Residual value (c_r), given as shear strength in kPa.
PID	=	Photo Ionisation Detector Results, in ppm.

ROTARY DRILLING INFORMATION

W	=	Water flush returns (%)
TCR	=	Total core recovery (%)
SCR	=	Solid core recovery (%)
RQD	=	Rock quality designations (%)
If	=	Fracture spacing (mm).
		In fracture column (i) denotes discontinuity is infilled (refer to Fracture Table for details).
		Where variable the minimum - mode - maximum spacing may be quoted.
		'NI' denotes non-intact core. 'NA' denotes not applicable.

All lengths used to determine rock core mechanical properties taken along the centre line of the core.

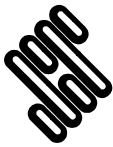
Obvious induced fractures have been ignored.

The assessment of solid core is based on lengths that show a full diameter and not necessarily a full circumference.

AZCL = Assessed zone of core loss.

ADDITIONAL NOTES

1. All soil and rock descriptions and legends in general accordance with BS EN ISO 14688-1, 14688-2, 14689-1, and BS5930:2015.
2. Material types divided by a broken line (- - -) indicates an unclear boundary.
3. The data on any sheet within the report showing the AGS icon is available in the AGS format.



KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF GRAPHIC SYMBOLS

WATER COLUMN SYMBOLS

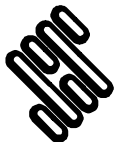
	First water strike, second water strike etc.
	Standing water level following first strike, standing water level following second strike etc.
	Seepage.
	Standing water level recorded at documented date.

MATERIAL GRAPHIC LEGENDS

	CLAY		GRAVEL		Gravelly CLAY		Gravelly SILT
	Mudstone		Sandstone		Sandy CLAY		Sandy silty CLAY
	Sandy gravelly CLAY		Sandy gravelly silty CLAY		Silty sandy gravelly CLAY		Sandy gravelly clayey SILT
	Sandy gravelly SILT		Siltstone		Sandy clayey SILT		Sandy SILT
	Topsoil		SILT		Clayey SILT		Silty CLAY

INSTRUMENTATION SYMBOLS

	Backfill		Bentonite cement grout		Bentonite seal		Concrete
	Gravel filter		Flush cover		Upstanding cover		
	Plain pipe		Slotted pipe				



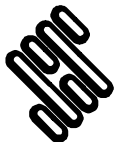
STRUCTURAL SOILS

BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI			Client: Homes England		Borehole: BH104
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 20.57	National Grid Co-ordinate: E:531284.7 N:120972.2		Sheet: 1 of 7

Mechanical Log				If (mm)	Flush Returns & Details	Samples & Testing			Backfill	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	TCR (%)	SCR (%)	RQD (%)			No	Type	Results					
0.30-0.40						1	ES				Grass over soft to firm light brown to yellowish brown slightly sandy clayey SILT with many rootlets. Sand is fine. (TOPSOIL)	0.20	
											Extremely soft to very soft pale orangish brown silty CLAY. (Completely weathered WEALD CLAY FORMATION)	(1.00)	
1.10-1.20						2	ES					1.20	
1.20-2.20						1	SPT	N=1			Soft thinly laminated yellowish brown mottled orangish brown slightly sandy slightly CLAY with occasional rootlets and mudstone lithorelicts up to 30 mm. Sand is fine to coarse. (Completely weathered WEALD CLAY FORMATION)	(1.00)	
1.20-1.65													
1.75-2.00	45	0	0				D						
2.00							HP	c _u =12/12/25				2.20	
2.20-3.20						2	SPT	N=0			Soft yellowish brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine of weak mudstone. (Completely weathered WEALD CLAY FORMATION)	(1.20)	
2.20-2.65							D						
2.30-2.50							HP	c _u =12/0/0					
2.70	100	0	0										
3.20-4.00						3	SPT	N=35			Stiff to very stiff thinly to thickly laminated orangish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium of mudstone. Discontinuities are stained reddish brown. (Completely weathered WEALD CLAY FORMATION)	3.40	
3.20-3.65							D						
3.40-3.60							HP	c _u =100/100/125				3.65	
3.50	100	100	44										
3.80-4.00							D					(0.35)	
4.00-5.00						4	SPT	12,13/21,37,42 for 35mm			Extremely weak to very weak thinly to thickly laminated grey MUDSTONE. (Moderately weathered WEALD CLAY FORMATION)	4.00	
4.00-4.27													
	40	40	0									(1.00)	
5.00-6.50						5	SPT	N=55			Firm to stiff orangish brown mottled grey CLAY with frequent orange stained mudstone lithorelicts (up to 40mm). (Completely weathered WEALD CLAY FORMATION)	5.00	
5.00-5.45											Between 4.40m and 5.00m Assessed Zone of Core Loss		
	100	100	53										

Drilling Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		
03/04/19	14:00	1.20	0.00	121	1.15	1. Service clearance undertaken by DDS Ltd 2. Inspection pit hand dug to 1.20m depth. 3. Groundwater strike encountered at 1.15m. Artesian groundwater between 12.50m and 17.00m depths. 4. Weathering classifications applied using BS EN ISO 14689:2018 (approach 4). 5. Attempted to case to base of hole to seal artesian water, groundwater then observed to be rising around the outside of the casing.	
03/04/19	18:00	4.00	4.00	121	Dry		
05/04/19	15:00	12.50	5.00	121	0.00		
08/04/19	12:00	17.00	17.00	121	0.00		
All dimensions in metres						Scale:	1:30
Method Used: Inspection pit + Rotary coring		Plant Used: Comacchio GEO		Drilled By: Rhymal Ricketts	Logged By: DPellatt	Checked By:	AGS



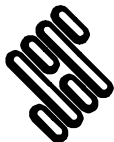
STRUCTURAL SOILS

BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI			Client: Homes England		Borehole: BH104
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 20.57	National Grid Co-ordinate: E:531284.7 N:120972.2		Sheet: 2 of 7

Mechanical Log					Flush Returns & Details	Samples & Testing			Backfill	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	TCR (%)	SCR (%)	RQD (%)	If (mm)		No	Type	Results					
5.90-6.20	100	100	53	NI 217 410	100% return Water	6	SPT	N=56			Extremely weak to very weak thinly to thickly laminated grey MUDSTONE. Discontinuities are subhorizontal very closely to medium spaced, planar, smooth, clean, and probably partially open to open. (Moderately weathered WEALD CLAY FORMATION) ... between 5.00m and 5.40m recovered as soft clay, likely remains of 4.00m to 5.00m run. (stratum copied from 5.00m from previous sheet) ... between 6.50m and 7.00m recovered as soft to firm clay.	(2.00)	
6.50-8.00 6.50-6.95	93	93	57	NI 165 300	100% return Water						Very weak to weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal very closely to medium spaced, planar, smooth, clean, and probably partially open to open. (Moderately weathered WEALD CLAY FORMATION)	7.00	
8.00-9.50 8.00-8.31	100	97	32	NI 222.5 550	100% return Water	7	SPT	N=95				(2.80)	
8.55-8.85	100	97	32	NI 222.5 550	100% return Water	8	SPT	N=104					
9.50-11.00 9.50-9.88	90	90	47	NI 222.5 550	100% return Water						Weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal, very closely to medium spaced, planar, smooth, clean, and probably partially open to open. (Fresh WEALD CLAY FORMATION)	9.80	
10.55-10.85												(1.20)	

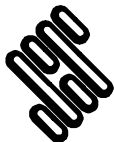
Drilling Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		
						6. Borehole terminated at 17.45m depth upon AECOM (investigation supervisor) instruction and backfilled with cement bentonite grout. 7. Borehole drilled approximately 5m away using rotary open hole techniques for purposes of installing shallow groundwater and gas monitoring pipes. 8. SPT hammer CJA.8-2018 ($E_r = 65.00\%$) used.	
Method Used: Inspection pit + Rotary coring						All dimensions in metres	Scale: 1:30
Plant Used: Comacchio GEO			Drilled By: Rhymal Ricketts		Logged By: DPellatt	Checked By:	AGS



Contract: HE Northern Arc, Burgess Hill - Link Road GI			Client: Homes England		Borehole: BH104
Contract Ref: 562943	Start: 03.04.19	Ground Level (m AOD): 20.57	National Grid Co-ordinate: E:531284.7 N:120972.2		Sheet: 3 of 7
End: 09.04.19					

Mechanical Log					Flush Returns & Details	Samples & Testing			Backfill	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	TCR (%)	SCR (%)	RQD (%)	If (mm)		No	Type	Results					
11.00-12.50	90	90	47								Weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal, very closely to medium spaced, planar, smooth, clean, and probably partially open to open. (Fresh WEALD CLAY FORMATION)	11.00	
11.60-11.90	67	67	50		67% return Water		C					(1.50)	
12.50-14.00											... Between 12.00m and 12.50m Assessed Zone of Core Loss	12.50	
12.50-12.89						9	SPT	N=86			Weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal, very closely to medium spaced, planar, smooth, clean, and probably partially open to open. (Fresh WEALD CLAY FORMATION) ... between 12.50m and 12.95m recovered as soft clay with frequent mudstone lithorelicts (up to 40 mm).		
	97	73	67	NI 222.5 550	100% return Water								
14.00-15.50													
14.00-14.39						10	SPT	N=84					
	97	97	93		100% return Water								
15.20-15.40							C					(4.95)	
15.50-17.00													
	100	80	80		100% return Water								

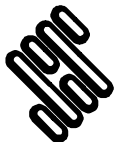
Drilling Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		



Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Borehole: BH104
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 20.57	National Grid Co-ordinate: E:531284.7 N:120972.2	Sheet: 4 of 7

Mechanical Log					Flush Returns & Details	Samples & Testing			Backfill	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	TCR (%)	SCR (%)	RQD (%)	If (mm)		No	Type	Results					
16.15-16.45	100	80	80	NI 222.5 550	11	C	N=87			Weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal, very closely to medium spaced, planar, smooth, clean, and probably partialy open to open. (Fresh WEALD CLAY FORMATION) . . . between 12.50m and 12.95m recovered as soft clay with frequent mudstone lithorelicts (up to 40 mm). .(stratum copied from 12.50m from previous sheet)	17.45		
17.00-17.45						SPT							
Borehole terminated at 17.45m depth.													

Drilling Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		



STRUCTURAL SOILS

BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Borehole: BH104
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 20.57	National Grid Co-ordinate: E:531284.7 N:120972.2	Sheet: 5 of 7

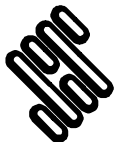
BH104 1.75m-4.00m



BH104 4.00m-6.50m

Method Used: Inspection pit + Rotary coring	Plant Used: Comacchio GEO	Drilled By: Rhymal Ricketts	Logged By: DPellatt	Checked By:
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STRUCTURAL SOILS

BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Borehole: BH104
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 20.57	National Grid Co-ordinate: E:531284.7 N:120972.2	Sheet: 6 of 7

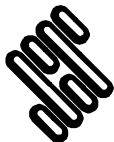
BH104 6.50m-9.50m



BH104 9.50m-12.50m

Method Used: Inspection pit + Rotary coring	Plant Used: Comacchio GEO	Drilled By: Rhymal Ricketts	Logged By: DPellatt	Checked By:
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STRUCTURAL SOILS

BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Borehole: BH104
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 20.57	National Grid Co-ordinate: E:531284.7 N:120972.2	Sheet: 7 of 7

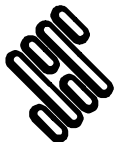
BH104 12.50m-15.50m



BH104 15.50m-17.00m

Method Used: Inspection pit + Rotary coring	Plant Used: Comacchio GEO	Drilled By: Rhymal Ricketts	Logged By: DPellatt	Checked By:
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STRUCTURAL SOILS

BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI			Client: Homes England		Borehole: BH104P
Contract Ref: 562943		Start: 08.04.19 End: 09.04.19	Ground Level (m AOD): 20.84	National Grid Co-ordinate: E:531289.0 N:120975.9	Sheet: 1 of 1

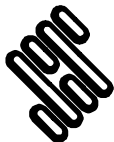
Mechanical Log					Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	TCR (%)	SCR (%)	RQD (%)	If (mm)					
							TOPSOIL (Driller Description)	0.20	
							CLAY (Driller Description)	(7.80)	
							MUDSTONE (Driller Description) Borehole terminated at 8.00m depth.	8.00	

Drilling Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		
08/04/19	08:00	0.00	-		-	1. Service clearance undertaken by DDS Ltd 2. Inspection pit hand dug to 1.20m depth. 3. Borehole drilled using rotary open hole techniques. 4. 50mm diameter HDPE groundwater monitoring pipe installed to 8.0m depth (response zone 2.0m-8.0m) and 19mm diameter HDPE gas monitoring pipe installed to 2.0m depth (response zone 1.0m-2.0m) on completion with concreted flush cover.	
08/04/19	18:00	6.00	3.00		-		
09/04/19	08:00	6.00	3.00		-		
09/04/19	18:00	8.00	3.00		-		
All dimensions in metres						Scale:	1:50
Method Used: Rotary coring			Plant Used: Comacchio GEO 205		Drilled By: Rhymal Ricketts	Logged By: ???	Checked By: AGS

GINT_LIBRARY_V8_07.GLB LibVersion: v8.07.01 ProjVersion: v8.07 | Log ROTARY CORED LOG - A4P | 562943 HE_NORTH_ARC_BURGESS_HILL_FREEKS_FARM&LINK_ROAD_GI.GPJ - v8.07.
Structural Soils Ltd, Branch Office - Hemel Hempstead, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437550, Web: www.soils.co.uk, Email: ask@soils.co.uk | 15/07/19 - 15:41 | EOR1 |



Drilling Progress and Water Observations						General Remarks 1. Service clearance undertaken by DDS Ltd 2. Inspection pit hand dug to 1.20m depth. 3. No noticable groundwater strike due to using water flush. Standing water noted at 1.87m on 04.04.19 (borehole depth 3.0m), 1.59m on 05.04.19 (borehole depth 13.50m), 1.88m on 08.04.19 (borehole depth 30.50m) and 0.87m on 09.04.19 (borehole depth 30.50m). 4. Weathering classifications applied using BS EN ISO 14689:2018 (approach 4). All dimensions in metres Scale: 1:30
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	
03/04/19	18:00	3.00	2.50		Dry	
04/04/19	08:00	3.00	2.50		Dry	
04/04/19	18:00	13.50	2.50		1.87	
05/04/19	07:59	13.50	2.50		1.59	
08/04/19	08:30	20.50	2.50		0.27	
08/04/19	18:30	30.50	2.50		1.88	
09/04/19	08:00	30.50	2.50		0.87	
Method Used: Inspection pit + Rotary coring		Plant Used: Comacchio GEO		Drilled By: G Haddock	Logged By: DPellatt	



STRUCTURAL SOILS

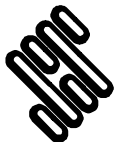
BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI			Client: Homes England		Borehole: BH201
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 26.87	National Grid Co-ordinate: E:531265.4 N:121075.2		Sheet: 2 of 13

Mechanical Log					Flush Returns & Details	Samples & Testing			Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	TCR (%)	SCR (%)	RQD (%)	If (mm)		No	Type	Results					
6.20-7.65	80	80	63		100% return Water	10	SPT	20,5/41,9 for 10mm			Extremely weak to very weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal very closely to medium spaced planar, smooth, clean, and probably partially open to open. (Moderately weathered WEALD CLAY FORMATION) (stratum copied from 3.90m from previous sheet) . . . between 6.20m and 6.50m recovered as soft clay (drilling disturbance).	(3.75)	
6.50-6.67				NI 400 600									
6.90-7.20	100	100	59		100% return Water								
7.65-9.00						11	SPT	17,8/50 for 53mm			Very weak to weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal very closely to medium spaced planar, smooth, clean, and probably partially open to open. (Fresh WEALD CLAY FORMATION)	7.65	
7.65-7.79													
8.05-8.30	95	95	66		100% return Water								
9.00-10.50						12	SPT(c)	8,17/50 for 55mm				(4.35)	
9.00-9.17				NI 230 500									
9.30-9.44	97	87	53		100% return Water								
10.50-12.00						13	SPT(c)	13,9/12,20,18 for 45mm					
10.50-10.85	97	95	86		100% return Water								

Drilling Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		
						5. 50mm diameter HDPE groundwater monitoring pipe installed to 6.0m depth (reponse zone 2.0m-6.0m) and 19mm HDPE gas monitoirng pipe installed to 1.50m depth (response zone 0.50m-1.50m) on completion with concreted upstanding cover. 6. SPT hammer AR1551-2019 ($E_r = 62.00\%$) used.	
Method Used: Inspection pit + Rotary coring						All dimensions in metres	Scale: 1:30
Plant Used: Comacchio GEO						Drilled By: G Haddock	Logged By: DPellatt
						Checked By:	AGS

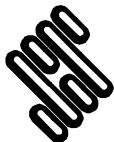
GINT_LIBRARY_V8_07.GLB LibVersion: v8_07_001 ProjVersion: v8_07 | Log ROTARY CORED LOG - A4P | 562943 HE NORTH ARC BURGESS HILL FREEKS FARM&LINK ROAD GI GPJ - v8_07. Structural Soils Ltd, Branch Office - Hemel Hempstead, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 416660, Fax: 01442 437550, Web: www.soils.co.uk, Email: ask@soils.co.uk | 15/07/19 - 15:47 | EOR1 |



Contract: HE Northern Arc, Burgess Hill - Link Road GI			Client: Homes England		Borehole: BH201
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 26.87	National Grid Co-ordinate: E:531265.4 N:121075.2		Sheet: 3 of 13

Mechanical Log					Flush Returns & Details	Samples & Testing			Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	TCR (%)	SCR (%)	RQD (%)	If (mm)		No	Type	Results					
11.20-11.50	97	95	86		100% return Water		C				Very weak to weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal very closely to medium spaced planar, smooth, clean, and probably partially open to open. (Fresh WEALD CLAY FORMATION) (<i>stratum copied from 7.65m from previous sheet</i>) . . . between 11.50m and 11.80m fracture zone around subhorizontal band of grey mudstone surfaces are stained dark brown.	12.00	
12.00-13.50 12.00-12.22						14	SPT(c)	11,14/33,17 for 16mm			Weak thinly laminated grey MUDSTONE. Discontinuities subhorizontal closely to medium spaced are planar, smooth, clean, and probably partially open to open. (Fresh WEALD CLAY FORMATION) . . . between 12.23m and 12.64m fracture zones around horizontal joint band of grey mudstone 70mm -100mm thick. Surfaces are stained brown.		
13.10-13.55	100	70	60		100% return Water		C						
13.50-15.00 13.50-13.56				NI 230 500		15	SPT(c)	25/50 for 36mm				(3.00)	
14.25-14.55	100	90	47		100% return Water		C						
15.00-16.50 15.00-15.18						13	SPT(c)	2,23/50 for 41mm			Very weak to weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal closely to medium spaced planar, smooth, clean, and probably partially open to open. (Fresh WEALD CLAY FORMATION)	15.00	
16.00-16.30	100	93	60		100% return Water		C						

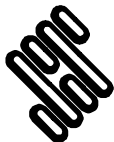
Drilling Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		
						All dimensions in metres	
						Scale:	1:30
Method Used: Inspection pit + Rotary coring			Plant Used: Comacchio GEO		Drilled By: G Haddock	Logged By: DPellatt	Checked By:



Contract: HE Northern Arc, Burgess Hill - Link Road GI			Client: Homes England		Borehole: BH201
Contract Ref: 562943		Start: 03.04.19	Ground Level (m AOD): 26.87	National Grid Co-ordinate: E:531265.4 N:121075.2	Sheet: 4 of 13
End: 09.04.19					

Mechanical Log					Flush Returns & Details	Samples & Testing			Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	TCR (%)	SCR (%)	RQD (%)	If (mm)		No	Type	Results					
16.50-18.00	100	93	60								Very weak to weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal closely to medium spaced planar, smooth, clean, and probably partially open to open. (Fresh WEALD CLAY FORMATION) (stratum copied from 15.00m from previous sheet)	(5.50)	
17.25-17.55	100	97	73		100% return Water		C						
18.00-19.00						14	SPT(c)	6,19/50 for 40mm					
18.00-18.16													
	97	85	64	NI 230 500	100% return Water								
19.00-20.50													
19.50-19.70	100	93	60		100% return Water		D						
20.50-22.00						15	SPT(c)	20,5/50 for 51mm					
20.50-20.63											Very weak to weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal closely to medium spaced planar, smooth, clean, and probably partially open to open. (Fresh WEALD CLAY FORMATION)		
20.80-21.10	93	82	77	NI 260 550	100% return Water		C						

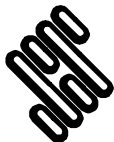
Drilling Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		



Contract: HE Northern Arc, Burgess Hill - Link Road GI			Client: Homes England		Borehole: BH201
Contract Ref: 562943		Start: 03.04.19	Ground Level (m AOD): 26.87	National Grid Co-ordinate: E:531265.4 N:121075.2	Sheet: 5 of 13
		End: 09.04.19			

Mechanical Log					Flush Returns & Details	Samples & Testing			Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	TCR (%)	SCR (%)	RQD (%)	If (mm)		No	Type	Results					
22.00-23.20	93	82	77		100% return Water						Very weak to weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal closely to medium spaced planar, smooth, clean, and probably partially open to open. (Fresh WEALD CLAY FORMATION) (stratum copied from 20.50m from previous sheet)		
22.85-23.15	100	100	67		100% return Water		C						
23.20-24.70						16	SPT(c)	25/50 for 68mm					
23.20-23.31							C						
23.40-23.80													
	97	81	81		100% return Water								
24.70-26.00				NI 260 550									
	100	92	81		100% return Water		C						
25.50-25.80													
26.00-27.50						17	SPT(c)	25/50 for 56mm					
26.00-26.11													
	98	88	80		100% return Water		C						
26.70-27.10													

Drilling Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		



STRUCTURAL SOILS

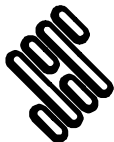
BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI			Client: Homes England		Borehole: BH201
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 26.87	National Grid Co-ordinate: E:531265.4 N:121075.2		Sheet: 6 of 13

Mechanical Log					Flush Returns & Details	Samples & Testing			Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	TCR (%)	SCR (%)	RQD (%)	If (mm)		No	Type	Results					
27.50-29.00	98	88	80		100% return Water						Very weak to weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal closely to medium spaced planar, smooth, clean, and probably partially open to open. (Fresh WEALD CLAY FORMATION) (stratum copied from 20.50m from previous sheet) ... between 28.25m and 28.80m subhorizontal planar, smooth and clean discontinuity. ... between 31.75m and 31.95m subvertical planar, smooth and clean discontinuity. ... between 32.15m to 32.25m subvertical planar, smooth and clean	(14.60)	
28.25-28.55	100	80	63		100% return Water		C						
29.00-30.50 29.00-29.10						18	SPT(c)	25/50 for 61mm					
29.55-29.80	98	67	63	NI 260 550	100% return Water		C						
30.50-32.00													
31.35-31.70	98	27	27		100% return Water		D						
32.00-33.50 32.00-32.12	97	92	69		100% return Water	19	SPT(c)	20,5/50 for 39mm					

Drilling Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		
Method Used: Inspection pit + Rotary coring						All dimensions in metres	
Plant Used: Comacchio GEO						Scale: 1:30	
Drilled By: G Haddock						Logged By: DPellatt	Checked By:

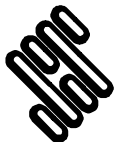
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Contract: HE Northern Arc, Burgess Hill - Link Road GI			Client: Homes England		Borehole: BH201
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 26.87	National Grid Co-ordinate: E:531265.4 N:121075.2	Sheet: 7 of 13	

Mechanical Log					Flush Returns & Details	Samples & Testing			Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	TCR (%)	SCR (%)	RQD (%)	If (mm)		No	Type	Results					
32.85-33.20	97	92	69		100% return Water		C				discontinuity. Very weak to weak thinly laminated grey MUDSTONE. Discontinuities are subhorizontal closely to medium spaced planar, smooth, clean, and probably partially open to open. (Fresh WEALD CLAY FORMATION) (stratum copied from 20.50m from previous sheet)		
33.50-35.00													
33.85-34.50							C						
	97	97	93		100% return Water								
35.00-35.10						20	SPT(c)	25/50 for 61mm				35.10	
											Borehole terminated at 35.10m depth.		

Drilling Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		



STRUCTURAL SOILS

BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Borehole: BH201
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 26.87	National Grid Co-ordinate: E:531265.4 N:121075.2	Sheet: 8 of 13

BH201 1.20m-4.00m

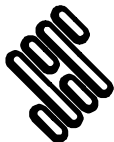


BH201 4.00m-6.20m

GINT_LIBRARY_V8_07.GLB LibVersion: v8_07_001 ProjVersion: v8_07 | Log ROTARY CORED LOG - A4P | 562943 HE NORTH ARC BURGESS HILL FREEKS FARM&LINK ROAD GI.GPJ - v8_07.
Structural Soils Ltd, Branch Office - Hemel Hempstead, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 416660, Fax: 01442 437550, Web: www.soils.co.uk, Email: ask@soils.co.uk | 15/07/19 - 15:47 | EOR1 |

Method Used: Inspection pit + Rotary coring	Plant Used: Comacchio GEO	Drilled By: G Haddock	Logged By: DPellatt	Checked By:
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STRUCTURAL SOILS

BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Borehole: BH201
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 26.87	National Grid Co-ordinate: E:531265.4 N:121075.2	Sheet: 9 of 13

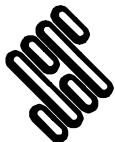
BH201 6.20m-9.00m



BH201 9.00m-12.00m

Method Used: Inspection pit + Rotary coring	Plant Used: Comacchio GEO	Drilled By: G Haddock	Logged By: DPellatt	Checked By:
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STRUCTURAL SOILS

BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Borehole: BH201
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 26.87	National Grid Co-ordinate: E:531265.4 N:121075.2	Sheet: 10 of 13

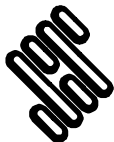
BH201 12.00m-15.00m



BH201 15.00m-18.00m

Method Used: Inspection pit + Rotary coring	Plant Used: Comacchio GEO	Drilled By: G Haddock	Logged By: DPellatt	Checked By:
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STRUCTURAL SOILS

BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Borehole: BH201
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 26.87	National Grid Co-ordinate: E:531265.4 N:121075.2	Sheet: 11 of 13

BH201 18.00m-20.50m

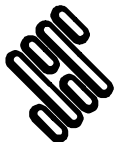


BH201 20.50m-23.20m

GINT_LIBRARY_V8_07.GLB LibVersion: v8_07_001 ProjVersion: v8_07 | Log ROTARY CORED LOG - A4P | 562943 HE NORTH ARC BURGESS HILL FREEKS FARM LINK ROAD GI GPJ - v8_07. Structural Soils Ltd, Branch Office - Hemel Hempstead, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 416660, Fax: 01442 437550, Web: www.soils.co.uk, Email: ask@soils.co.uk | 15/07/19 - 15:49 | EOR1 |

Method Used: Inspection pit + Rotary coring	Plant Used: Comacchio GEO	Drilled By: G Haddock	Logged By: DPellatt	Checked By:
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STRUCTURAL SOILS

BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Borehole: BH201
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 26.87	National Grid Co-ordinate: E:531265.4 N:121075.2	Sheet: 12 of 13

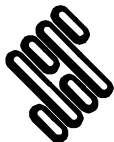
BH201 23.20m-26.00m



BH201 26.00m-29.00m

Method Used: Inspection pit + Rotary coring	Plant Used: Comacchio GEO	Drilled By: G Haddock	Logged By: DPellatt	Checked By:
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STRUCTURAL SOILS

BOREHOLE LOG

Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Borehole: BH201
Contract Ref: 562943	Start: 03.04.19 End: 09.04.19	Ground Level (m AOD): 26.87	National Grid Co-ordinate: E:531265.4 N:121075.2	Sheet: 13 of 13

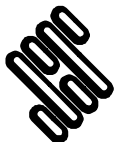
BH201 29.00m-32.00m



BH201 32.00m-35.00m

Method Used: Inspection pit + Rotary coring	Plant Used: Comacchio GEO	Drilled By: G Haddock	Logged By: DPellatt	Checked By:
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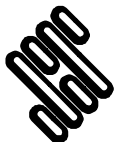


Contract: HE Northern Arc, Burgess Hill - Link Road GI			Client: Homes England		Trial Pit: TP201
Contract Ref: 562943	Start: 09.04.19 End: 09.04.19	Ground Level (m AOD): 21.11	National Grid Co-ordinate: E:531324.4 N:121002.4		Sheet: 1 of 4

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend	
Depth	No	Type	Results						
0.00-0.50	1	B	0.2ppm			Grass over soft to firm light brown slightly sandy SILT with occasional rootlets (<20 x 15mm). Sand is fine to coarse. (TOPSOIL)	(1.30)		
0.50	2	D							
0.50-0.60	3	ES PID							
0.50									
1.00	4	D	0.1ppm				Very soft to soft yellowish brown locally stained brown slightly sandy silty CLAY with frequent pockets of organic material (<5mm x 3mm). (Completely weathered ALLUVIUM)	1.30	
1.30-1.80	5	B							
1.30	6	D							
1.30-1.40	7	ES PID							
1.30									
1.80	8	D							
1.90	10	D							
1.90-2.40	9	B							
2.40	11	D	Soft yellowish brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is extremely weak angular to subangular medium to coarse mudstone. (Completely weathered WEALD CLAY FORMATION)					(1.10)	
2.90	12	D							
3.00	13	B							
3.00	14	D							
						Soft to firm orangish brown mottled blue and grey slightly sandy silty CLAY with frequent gravel of extremely weak siltstone. Sand is fine. (Completely weathered WEALD CLAY FORMATION) Trial pit terminated at 3.00m depth.	3.00/		

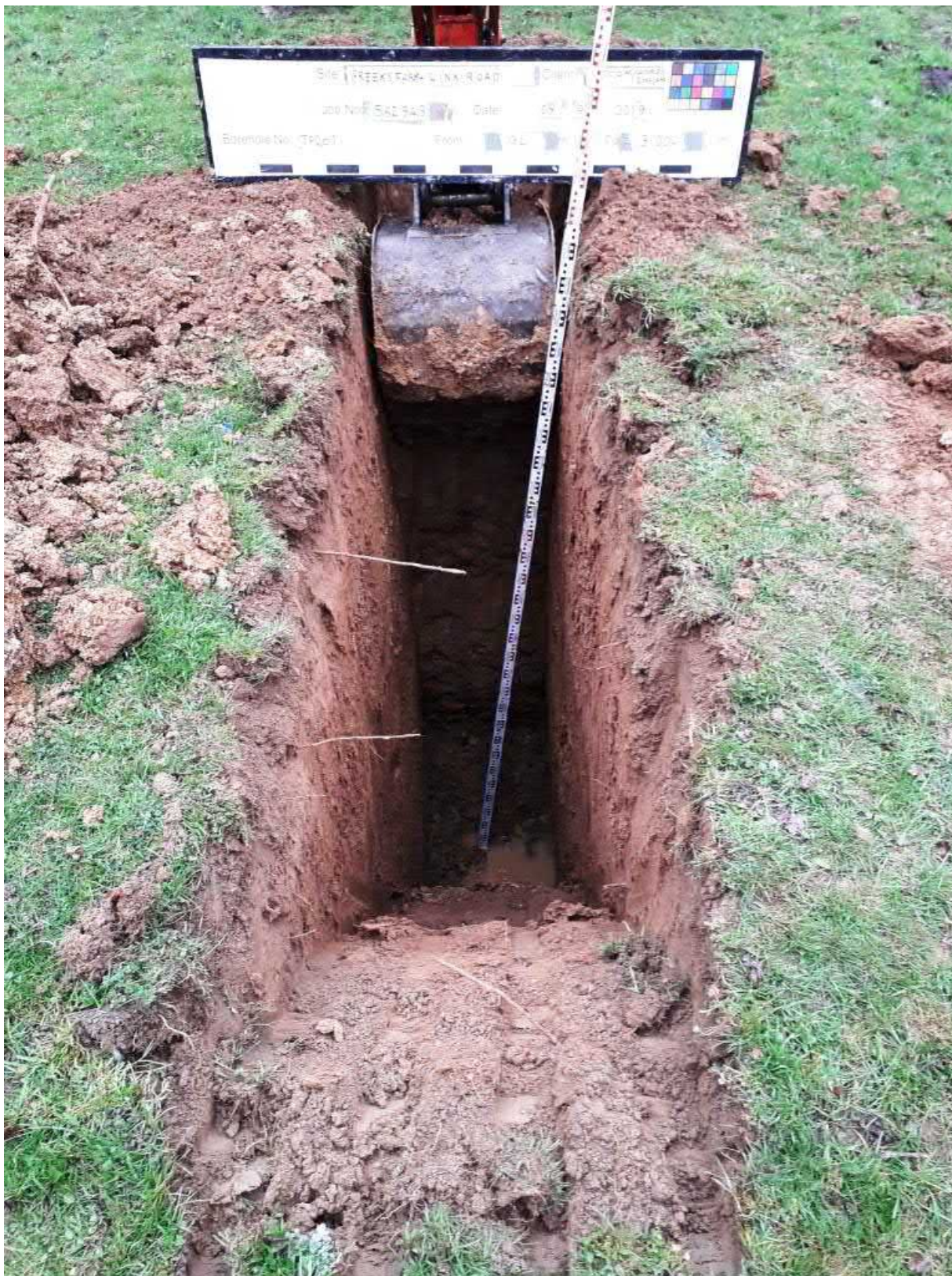
Plan (Not to Scale)		General Remarks			
		- Service clearance undertaken by DDS Ltd. - Groundwater seepage encountered at 1.70m depth. - Standing water at 2.95m depth at termination depth. - Hand vane not taken as there was no suitable soil to take test. - Weathering classifications applied using BS EN ISO 14689:2018 (approach 4). - Backfilled with arisings upon completion.			
		All dimensions in metres		Scale:	1:25
Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: O Jinadu	Checked By:		

GINT_LIBRARY_V8_07.GLB LibVersion: v8_07_001 PriVersion: v8_07 | Log TRIAL PIT LOG - A4P | 562943_HE_NORTH_ARC_BURGESS_HILL_FREEKES_FARM&LINK_ROAD_GI.GPJ - v8_07.
Structural Soils Ltd, Branch Office - Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437550, Web: www.soils.co.uk, Email: ask@soils.co.uk | 15/07/19 - 16:05 | EOR1 |

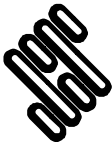


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP201
Contract Ref: 562943	Start: 09.04.19 End: 09.04.19	Ground Level (m AOD): 21.11	National Grid Co-ordinate: E:531324.4 N:121002.4	Sheet: 2 of 4

TP201: Pit



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: O Jinadu	Checked By:	
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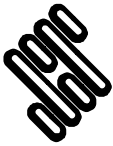


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP201
Contract Ref: 562943	Start: 09.04.19 End: 09.04.19	Ground Level (m AOD): 21.11	National Grid Co-ordinate: E:531324.4 N:121002.4	Sheet: 3 of 4

TP201: Spoil



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: O Jinadu	Checked By:	
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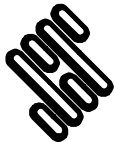


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP201
Contract Ref: 562943	Start: 09.04.19 End: 09.04.19	Ground Level (m AOD): 21.11	National Grid Co-ordinate: E:531324.4 N:121002.4	Sheet: 4 of 4

TP201: Reinstatement



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: O Jinadu	Checked By:	
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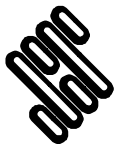


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP202
Contract Ref: 562943	Start: 08.04.19 End: 08.04.19	Ground Level (m AOD): 29.89	National Grid Co-ordinate: E:531189.9 N:121091.3	Sheet: 1 of 4

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20 0.20 0.20	1 1 1	ES D PID	0.2ppm			Grass over soft brown sandy SILT with frequent rootlets (<2mm). Sand is fine to medium. (TOPSOIL)	(0.45) 0.45	
0.60 0.60 0.60 0.60	1 2 2 2	B ES D PID	0.2ppm			Soft to firm friable greyish brown slightly mottled orange slightly clayey SILT. (Completely weathered WEALD CLAY FORMATION)	(0.45) 0.90	
1.00 1.00 1.00 1.00 1.00 1.00 1.20 1.20 1.20 1.20 1.60 1.60 1.60 1.60	2 3 3 3 3 3 4 4 4 4 5 5 5 5	B ES D V V PID B ES D V ES D PID	 0.1ppm			Firm orangish brown mottled grey CLAY. With unknown orientation, possible closely to medium spaced smooth striated undulose fissures. (Highly weathered WEALD CLAY FORMATION) Stiff fissured orangish brown mottled grey CLAY. Fissures appear closely spaced (100mm), smooth, striated and undulose. (Highly weathered WEALD CLAY FORMATION)	1.10 (0.40) 1.50	
1.20 1.20 1.20 1.20 1.60 1.60 1.60 1.60 2.20 2.20 2.30 2.30 2.50 2.50 2.50 2.50	4 4 4 4 5 5 5 5 6 6 5 6 7 7 7 7	B ES D V ES D PID B ES D PID B ES D PID	 0.1ppm			Very stiff to extremely weak very friable distinctly weathered orangish brown streaked black thinly laminated (4-5mm) SILT / SILTSTONE. Locally weathered to angular fine to medium gravel of siltstone. (Highly weathered WEALD CLAY FORMATION) ... from 2.30m increasing oxidation (rusty reddish brown staining). Extremely weak distinctly weathered black to very dark reddish orange thinly bedded (100 to 120mm) SILTSTONE and grey mottled orange SILT. (Highly weathered WEALD CLAY FORMATION) ... from 2.40m operator noted hard digging. Trial pit terminated at 2.50m depth.	(0.90) 2.40 2.50	

Plan (Not to Scale)		General Remarks		
		- Service clearance undertaken by DDS Ltd. - No groundwater encountered during investigation. - Pit stable during excavation. - Weathering classifications applied using BS EN ISO 14689:2018 (approach 4). - Backfilled with arisings upon completion.		
Method Used: Machine dug		Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By: AGS

GINT_LIBRARY_V8_07.GLB LibVersion: v8_07_001 PriVersion: v8_07 | Log TRIAL PIT LOG - A4P | 562943_HE_NORTH_ARC_BURGESS_HILL_FREEKES_FARM&LINK_ROAD_GI.GPJ - v8_07.
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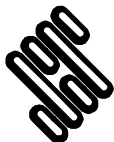


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP202
Contract Ref: 562943	Start: 08.04.19 End: 08.04.19	Ground Level (m AOD): 29.89	National Grid Co-ordinate: E:531189.9 N:121091.3	Sheet: 2 of 4

TP202: Pit



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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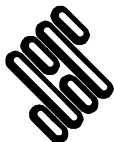


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP202
Contract Ref: 562943	Start: 08.04.19 End: 08.04.19	Ground Level (m AOD): 29.89	National Grid Co-ordinate: E:531189.9 N:121091.3	Sheet: 3 of 4

TP202: Spoil



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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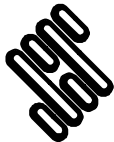


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP202
Contract Ref: 562943	Start: 08.04.19 End: 08.04.19	Ground Level (m AOD): 29.89	National Grid Co-ordinate: E:531189.9 N:121091.3	Sheet: 4 of 4

TP202: Reinstatement



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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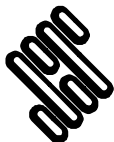


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP203
Contract Ref: 562943	Start: 05.04.19 End: 05.04.19	Ground Level (m AOD): 27.00	National Grid Co-ordinate: E:531066.1 N:121007.1	Sheet: 1 of 4

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.15 0.15 0.15	1 1 1	ES D PID	0.5ppm			Grass over soft to firm brown sandy SILT with frequent rootlets (<2mm). Sand is fine to medium. (TOPSOIL)	(0.30) 0.30	
						Firm to stiff light brown mottled orange to orangish brown slightly sandy silty CLAY. Sand is fine to medium. (Completely weathered WEALD CLAY FORMATION)	(0.60)	
0.70 0.70 0.70 0.70 0.70 0.70 1.00 1.00 1.10 1.10 1.10 1.10	1 2 2 2 2 2 2 2 3 3 3 3	B ES D V V V PID V B ES D PID	c _u =78/84/60 c _u =16/18/10 0.4ppm c _u =102/116/104 c _u =22/22/18			Firm brownish grey to grey mottled orange clayey SILT. (Completely weathered WEALD CLAY FORMATION)	0.90 (0.50)	
1.60 1.60 1.60 1.60	3 4 4 4	B ES D PID	0.5ppm 0.6ppm			Firm very friable grey streaked orange thinly (<6mm) laminated clayey SILT. (Completely weathered WEALD CLAY FORMATION)	1.40 (0.60) 2.00	
2.10 2.10 2.10 2.10	4 5 5 5	B ES D PID	0.3ppm			Firm grey mottled orange and dark brown thinly laminated (<6mm) SILT with frequent iron (rusty) staining on laminated surfaces. (Highly weathered WEALD CLAY FORMATION)	(0.30) 2.30	
2.40 2.40 2.40 2.40	5 6 6 6	B ES D PID	0.4ppm			Weak to medium strong unweathered black greenish brown and dark orange thickly laminated SILTSTONE with a sheen or iridescence on laminated surfaces. Moisture apparent on laminated surfaces. (Fresh WEALD CLAY FORMATION)	(0.35) 2.65	
						... at 2.60m moisture between laminations. Trial pit terminated at 2.65m depth due to refusal - hard digging with machine.		

Plan (Not to Scale)		General Remarks		
		- Service clearance undertaken by DDS Ltd. - No groundwater encountered during investigation. - Pit stable during excavation. - Weathering classifications applied using BS EN ISO 14689:2018 (approach 4). - Backfilled with arisings upon completion.		
Method Used: Machine dug		Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By: AGS

GINT_LIBRARY_V8_07.GLB LibVersion: v8_07_001 PriVersion: v8_07 | Log TRIAL PIT LOG - A4P | 562943_HE_NORTH_ARC_BURGESS_HILL_FRECKS_FARM&LINK_ROAD_GI.GPJ - v8_07.
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Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP203
Contract Ref: 562943	Start: 05.04.19 End: 05.04.19	Ground Level (m AOD): 27.00	National Grid Co-ordinate: E:531066.1 N:121007.1	Sheet: 2 of 4

TP203: Pit



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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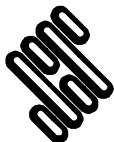


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP203
Contract Ref: 562943	Start: 05.04.19 End: 05.04.19	Ground Level (m AOD): 27.00	National Grid Co-ordinate: E:531066.1 N:121007.1	Sheet: 3 of 4

TP203: Spoil



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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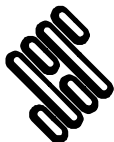


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP203
Contract Ref: 562943	Start: 05.04.19 End: 05.04.19	Ground Level (m AOD): 27.00	National Grid Co-ordinate: E:531066.1 N:121007.1	Sheet: 4 of 4

TP203: Reinstatement



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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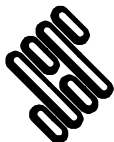


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP204
Contract Ref: 562943	Start: 05.04.19 End: 05.04.19	Ground Level (m AOD): 30.28	National Grid Co-ordinate: E:531049.0 N:120884.8	Sheet: 1 of 4

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.15 0.15 0.15	1 1 1	ES D PID	0.4ppm			Grass over brown sandy SILT with frequent rootlets (<2mm). Sand is fine. (TOPSOIL)	(0.30) 0.30	
0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.80 0.80	1 2 2 2 2 2 2 3 3	B ES D V V PID V V	$c_u=70/68/70$ $c_v=10/16/22$ 0.5ppm $c_u=80/86/84$ $c_v=18/16/18$			Firm to stiff locally fissured grey mottled orange CLAY. Fissures are smooth, striated and undulose. (Completely weathered WEALD CLAY FORMATION)	(0.65) 0.95	
1.10 1.10 1.10 1.10	2 3 3 3	B ES D PID	0.3ppm			Firm grey mottled orange slightly sandy SILT. Sand is fine to medium. (Completely weathered WEALD CLAY FORMATION)	(0.70) 1.65	
1.80 1.80	3 4	B D				Extremely weak to medium strong grey and orangish brown fine to medium grained SANDSTONE locally partially weathered to coarse gravel to cobble size tabular fragments (40 x 100 x 140mm). With occasional striations and reddish brown / black staining on surfaces. (Highly weathered WEALD CLAY FORMATION)	(0.65) 2.30	
2.50 2.50 2.50 2.50	4 4 5 5	ES B D PID	0.8ppm			Very stiff to extremely weak orangish brown slightly sandy SILTSTONE. (Highly weathered WEALD CLAY FORMATION) ... from 2.50m hard digging. Trial pit terminated at 2.60m depth as too hard to excavate.	(0.30) 2.60	

Plan (Not to Scale) 		General Remarks 1. Service clearance undertaken by DDS Ltd. 2. No groundwater encountered during investigation. 3. Pit stable during excavation. 4. Weathering classifications applied using BS EN ISO 14689:2018 (approach 4). 5. Backfilled with arisings upon completion.	
All dimensions in metres		Scale: 1:25	
Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:

GINT_LIBRARY_V8_07.GLB LibVersion: v8_07_001 PriVersion: v8_07 | Log TRIAL PIT LOG - A4P | 562943_HE_NORTH_ARC_BURGESS_HILL_FREEKES_FARM&LINK_ROAD_GI.GPJ - v8_07.
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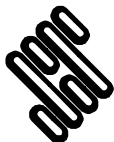


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP204
Contract Ref: 562943	Start: 05.04.19 End: 05.04.19	Ground Level (m AOD): 30.28	National Grid Co-ordinate: E:531049.0 N:120884.8	Sheet: 2 of 4

TP204: Pit



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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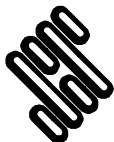


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP204
Contract Ref: 562943	Start: 05.04.19 End: 05.04.19	Ground Level (m AOD): 30.28	National Grid Co-ordinate: E:531049.0 N:120884.8	Sheet: 3 of 4

TP204: Spoil



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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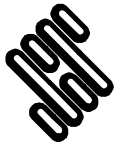


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP204
Contract Ref: 562943	Start: 05.04.19 End: 05.04.19	Ground Level (m AOD): 30.28	National Grid Co-ordinate: E:531049.0 N:120884.8	Sheet: 4 of 4

TP204: Reinstatement



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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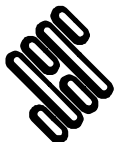


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP205
Contract Ref: 562943	Start: 04.04.19 End: 04.04.19	Ground Level (m AOD): 25.73	National Grid Co-ordinate: E:530961.7 N:120773.0	Sheet: 1 of 4

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20 0.20 0.20	1 1 1	ES D PID	0.4ppm			Grass over soft to firm brown sandy SILT. Sand is fine to medium. (TOPSOIL)	(0.40) 0.40	
0.60 0.60 0.70 0.70 0.70 0.90 1.10 1.10 1.10 1.10	1 2 2 2 2 2 3 3 3 3	V V B ES D V B ES D PID	$c_u=70$ $c_u=9$ 0.7ppm $c_u=50$ 0.3ppm			Firm grey mottled orange CLAY/SILT. (Completely weathered WEALD CLAY FORMATION)	(0.60) 1.00	
1.50 1.50 1.50 1.50	3 4 4 4	B ES D PID	0.3ppm			Soft to firm grey mottled orange silty CLAY. (Completely weathered WEALD CLAY FORMATION)	(0.30) 1.30	
1.90 1.90 1.90 1.90 2.00 2.00	4 5 5 5 5 6	B ES D PID B D	0.4ppm			Grey mottled orange gravelly SILT. Gravel is angular to subangular medium to coarse of hard to extremely weak brown mudstone / siltstone. (Completely weathered WEALD CLAY FORMATION)	(0.50) 1.80	
						Very stiff to extremely weak highly weathered orange sandy SILTSTONE. With heavy orangish brown staining on surfaces. (Highly weathered WEALD CLAY FORMATION)	(0.30) 2.10	
						... at 1.90m clasts are coarse gravel up to (40mm x 70mm x 80mm) cobble size. ... at 2.00m clasts are weak to medium strong. Trial pit terminated at 2.10m depth due to refusal - too difficult to dig.		

Plan (Not to Scale)		General Remarks		
		- Service clearance undertaken by DDS Ltd. - No groundwater encountered during investigation. - Pit stable during excavation. - Weathering classifications applied using BS EN ISO 14689:2018 (approach 4). - Backfilled with arisings upon completion.		
Method Used: Machine dug		Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By: AGS

GINT_LIBRARY_V8_07.GLB LibVersion: v8_07_001 PriVersion: v8_07 | Log TRIAL PIT LOG - A4P | 562943_HE_NORTH_ARC_BURGESS_HILL_FRECKS_FARM&LINK_ROAD_GI.GPJ - v8_07.
Structural Soils Ltd, Branch Office - Hemel Hempstead, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437550, Web: www.soils.co.uk, Email: ask@soils.co.uk | 15/07/19 - 16:06 | EOR1 |

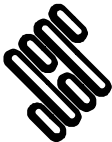


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP205
Contract Ref: 562943	Start: 04.04.19 End: 04.04.19	Ground Level (m AOD): 25.73	National Grid Co-ordinate: E:530961.7 N:120773.0	Sheet: 2 of 4

TP205: Pit



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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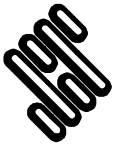


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP205
Contract Ref: 562943	Start: 04.04.19 End: 04.04.19	Ground Level (m AOD): 25.73	National Grid Co-ordinate: E:530961.7 N:120773.0	Sheet: 3 of 4

TP205: Spoil



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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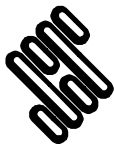


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP205
Contract Ref: 562943	Start: 04.04.19 End: 04.04.19	Ground Level (m AOD): 25.73	National Grid Co-ordinate: E:530961.7 N:120773.0	Sheet: 4 of 4

TP205: Reinstatement



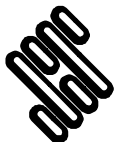
Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP206
Contract Ref: 562943	Start: 04.04.19 End: 04.04.19	Ground Level (m AOD): 26.51	National Grid Co-ordinate: E:530832.6 N:120819.5	Sheet: 1 of 4

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10 0.10 0.10	1 1	ES D PID	0.4ppm			Grass over soft to firm orange brown silty fine to medium SAND with frequent rootlets (<2mm). (TOPSOIL)	0.25	
0.50	2	D				Firm friable light brown / grey mottled orange clayey SILT. (Completely weathered WEALD CLAY FORMATION)	(1.45)	
0.70 0.70 0.70 0.70	1 2	B ES V PID	$c_u=31$ 0.6ppm					
1.00 1.00	3	D V	$c_u=70$					
1.50 1.50 1.50 1.50	2 3 4	B ES D PID	0.3ppm			Very stiff to hard grey mottled orange thinly laminated (5mm) CLAY / SILT with occasional dark brown coarse gravel of mudstone / siltstone. (Completely weathered WEALD CLAY FORMATION) . . . between 1.70m to 2.50m very friable. Breaks up into medium gravel size blocklike fragments (8x10x20mm). Also grey mottled orangish brown in colour.	1.70 (0.80)	
2.20 2.20 2.20 2.20	3 4 5	B ES D PID	0.6ppm			Very stiff distinctly weathered reddish brown locally mottled grey weakly cemented MUDSTONE / SILTSTONE. (Completely weathered WEALD CLAY FORMATION)	2.50 (0.40)	
2.80 2.80 2.80 2.80	4 5 6	B ES D PID	0.4ppm			Hard to extremely weak partially weathered greyish brown with abundant orange reddish brown iron staining MUDSTONE. (Highly weathered WEALD CLAY FORMATION) . . . at 2.90m driver noted hard digging. Trial pit terminated at 3.00m depth.	2.90 3.00	

Plan (Not to Scale)		General Remarks		
		- Service clearance undertaken by DDS Ltd. - No groundwater encountered during investigation. - Pit stable during excavation. - Weathering classifications applied using BS EN ISO 14689:2018 (approach 4). - Backfilled with arisings upon completion.		
Method Used: Machine dug		Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By: AGS

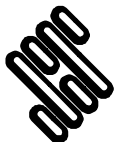


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP206
Contract Ref: 562943	Start: 04.04.19 End: 04.04.19	Ground Level (m AOD): 26.51	National Grid Co-ordinate: E:530832.6 N:120819.5	Sheet: 2 of 4

TP206: Pit



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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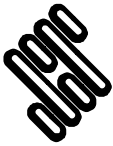


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP206
Contract Ref: 562943	Start: 04.04.19 End: 04.04.19	Ground Level (m AOD): 26.51	National Grid Co-ordinate: E:530832.6 N:120819.5	Sheet: 3 of 4

TP206: Spoil



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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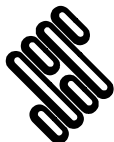


Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Trial Pit: TP206
Contract Ref: 562943	Start: 04.04.19 End: 04.04.19	Ground Level (m AOD): 26.51	National Grid Co-ordinate: E:530832.6 N:120819.5	Sheet: 4 of 4

TP206: Reinstatement



Method Used: Machine dug	Plant Used: 13 Ton Tracked Excavator	Logged By: AHayton	Checked By:	
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STRUCTURAL SOILS

WINDOW SAMPLE LOG

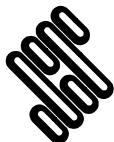
Contract: HE Northern Arc, Burgess Hill - Link Road GI			Client: Homes England		Window Sample: WS119
Contract Ref: 562943	Start: 23.04.19 End: 23.04.19	Ground Level (m AOD): 21.07	National Grid Co-ordinate: E:531356.4 N:120991.9		Sheet: 1 of 3

Progress Window Run	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
	Depth	No	Type	Results					
1.20 - 2.00 (101mm dia) 100% rec 2.00 - 3.00 (101mm dia) 70% rec 3.00 - 3.50 (100mm dia) 100% rec 3.50 - 3.80 (87mm dia) 0% rec	0.00-0.30	1	B				Grass over soft to firm light brown slightly sandy clayey SILT with frequent rootlets (3 x 5mm). Sand is fine to coarse. (TOPSOIL)	(0.30)	
	0.20	2	D				Soft to firm orangish brown mottled grey and brown locally stained reddish brown partially weathered slightly gravelly slightly sandy silty CLAY with occasional pockets (up to 40mm) oxidised mudstone lithorelicts. Sand is fine to coarse. Gravel is angular to subangular fine to coarse mudstone. (Completely weathered WEALD CLAY FORMATION)	0.30	
	0.20-0.30	3	ES						
	0.20		PID	0.1ppm					
	0.40-0.90	4	B						
	0.40	5	D						
	0.50-0.60	6	ES						
	0.50		PID	0.0ppm					
	0.90	7	D						
	1.20-1.65	8	UT					(2.00)	
	1.65-1.70	9	D						
	2.00-2.45	10	SPT	N=0					
	2.00-2.45	10	DSPT						
	2.30	11	D				Very soft to soft brownish grey mottled orange and brown CLAY with rare pockets of mudstone. (Completely weathered WEALD CLAY FORMATION)	2.30	
	2.30-2.40	12	ES						
	2.30		PID	0.0ppm					
	2.80	13	D					(1.15)	
	3.00-3.45	14	UT						
	3.45-3.50	15	D				Extremely weak bluish grey MUDSTONE. (Highly weathered WEALD CLAY FORMATION)	3.45	
	3.50-3.74	16	SPT	15,26/34,34 for 12mm				(0.35)	
	3.50-3.80	16	DSPT					3.80	
Window sample hole terminated at 3.80m depth.									

Drilling Progress and Water Observations						General Remarks					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)						
23/04/19	08:30	2.00	-	101	2.00						
23/04/19	09:15	3.80	-	87	2.20						
1. Service clearance undertaken by DDS Ltd.											
2. Inspection pit hand dug to 1.20m.											
3. Groundwater encountered at 2.00m depth and remained at 2.00m after 20 minutes.											
4. Weathering classifications applied using BS EN ISO 14689:2018 (approach 4).											
5. Backfilled with bentonite upon completion.											
All dimensions in metres				Scale:		1:25					
Method Used:	Tracked window sampling		Plant Used:	Dando Terrier		Drilled By:	Oakland SI	Logged By:	O Jinadu	Checked By:	AGS

GINT_LIBRARY_V8_07.GLB LibVersion: v8.07.001 ProjVersion: v8.07 | Log WINDOW SAMPLE LOG - A4P | 562943 HE NORTH ARC BURGESS HILL FREEKES FARM&LINK ROAD GI.GPJ - v8.07.
Structural Soils Ltd, Branch Office - Hemel Hempstead, Hertfordshire, HP3 9RT, Tel: 01442 416660, Fax: 01442 437550, Web: www.soils.co.uk, Email: ask@soils.co.uk | 17/07/19 - 09:42 | EOR1 |

[illegible]



Contract: HE Northern Arc, Burgess Hill - Link Road GI		Client: Homes England		Window Sample: WS119
Contract Ref: 562943	Start: 23.04.19 End: 23.04.19	Ground Level (m AOD): 21.07	National Grid Co-ordinate: E:531356.4 N:120991.9	Sheet: 3 of 3

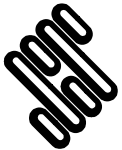
WS119: 1.70m-2.00m



WS119 2.00m-3.00m

Method Used:	Tracked window sampling	Plant Used:	Dando Terrier	Drilled By:	Oakland SI	Logged By:	O Jinadu	Checked By:	AGS
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STANDPIPE SUMMARY TABLE

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Compiled By

Date _____

Contract Ref:

SOFARRELL

12.06.19

562943

Contract:

HE Northern Arc, Burgess Hill - Freeks Farm & Link Road GI

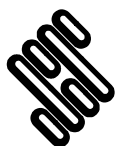
Page:

1 of 1



APPENDIX C - IN-SITU TESTING

- (i) Standard Penetration Test (SPT) Summary Sheet
- (ii) SPT N value versus Depth / Elevation Plot
- (iii) TRL Dynamic Cone Penetration Test Results



STANDARD PENETRATION TEST SUMMARY TABLE

Contract: HE Northern Arc, Burgess Hill - Link Road GI				Client: Homes England			Contract ref: 562943
Exploratory Position ID	Depth (m)	Seating Drive		Test Drive			Comments
		Blows	Pen (mm)	Blows	R (mm)	Result	
BH104	1.20	1,0	150	0,0,0,1		N=1	
	2.20	1,0	150	0,0,0,0		N=0	
	3.20	6,6	150	7,6,8,14		N=35	
	4.00	12,13	85	21,37,42+	185	12,13/21,37,42	
						for 35mm	
	5.00	6,7	150	9,9,18,19		N=55	
	6.50	9,12	150	16,17,11,12		N=56	
	8.00	25	10	19,14,29,33		N=95	
	9.50	21,4	80	17,19,31,37		N=104	
	12.50	17,8	85	14,17,21,34		N=86	
	14.00	16,9	85	14,17,19,34		N=84	
	17.00	14,11	150	17,19,24,27		N=87	
BH201	1.20	2,3	150	4,5,5,7		N=21	
	2.00	6,9	150	10,11,11,11		N=43	
	3.00	5,11	150	16,29,5+	154	5,11/16,29,5	
						for 4mm	
	4.00	10,14	150	13,17,20	225	10,14/13,17,20	
						for 75mm	
	5.00	9,10	150	11,11,22,6+	232	9,10/11,11,22,6	
						for 7mm	
	6.50	20,5	83	41,9+	85	20,5/41,9	
						for 10mm	
	7.65	17,8	91	50+	53	17,8/50	
						for 53mm	
	9.00	8,17	117	50+	55	8,17/50	SPT(c)
						for 55mm	
	10.50	13,9	150	12,20,18+	195	13,9/12,20,18	SPT(c)
						for 45mm	
	12.00	11,14	131	33,17+	91	11,14/33,17	SPT(c)
						for 16mm	
	13.50	25	21	50+	36	25/50	SPT(c)

Notes:

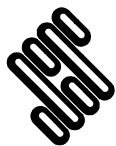
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005

2. Reported blows are for 75mm penetration unless indicated "+".

3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.

4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.





STANDARD PENETRATION TEST SUMMARY TABLE

Contract: HE Northern Arc, Burgess Hill - Link Road GI				Client: Homes England			Contract ref: 562943
Exploratory Position ID	Depth (m)	Seating Drive		Test Drive			Comments
		Blows	Pen (mm)	Blows	R (mm)	Result	
						for 36mm	
	15.00	2,23	137	50+	41	2,23/50	SPT(c)
						for 41mm	
	18.00	6,19	116	50+	40	6,19/50	SPT(c)
						for 40mm	
	20.50	20,5	79	50+	51	20,5/50	SPT(c)
						for 51mm	
	23.20	25	46	50+	68	25/50	SPT(c)
						for 68mm	
	26.00	25	51	50+	56	25/50	SPT(c)
						for 56mm	
	29.00	25	35	50+	61	25/50	SPT(c)
						for 61mm	
	32.00	20,5	77	50+	39	20,5/50	SPT(c)
						for 39mm	
	35.00	25	40	50+	61	25/50	SPT(c)
						for 61mm	
WS119	2.00		0		0	N=0	Sunk under own weight
							Initial penetration after
							lowering of drive
							assembly to base of
							hole was recorded as >
							450mm. In this
							situation N=0.
	3.50	15,26	150	34,34+	87	15,26/34,34	
						for 12mm	

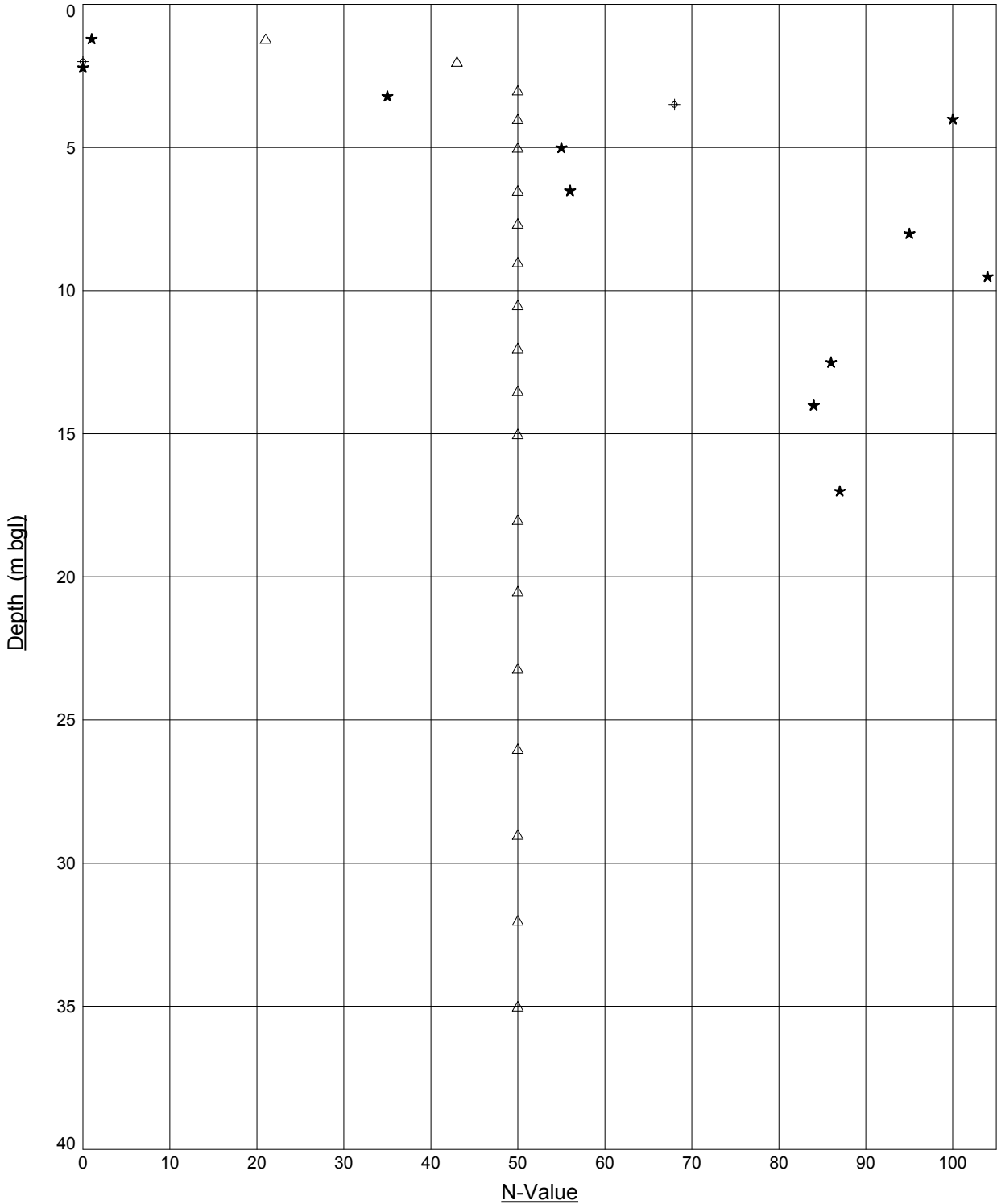
Notes:

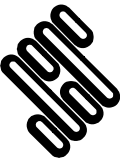
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.



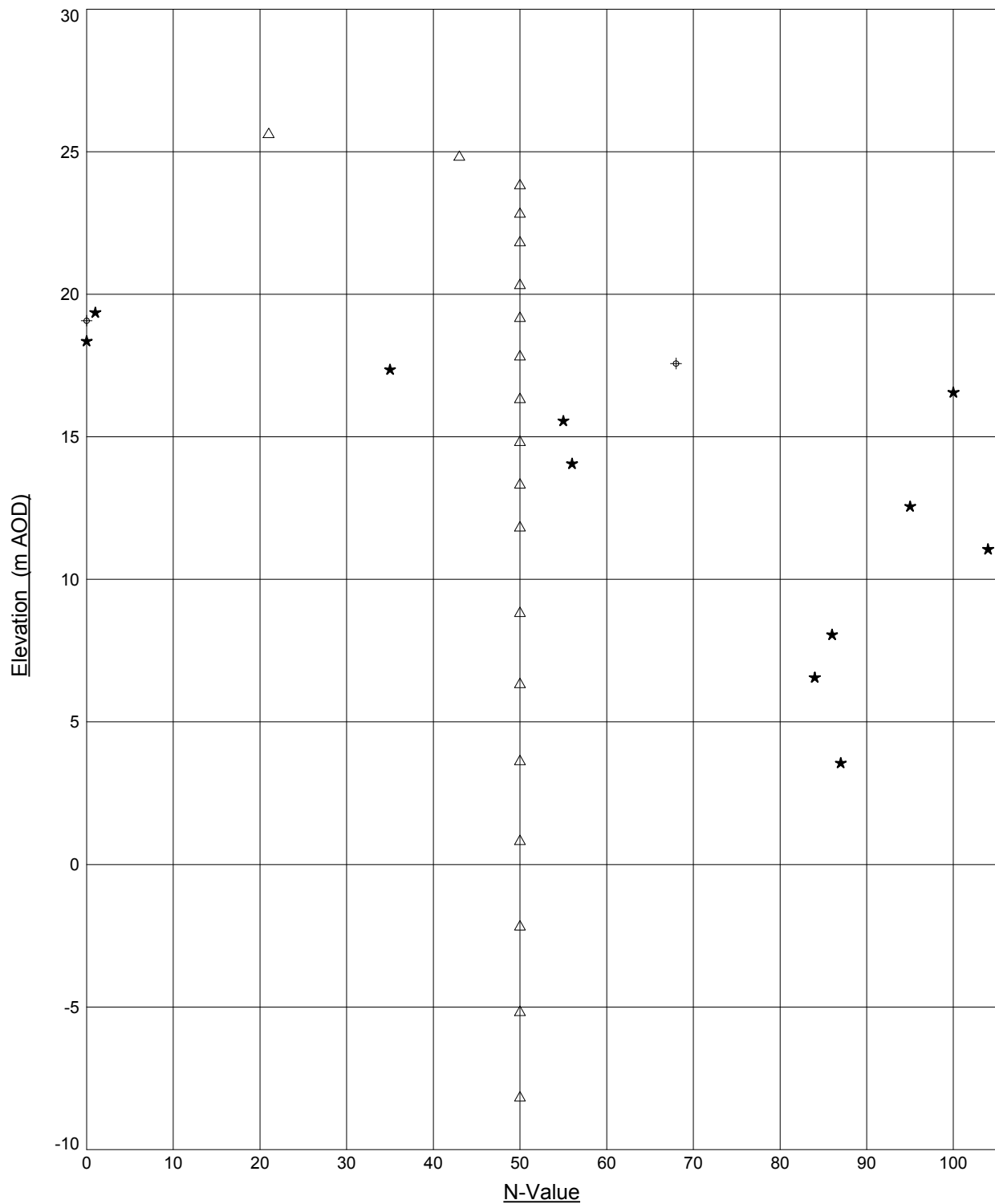
GIINT_LIBRARY_v8_07.GLB LibVersion: v8_07_001 ProjVersion: v8_07 | Graph G - PLOTS - SITE - GENERAL - A4P | 562943_HE_NORTH_ARC_BURGESS_HILL_FRECKS_FARM&LINK_ROAD_GI.GPJ - v8_07_ | 17/07/19 - 11:08 | EOR1 |

STANDARD PENETRATION TEST (SPT N-Value) vs DEPTH

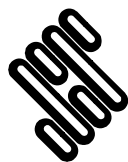


 STRUCTURAL SOILS 18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT	Contract	Date	Compiled By
	HE Northern Arc, Burgess Hill - Link Road GI	17.07.19	ER
	Client	Contract Ref:	
	Homes England	562943	
			

STANDARD PENETRATION TEST (SPT N-Value) vs ELEVATION



Key: ★ = BH104, △ = BH201, ◆ = WS119



STRUCTURAL SOILS
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Contract

**HE Northern Arc, Burgess Hill -
Link Road GI**

Client

Homes England

Date

18.07.19

Compiled By

ER

Contract Ref:

562943



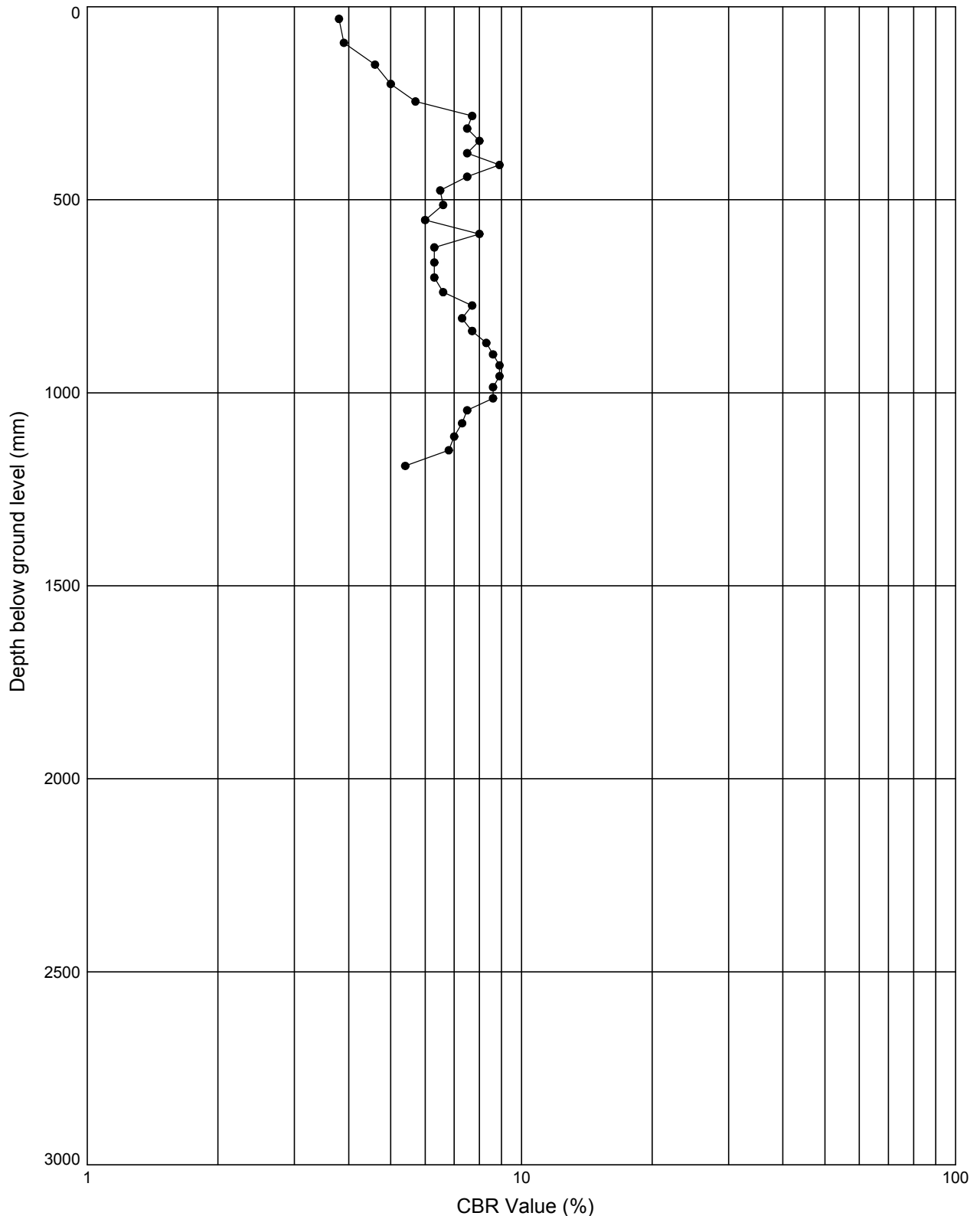
DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **TRL201**

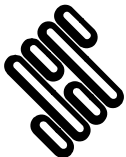
Test Date : **11.04.19**

Ground Level (m AOD): **21.11**

National Grid Co-ordinates: **E:531324.4 N:121002.4**



Notes: CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line.



Compiled By

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Date

12/06/19

Contract

**HE Northern Arc, Burgess Hill -
Freeks Farm & Link Road GI**

Contract Ref:

562943

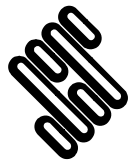
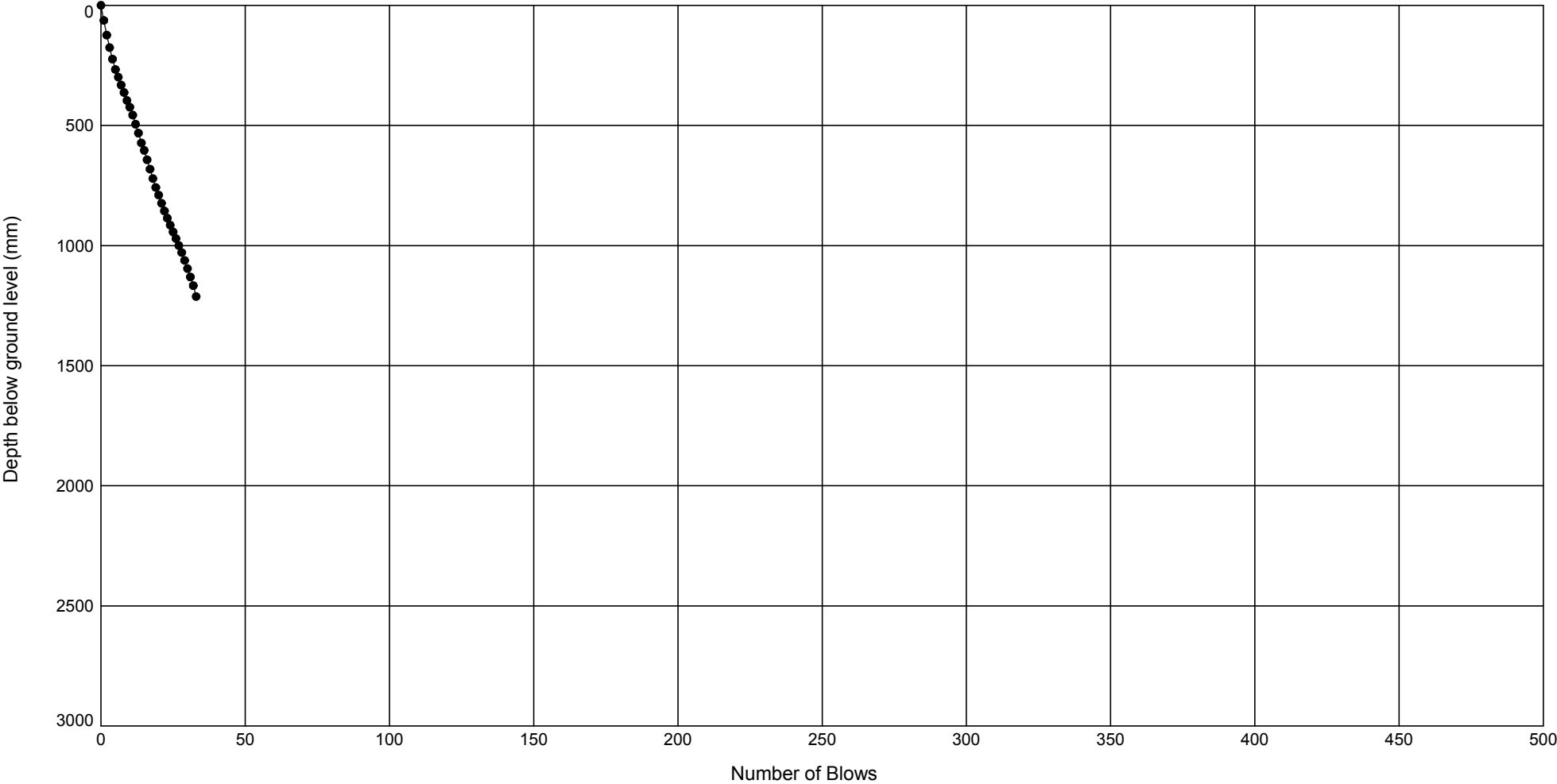
DCP TEST RESULTS - DEPTH vs NUMBER OF BLOWS

Position Ref : **TRL201**

Test Date : **11.04.19**

National Grid Co-ordinates: **E:531324.4 N:121002.4**

Ground Level (m AOD): **21.11**



Compiled By

Date

Checked By

Date

Contract Ref:

12/06/19

Contract

562943

HE Northern Arc, Burgess Hill - Frees Farm & Link Road GI

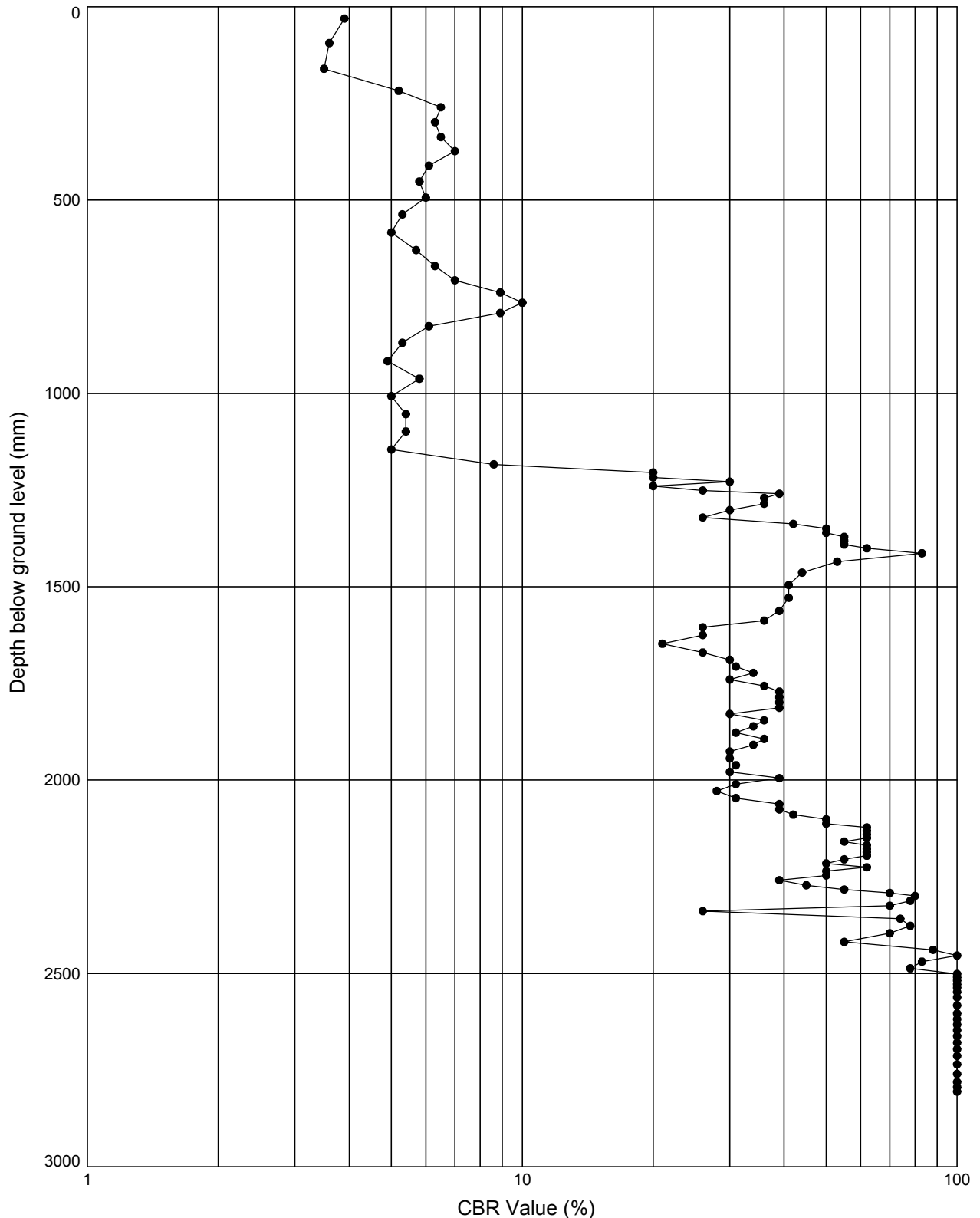
DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **TRL202**

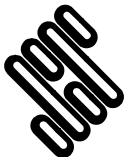
Test Date : **03.04.19**

Ground Level (m AOD): **29.89**

National Grid Co-ordinates: **E:531189.9 N:121091.3**



Notes: CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line.
Location CAT and GPR scanned prior to test.



Compiled By

Date

Checked By

Date

12/06/19

Contract

**HE Northern Arc, Burgess Hill -
Freeks Farm & Link Road GI**

Contract Ref:

562943

GINT_LIBRARY_v8_07.GLB LibVersion: v8_07_001 PjVersion: v8_07 | Graph 1 - DCP - 1 - BLOWS VS DEPTH - A4L | 562943_HE_NORTH_ARC_BURGESS_HILL_FREES_FARM&LINK_ROAD_GI.GPJ

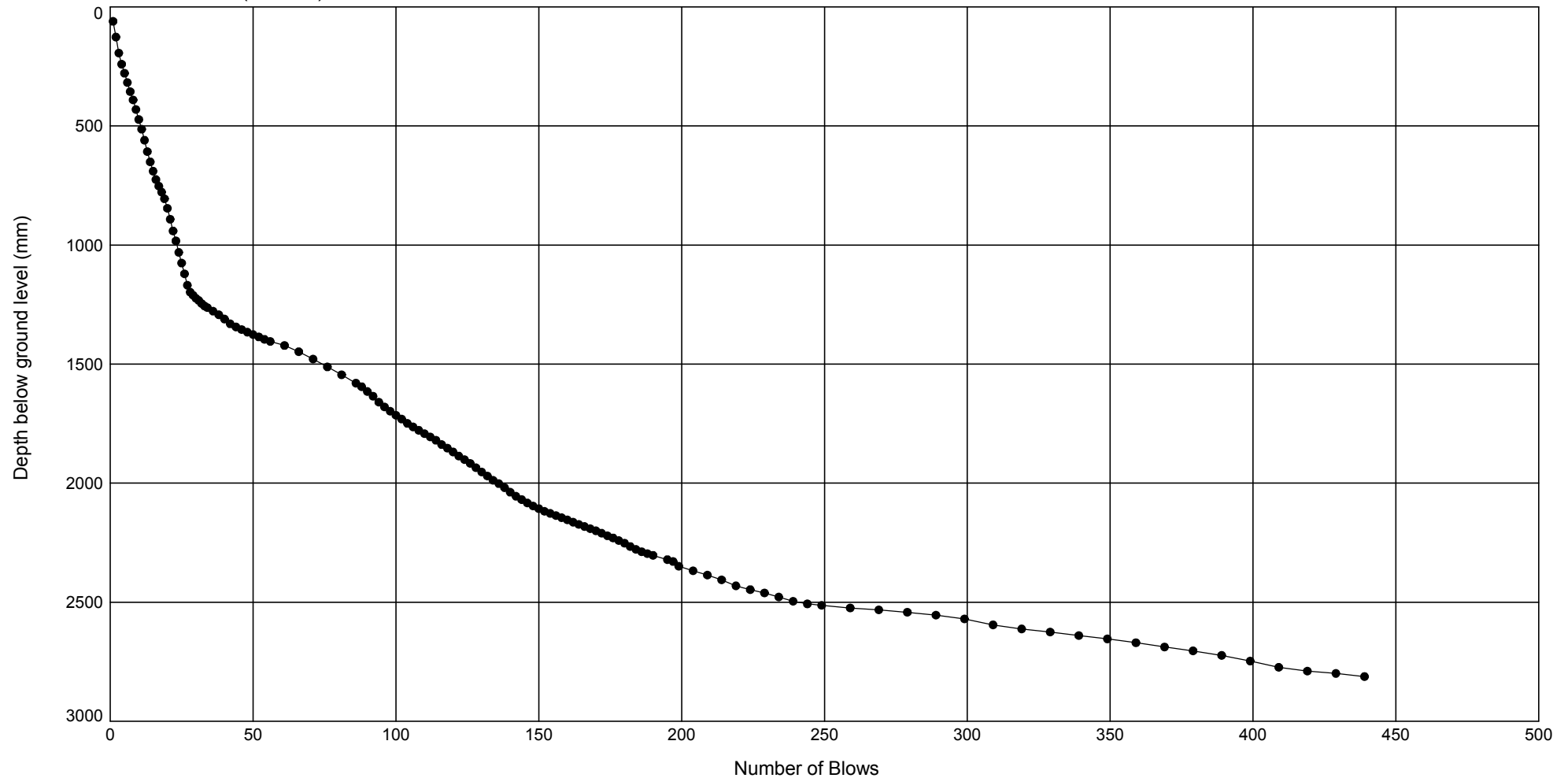
DCP TEST RESULTS - DEPTH vs NUMBER OF BLOWS

Position Ref : **TRL202**

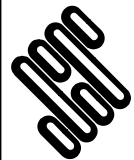
Test Date : **03.04.19**

Ground Level (m AOD): **29.89**

National Grid Co-ordinates: **E:531189.9 N:121091.3**



Notes: **Location CAT and GPR scanned prior to test.**



Compiled By

Date

Checked By

Date

Contract Ref:

12/06/19

Contract

562943

HE Northern Arc, Burgess Hill - Frees Farm & Link Road GI

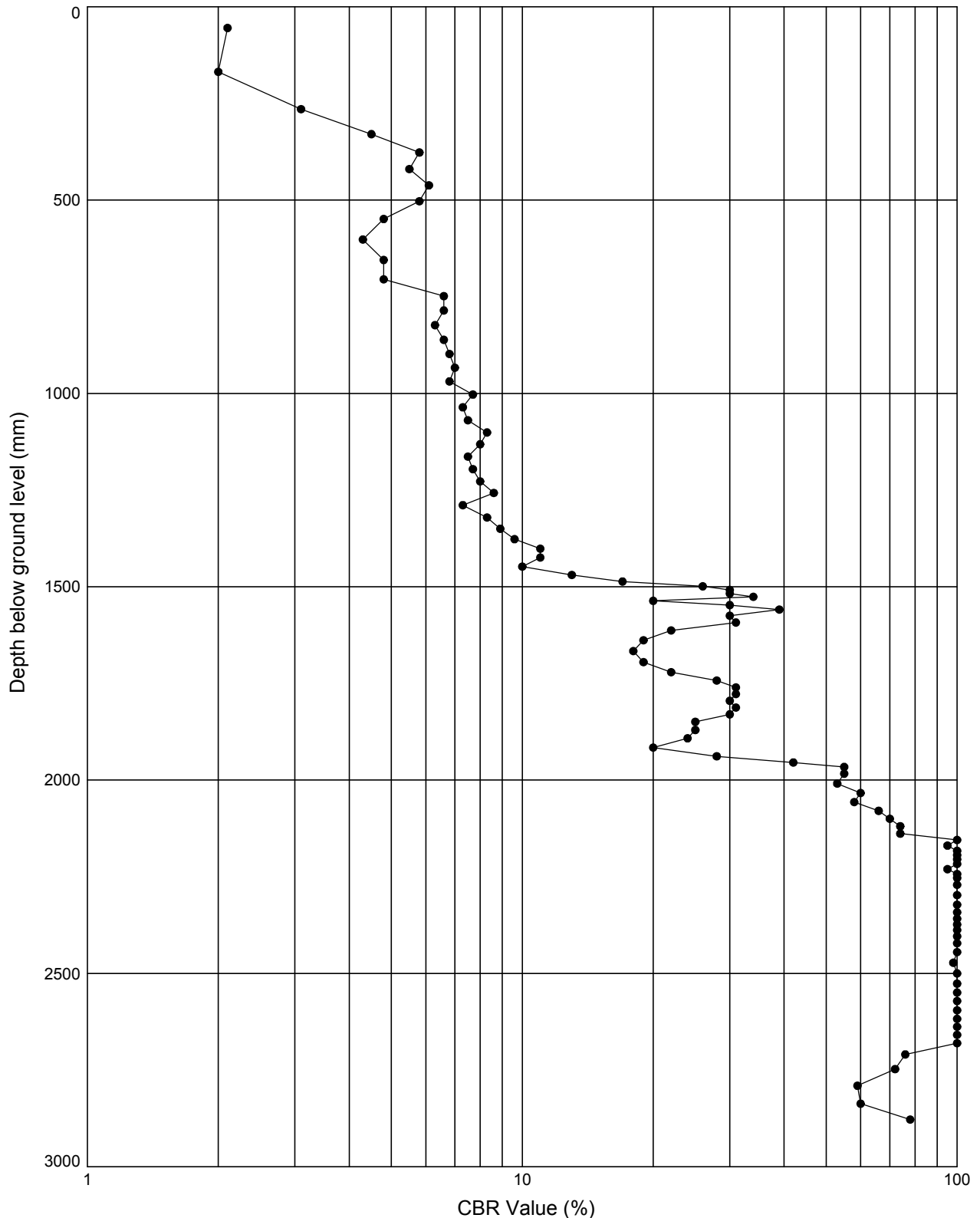
DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **TRL203**

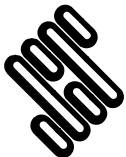
Test Date : **03.04.19**

Ground Level (m AOD): **27.00**

National Grid Co-ordinates: **E:531066.1 N:121007.1**



Notes: CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line.
Location EM and GPR scanned prior to test.



Compiled By

Date

Checked By

Date

12/06/19

Contract

**HE Northern Arc, Burgess Hill -
Freeks Farm & Link Road GI**

Contract Ref:

562943

GINT_LIBRARY_v8_07.GLB LibVersion: v8_07_001 PjVersion: v8_07 | Graph 1 - DCP - 1 - BLOWS VS DEPTH - A4L | 562943_HE_NORTH_ARC_BURGESS_HILL_FREES_FARM&LINK_ROAD_GI.GPJ

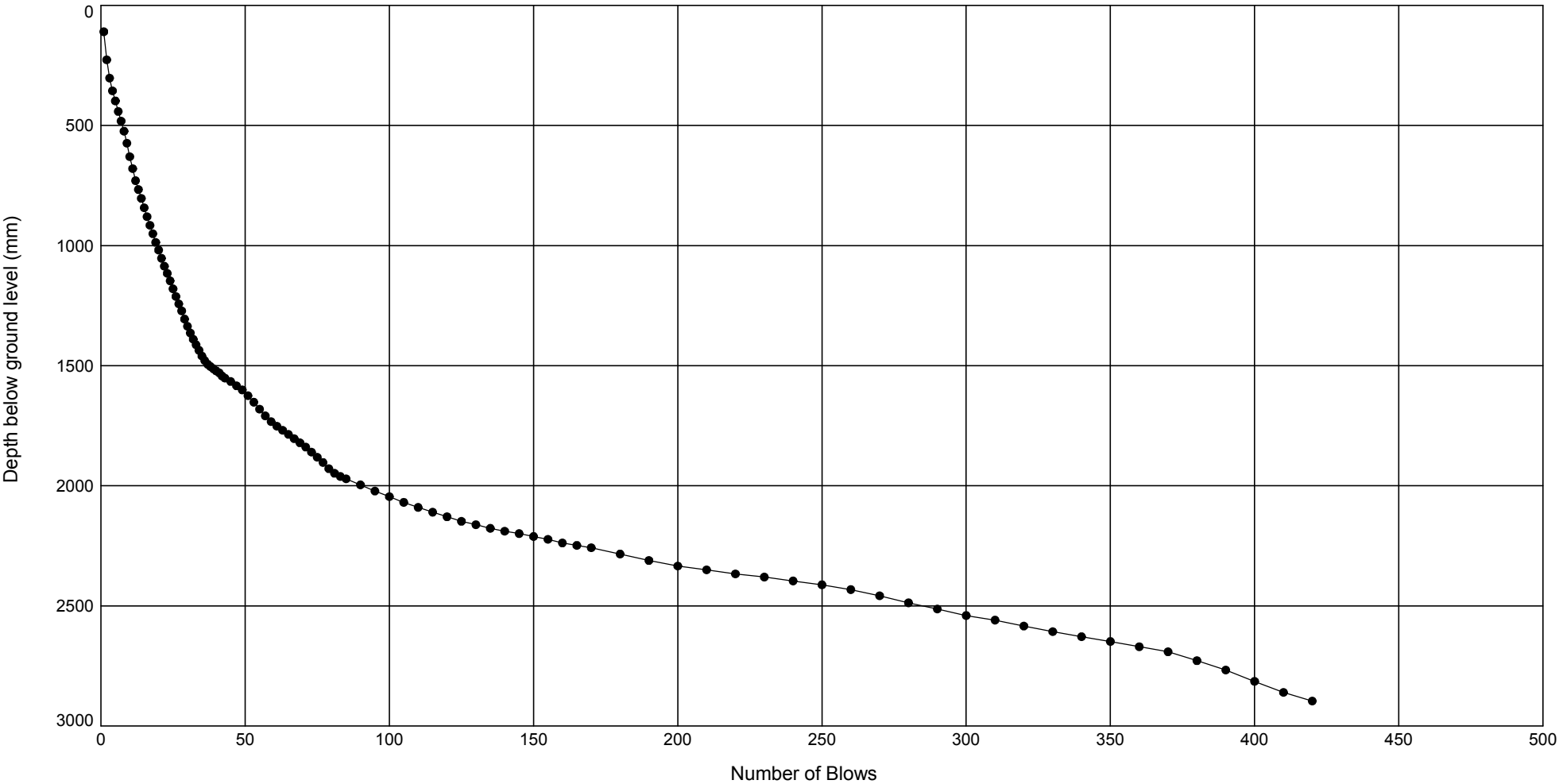
DCP TEST RESULTS - DEPTH vs NUMBER OF BLOWS

Position Ref : **TRL203**

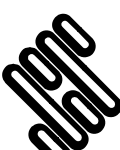
Test Date : **03.04.19**

Ground Level (m AOD): **27.00**

National Grid Co-ordinates: **E:531066.1 N:121007.1**



Notes: **Location EM and GPR scanned prior to test.**

	Compiled By	Date	Checked By	Date	Contract Ref: 562943
		12/06/19			
	Contract HE Northern Arc, Burgess Hill - Freeks Farm & Link Road GI				

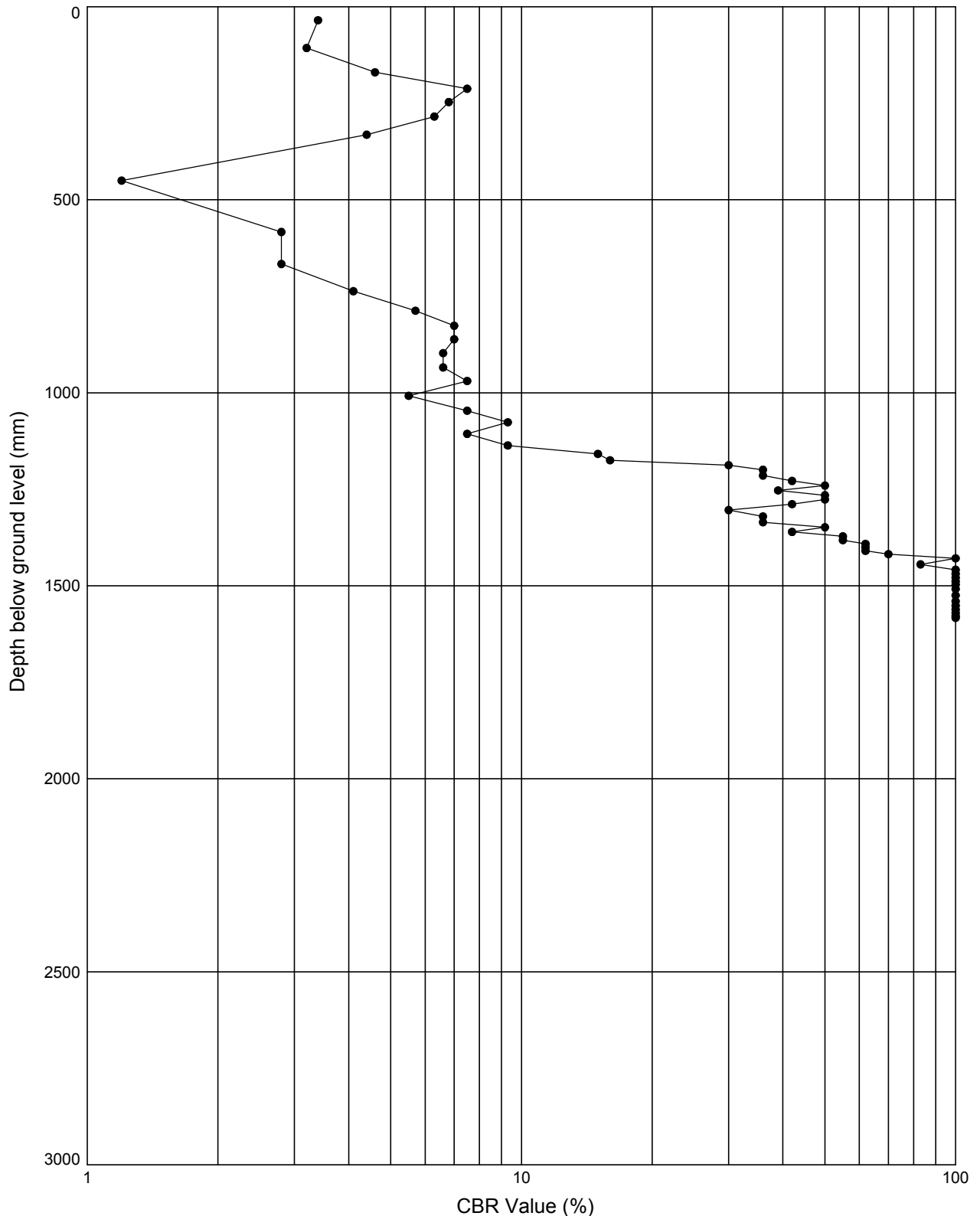
DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **TRL204**

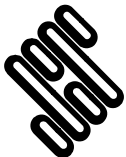
Test Date : **03.04.19**

Ground Level (m AOD): **30.28**

National Grid Co-ordinates: **E:531049.0 N:120884.8**



Notes: CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line. Location CAT and GPR scanned prior to test.



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**HE Northern Arc, Burgess Hill -
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Contract Ref:

562943

GINT_LIBRARY_v8_07.GLB LibVersion: v8_07_001 PjVersion: v8_07 | Graph 1 - DCP - 1 - BLOWS VS DEPTH - A4L | 562943_HE_NORTH_ARC_BURGESS_HILL_FREEKS_FARM&LINK_ROAD_GI.GPJ

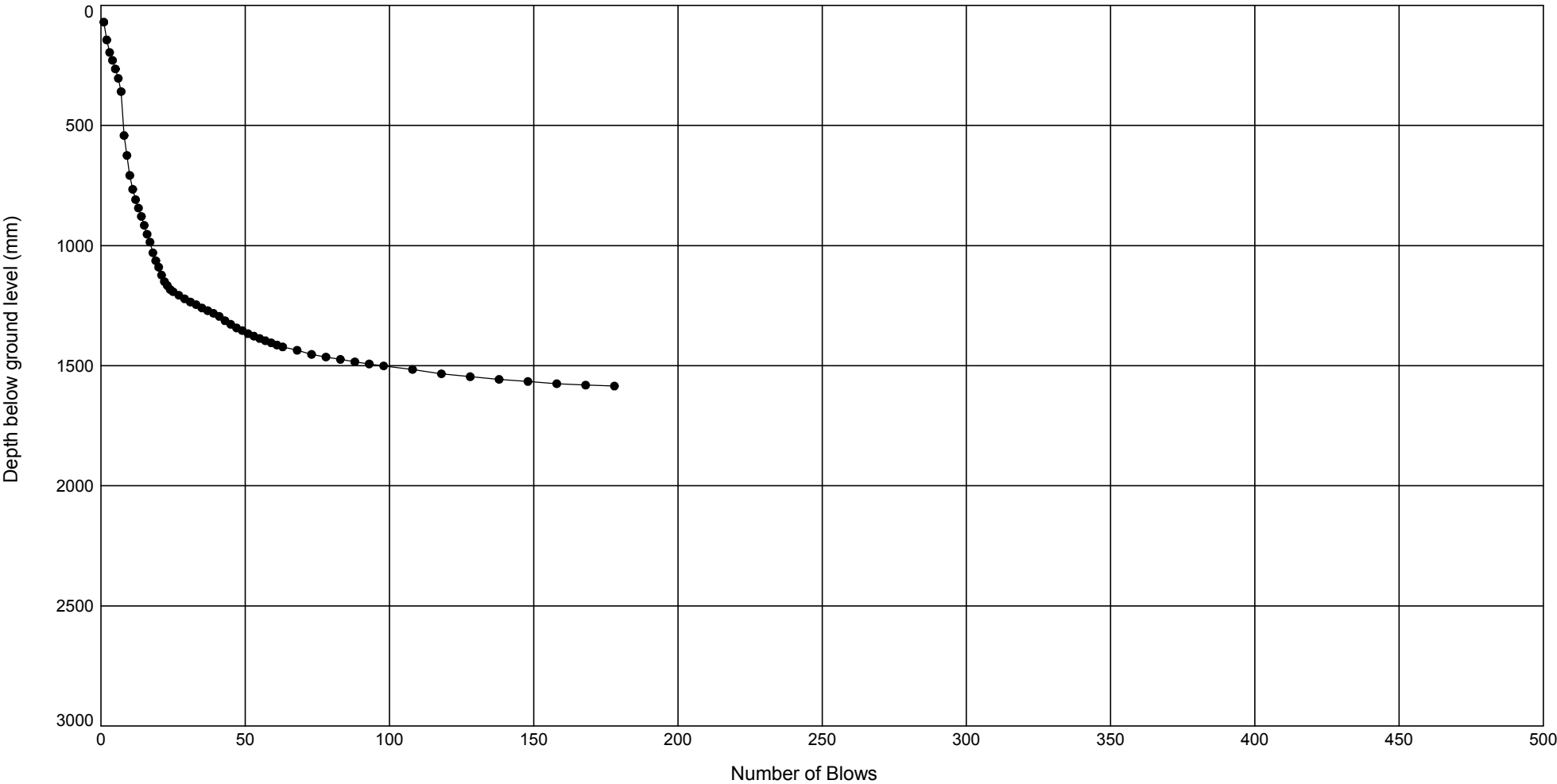
DCP TEST RESULTS - DEPTH vs NUMBER OF BLOWS

Position Ref : **TRL204**

Test Date : **03.04.19**

Ground Level (m AOD): **30.28**

National Grid Co-ordinates: **E:531049.0 N:120884.8**



Notes: **Location CAT and GPR scanned prior to test.**

	Compiled By	Date	Checked By	Date	Contract Ref: 562943
		12/06/19			
	Contract HE Northern Arc, Burgess Hill - Freeks Farm & Link Road GI				

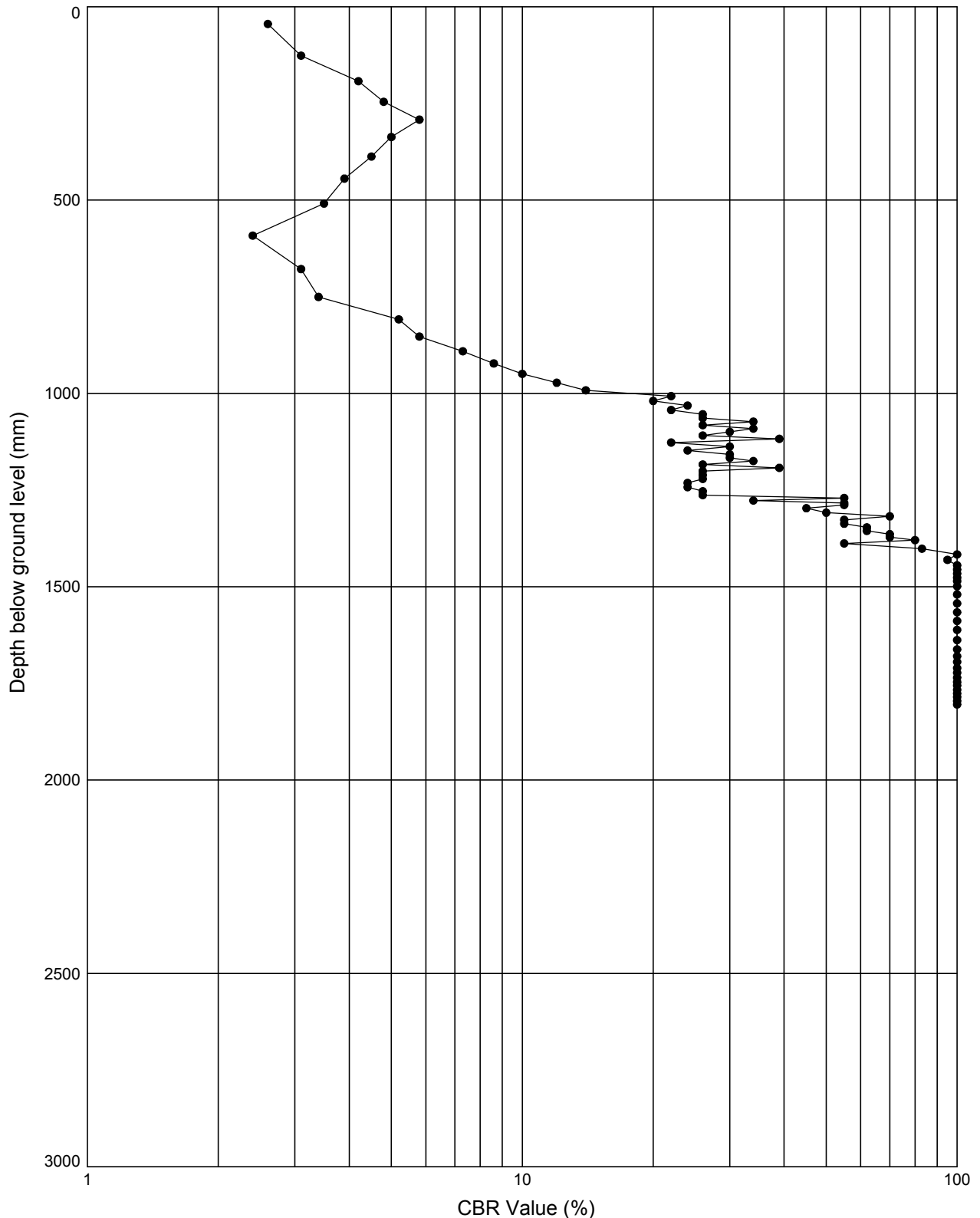
DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **TRL205**

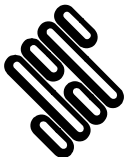
Test Date : **03.04.19**

Ground Level (m AOD): **25.73**

National Grid Co-ordinates: **E:530961.7 N:120773.0**



Notes: CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line. Location CAT and GPR scanned prior to test.



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Date

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Date

12/06/19

Contract

**HE Northern Arc, Burgess Hill -
Freeks Farm & Link Road GI**

Contract Ref:

562943

GINT_LIBRARY_v8_07.GLB LibVersion: v8_07_001 PjVersion: v8_07 | Graph 1 - DCP - 1 - BLOWS VS DEPTH - A4L | 562943_HE_NORTH_ARC_BURGESS_HILL_FREEKS_FARM&LINK_ROAD_GI.GPJ

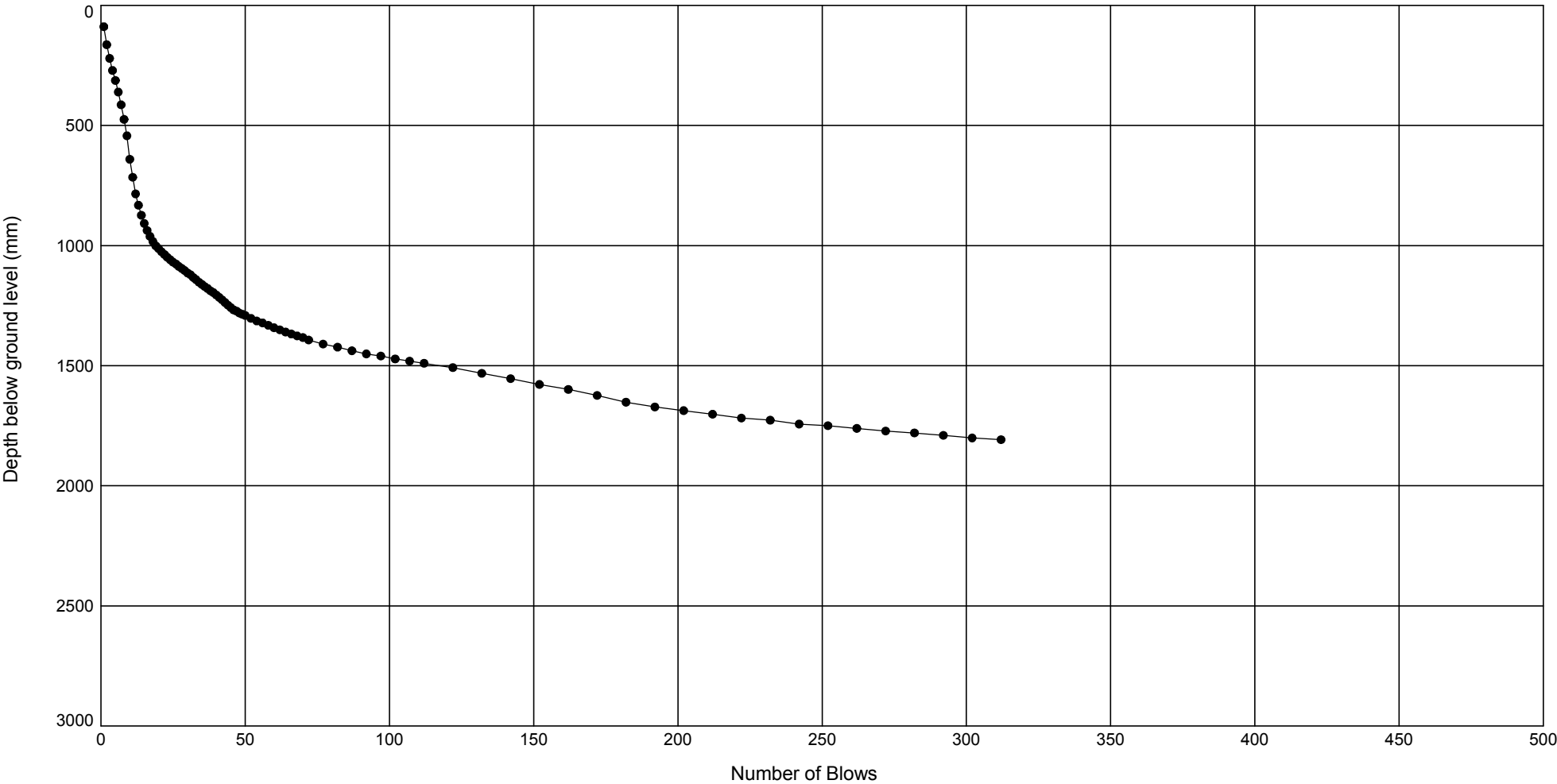
DCP TEST RESULTS - DEPTH vs NUMBER OF BLOWS

Position Ref : **TRL205**

Test Date : **03.04.19**

National Grid Co-ordinates: **E:530961.7 N:120773.0**

Ground Level (m AOD): **25.73**



Notes: **Location CAT and GPR scanned prior to test.**

	Compiled By	Date	Checked By	Date	Contract Ref: 562943
		12/06/19			
	Contract HE Northern Arc, Burgess Hill - Freeks Farm & Link Road GI				

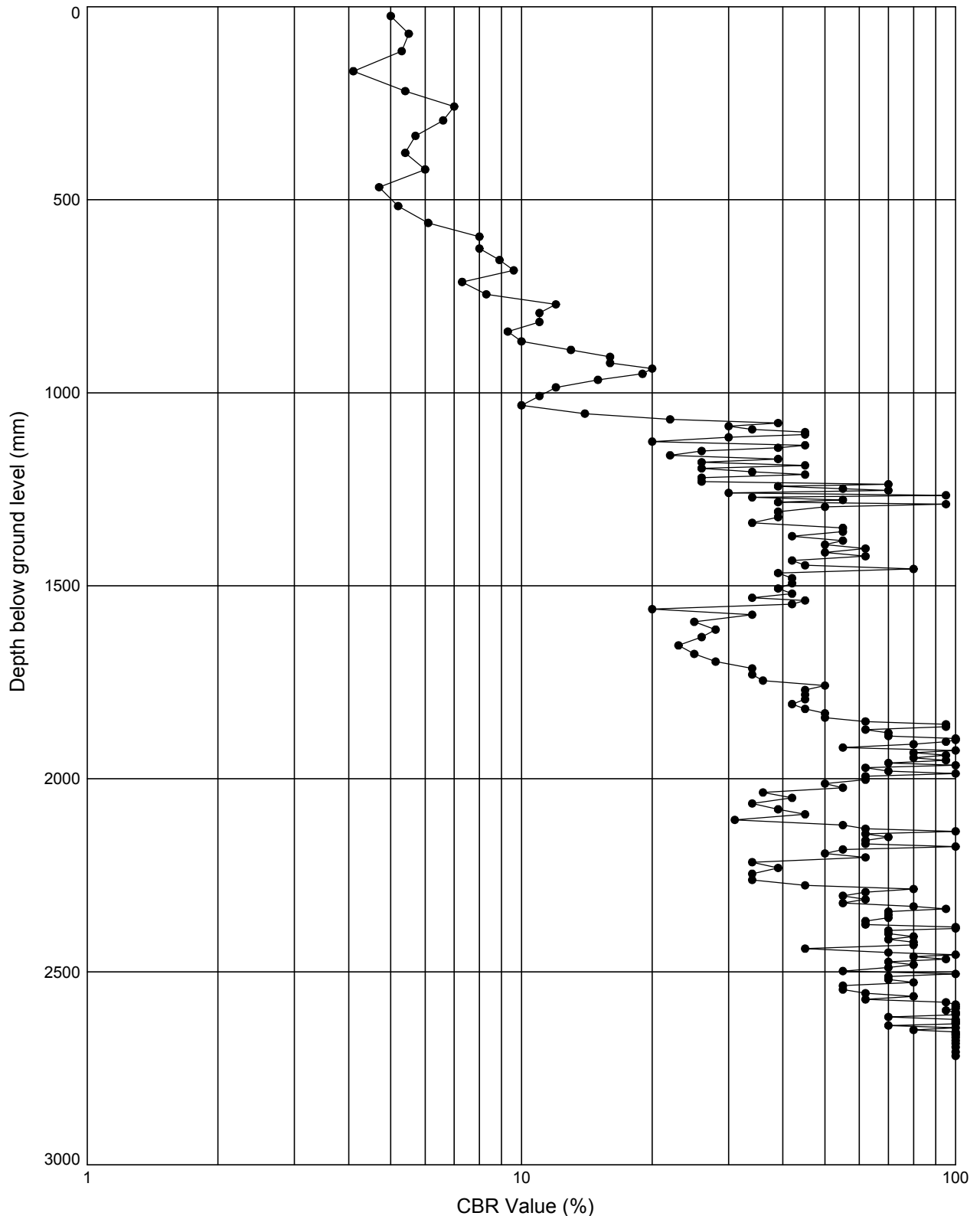
DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **TRL206**

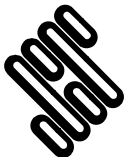
Test Date : **03.04.19**

Ground Level (m AOD): **26.51**

National Grid Co-ordinates: **E:530832.6 N:120819.5**



Notes: CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line.
Location CAT and GPR scanned prior to test.



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Date

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Date

12/06/19

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**HE Northern Arc, Burgess Hill -
Freeks Farm & Link Road GI**

Contract Ref:

562943

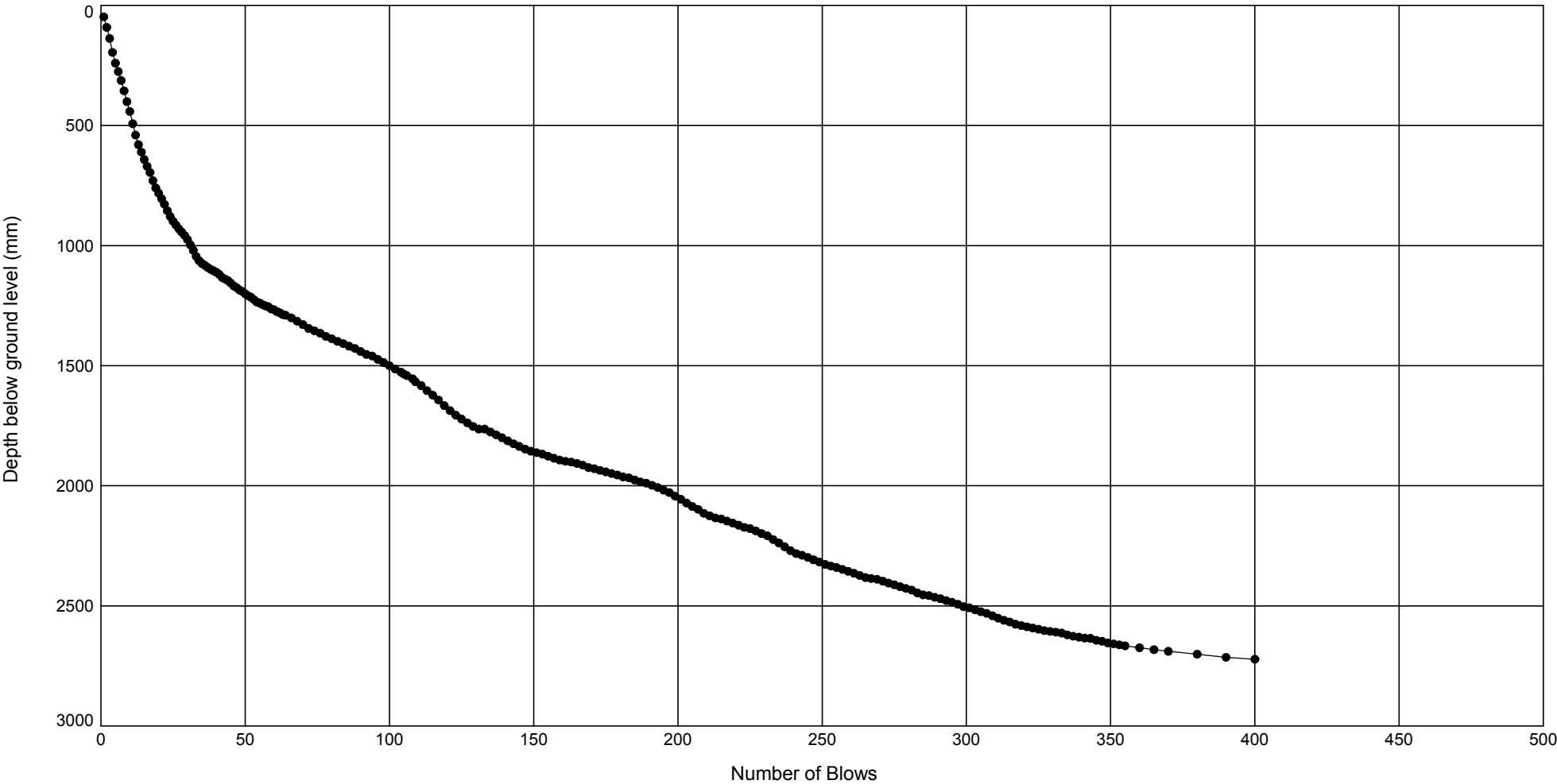
DCP TEST RESULTS - DEPTH vs NUMBER OF BLOWS

Position Ref : **TRL206**

Test Date : **03.04.19**

Ground Level (m AOD): **26.51**

National Grid Co-ordinates: **E:530832.6 N:120819.5**



Notes: **Location CAT and GPR scanned prior to test.**

	Compiled By	Date	Checked By	Date	Contract Ref: 562943
		12/06/19			
	Contract HE Northern Arc, Burgess Hill - Freeks Farm & Link Road GI				

APPENDIX D - GEOTECHNICAL LABORATORY TESTING

- (i) Laboratory Test Verification Sheet
- (ii) Laboratory Test Results



STRUCTURAL SOILS LTD

TEST REPORT



Report No. 562943-01 (00)

1774

Date 30-June-2019 Contract Link Road

Client Structural Soils Ltd
Address Anerley Court
Half Moon Lane
Hildenborough
Tonbridge
TN11 9HU

For the Attention of Alice Hayton

Samples submitted by client	10-April-2019	Client Reference	562943
Testing Started	10-April-2019	Client Order No.	n/a
Testing Completed	26-June-2019	Instruction Type	Written

Tests marked 'Not UKAS Accredited' in this report are not included in the UKAS Accreditation Schedule for our Laboratory.

UKAS Accredited Tests

- | | |
|-------|---|
| 1.01 | Moisture Content (oven drying method) BS1377:Part 2:1990:clause 3.2 (superceded)* |
| 1.03 | Liquid Limit (one point method) & Plastic Limit BS1377:Part 2:1990,clause 4.4/5.3 |
| 1.10 | Particle Size Distribution wet sieve method BS1377:Part 2:1990,clause 9.2* |
| 1.13a | Particle Size Distribution sedimentation pipette method BS1377:Part 2:1990,clause 9.4* |
| 4.01 | One-dimensional consolidation BS1377:Part 5:1990,clause 3.5* |
| 10.06 | Point Load Index ISRM:2007 |
| 10.07 | RT06 UCS of Rock (In-house method based on ISRM 2007, ASTM D4543-08 and Eurocode 7 Part 2 W.1.1) |
| 5.04 | Undrained shear strength triaxial compression without pore pressure measurement (definitive method) 100mm diameter specimens BS1377:Part 7:1990,clause 8.4* |

Undertaken by a sub-contractor

- | | |
|------|---|
| 2.07 | pH value in accordance with BRE Special Digest 1:2005 |
| 2.04 | Sulphate content (water extract) in accordance with BRE Special Digest 1:2005 |
| 2.01 | Organic matter content in accordance with BRE Special Digest 1:2005 |
| 2.06 | Sulphate content (acid extract) in accordance with BRE Special Digest 1:2005 |
| 2.05 | Total sulphur in accordance with BRE Special Digest 1:2005 |

* This clause of BS1377 is no longer the most up to date method due to the publication of ISO17892

Please Note: Remaining samples will be retained for a period of one month from today and will then be disposed of .
Test were undertaken on samples 'as received' unless otherwise stated.
Opinions and interpretations expressed in this report are outside the scope of accreditation for this laboratory.

Structural Soils Ltd 18 Frogmore Rd Hemel Hempstead HP3 9RT Tel.01442 416661 e-mail dimitris.xirouchakis@soils.co.uk

TESTING VERIFICATION CERTIFICATE



1774

The test results included in this report are certified as:-

ISSUE STATUS: **FINAL**

In accordance with the Structural Soils Ltd Laboratory Quality Management System, results sheets and summaries of results issued by the laboratory are checked by an approved signatory. The integrity of the test data and results are ensured by control of the computer system employed by the laboratory as part of the Software Verification Program as detailed in the Laboratory Quality Manual.

This testing verification certificate covers all testing compiled on or before the following datetime: **30/06/2019 20:13:38**.

Testing reported after this date is not covered by this Verification Certificate.

Approved Signatory
Sharon Cairns (Laboratory Manager)

(Head Office)
Bristol Laboratory
Unit 1A, Princess Street
Bedminster
Bristol
BS3 4AG

Castleford Laboratory
The Potteries, Pottery Street
Castleford
West Yorkshire
WF10 1NJ

Hemel Laboratory
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Tonbridge Laboratory
Anerley Court, Half Moon Lane
Hildenborough
Tonbridge
TN11 9HU



**STRUCTURAL
SOILS LTD**

Contract:

**HE Northern Arc, Burgess Hill -
Link Road GI**

Job No:

562943



SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH104		D	1.75	36	44	19	25	100	Yellowish brown mottled grey slightly sandy CLAY
BH104		D	2.30	38	56	22	34	98	Yellowish brown slightly sandy slightly gravelly CLAY
BH201	5	DSPT	2.00	16	45	23	22	99	Yellowish brown slightly gravelly silty CLAY
TP201	4	D	1.00	30	43	26	17	100	Dark orangish brown slightly sandy CLAY
TP201	10	D	1.90	23	36	20	16	83	Brown mottled orange and grey slightly gravelly slightly sandy CLAY
TP201	14	D	3.00	26	44	25	19	55	Orangish brown mottled grey and black slightly gravelly slightly sandy CLAY
TP202	2	D	0.60	29	60	29	31	79	Brown mottled orange and yellowish grey slightly gravelly slightly sandy CLAY
TP202	4	D	1.20	36	84	33	51	99	Brown mottled orange and grey sandy CLAY



**STRUCTURAL
SOILS LTD**

Contract:

HE Northern Arc, Burgess Hill - Link Road GI

Contract Ref:

562943



SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP203	2	D	0.70	26	44	24	20	97	Yellowish brown mottled orange and grey slightly sandy slightly gravelly silty CLAY
TP203	4	D	1.60	21	46	25	21	97	Grey mottled orangish brown slightly gravelly slightly sandy silty CLAY
TP204	2	D	0.50	31	74	27	47	100	Brown mottled orange and grey silty CLAY
TP204	3	D	1.10	23	55	22	33	99	Brown mottled grey and orange slightly sandy slightly gravelly silty CLAY
TP205	2	D	0.70	19	39	19	20	100	Grey mottled orangish brown silty CLAY with rare sand and rare gravel
TP205	4	D	1.50	15	32	20	12	75	Brown mottled orange, grey and black slightly sandy slightly gravelly silty CLAY. Gravel is weak siltstone
TP206	2	D	0.50	26	41	25	16	100	Brown mottled grey and orange silty CLAY
TP206	4	D	1.50	18	36	23	13	100	Brown mottled grey and orange slightly sandy slightly gravelly silty CLAY



**STRUCTURAL
SOILS LTD**

Contract:

HE Northern Arc, Burgess Hill - Link Road GI

Contract Ref:

562943



SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP206	5	D	2.20	15	36	22	14	98	Brown mottled grey and orange slightly sandy slightly gravelly silty CLAY. Gravel is weak siltstone
WS119	8	UT	1.20	22	33	18	15	99	Orangish brown mottled grey slightly sandy slightly gravelly silty CLAY
WS119	14	UT	3.00	27	40	21	19	93	Orangish brown mottled grey slightly gravelly silty CLAY



**STRUCTURAL
SOILS LTD**

Contract:

HE Northern Arc, Burgess Hill - Link Road GI

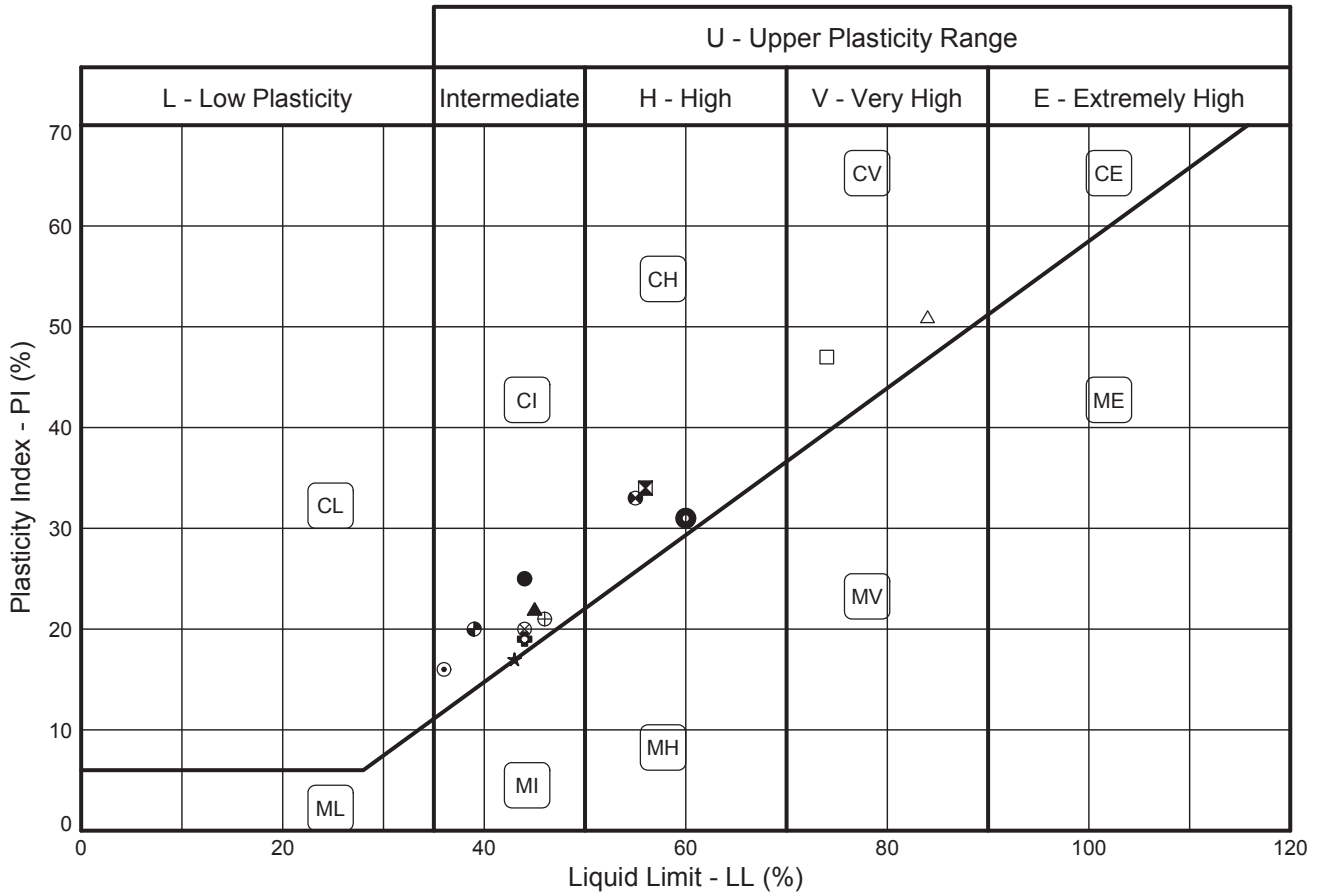
Contract Ref:

562943



PLASTICITY CHART - PI Vs LL

In accordance with BS5930:2015
Testing in accordance with BS1377-2:1990



Sample Identification				BS Test Method #	Preparation Method +	MC %	LL %	PL %	PI %	<425um %	Lab location
Exploratory Position ID	Sample	Depth (m)									
●	BH104	D	1.75	3.2/4.3/5.3/5.4	4.2.4	36	44	19	25	100	B
⊠	BH104	D	2.30	3.2/4.3/5.3/5.4	4.2.4	38	56	22	34	98	B
▲	BH201	5DSPT	2.00	3.2/4.3/5.3/5.4	4.2.3	16	45	23	22	99	B
★	TP201	4D	1.00	3.2/4.3/5.3/5.4	4.2.3	30	43	26	17	100	T
⊙	TP201	10D	1.90	3.2/4.3/5.3/5.4	4.2.4	23	36	20	16	83	T
⊕	TP201	14D	3.00	3.2/4.3/5.3/5.4	4.2.4	26	44	25	19	55	T
⊗	TP202	2D	0.60	3.2/4.3/5.3/5.4	4.2.4	29	60	29	31	79	T
△	TP202	4D	1.20	3.2/4.3/5.3/5.4	4.2.4	36	84	33	51	99	T
⊗	TP203	2D	0.70	3.2/4.3/5.3/5.4	4.2.4	26	44	24	20	97	T
⊕	TP203	4D	1.60	3.2/4.3/5.3/5.4	4.2.4	21	46	25	21	97	T
□	TP204	2D	0.50	3.2/4.3/5.3/5.4	4.2.3	31	74	27	47	100	T
⊗	TP204	3D	1.10	3.2/4.3/5.3/5.4	4.2.4	23	55	22	33	99	T
⊕	TP205	2D	0.70	3.2/4.3/5.3/5.4	4.2.3	19	39	19	20	100	T

Tested in accordance with the following clauses of BS1377-2:1990.

3.2 - Moisture Content
4.3 - Cone Penetrometer Method
4.4 - One Point Cone Penetrometer Method
4.6 - One Point Casagrande Method
5.3 - Plastic Limit Method
5.4 - Plasticity Index

+ Tested in accordance with the following clauses of BS1377-2:1990.

4.2.3 - Natural State
4.2.4 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)



**STRUCTURAL
SOILS LTD**

Compiled By

Date

SHARON CAIRNS

23/06/19

Contract

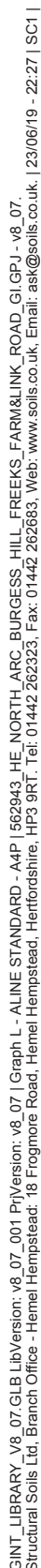
Contract Ref:

**HE Northern Arc, Burgess Hill -
Link Road GI**

562943



In accordance with BS5930:2015
Testing in accordance with BS1377-2:1990



# Tested in accordance with the following clauses of BS1377-2:1990. 3.2 - Moisture Content 4.3 - Cone Penetrometer Method 4.4 - One Point Cone Penetrometer Method 4.6 - One Point Casagrande Method 5.3 - Plastic Limit Method 5.4 - Plasticity Index	+ Tested in accordance with the following clauses of BS1377-2:1990. 4.2.3 - Natural State 4.2.4 - Wet Sieved Key: * = Non-standard test, NP = Non plastic.
---	--



Compiled By		Date
	SHARON CAIRNS	23/06/19
Contract HE Northern Arc, Burgess Hill - Link Road GI		Contract Ref: 562943 

PARTICLE SIZE DISTRIBUTION TEST

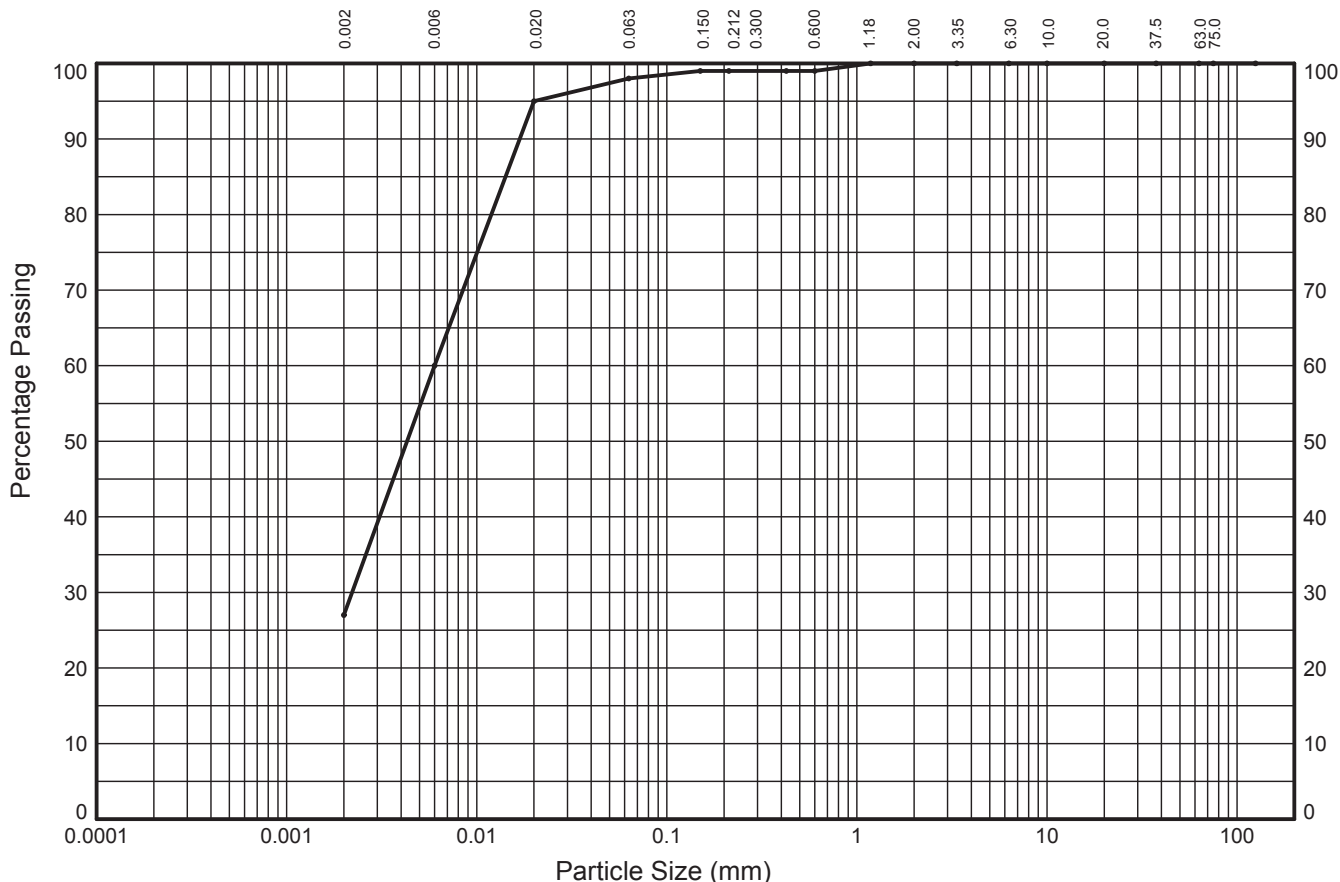
In accordance with clauses 9.2, 9.4 of BS1377:Part 2:1990

Borehole: **BH201**

Sample Ref: **2**

Sample Type: **B**

Depth (m): **0.60**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	34%	34%	3%	1%	0%	1%	0%	0%	0%	
	SILT			SAND			GRAVEL			
27%	71%			2%			0%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	100
6.3	100
3.35	100
2.0	100
1.18	100
0.600	99
0.425	99
0.212	99
0.150	99
0.063	98

Particle Diameter (mm)	Percent Passing (%)
0.02	95
0.006	60
0.002	27
Sedimentation sample was not pre-treated	

Coefficients	
D ₁₀ (mm)	NA
D ₁₅ (mm)	NA
D ₃₀ (mm)	0.002
D ₅₀ (mm)	0.004
D ₆₀ (mm)	0.006
D ₈₅ (mm)	0.014
D ₉₀ (mm)	0.017
C _U	NA
C _C	NA

Soil Description:

Brown mottled orange and grey slightly sandy clayey SILT

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2



STRUCTURAL SOILS
Anerley Court
Half Moon Lane
Hildenborough
Tonbridge TN11 9HU

Compiled By

Date

SHARON CAIRNS

23/06/19

Contract

Contract Ref:

**HE Northern Arc, Burgess Hill -
Link Road GI**

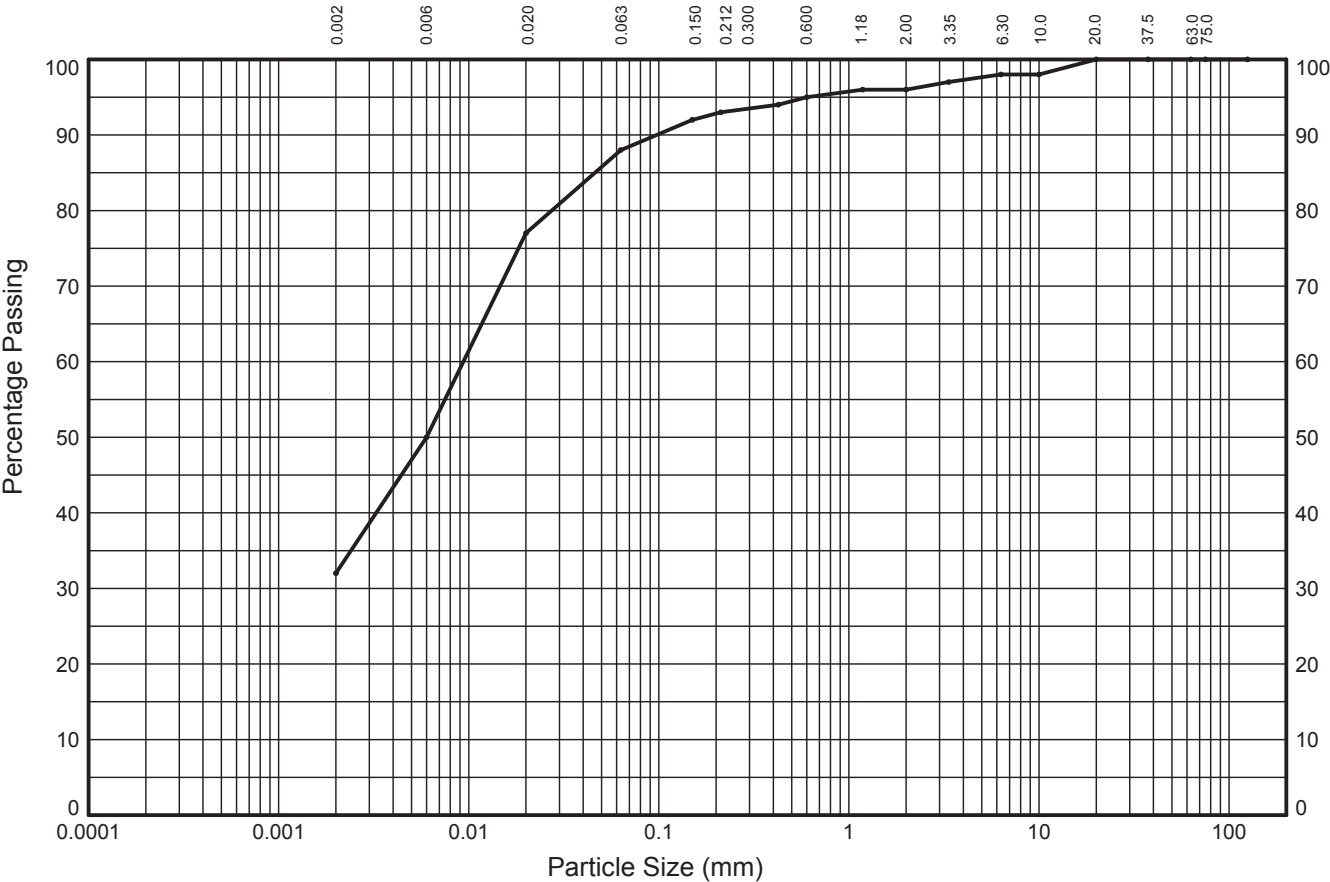
562943



PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2, 9.4 of BS1377:Part 2:1990

Trial Pit: **TP201** Sample Ref: **5** Sample Type: **B** Depth (m): **1.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	19%	26%	11%	5%	2%	1%	2%	2%	0%	
	SILT			SAND			GRAVEL			
32%	56%			8%			4%			0%

Test Sieve (mm)	Percent Passing (%)	Particle Diameter (mm)	Percent Passing (%)	Coefficients	
125.0	100	0.02	77	D ₁₀ (mm)	NA
75.0	100			D ₁₅ (mm)	NA
63.0	100			D ₃₀ (mm)	NA
37.5	100	0.006	50	D ₅₀ (mm)	0.006
20.0	100			D ₆₀ (mm)	0.009
10.0	98			D ₈₅ (mm)	0.046
6.30	98	0.002	32	D ₉₀ (mm)	0.097
3.35	97			C _U	NA
2.00	96			C _C	NA
1.18	96	Sedimentation sample was not pre-treated			
0.600	95				
0.425	94				
0.212	93				
0.150	92				
0.063	88	Soil Description: Brown mottled yellowish brown slightly gravelly slightly sandy clayey SILT			

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2

	Compiled By		Date
	SHARON CAIRNS		23/06/19
	Contract	Contract Ref:	
STRUCTURAL SOILS Anerley Court Half Moon Lane Hildenborough Tonbridge TN11 9HU		HE Northern Arc, Burgess Hill - Link Road GI	
		562943	
			

PARTICLE SIZE DISTRIBUTION TEST

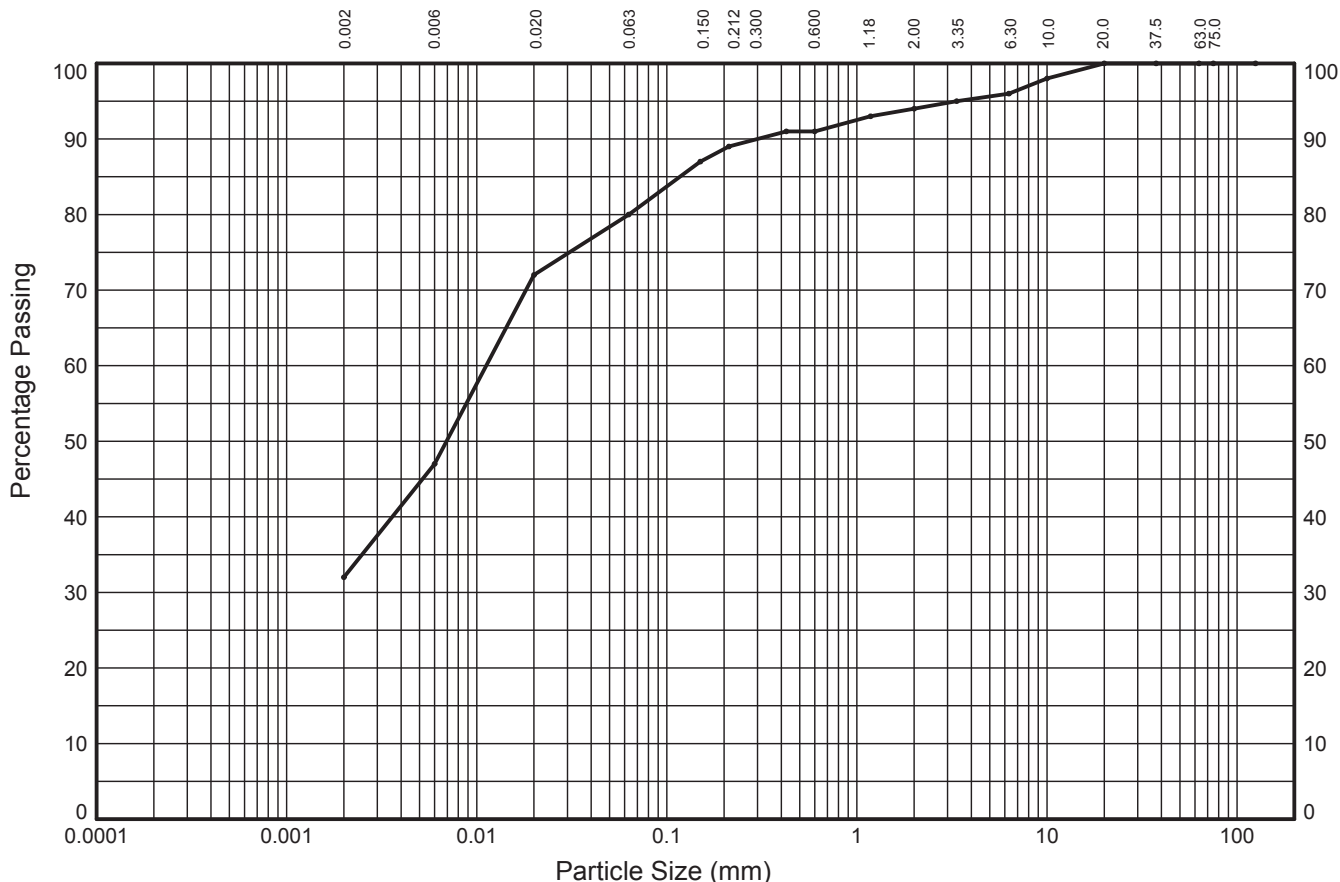
In accordance with clauses 9.2, 9.4 of BS1377:Part 2:1990

Trial Pit: **TP201**

Sample Ref: **9**

Sample Type: **B**

Depth (m): **1.90**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	16%	24%	8%	9%	2%	3%	2%	4%	0%	
	SILT			SAND			GRAVEL			
32%	48%			14%			6%			0%

Test Sieve (mm)	Percent Passing (%)	Particle Diameter (mm)	Percent Passing (%)	Coefficients	
125.0	100	0.02	72	D ₁₀ (mm)	NA
75.0	100			D ₁₅ (mm)	NA
63.0	100			D ₃₀ (mm)	NA
37.5	100	0.006	47	D ₅₀ (mm)	0.007
20.0	100			D ₆₀ (mm)	0.011
10.0	98			D ₈₅ (mm)	0.117
6.30	96	0.002	32	D ₉₀ (mm)	0.300
3.35	95			C _U	NA
2.00	94			C _C	NA
1.18	93	Sedimentation sample was not pre-treated			
0.600	91				
0.425	91				
0.212	89				
0.150	87				
0.063	80	Soil Description: Orangish brown mottled dark brown and grey slightly gravelly slightly sandy clayey SILT			

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2



STRUCTURAL SOILS
Anerley Court
Half Moon Lane
Hildenborough
Tonbridge TN11 9HU

Compiled By

Date

SHARON CAIRNS

23/06/19

Contract

Contract Ref:

**HE Northern Arc, Burgess Hill -
Link Road GI**

562943



PARTICLE SIZE DISTRIBUTION TEST

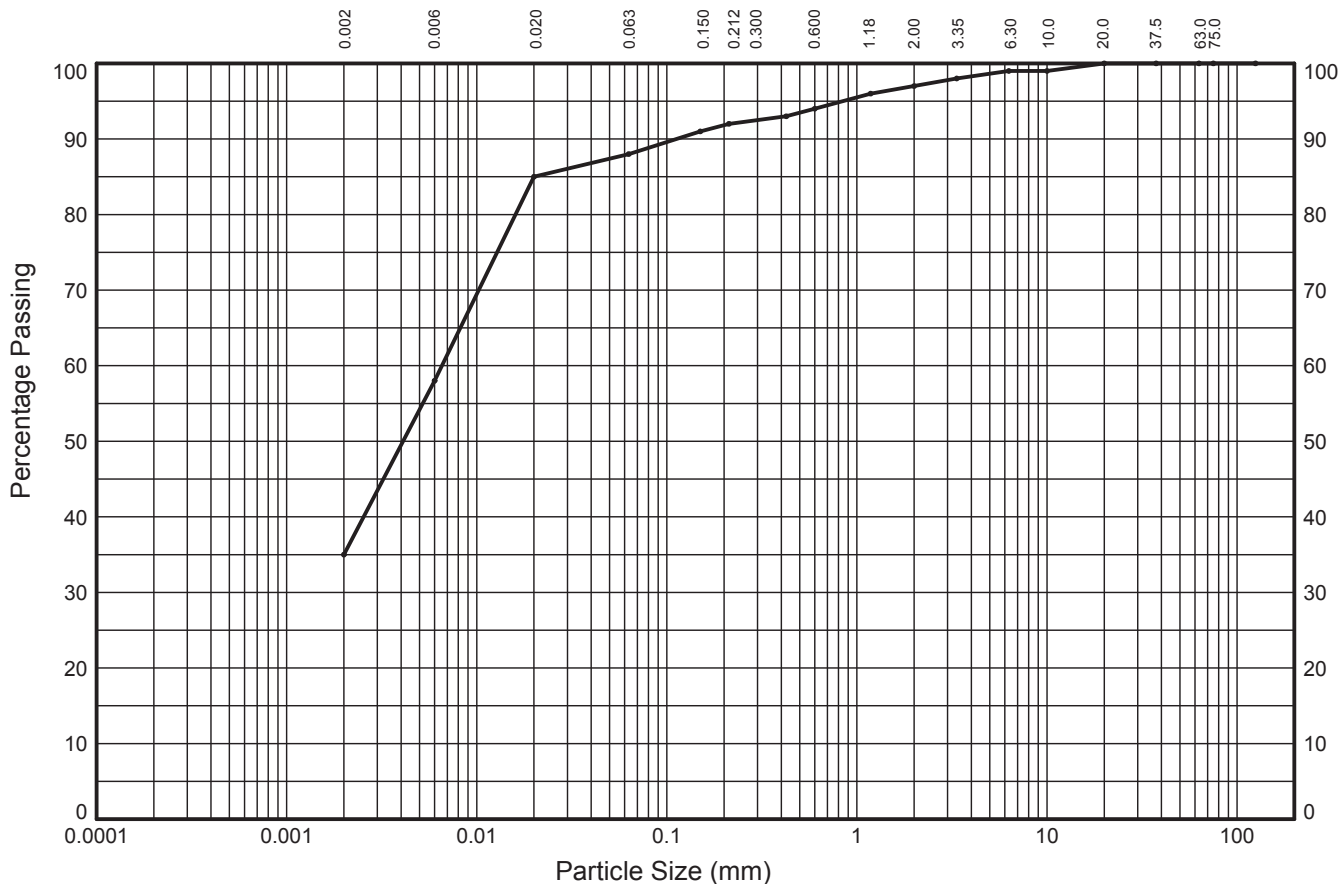
In accordance with clauses 9.2, 9.4 of BS1377:Part 2:1990

Trial Pit: **TP201**

Sample Ref: **13**

Sample Type: **B**

Depth (m): **3.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	24%	26%	3%	4%	2%	3%	2%	1%	0%	
	SILT			SAND			GRAVEL			
35%	53%			9%			3%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	99
6.30	99
3.35	98
2.00	97
1.18	96
0.600	94
0.425	93
0.212	92
0.150	91
0.063	88

Particle Diameter (mm)	Percent Passing (%)
0.02	85
0.006	58
0.002	35
Sedimentation sample was not pre-treated	

Coefficients	
D ₁₀ (mm)	NA
D ₁₅ (mm)	NA
D ₃₀ (mm)	NA
D ₅₀ (mm)	0.004
D ₆₀ (mm)	0.007
D ₈₅ (mm)	0.020
D ₉₀ (mm)	0.112
C _U	NA
C _C	NA

Soil Description:

Brown mottled orange and grey slightly gravelly slightly sandy clayey SILT

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2



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PARTICLE SIZE DISTRIBUTION TEST

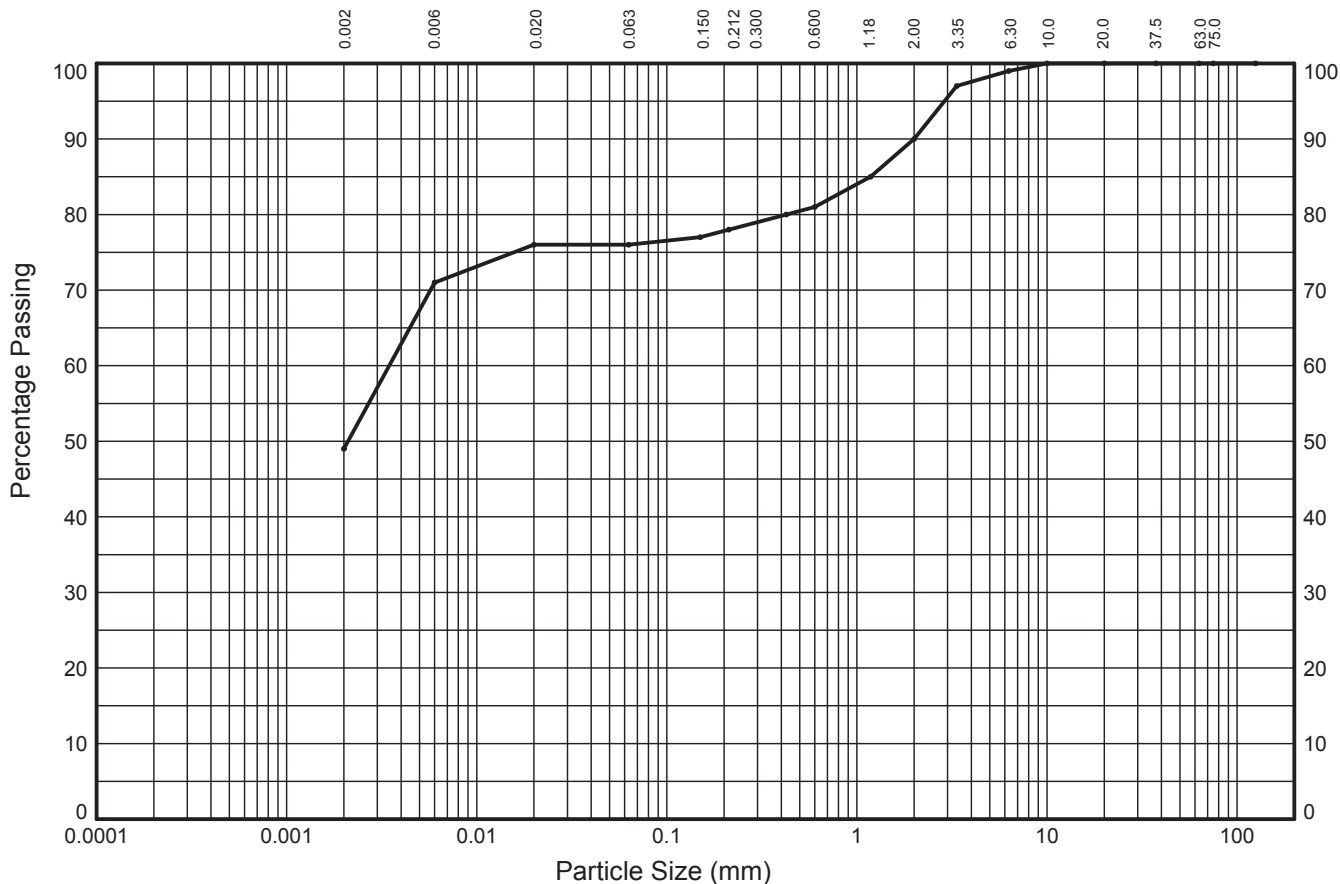
In accordance with clauses 9.2, 9.4 of BS1377:Part 2:1990

Trial Pit: **TP202**

Sample Ref: **1**

Sample Type: **B**

Depth (m): **0.60**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	22%	5%	0%	2%	3%	9%	9%	1%	0%	
	SILT			SAND			GRAVEL			
49%	27%			14%			10%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	100
6.30	99
3.35	97
2.00	90
1.18	85
0.600	81
0.425	80
0.212	78
0.150	77
0.063	76

Particle Diameter (mm)	Percent Passing (%)
0.02	76
0.006	71
0.002	49
Sedimentation sample was not pre-treated	

Coefficients	
D ₁₀ (mm)	NA
D ₁₅ (mm)	NA
D ₃₀ (mm)	NA
D ₅₀ (mm)	0.002
D ₆₀ (mm)	0.003
D ₈₅ (mm)	1.180
D ₉₀ (mm)	2.000
C _U	NA
C _C	NA

Soil Description:

Brown mottled orange and grey slightly gravelly slightly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2



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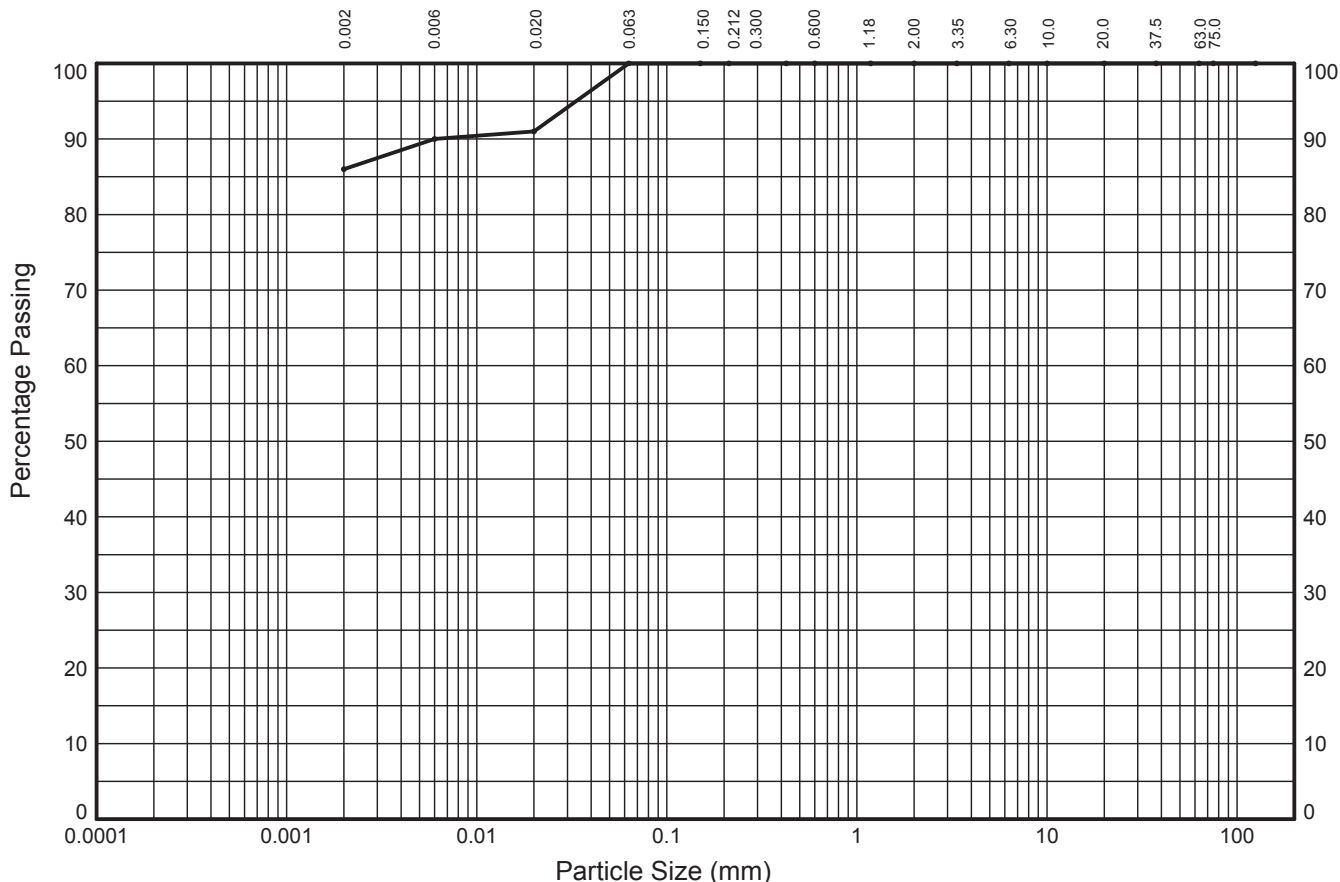
In accordance with clauses 9.2, 9.4 of BS1377:Part 2:1990

Trial Pit: **TP202**

Sample Ref: **3**

Sample Type: **B**

Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	1%	9%	0%	0%	0%	0%	0%	0%	
	SILT			SAND			GRAVEL			
86%	14%			0%			0%			0%

Test Sieve (mm)	Percent Passing (%)	Particle Diameter (mm)	Percent Passing (%)	Coefficients	
125.0	100	0.02	91	D ₁₀ (mm)	NA
75.0	100			D ₁₅ (mm)	NA
63.0	100	0.006	90	D ₃₀ (mm)	NA
37.5	100			D ₅₀ (mm)	NA
20.0	100			D ₆₀ (mm)	NA
10.0	100	0.002	86	D ₈₅ (mm)	NA
6.30	100			D ₉₀ (mm)	0.006
3.35	100			C _U	NA
2.00	100	C _C		NA	
1.18	100	Sedimentation sample was not pre-treated			
0.600	100	Soil Description: Brown mottled orange and grey silty CLAY			
0.425	100				
0.212	100				
0.150	100				
0.063	100				

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2



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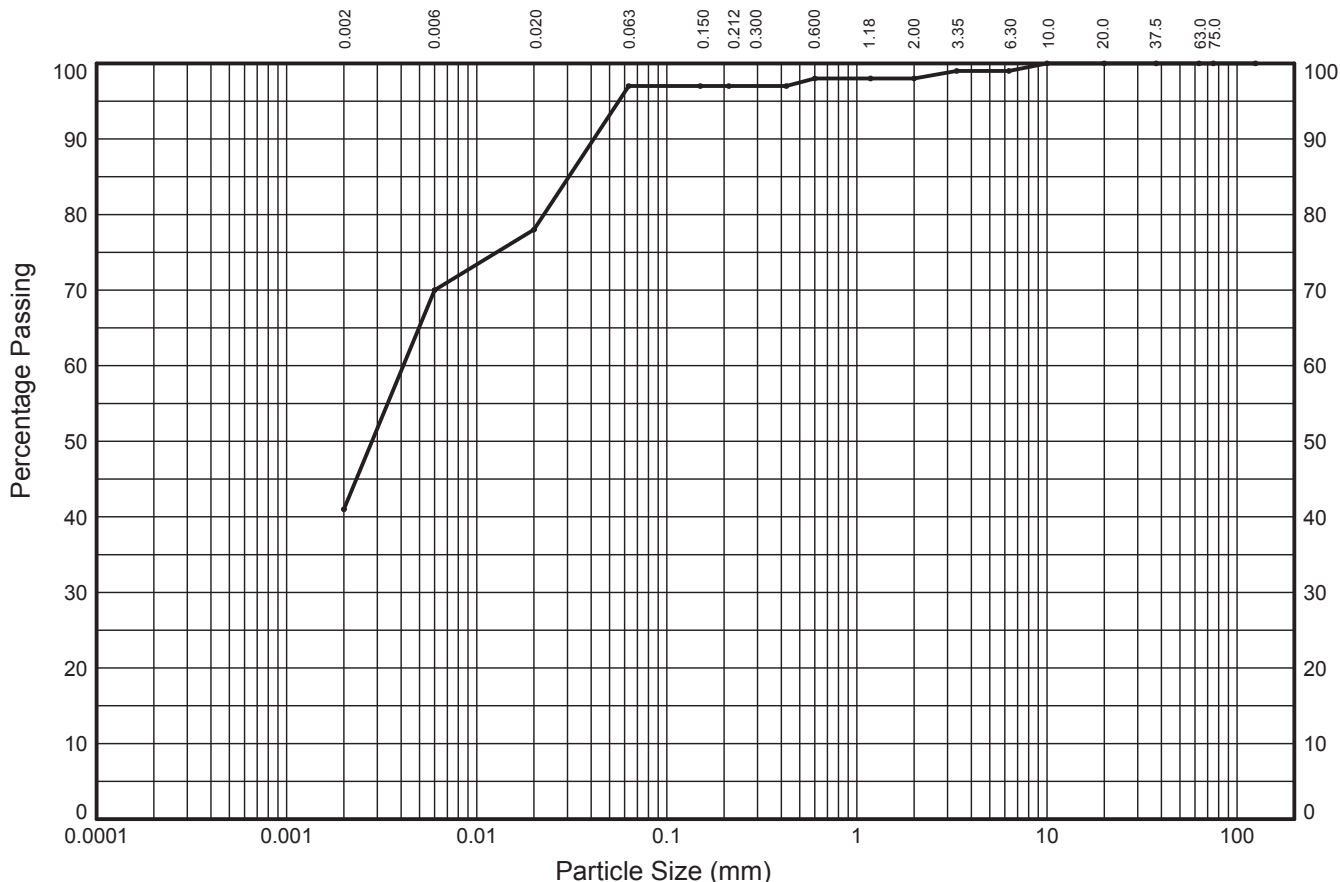
In accordance with clauses 9.2, 9.4 of BS1377:Part 2:1990

Trial Pit: **TP203**

Sample Ref: **1**

Sample Type: **B**

Depth (m): **0.70**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	29%	8%	19%	0%	1%	0%	1%	1%	0%	
	SILT			SAND			GRAVEL			
41%	56%			1%			2%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	100
6.30	99
3.35	99
2.00	98
1.18	98
0.600	98
0.425	97
0.212	97
0.150	97
0.063	97

Particle Diameter (mm)	Percent Passing (%)
0.02	78
0.006	70
0.002	41
Sedimentation sample was not pre-treated	

Coefficients	
D ₁₀ (mm)	NA
D ₁₅ (mm)	NA
D ₃₀ (mm)	NA
D ₅₀ (mm)	0.003
D ₆₀ (mm)	0.004
D ₈₅ (mm)	0.031
D ₉₀ (mm)	0.041
C _U	NA
C _C	NA

Soil Description:

Brown mottled grey and orange slightly sandy slightly gravelly clayey SILT

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2



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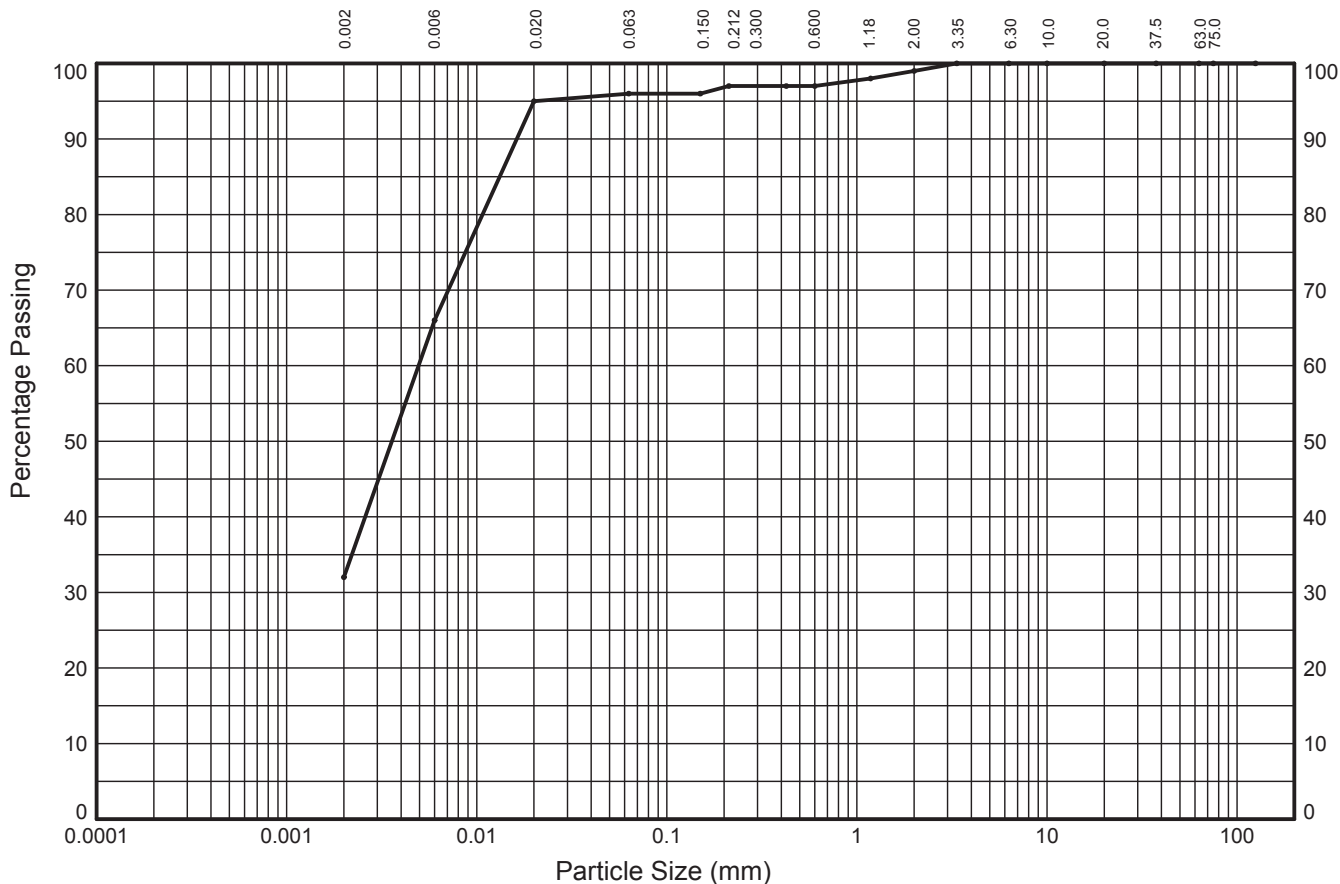
In accordance with clauses 9.2, 9.4 of BS1377:Part 2:1990

Trial Pit: **TP203**

Sample Ref: **3**

Sample Type: **B**

Depth (m): **1.60**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	35%	28%	1%	1%	0%	2%	1%	0%	0%	
	SILT			SAND			GRAVEL			
32%	64%			3%			1%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	100
6.30	100
3.35	100
2.00	99
1.18	98
0.600	97
0.425	97
0.212	97
0.150	96
0.063	96

Particle Diameter (mm)	Percent Passing (%)
0.02	95
0.006	66
0.002	32
Sedimentation sample was not pre-treated	

Coefficients	
D ₁₀ (mm)	NA
D ₁₅ (mm)	NA
D ₃₀ (mm)	NA
D ₅₀ (mm)	0.004
D ₆₀ (mm)	0.005
D ₈₅ (mm)	0.013
D ₉₀ (mm)	0.016
C _U	NA
C _C	NA

Soil Description:

Grey mottled orangish brown slightly gravelly slightly sandy clayey SILT

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2



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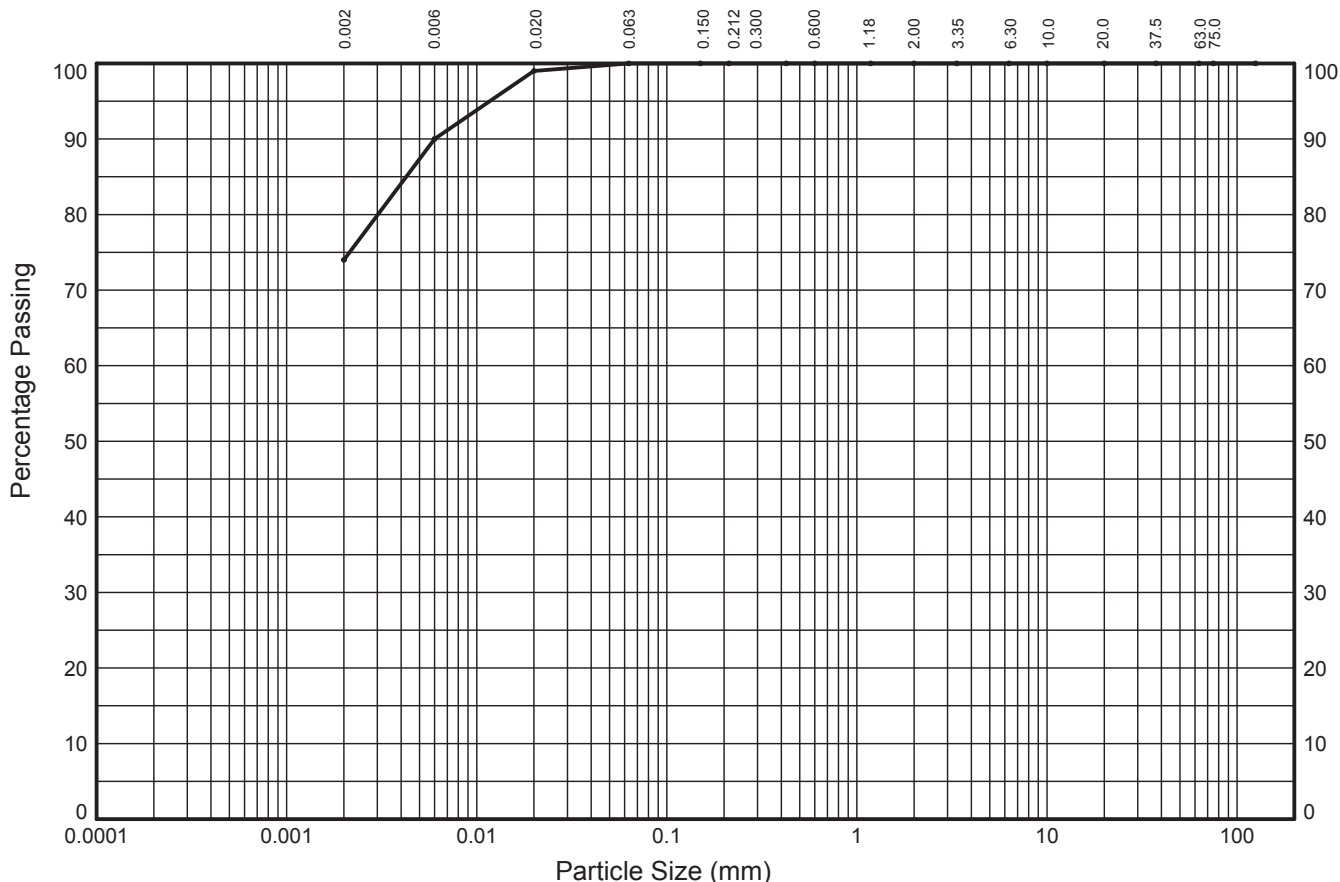
In accordance with clauses 9.2, 9.4 of BS1377:Part 2:1990

Trial Pit: **TP204**

Sample Ref: **1**

Sample Type: **B**

Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	16%	9%	1%	0%	0%	0%	0%	0%	0%	
	SILT			SAND			GRAVEL			
74%	26%			0%			0%			0%

Test Sieve (mm)	Percent Passing (%)	Particle Diameter (mm)	Percent Passing (%)	Coefficients		
125.0	100	0.02	99	D ₁₀ (mm)	NA	
75.0	100			D ₁₅ (mm)	NA	
63.0	100	0.006	90	D ₃₀ (mm)	NA	
37.5	100			D ₅₀ (mm)	NA	
20.0	100			D ₆₀ (mm)	NA	
10.0	100	0.002	74	D ₈₅ (mm)	0.004	
6.30	100			D ₉₀ (mm)	0.006	
3.35	100			C _U	NA	
2.00	100	C _C		NA		
1.18	100	Sedimentation sample was not pre-treated				
0.600	100					
0.425	100	Soil Description: Brown mottled orange and grey silty CLAY				
0.212	100					
0.150	100					
0.063	100					

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2



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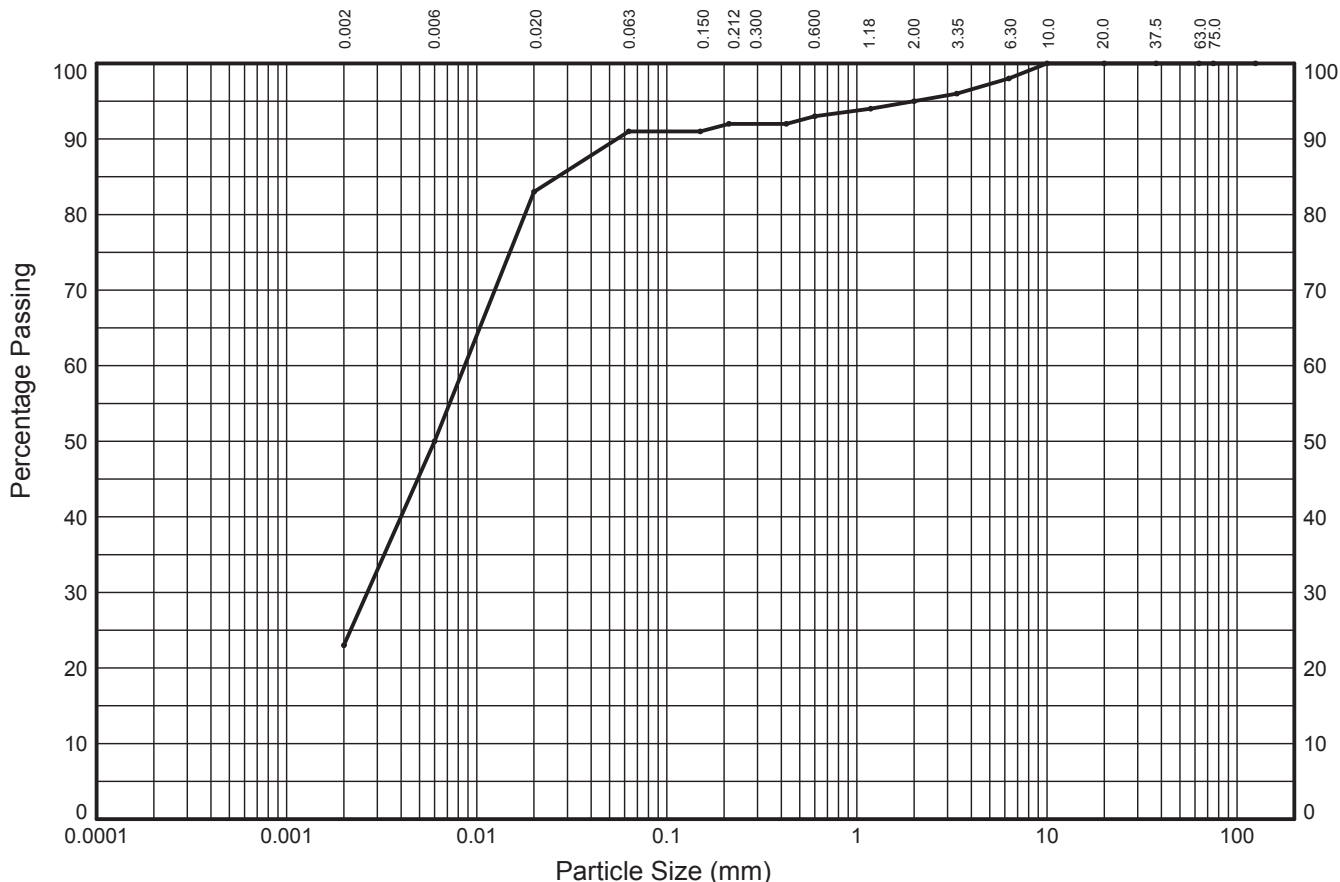
In accordance with clauses 9.2, 9.4 of BS1377:Part 2:1990

Trial Pit: **TP204**

Sample Ref: **2**

Sample Type: **B**

Depth (m): **1.10**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	28%	32%	8%	1%	1%	2%	3%	2%	0%	
	SILT			SAND			GRAVEL			
23%	68%			4%			5%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	100
6.30	98
3.35	96
2.00	95
1.18	94
0.600	93
0.425	92
0.212	92
0.150	91
0.063	91

Particle Diameter (mm)	Percent Passing (%)
0.02	83
0.006	50
0.002	23
Sedimentation sample was not pre-treated	

Coefficients	
D ₁₀ (mm)	NA
D ₁₅ (mm)	NA
D ₃₀ (mm)	0.003
D ₅₀ (mm)	0.006
D ₆₀ (mm)	0.009
D ₈₅ (mm)	0.027
D ₉₀ (mm)	0.055
C _U	NA
C _C	NA

Soil Description:

Brown mottled grey and orange slightly sandy slightly gravelly silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2



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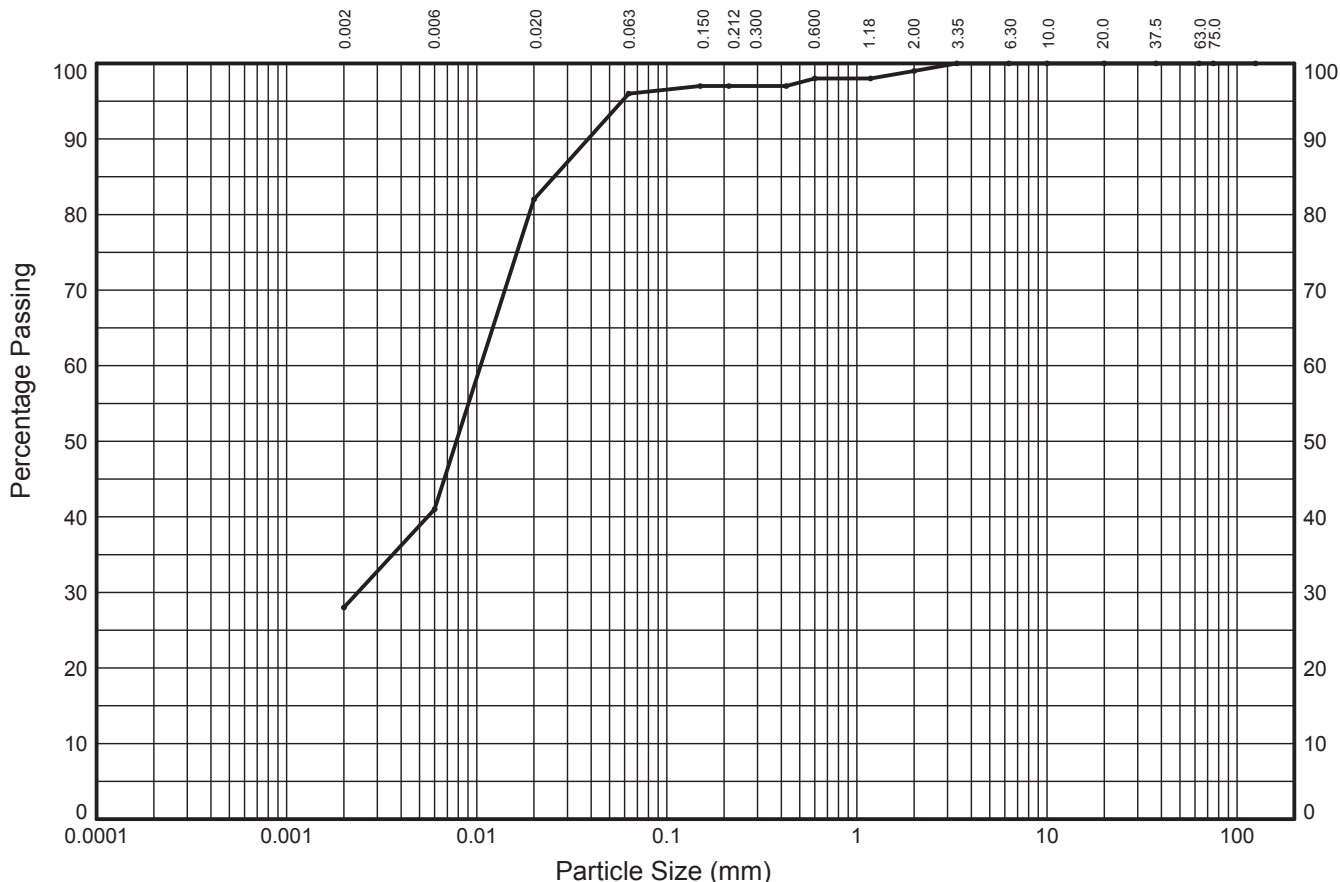
In accordance with clauses 9.2, 9.4 of BS1377:Part 2:1990

Trial Pit: **TP205**

Sample Ref: **1**

Sample Type: **B**

Depth (m): **0.70**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	14%	40%	14%	1%	1%	1%	1%	0%	0%	
	SILT			SAND			GRAVEL			
28%	68%			3%			1%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	100
6.30	100
3.35	100
2.00	99
1.18	98
0.600	98
0.425	97
0.212	97
0.150	97
0.063	96

Particle Diameter (mm)	Percent Passing (%)
0.02	82
0.006	41
0.002	28
Sedimentation sample was not pre-treated	

Coefficients	
D ₁₀ (mm)	NA
D ₁₅ (mm)	NA
D ₃₀ (mm)	0.002
D ₅₀ (mm)	0.008
D ₆₀ (mm)	0.010
D ₈₅ (mm)	0.026
D ₉₀ (mm)	0.039
C _U	NA
C _C	NA

Soil Description:

Grey mottled orangish brown clayey SILT with rare sand and rare gravel

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2



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