GEOTECHNICAL AND GEO-ENVIRONMENTAL ASSESSMENT

Client: Hightown Housing Association Limited

Broadwater Road, Welwyn Garden City

Report No. 13896
October 2023
Version 2

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1	August 2023	Initial (awaiting monitoring results)	Hightown Housing Association Limited
2	October 2023	Final	Hightown Housing Association Limited

Executive Summary

South West Geotechnical Ltd (SWG) was instructed by Hightown Housing Association Ltd (the Client) to undertake a geotechnical and geo-environmental assessment to assist with the proposed development of the a site at 29 Broadwater Road, Welwyn Garden City , AL7 3BQ.

At the time of the investigation, development proposals comprised the construction of a horse-shoe shaped block of flats comprising of four above-ground floors, basement and communal gardens, including garden areas on top of the basement.

The geotechnical assessment was carried out to determine the ground conditions for foundation design. In addition, an assessment was required from a geo-environmental perspective to include recommendations for any contamination remediation that may be required. Falling head permeability testing was undertaken to assist with surface water drainage design.

The investigation works were also carried out to address a significant risk posed by natural cavities which are mapped to be present on the site, identified by desk studies conducted by ListersGeo and Peter Brett Associates. The reports recommend intrusive investigation to be conducted to quantify the extent to which these features might pose risks to proposed developments and inform engineering solutions to reduce those risks.

Ground Conditions

The investigation encountered significant thicknesses of made ground overlying cohesive Glacial Till Deposits soils which in turn overlay dense coarse granular materials attributed to the Kesgrave Catchment Subgroup (‘Glaciofluvial Deposits’). These superficial Materials had their base above chalk belonging to the Seaford Chalk Formation.

Perched groundwater was encountered during the investigation across the site at depths of 3.58 to 4.70mbgl, typically concordant with the base of the higher permeability made ground, and sat on top of the low permeability clay soils beneath.

Geo-environmental

Locally, elevated concentrations of arsenic were recorded in the near surface made ground materials. These are not are not considered to be statistically significant (i.e. are not considered to pose a risk to human health), and no further works are considered necessary in this regard.

No radon protection measures are required.

No other gas protection measures are required.

Any hydrocarbon impacted soils should be removed from site to appropriate landfill facilities during the excavation of the basement. Similarly, any obviously hydrocarbon impacted groundwater (if present) should be removed as well. Any such water is expected to be very localised (i.e. in the vicinity of WS07 and DPSH39).

Standard potable, water pipes are expected to be suitable although, this should be confirmed by the service provider.

Should any obviously contaminated soils be encountered during the construction phase of the works, advice should be sought from a suitably experienced Geo-environmental Engineer.

Geotechnical

It is not considered that there are any significant solution features on the site, rather the chalk bedrock is low density and more prone to solution features as a result of its low density, than higher density chalk materials.

The proposed basement is not a full storey below ground level and there will be up to approximately 3.0m of made ground materials below the underside of the basement floor level. Whilst the cohesive soils beneath the made ground have some appreciable strength, the depth to the soils will make forming pad foundations difficult. Furthermore, the building previously on the site was piled and it is understood that current proposals involve reusing the existing piles to support the new building. Therefore, to ensure consistency of foundation, all of the building should be constructed off piled foundations.

There are significant thicknesses of un-engineered made ground present beneath the proposed basement level. These materials will need to be excavated and re-engineered if they are to be utilised to provide support to the basement floor.

Consideration could be given to the use of Vibro Stone Columns (VSC) to provide support to the basement floor. This would save excavating/ re-engineering the made ground materials.

It is envisaged that a large open excavation will be required to enable construction of the building. Consideration will need to be given to providing support to the site boundaries during construction, particularly along the Broadwater Road and Broad Court elevations.

Concrete should be designed to a Design Sulphate Class of DS-1, and ACEC Class AC-1.

Soakaways should not be formed in made ground as the inundation of un-engineered materials by water can lead to excessive settlement. Furthermore, the underlying cohesive Glacial Till materials would have lower permeability still and so any water soaking into the made ground would simply pond on the surface of the Glacial Till, as is the case with surface water currently. Therefore, conventional shallow soakaway drainage is not considered suitable for use on the site, and an alternative drainage strategy should be sought.

1 INTRODUCTION

1.1 General

South West Geotechnical Ltd (SWG) was instructed by Hightown Housing Association Ltd (the Client) to undertake a geotechnical and geo-environmental assessment to assist with the proposed development of the a site at 29 Broadwater Road, Welwyn Garden City , AL7 3BQ. The initial report was issued in August 2023. This V2 report, provides the results of the gas and groundwater monitoring, and the subsequently updated geo-environmental risk assessment.

At the time of the investigation, development proposals comprised the construction of a horse-shoe shaped block of flats comprising of four above-ground floors, basement and communal gardens, including garden areas on top of the basement. The current proposed development plan is included in Appendix I.

The geotechnical assessment was carried out to determine the ground conditions for foundation design. In addition, an assessment was required from a geo-environmental perspective to include recommendations for any contamination remediation that may be required. Falling head permeability testing was undertaken to assist with surface water drainage design.

The investigation works were also carried out to address a significant risk posed by natural cavities which are mapped to be present on the site, identified by desk studies conducted by ListersGeo and Peter Brett Associates. The reports recommend intrusive investigation to be conducted to quantify the extent to which these features might pose risks to proposed developments and inform engineering solutions to reduce those risks.

The investigation comprised a review of the existing desk study information, intrusive investigation, geotechnical and geo-environmental laboratory testing and reporting.

1.2 Site Description

The site is situated on Broadwater road, in the centre of Welwyn Garden City, Hertfordshire, AL7 3BQ. It is centred on National Grid Reference 524256, 212633, as shown in the Site Location Plan, Appendix A. The site is set within a predominantly commercial and industrial

area near the centre of Welwyn Garden City, and is bound to its west by Broadwater Road. Presently, the land on the other side of the road is a construction site for more residential flats. It is bound the north by Broad Court road separating it from an industrial estate with the nearest premises on the estate being those of Supertyres Motorists Centre and Hertz Car Rental. It is bound to the southeast by an active car park and to the south by an overgrown/ disused car park.

Access to the site is gained from Broadwater Road, entering the site's southwest corner.

At the time of the investigation the buildings on the site had been demolished and the surface of the car park removed.

There was no vegetation on the site apart from weeds around the site edges and mature trees just outside of the eastern and western boundaries.

The site occupies an area around 5800 square meters with maximum dimensions in a broadly square plot with maximum dimensions 80 by 90m.

The site's elevation ranges from 83.6 to 88.9 mAOD and its slopes generally towards the south. There is a significant depression around 3m deep near the site's centre (centred on British National Grid Reference 524251, 212655), in a space previously occupied by a basement.

2 DESK STUDY

2.1 General

A Phase 1 (Desk Study) Investigation was undertaken for the site by ListersGeo in December 2018. The report (no.18.11.010) provides a detailed site history based on Historic Ordnance Survey maps and an analysis of the contemporary sources of contamination using geologic maps and memoirs and a Groundsure Enviro Insight Environmental Report. This Phase 1 (Desk study) Investigation (report no. 18.11.010) is referred to in this report and should be consulted for full details of the geoenvironmental assessment of the site. The salient points from the previous desk studies and SWG's own research are summarised below.

2.2 Geology

The British Geological Survey (BGS) map for the area indicates the bedrock geology beneath the site comprises the Lewes Nodular Chalk Formation and Seaford Chalk Formation (undifferentiated). Typically this comprises chalk with secondary calcareous mudstone and flint. Near to the site there are also mapped outcrops of the London Clay Formation and Lambeth Group, both generally comprising of clay, silt and sand.

Superficial (Recent) soils are shown to overlie the bedrock on the site. On the southern edge of the site, there are mapped deposits of the Lowestoft Formation ('Glacial Till Deposits') which generally comprises of Diamicton. Extending across the north of the site and covering most of the site area is the Kesgrave Catchment Subgroup (which are nominally 'Glaciofluvial Deposits'), generally comprising of sand and gravel. Although not within the site boundaries, there are also deposits of Alluvium in the vicinity, which generally comprises of clay, silt, sand and gravel.

No Made Ground is mapped on the site. However, given the history of Welwyn Garden City and simply the fact that the site is heavily built up, Made Ground is expected on the site.

Borehole records available on the British Geological Survey GeoIndex website give an indication of the geology in the local area. A borehole on the construction site on the opposite side of Broadwater Road encountered granular Made Ground to a depth of 1mbgl

followed by granular natural materials to 13mbgl where the head of the Chalk Bedrock was found. The chalk Bedrock was flinty to 15.2mbgl and extended beyond 30mbgl.

2.3 Natural Hazards- Natural Cavities

This investigation by SWG addresses a significant risk posed by natural cavities identified in the 2018 Phase 1 Desk Study (report no. 18.11.010).

It is common for the bedrock chalk in the region of the UK in which the site is situated to have experienced extensive chemical weathering through the action of percolating rainwater and groundwater. In many cases, this has led to the development of dissolution features including sinkholes. Sinkholes are a depression or hole on the ground created when the surface layer collapses because there is some weakening or erosion of materials beneath it.

As part of the ListersGeo Phase 1 Desk Study, the historical records of 'natural cavities' held by Peter Brett Associates' Cavities Database were consulted. The consultation identified several recorded cavities on the site area and considered the risk posed by natural cavities on the site to be HIGH. Three features were identified within 100m of the site's centre with the potential to impact ground conditions on the site- summarised Table 1.

Table 1: Cavities Database Information

Approximate National Grid Reference	Approximate distance and bearing from site centre	Natural cavity type.
TL 52424, 21266	20m NW (on the site)	Sinkhole
TL 52428, 21260	60m SE (on the site boundary)	Sinkhole
TL 52421, 21259.	70m S	Sinkhole

It was proposed that an intrusive investigation should be undertaken on the site to investigate the exact nature and location of these features and elucidate the risk they pose to proposed developments on the site and inform the design of engineering solutions to mitigate those risks.

2.4 Mining

The site is not in an area that is generally known for mining.

However, historical records show that an area in the northeast of the site was used for clay extraction in the nineteenth century. These shallow workings have since been backfilled.

2.5 Geoenvironmental Considerations

The Desk Study by ListersGeo highlights that there are/ have been potential sources of contamination on the site and potential pathways to transfer contamination to the site from nearby sources.

Table 2, taken from the ListersGeo Phase 1 Desk Study (report no. 18.11.010) summarises those potential contaminants.

Table 2: Potential contaminants in the geological materials on the site

Potential Source	Potential Contaminants
Factories, works and depots, on-site	Variable: may include heavy metals, metalloids, non-metals, polycyclic aromatic hydrocarbons, petroleum hydrocarbons, poly-chlorinated bi-phenyls and asbestos
Made Ground, on-site	Variable: may include heavy metals, metalloids, non-metals, polycyclic aromatic hydrocarbons, hydrocarbons and asbestos
Urban/industrial setting	Various air-borne; including lead and polycyclic aromatic hydrocarbons
Former factories and works (plastics, chemical, mechanical, and motor engineering)	Variable: may include heavy metals, metalloids, non-metals, petroleum hydrocarbons, organic solvents (including halogenated varieties), polycyclic aromatic hydrocarbons, acids, organic acids, alkalis, alcohols, esters, phenols, cyanide, poly-chlorinated bi-phenyls, sodium salts, asbestos and a variety of active pharmaceutical ingredients
Car servicing and repairs, adjacent to the north	Leakage, spills and dumping of petroleum hydrocarbons, oils and lubricants, Lead and battery acid, paints (volatile organic hydrocarbons)

The ListersGeo Phase 1 Desk Study (report no. 18.11.010) recommends that the risk posed by these potential contaminants on the site should be investigated by chemical testing of soil samples collected from the site during an intrusive investigation.

2.6 Desk Study Conclusions

The site is situated in a generally industrial area and has an industrial legacy. Human activities on or near the site may have introduced potentially harmful contaminants to the soils on the site. The potential risk posed by these contaminants should be investigated during a Phase 2 intrusive investigation.

The site has historically been subject to clay extraction. Geotechnical hazards resulting from these activities should be investigated.

The site is in an area where dissolution features in the chalk bedrock are prone to producing natural cavities. Two such cavities have been noted on the site area which may pose a risk to proposed developments. Intrusive investigation works should be conducted to determine the extent of this risk and inform potential engineering works to mitigate it.

The works described in this report aim to address these recommendations.

2.7 Walkover Survey

The site walkover survey was conducted on 19th June 2023 to identify any surface features of geoenvironmental interest or expressions of subsurface deformation which could be caused by dissolution features at depth. A full description, obtained from the walkover, is given in Section 1.2.

The materials comprising the surface of the site were noted to contain anthropogenic debris including metal, plastic and glass, indicating at least some degree of ground contamination. Photographs of the site are presented as Appendix C.

3 GROUND INVESTIGATION

3.1 Fieldwork

An intrusive investigation was carried out from the 19th to the 28th June 2023. The exploratory hole location plan, exploratory hole logs, in-situ test data / results and associated photographs are contained in Appendices B and C respectively.

The fieldwork was carried out following the guidelines of BS 5930 (2015): Code of Practice for Ground Investigation; British Standard BS10175 (2011): Investigation of Potentially Contaminated Sites – Code of Practice and BS EN 1997-2:2007 (Eurocode 7) – Geotechnical Design – Part 2: Ground investigation and testing).

The fieldwork consisted of:

- Nine (9 no) Window Sample boreholes.
- Eight (8 no) Cable Percussive Boreholes.
- Three (3 no) Gas and Water monitoring standpipes.
- Three (3 no) Falling Head Permeability Tests.
- Sixty Six (66 no) Dynamic Probes (Super Heavy).

The boreholes and probes were positioned to give good representative coverage of the site from both a geotechnical and geo-environmental perspective including attempting to capture the ground conditions beneath the locations of sinkhole features identified by Peter Brett Associates. The position of some exploratory holes was dictated by the position of a large hole left where the basement of the structure which used to stand on the site had been removed. This area was not accessible by the drilling rigs.

The works are essentially the works proposed by Peter Brett Associates.

3.2 Window Sampling

Window sampling was carried out using a Premier Compact 110 rig and a Messersi Tracked Dumper mounted rig, which use a 63.5kg weight dropping a vertical distance of

750mm (BS 5930 Section 4, Clause 22.9). The boring produces a continuous sample in diameters ranging from 100mm down to 36mm, in clear rigid plastic liners.

Window sample holes included in-situ Standard Penetration Tests (SPTs), generally at metre centres. Where SPT blow counts exceed 50 without reaching the full 300mm penetration, the actual penetration was recorded and the extrapolated N-value for the full penetration was calculated.

3.3 Dynamic Probes

Dynamic probes were conducted using the same window sampling rigs, utilising a 63.5kg weight falling 750mm, as were used for the window sampling.

The dynamic probes used 32mm rods attached to a 50mm 90 degree cone (BS 5930 Section 4, Clause 26.2 – DPSH method). The cone diameter, driving weight and fall distance are all identical to that used in the Standard Penetration Test (BS 5930 Section 4, Clause 25.2), which enables an approximate correlation between the two. The test records the number of blows required to drive the test cone 100mm, and is referred to as the N100 value. The effective refusal point for DPSH is taken as when the blow count exceeds 50 blows for 300mm.

It was originally planned to undertake all the dynamic probes to effective refusal in the chalk bedrock. However, the very high density of the Glaciofluvial gravel materials overlying the chalk meant the majority of the probes reached refusal in these materials rather than being able to penetrate the Glacifluvial materials. In order to assist with assessing the density of the chalk at depth, five dynamic probes (DPSH04, 37, 39, 45 and 53) were conducted from the surface until refusal in the Glaciofluvial materials. The positions were then drilled using Cable Percussive Drilling to the upper surface of the chalk. The dynamic probes were then continued to refusal in the chalk.

3.4 Cable Percussive Boreholes

Eight (8 no) cable percussive borehole was drilled using a Dando 150 rig. Five of these (BH01, 02 and 03, DPSH39 and 45) were logged and/or subject to geotechnical and

geochemical testing. The other three were solely used to assist continuing the Super Heavy Dynamic Probes (DPSH04, 37 and 53).

For each borehole, a 1.2m inspection pit was dug by hand before drilling commenced. In BH01-03 and DPSH39 and 45, the boreholes were logged from the surface by a qualified SWG Engineering Geologist. Materials recovered from the borehole were bagged at 0.5m intervals or where the nature of materials changed noticeably as work progressed. Environmental samples were collected by subsampling materials from the chiselling tool or drilling shell.

BH01-BH03 included in-situ Standard Penetration Tests (SPTs) in the Superficial Deposits, generally at metre centres. Once the chalk was encountered, standard penetration tests (SPTs) and UT100 sampling was conducted at alternating 1.0m intervals until SPT refusal. BH01-03 were terminated and backfilled once SPT refusal had been met within the chalk materials. DPSH 39 and 45 were terminated once the upper surface of the chalk was penetrated. After hole completion, DPSH39 and 45 were left open to allow dynamic probing to continue from their base.

Cable Percussive drilling was also used at DPSH04, 37, and 53 to construct an open hole to the upper surface of the chalk to allow access for Super Heavy Dynamic Probing. These boreholes did not include SPTs and were not logged as their primary purpose was to remove the dense granular materials which were causing effective refusal before the chalk was reached and preventing exploration of dissolution features there.

The log for the boreholes (BH01-03 and DPSH39 and 45) are presented in appendix C.

3.5 Falling Head Permeability Tests

Falling head permeability testing was undertaken following recommendations in BSI 22282 (2012). The testing undertaken does not strictly comply with standards, but gives a guide to likely permeability of the materials.

The results of the permeability testing are included as Appendix G.

3.6 Groundwater Monitoring Wells

Groundwater monitoring wells were installed in WS01, 02 and 09 positioned in the east, southeast and north of the site area respectively. The wells comprise a 50mm diameter slotted pipe with gravel cell from the base of the window sample borehole made ground to between 0.3 and 1.0m below ground level where a plain pile with bentonite seal is present. Wells were finished at surface with concrete and a cover.

The details of the monitoring installation and pipework in each borehole can be found in the exploratory hole logs.

Groundwater and gas monitoring has been undertaken on three occasions to confirm the groundwater levels on the site and to allow the gas risk assessment to be undertaken.

The gas and groundwater monitoring results are included in Appendix H.

4 LABORATORY TESTING

4.1 Geotechnical Laboratory Testing

All geotechnical testing was carried out in the SWG UKAS accredited laboratory in accordance with BS 1377; 1990, Methods of tests for soils for civil engineering purposes. Table 3 summarises geotechnical testing undertaken. The geotechnical laboratory test results are enclosed as Appendix D.

Table 3: Geotechnical Testing

Test	No. Tests
Moisture Content	6
Atterberg Limits	6
Particle Size Distribution by sieve and Pipette Method	7
Saturation Moisture Content of Chalk	2
pH & Soluble Sulphate	9

4.2 Geo-environmental testing

Twelve soil samples were tested for the following suite of determinands:

- pH, organic matter, sulphate (water soluble).
- Metals: Arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc and cyanide
- Speciated Polyaromatic Hydrocarbons (PAH): Acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h) anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene.
- Total Petroleum Hydrocarbons (TPH)
- Speciated Total Petroleum Hydrocarbons (TPH), aliphatic >C5-C6, aliphatic >C6-C8, aliphatic >C8-C10, aliphatic >C10-C12, aliphatic >C12-C16, aliphatic >C16-C21, aliphatic >C21-C35, aromatic >C5-C7, aromatic >C7-C8, aromatic >C8-C10, aromatic >C10-C12, aromatic >C12-C16, aromatic >C16-C21, aromatic >C21-C35.
- Benzene, toluene, ethylbenzene, p & m-xylene and o-xylene

Ten soil samples were screened for asbestos.

Waste Acceptance Criteria (WAC) testing was undertaken on three samples of made ground materials.

During subsequent groundwater monitoring, samples of groundwater were recovered from WS02 and WS09 on 5/9/23, and tested for the following suite of contaminants;

- Speciated Total Petroleum Hydrocarbons (TPH), aliphatic >C5-C6, aliphatic >C6-C8, aliphatic >C8-C10, aliphatic >C10-C12, aliphatic >C12-C16, aliphatic >C16-C21, aliphatic >C21-C35, aromatic >C5-C7, aromatic >C7-C8, aromatic >C8-C10, aromatic >C10-C12, aromatic >C12-C16, aromatic >C16-C21, aromatic >C21-C35.
- Benzene, toluene, ethylbenzene, p & m-xylene and o-xylene, MTBE

The test results and certificates are presented in Appendix E.

5 GROUND CONDITIONS

5.1 General

The investigation encountered significant thicknesses of made ground overlying cohesive Glacial Till Deposits soils which in turn overlay dense coarse granular materials attributed to the Kesgrave Catchment Subgroup ('Glaciofluvial Deposits'). These superficial Materials had their base above chalk belonging to the Seaford Chalk Formation (undifferentiated).

The ground conditions have been summarised in Table 4.

Table 4: Stratum summary

Stratum	Depth to base of stratum (m BGL)						
	BH01	BH02	BH03	WS01	WS02	WS03	WS04
Made Ground	4.50	3.60	4.20	4.50	4.40	4.30	4.30
Glacial Till Deposits	6.15	6.20	6.15	>5.45	>5.45	>5.45	>5.45
Glaciofluvial Deposits	14.20	8.60	12.20	-	-	-	-
Seaford Chalk Formation (undifferentiated)	>22.36	>18.40	>20.34	-	-	-	-
Groundwater	-	-	-	4.70	3.87	-	-
Stratum	**Depth to base of stratum (m BGL)**						
	WS05	**WS06**	**WS07**	**WS08**	**WS09**	**DPSH39**	**DPSH45**
Made Ground	>2.08	4.10	4.00	4.20	4.20	4.00	4.50
Glacial Till Deposits	-	>5.45	>5.45	>5.45	>5.45	6.60	6.40
Glaciofluvial Deposits	-	-	-	-	-	13.00	10.40
Seaford Chalk Formation (undifferentiated)	-	-	-	-	-	>14.00	>11.00
Groundwater	-	3.58	3.65	3.65	3.70	-	4.00

Standard Penetration Tests (SPTs) were undertaken at frequent intervals in the boreholes and window sample holes to allow the relative strength / density of near surface soils to be assessed. The SPT N values have been plotted against depth in Figure 1.

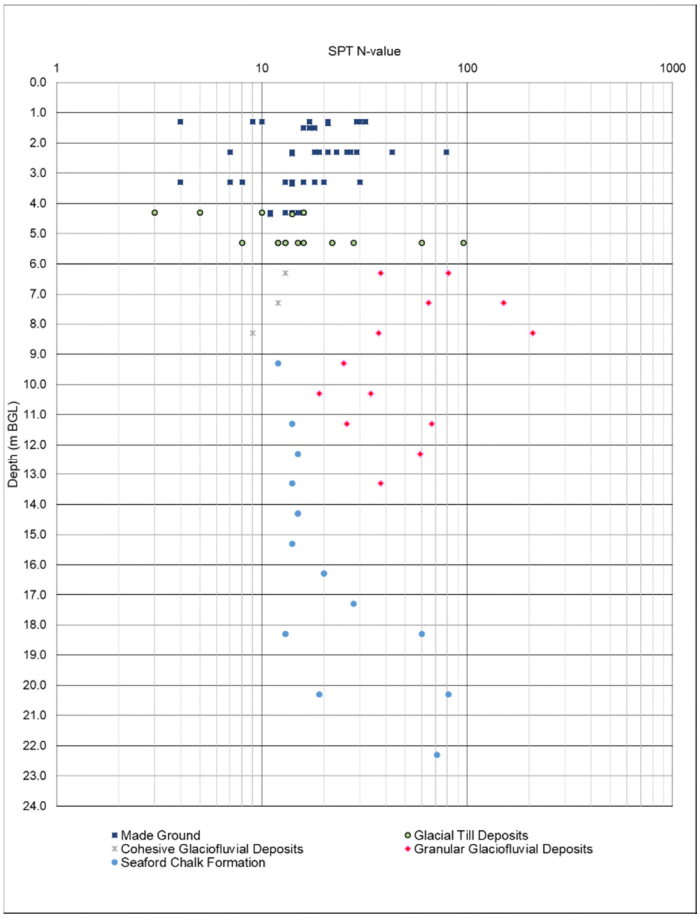

Figure 1: SPT N Vs Depth Plot

The N values show significant scatter near surface which is reflective of the highly variable nature of the made ground. With depth the N values increase through the Glacial Till Deposits and Glaciofluvial Deposits before decreasing again once the chalk is encountered. The boreholes were undertaken in areas where the chalk was understood to be "unaltered" (i.e. sinkholes not present) so that the SPT N values can be compared to the DPSH N_{100} derived SPT N values.

5.2 Made Ground

Made Ground was encountered from the surface in every exploratory hole and continued to depths of between 4.00 and 4.60mbgl.

The Made Ground Materials were highly variable in composition.

The largest proportion of the made ground seemed to comprise of loose to medium dense slightly clayey slightly silty very gravelly fine to coarse angular to subrounded SAND with a medium cobble content in which the gravel is fine to coarse angular to subangular flint, brick, chert, concrete, chalk, and metalwork, cables and plastic. Often this material had a much higher gravel content and is better classified as loose to medium dense brown to orange-brown slightly silty very sandy very clayey GRAVEL with a low cobble content. These granular materials are likely to dominate the bulk geotechnical properties of the Made Ground.

Thinner horizons (generally not exceeding 1.0m thickness) and generally near the surface comprised of stiff brown to orange-brown silty very gravelly very sandy CLAY in which the gravel is fine to coarse angular to subrounded chert, flint, sandstone and ceramic.

In DPSH39 and WS07 a notable horizon of Made Ground comprised generally of loose grey-brown to green-brown silty very clayey very sandy GRAVEL with a hydrocarbon odour.

SPT N values recorded in the made ground range from 4 to 79.

5.3 Lowestoft Formation (Glacial Till Deposits)

Materials identified as Glacial Till Deposits were encountered beneath the Made Ground in all exploratory holes (excluding WS05) and extended to depths up to 6.60mbgl.

Generally, the Glacial Till Deposits comprised of stiff becoming very stiff grey-brown to brown (although there was a wide range of colour variation)(locally slightly sandy) slightly gravelly CLAY with a low cobble content. The gravel component comprised of fine to medium angular to sub-rounded chalk and sandstone.

Three Liquid and Plastic (Atterberg) Limit tests undertaken on the materials indicates the soils have intermediate to high plasticity and medium volume change potential in accordance with NHBC (2023).

SPT N values recorded in the Lowestoft Formation range from 3 to 96. Based on measurements of shear strength in these materials taken using a hand shear vane, a factor

of 5 is considered appropriate for calculating undrained shear strength from the SPT N values in these materials. A characteristic undrained shear strength of 62kPa is appropriate for these materials considering the 10th percentile values of the hand shear vane measurements.

Using correlations between Plasticity Index and friction angle, a friction angle of 24° is considered appropriate for the materials.

Locally (WS03), more granular lenses of Glacial Till materials were encountered.

5.4 Kesgrave Catchment Subgroup ('Glaciofluvial Deposits')

Materials assigned to the named 'Kesgrave Catchment Subgroup' (Glaciofluvial Deposits) were encountered in all of the Cable percussive boreholes (BH01-03 and DPSH39 and 45). These materials were encountered directly beneath the Glacial Till Deposits at depths between 6.15 and 6.60mbgl and rested directly atop the chalk bedrock at depths between 8.60 and 14.20mbgl.

Both cohesive and more granular materials were encountered.

5.4.1 Cohesive Glaciofluvial Deposits

Cohesive materials interpreted as Glaciofluvial deposits were encountered in BH01 at 6.15 to 9.00mbgl, comprising firm consistency, light brown (locally slightly gravelly) very sandy very silty CLAY. (Locally very clayey SILT) in which the gravel was of fine to medium rounded quartz was encountered.

In DPSH 39, between 6.0 and 7.20mbgl, firm to stiff locally organic orange-brown, brown and grey mottled (locally slightly gravelly) sandy to very sandy silty to very silty CLAY in which the gravel was of fine to coarse subrounded flint and quartz was encountered. The two materials may represent a single continuous but variable sedimentary body of finer materials extending from the southwest towards the centre of the site.

Particle size distribution sieves and pipettes undertaken on the materials indicate the soils are predominantly silt.

Liquid and Plastic (Atterberg) Limit testing undertaken on the cohesive Glaciofluvial materials, between 6.15 and 9.0mbgl in BH01 indicate the soils are of low plasticity (CL) and low volume change potential.

Three SPT N values were recorded in the cohesive Glaciofluvial materials. These range from 9 to 13. An undrained shear strength of 130 kPa was recorded using a hand shear vane in the materials. A characteristic undrained shear strength of 60 kPa is considered appropriate for the soils.

Using correlations between Plasticity Index and friction angle, a friction angle of 29° is considered appropriate for the materials.

5.4.2 Granular Glaciofluvial Deposits

The more granular Glaciofluvial Deposits generally comprise medium dense to very dense light brown to grey-brown slightly silty/clayey very sandy Gravel with a low to medium cobble content. The gravel component comprises of fine to coarse angular to rounded chert, flint and sandstone.

Particle size distribution testing undertaken on the more granular materials, confirm the field observations of the material comprising of slightly clayey and silty very sandy GRAVEL.

SPT N values recorded in the granular materials range from 19 to 208 (extrapolated), confirming the density range.

A friction angle of 35° is considered appropriate for the soils.

Many of the dynamic probes encountered effective refusal at depths within the granular materials. Only DPSH10 was able to penetrate the granular materials without additional drilling. DPSH37, 39, 45, 53 and 04 only reached depths beyond the base of the granular materials because an open hole had been constructed past the base of the unit by other methods (Cable Percussive Drilling).

5.5 Seaford Chalk Formation

Materials identified as the Seaford Chalk Formation were encountered in all of the cable percussive boreholes. In the upper levels, the chalk was encountered as structureless CHALK comprising of stiff compact cream gravelly sandy SILT in which the gravel comprised of fine to medium angular to subrounded very weak, low density white to light grey very weak chalk and occasional flint. The near surface materials are classed Dm chalk in accordance with Ciria 574 (2002).

With depth the materials comprise extremely weak to very weak chalk, and is considered to be class C4/5 chalk.

SPT N values recorded in the chalk range from 12 to 81 (extrapolated).

Laboratory testing to derive the saturation moisture content, bulk density and dry density of chalk samples from BH01 indicate they are classified as low density chalk.

5.6 Groundwater

Perched groundwater was encountered during the investigation across the site at depths of 3.58 to 4.70mbgl, typically concordant with the base of the higher permeability made ground, and sat on top of the low permeability clay soils beneath.

During the subsequent monitoring, the groundwater levels were recorded as summarised in Table 5.

Table 5: Groundwater Monitoring Summary

Date	BH ID and Water Depth (m BGL)		
	WS01	WS02	WS09
5/9/23	Dry	3.75	3.56
22/9/23	Dry	Dry	0.69
6/10/23	4.61	3.55	3.42

It is expected that the shallow value recorded in WS09 on 22 September is due to the standpipe being flooded from the surface rather than indicative of very elevated groundwater levels, considering the other two standpipes were dry on the same date.

5.7 Geo-environmental considerations

Made ground was encountered across the site largely comprising reworked local soils although, fill materials including: brick, glass, porcelain, concrete, organic matter (generally wood) and metal (including rebar and other construction materials), were present in the made ground.

In WS07 and DPSH39, some of the Made Ground materials bore a strong odour of hydrocarbons. These positions were located in the centre of the former building on the site. The origin of the hydrocarbon odour is not known.

6 GEO-ENVIRONMENTAL RISK ASSESSMENT

6.1 General

In order for land affected by contamination to cause harm, there must be a source of contamination, a receptor that can be harmed and a pathway by which the receptor can be exposed to the contamination. Based on the initial conceptual model an assessment of the risk posed by ground / groundwater contamination to potential receptors has been undertaken.

The desk study highlighted many potential sources of contamination on site and in the surrounding area. During the investigation works, significant thicknesses of made ground were encountered near surface. These materials were predominantly demolition rubble associated with the former building on the site. These materials were subsequently considered the main source of contaminants. In WS07 and DPSH39, some of the Made Ground materials bore a strong odour of hydrocarbons. Chemical testing was undertaken to further assess the initial conceptual model with samples from around proposed development area tested, including materials from depth where a hydrocarbon odour was noted.

6.2 Environmental Soil Test Results

The results of the environmental laboratory testing, presented as Appendix E, have been summarised in Table 6 and compared to Suitable for Use Level (S4UL) values for residential developments without home grown produce. For organic substances a 1% Soil Organic Matter (SOM) has been used, unless otherwise indicated, which represent the most stringent threshold limit.

LQM/ CIEH S4ULs have been developed by Land Quality Management Ltd jointly with the Chartered Institute of Environmental Health, and provide values for the assessment of potential risks to human health posed by contaminants in soil, and are compliant with UK legislative policy and guidelines. In particular, these include components of TPH and PAH.

The S4ULS have been derived in accordance with UK legislation, national as well as Environment Agency (EA) policy, and using a modified version of the EA CLEA software.

The Department for the Environment, Food & Rural Affairs (DEFRA) has published Category 4 Screening Levels (C4SLs) for six substances including lead. The C4SLs represent the most stringent guidance available for the assessment of lead contamination in soils, and have been used in this report.

Where other guidelines are not available, local guidance, Dutch standards or an in-house screening value is used to provide an initial comparison figure.

Table 6: Environmental Testing Summary

Determinants	S4UL/C4SL mg/kg	Source of GAC	Recorded Range mg/kg	Location of Exceedances
Arsenic	40	LQM/ CIEH	5 - 44	WS02 – 0.9m WS07 – 3.3m
Cadmium	85	LQM/ CIEH	<0.2 - 9.5	
Chromium (III)	910	LQM/ CIEH	5 - 32	
Copper	7100	LQM/ CIEH	4 - 32	
Lead	310	Defra	4 - 49	
Mercury (inorganic)	56	LQM/ CIEH	<1	
Nickel	180	LQM/ CIEH	6 - 36	
Selenium	430	LQM/ CIEH	<2	
Zinc	40000	LQM/ CIEH	27 - 370	
Cyanide (total)	50	DUTCH	<1 - 3	
TPH aliphatic C5-C6	42	LQM/ CIEH	<0.01	
TPH aliphatic C6-C8	100	LQM/ CIEH	<0.05	
TPH aliphatic C8-C10	27	LQM/ CIEH	<2 – 3	
TPH aliphatic C10-C12	130	LQM/ CIEH	<2 – 30	
TPH aliphatic C12-C16	1100	LQM/ CIEH	<2 – 142	
TPH aliphatic C16-C35	65000	LQM/ CIEH	<3 – 41	
TPH aromatic C5-C7	370	LQM/ CIEH	<0.01	
TPH aromatic C7-C8	860	LQM/ CIEH	<0.05	
TPH aromatic C8-C10	47	LQM/ CIEH	<2	
TPH aromatic C10-C12	250	LQM/ CIEH	<2	
TPH aromatic C12-C16	1800	LQM/ CIEH	<2	
TPH aromatic C16-C21	1900	LQM/ CIEH	<3 – 22	
TPH aromatic C21-C35	1900	LQM/ CIEH	<10	
Napthalene	2.3	LQM/ CIEH	<0.1	
Acenapthylene	2900	LQM/ CIEH	<0.1	
Acenapthene	31000	LQM/ CIEH	<0.1	
Flourene	2800	LQM/ CIEH	<0.1	
Phenanthrene	1300	LQM/ CIEH	<0.1	
Anthracene	31000	LQM/ CIEH	<0.1	
Flouranthene	1500	LQM/ CIEH	<0.1	
Pyrene	3700	LQM/ CIEH	<0.1	
Benzo(a)anthracene	11	LQM/ CIEH	<0.1	
Chrysene	30	LQM/ CIEH	<0.1	
Benzo(b)flouranthene	3.9	LQM/ CIEH	<0.1	
Benzo(k)flouranthene	110	LQM/ CIEH	<0.1	
Benzo(a)pyrene	3.2	LQM/ CIEH	<0.1	
Indeno(1,2,3-cd)pyrene	45	LQM/ CIEH	<0.1	
Dibenzo(a,h)anthracene	0.31	LQM/ CIEH	<0.1	
Benzo(g,h,i)perylene	360	LQM/ CIEH	<0.1	
Benzene	0.38	LQM/ CIEH	<2	
Toluene	880	LQM/ CIEH	<5	
Ethylbenzene	83	LQM/ CIEH	<2	
p & m xylene	82	LQM/ CIEH	<2	
O xylene	88	LQM/ CIEH	<2	

No asbestos fibres were identified in any of the samples tested.

On the basis of the above, the only contaminant concentrations elevated above the S4UL/C4SL values for residential land use without plant uptake is arsenic in two samples.

6.3 Human Health (Soils) Risk Assessment

In order for land affected by contamination to cause harm, there must be a source of contamination, a receptor that can be harmed and a pathway by which the receptor can be exposed to the contamination. From the results of the investigation, it is noted the site is not significantly contaminated. However, elevated levels of arsenic in the made ground materials represent a source of contamination, future residents of the properties represent the receptor, and exposure to the soils containing the elevated lead levels represent the potential pathway. The results are further discussed below.

6.3.1 Arsenic

The arsenic concentrations recorded near surface in WS02 and at depth in WS07 are elevated above the residential land use without plant uptake S4UL values. Neither of the "elevated" concentrations are considered statistical outliers (i.e. all concentrations are part of the same numerical population).

A Statistical "T" test has been undertaken on the eight shallowest (i.e. the soils most likely to pose a risk to residents) of the made ground materials for the arsenic concentrations. The tests have been undertaken comparing to the S4UL values for residential land use out plant uptake threshold value. The US95%'ile values have been compared to the S4UL value in Table 7. The statistical assessment results are included in Appendix E.

Table 7: Statistical T Test US95%'ile Summary - Arsenic

Determinants	S4UL mg/kg (POS Residential)	Source of GAC	US95%'tile mg/kg
Arsenic	40	LQM/ CIEH	37.3

From Table 6, it can be seen that US95%tile value for is below the S4UL value. On this basis, the "elevated" concentrations of arsenic are not considered to be statistically significant (i.e. are not considered to pose a risk to human health), and no further works are considered necessary in this regard.

It is noted that proposals involve the construction of a basement carpark across the majority of the site, as such much of the made ground material will be removed from site as part of the construction process. The main soft landscaping areas are on top of the basement

carpark and along the eastern and southern elevations to the site. There is no topsoil/ sub-soil on the site, and such materials will need to be imported for the soft landscaped areas.

6.4 Controlled Waters Risk Assessment

Perched groundwater was encountered at the base of the made ground, lying on top of the low permeability Glacial Till materials.

Two samples of groundwater were recovered from WS02 and WS09 on 5/9/23 and tested for speciated total petroleum hydrocarbons and BTEX, due to a strong odour of hydrocarbons being noted in made ground soils in nearby WS07 and DPSH39. The resulting testing recorded all hydrocarbon and BTEX concentrations below detectable limits. On this basis, the hydrocarbon odour / hydrocarbon impacted soils is very localised. It is noted that a basement is proposed, and the made ground materials will be removed to accommodate this. This will remove the source of hydrocarbons and subsequently, there will not be any risk to controlled waters.

Any hydrocarbon impacted soils should be removed from site to appropriate landfill facilities. Similarly, any obviously hydrocarbon impacted groundwater (if present) should be removed as well. Any such water is expected to be very localised (i.e. in the vicinity of WS07 and DPSH39).

6.5 Gas Risk Assessment

6.5.1 Gas Monitoring

The monitoring has been undertaken in general accordance with BS8485 (2015) which is largely based on CIRIA C665 (2007). The risk assessment has been undertaken following these documents and guidance provided by Card et al (2012) and Wilson and Nathanial (2019).

Three (3 no) rounds of gas monitoring visits have been over the space of one month. The monitoring undertaken on 22 September 2023 is considered “worst case” conditions of falling barometric pressure over the previous days, a barometric pressure of 990 mb recorded during the monitoring.

The monitoring was undertaken using a calibrated GA5000 gas analyser measuring concentrations of methane (CH4), carbon dioxide (CO2) and oxygen (O2) as percentage in air, along with barometric pressure and gas flow.

As recommended by CIRIA C665 (2007) measurements of both peak and steady state CH4, CO2 and O2 have been recorded in all of the monitoring wells.

During the monitoring, groundwater levels were measured at between dry (i.e. beyond the base of the boreholes) and 0.69m, typically 3.0+ m BGL.

6.5.2 Monitoring Results

No methane was recorded during the monitoring.

Maximum carbon dioxide concentrations of 4.8% were recorded in WS01 on 5/9/23.

No significant gas flow was ever recorded during any of the monitoring visits (i.e. maximum gas flow of 0.0l/hr recorded, which is the limit of detection).

6.5.3 Risk Assessment

The risk assessment has been undertaken using the approach detailed in BS8485 (2015). The Gas Screening Value (GSV) has been based on the maximum peak readings recorded at each borehole. The GSV determined for each borehole is summarised in Table 8.

Table 8: Gas Screening Values Per Borehole

BHID	GSV CH_4	GSV CO_2	Highest Characteristic Situation	Comments
WS01	0.00	0.0048	CS1	
WS02	0.00	0.0033	CS1	
WS09	0.00	0.0037	CS1	

The Characteristic Situation all of the gas monitoring wells installed across the site, is CS1. – Very low hazard potential, indicating that no gas protection measures are required. No methane was recorded and no carbon dioxide concentrations in excess of 5% were recorded. Therefore, there is no need to consider increasing the Characteristic Situation to

CS2. It is noted that the structure will have a basement, which will be an accessible carpark which will have a good degree of ventilation and will required waterproofing, subsequently a good degree of gas protection will be incorporated into the structure in any case.

No radon protection measures are required.

6.6 Water Pipe Selection

In January 2011, UK Water Industry Research (UKWIR) published "Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites" (Ref 10/WM/03/21; the 'UKWIR Guidance'). Its aim was to ensure that the correct materials are selected for water pipes and components to be used below ground in brownfield sites to protect the quality of drinking water whilst taking into account the service life of the water distribution system. It superseded the Water Regulations Advisory Scheme (WRAS) Information and Guidance Note 9-04-03 "Laying Pipes in Contaminated Land", which has been withdrawn.

The UKWIR Guidance was supplemented in January 2014 by "Contaminative Land Assessment Guidance" published by Water UK, which includes a risk assessment procedure for water pipes. The guidance is to be applied to greenfield and brownfield sites, but "where greenfield sites are not affected by contamination a preliminary risk assessment will suffice".

The 2014 guidance gives some direction about when testing is needed, stating: "*There are normally only three pathways by which contamination may come into contact with water pipes. These are direct contact with the soil or backfill, an excessive vapour phase or a contaminated groundwater regime. If none of these conditions exist onsite (adopting the source, pathway, receptor concept) then it is likely that extended and/or targeted soil testing will not be required and a simple risk assessment will suffice. For those sites where land may be affected by contamination appropriate testing shall be undertaken on the materials within which the pipes are to be laid, whether that be existing ground materials, remediated materials or imported capping materials."*

The desk study did not identify any sources of Volatile Organic Compounds (VOC), Semi-Volatile Organic Compounds (SVOC), Phenols, Ethers, Nitrobenzene, ketones, aldehydes, amines and therefore, these test groups were not tested for as part of the investigation.

The relevant contaminant concentrations for standard PE water pipe, for the determinands tested as part of this investigation are summarised in Table 9.

Table 9: Poly Ethylene Water Pipe Guideline Values

Determinand	PE Threshold (mg/kg)	Recorded Range (mg/kg)
Total BTEX and MTBE	0.1	<0.05
EC5-EC10 aliphatic and aromatic hydrocarbons	2.0	<2.0 – 3.0
EC10-EC16 aliphatic and aromatic hydrocarbons	10	<3.0 – 181
EC16-EC40 aliphatic and aromatic hydrocarbons	500	<10 - 155

The concentrations of EC10-EC16 aliphatic and aromatic hydrocarbons recorded in WS07 at 3.3m are elevated above the standard PE water pipe values however, water pipes are typically installed at a depth of between 0.7 and 1.3m below ground level. Furthermore, WS07 is located towards the centre of the proposed building rather than towards the edge where pipework is expected to enter. On this basis, the elevated concentrations at depth are not expected to pose a risk to PE pipes and therefore, PE pipes are considered suitable for the development. The local supplier should confirm this.

6.7 Waste Assessment

Three samples of the near surface made ground material, was submitted for Waste Acceptance Criteria (leachate) testing. Solids parameter tests were undertaken on twelve samples of the made ground materials. The full laboratory reports are enclosed. The solid parameter test results were assessed for hazardous – non-hazardous classification using HazWasteOnline™. Results of the HazWasteOnline™ assessment are included in Appendix E.

The results of the HazWastOnline™ assessment indicate that the materials can be considered as non-hazardous waste, classified as 17 05 04 in the European Waste Catalogue (EWC) List of Waste.

The results of the WAC test indicate that the made ground material would be considered as Inert Waste Landfill.

Any facility that is chosen to take the material should be supplied with the above mentioned results / assessment to ensure compliance with their own permit. This assessment alone does not allow for a receiving facility to make judgement on acceptance.

6.8 Remediation Requirements

The “elevated” concentrations of arsenic are not considered to be statistically significant (i.e. are not considered to pose a risk to human health), and no further works are considered necessary in this regard.

No radon protection measures are required.

No other gas protection measures are required.

Any hydrocarbon impacted soils should be removed from site to appropriate landfill facilities during the excavation of the basement. Similarly, any obviously hydrocarbon impacted groundwater (if present) should be removed as well. Any such water is expected to be very localised (i.e. in the vicinity of WS07 and DPSH39).

Standard potable, water pipes are expected to be suitable although, this should be confirmed by the service provider.

Should any obviously contaminated soils be encountered during the construction phase of the works, advice should be sought from a suitably experienced Geo-environmental Engineer.

7 GEOTECHNICAL CONSIDERATIONS

7.1 General

At the time of the investigation, development proposals included the demolition of existing structures on site and the construction of a horse-shoe shaped block of flats comprising of four above-ground floors and basement parking.

It is understood that the piles from the previous structures on the site are still present beneath the site, and it is proposed to reuse the piles to support some elements of the new building.

As discussed in Section 5.1, the investigation generally encountered significant thicknesses of made ground overlying cohesive Glacial Till Deposits soils which in turn overlay dense coarse granular Glaciofluvial Deposits. These superficial Materials had their base above chalk belonging to the Seaford Chalk Formation.

Perched groundwater was encountered during the investigation across the site at depths of 3.58 to 4.70mbgl.

A Geological Cross Section through the site is included in Appendix F. This is based on cross section AA provided by the Architect.

7.2 Solution Features

The intrusive investigation works conducted by SWG follow on from desk studies which highlight the potential for solution features in the chalk materials at depth beneath the site, to pose a risk to proposed developments. The locations of exploratory holes and in situ-testing were chosen to capture the ground conditions at the locations of historically recorded sinkhole features identified in those desk studies. Ideally, all dynamic probes would have fully penetrated the Glaciofluvial Deposits however, the density of the materials at the base of the unit meant this was not possible.

The SPT N values recorded in the chalk encountered in the cable percussive boreholes (i.e. ground outside the potential solution features) have been plotted in Figure 2, along

with SPT N values derived from the DPSH N_{100} values recorded in the chalk in the ground that may have been affected by solution weathering.

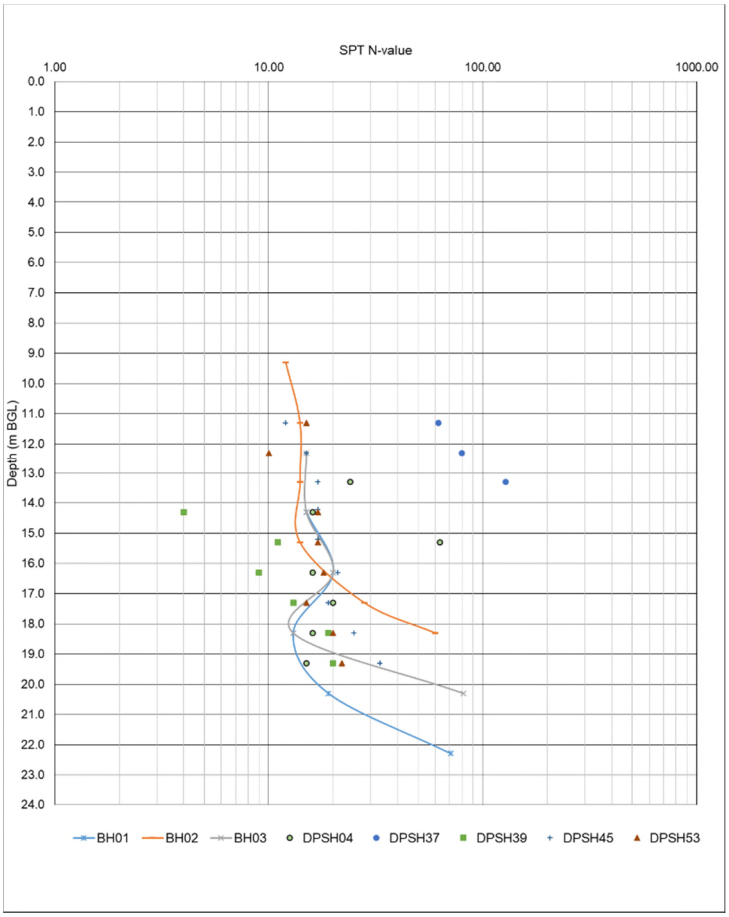

Figure 2: SPT N Vs N_{100} Derived SPT N - Chalk

The N_{100} derived SPT N values recorded in the Seaford Chalk Formation do not indicate that there is significant variation in the strength/ density of the chalk materials across the site. Similar blow count results are achieved wherever depth to the chalk were achieved by the probes. It is considered that DPSH37 did not penetrate the chalk bedrock, and instead refused in very dense Glaciofluvial soils which are at a greater depth than typically encountered. This may be indicative of a shallow infilled solution feature in the upper levels of the chalk.

The apparent relatively density of the chalk indicated by the SPT N values, could indicate that the sinkhole features identified in the desk studies are not the result of discrete solution

features lowering the strength and density of materials at depth in the chalk, but instead may be the manifestation of more generally widespread low strength/density materials.

The dynamic probes reveal that the dense to very dense Glaciofluvial Materials are continuous across the site and the data suggests they are of a generally consistent density. These materials do not appear to show any indication of lower density materials which could be indicative of post depositional movement (i.e. collapse of solution feature).

On the basis of the above, it is not considered that there are any significant solution features on the site, rather the chalk bedrock is low density and more prone to solution features as a result of its low density, than higher density chalk materials.

WS02 was undertaken in the area of an historic clay pit. In this area, the made ground extended to a depth of 4.5m which is not dissimilar to the remainder of the site. The made ground materials were similar in composition to those seen across the remainder of the site. Therefore, there is not considered to be any significant variation in the ground associated with the former clay pit.

7.3 Geotechnical Properties

The geotechnical properties detailed in Table 10 can be used for design of structures.

Table 10: Characteristic Geotechnical Properties

Stratum	SPT N Range	Undrained Shear Strength (kPa)	Drained Cohesion (kPa)	Friction (°)	Unit Weight (kN/m^3)
Made Ground	4-79	N/A	0	24	18
Glacial Till	3-96	62	0	24	19
Glaciofluvial Deposits (Cohesive)	9-13	60	0	29	19
Glaciofluvial Deposits (Granular)	15-208	N/A	0	35	19
Seaford Chalk Formation	12-71	N/A	0	31	21

7.4 Foundations

Proposals involve the construction of a horseshoe shaped four storey apartment block with basement parking. It is anticipated that loads from the above ground element will be transferred through the basement via columns.

The proposed basement is not a full storey below ground level and there will be up to approximately 3.0m of made ground materials below the underside of the basement floor level. Whilst the cohesive soils beneath the made ground have some appreciable strength to support pad foundations, the depth to the soils will make forming pad foundations difficult. Furthermore, the building previously on the site was piled and it is understood that current proposals involve reusing the existing piles to support the new building. Therefore, to ensure consistency of foundation, all of the building should be constructed off piled foundations.

Preliminary pile design has been undertaken using methods described in CIRIA 143 (1995). SPT N values have been derived from SPT N values and plotted against depth in Figure 1/2. Taking an SPT N value of 50, present below 18.0m, end bearing capacities shown in Table 11 have been determined.

Table 11: Preliminary End Bearing Capacities for Piles

Pile Diameter (m)	Area (m^2)	Ultimate Resistance (kN)	Factor of Safety	Working End Resistance (kN)
0.45	0.16	800	3	266
0.6	0.28	1400	3	466
0.9	0.64	3200	3	1066

Depending on the length of socket, additional resistance will be gained from the pile shaft resistance. Taking an average SPT N value of 15 in the chalk along a 1.0m length of socket, the resistances given in Table 12 have been determined using 2 x N (CIRIA 143, 1995).

Table 12: Preliminary Pile Shaft Resistance

Pile Diameter (m)	Area per m (m^2)	Ultimate Shaft Resistance (kN)	Factor of Safety	Shaft Adhesion (kN)
0.45	1.41	42	1.5	28
0.6	1.88	56	1.5	38
0.9	2.83	85	1.5	57

Shaft resistance gained will be dependent on the length of the socket.

Final pile design should take into account factors such as the soil effective stress parameters, pile settlement and structural limits on settlement acceptability, lateral pressures, the effects interaction between neighbouring piles and pile group effects.

It is recommended that specialist piling contractors familiar with the ground conditions are contacted to design and warrant the piles.

7.5 Basement Floor

There are significant thicknesses of un-engineered made ground present beneath the proposed basement level. These materials will need to be excavated and re-engineered if they are to be utilised to provide support to the basement floor.

Consideration could be given to the use of Vibro Stone Columns (VSC) to provide support to the basement floor. This would save excavating/ re-engineering the made ground materials.

7.6 Groundwater and Excavations

Perched groundwater was encountered during the investigation across the site at depths of 3.58 to 4.70mbgl, typically concordant with the base of the higher permeability made ground, and sat on top of the low permeability clay soils beneath. It is expected that the water levels will be higher over the winter months.

Any dewatering requirements will be based on proposals to improve/ re-engineer the made ground materials to provide support to the basement floor.

It is envisaged that a large open excavation will be required to enable construction of the building. Consideration will need to be given to providing support to the site boundaries during construction, particularly along the Broadwater Road and Broad Court elevations.

7.7 Sulphate Classification

The twenty soluble sulphate test results recorded concentrations of between <10 and 1140 mg/l, with a characteristic value of 433 mg/l.

pH values of between 5.4 and 11.3 were recorded, with a characteristic value of 6.6.

Groundwater is expected to be mobile.

On this basis, concrete should be designed to a Design Sulphate Class of DS-1, and ACEC Class AC-1 (BRE Digest SD1, 2005).

7.8 Drainage Design

Large scale soakaway testing was not completed on the site. Falling head permeability testing was undertaken in purposely drilled boreholes adjacent to WS01, 03 and 05. Permeability rates were variable, and it was only possible to complete one of the falling head tests (FHT03 Test 1) to British Standard. For the remaining tests, the permeability of the soils has been determined based on the total reduction in the induced water level in each test. Table 13 summarises the testing.

Table 13: Falling Head Test Results

WS ID	Permeability (m/s
01	2.05×10^{-8}
03 Test 1	1.19×10^{-6}
03 Test 2	2.27×10^{-8}
05	1.07×10^{-7}

The testing indicates that the made ground materials have very low permeability. CIRIA 156 (1996) recommends an infiltration rate of 3×10^{-06} m/s as the lower limit of acceptability for soakaway feasibility. The permeability's calculated are lower than this.

Soakaways should not be formed in made ground as the inundation of un-engineered materials by water can lead to excessive settlement. Furthermore, the underlying cohesive

Glacial Till materials would have lower permeability still and so any water soaking into the made ground would simply pond on the surface of the Glacial Till, as is the case with surface water currently. Therefore, conventional shallow soakaway drainage is not considered suitable for use on the site, and an alternative drainage strategy should be sought.

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9 LIMITATIONS

This report has been prepared by SWG solely for the benefit of Hightown Housing Association Limited. It shall not be relied upon or transferred to any third party without the prior written authorisation of SWG.

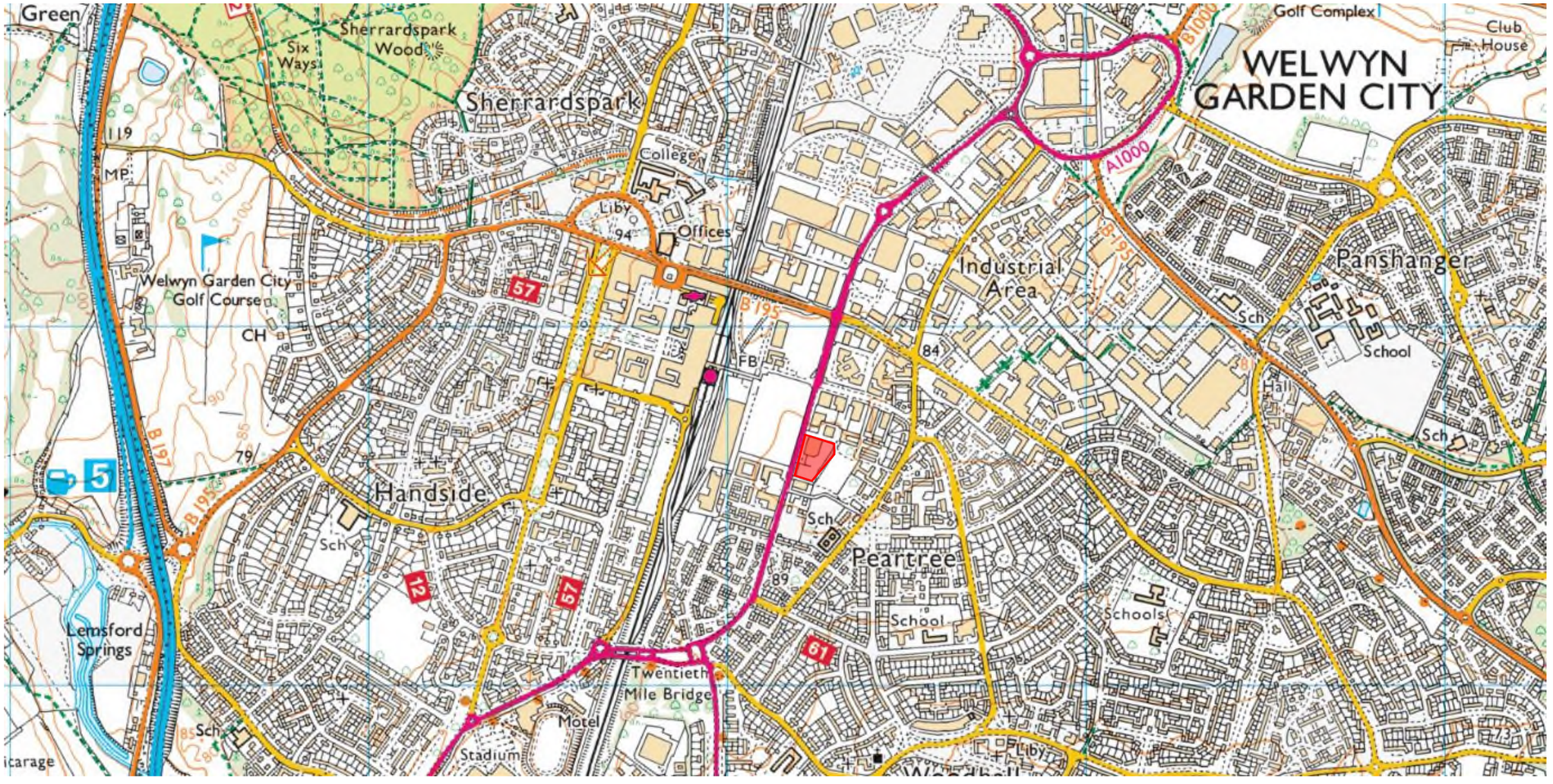
All information given in this report is based on the ground conditions encountered during the site work, and on the results of laboratory and field tests performed during the investigation. However, there may be conditions at the site which have not been taken into account, such as unpredictable soil strata, contaminant concentrations, and water conditions between or below exploratory holes.

It should be noted that groundwater levels usually vary due to seasonal and/or other effects and may at times differ to those measured during the investigation.

British Standards Institute (BSI, 2015) ordinarily recommends that laboratory measurements of strength in cohesive soils be undertaken only on high-quality (Category 'A') undisturbed samples, necessitating the use of wire-line drilling or thin-wall samples tubes. However, given the relatively low geotechnical risk presented and the low probability of being able to recover Category 'A' samples from the anticipated strata, it is considered that the use of such techniques is neither appropriate nor cost-effective.

Appendix A

Site Location Plan



NOT TO SCALE

LEGEND:

Site location

Broadwater Road

Welwyn Garden City

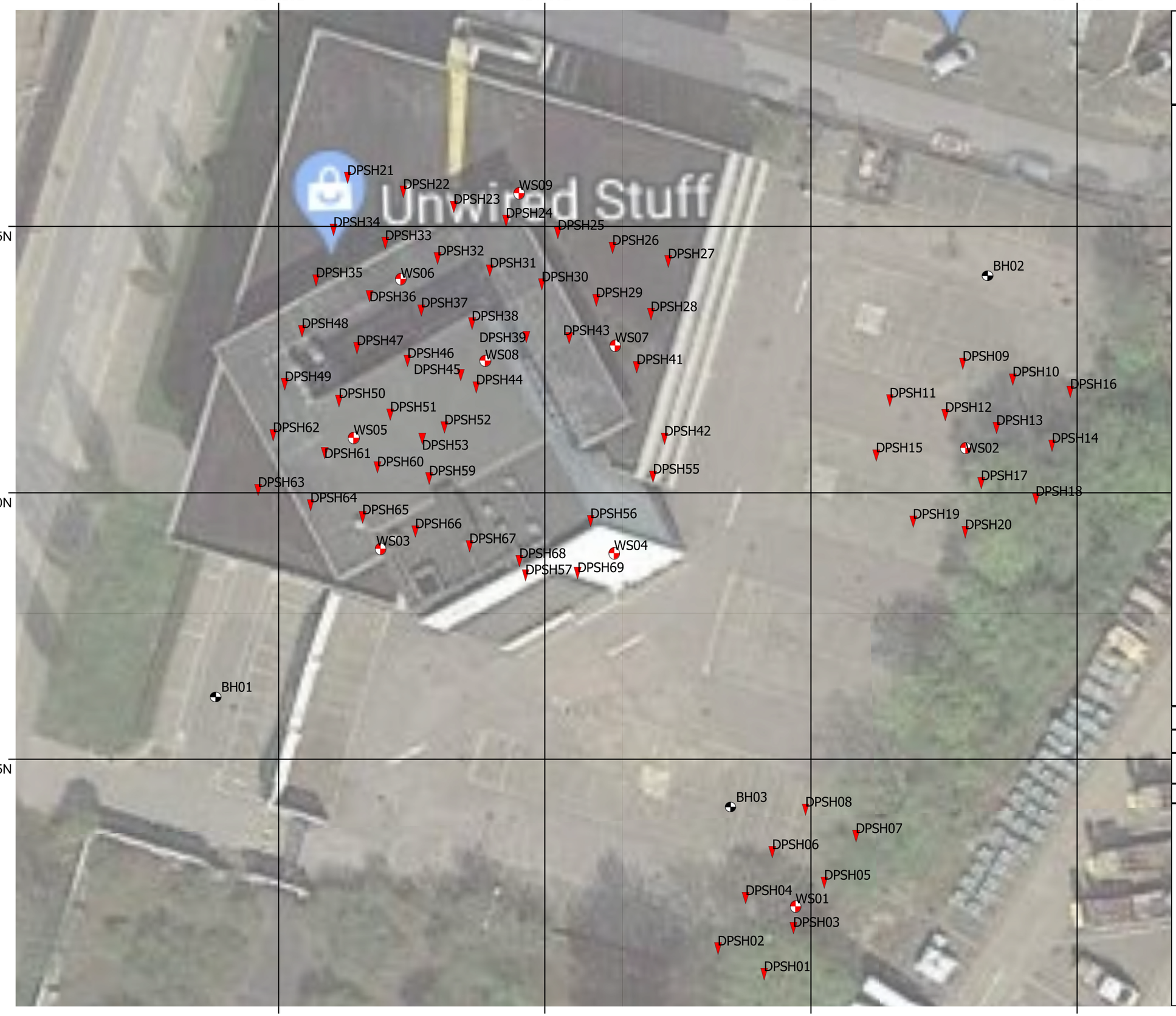
Job No. 13896

Site Location Plan

SOUTH WEST GEOTECHNICAL

Appendix B

Exploratory Hole Location Plan



N

0 5 10 15 20 m

Plan Legend:

- WS
- DPSH
- BH

Broadwater Road, WGC

Exploratory Hole Location Plan

SIZE:	JOB NO:	DWG NO:	REV:
A3	13896	Fig No. 1	1

SCALE: 1:350	16/06/2023	SHEET 1 OF 1

SOUTH WEST GEOTECHNICAL

South West Geotechnical Ltd,
Unit 3 Brooklands, Howden Road,
Tiverton, Devon.
EX16 5HW
01884 252 444

Appendix C

Exploratory Hole Logs and Photos

Borehole Log

Borehole No. **BH01**

Sheet 1 of 3

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524216.77 - 212628.80	Hole Type CP
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.32	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.00 - 0.30	B					
		0.20	D		0.30	84.02		MADE GROUND: Medium dense (?) dark brown slightly silty very gravelly fine to coarse subangular SAND. Medium cobble content. Gravel is fine to coarse angular to subrounded chert, flint, brick, concrete, plastic, glass and metal. Locally organic.
		0.20	ES					
		0.20	V					
		0.50 - 1.00	B					
		0.75	D					
		0.75	ES					
		0.75	V					
		1.20	SPT		1.30	83.02		MADE GROUND: Medium dense brown to orange-brown slightly silty clayey very gravelly SAND. (Locally very sandy GRAVEL). Low cobble content. Gravel is fine to coarse angular to subrounded flint, chert and brick.
		1.20		N=17 (3,3/4,4,4,5)				
		1.50 - 2.00	B					
		1.75	D					
		1.75	ES					
		2.00	SPT					MADE GROUND: Medium dense brown to orange-brown slightly silty very sandy very clayey GRAVEL. Low cobble content. Gravel is fine to coarse angular to subrounded flint, chert and brick.
		2.00		N=19 (3,4/5,6,4,4)				
		2.50 - 3.00	B					
		2.75	D					
		2.75	ES					
		2.75	V					
		3.00	SPT					
		3.00		N=14 (4,4/4,4,3,3)				
		3.50 - 4.00	B					
		4.00	D					
		4.00		N=13 (2,2/3,3,3,4)				
		4.50 - 5.00	B		4.50	79.82		Stiff becoming very stiff grey-brown to brown (locally light brown mottled) (locally slightly sandy) gravelly silty CLAY. Gravel is fine to medium angular to subrounded chalk, sandstone, mudstone and flint. Light brown spots in mottled areas comprise of clayey SILT. (GLACIAL TILL DEPOSITS).
				HVP=84				
		5.00	D					
		5.00	ES					
		5.00	SPT					
		5.00		N=12 (2,2/2,3,3,4) HVP=106				
		5.50 - 6.00	B					
		6.00	D					
		6.00		N=13 (2,2/3,3,3,4) HVP=130	6.15	78.17		Firm light brown (locally slightly gravelly) very sandy very silty CLAY. (Locally very clayey SILT). Gravel is fine to medium rounded quartz. Increasingly sandy with depth. (GLACIOFLOUVIAL DEPOSITS).
		6.50 - 7.00	B					
		6.75	D					
		6.75	ES					
		7.00	D					
		7.00		N=12 (2,2/3,3,3,3)				
		7.50 - 8.00	B					
		8.00	SPT					
		8.00		N=9 (1,1/2,2,2,3)				
		8.50 - 9.00	B					
		9.00	SPT		9.00	75.32		Medium dense light brown slightly gravelly very clayey very silty fine to coarse subangular to rounded SAND. Gravel is fine to coarse angular to rounded flint and sandstone. (GLACIOFLUVIAL DEPOSITS).
		9.00		N=25 (2,3/5,5,9,6)				
		9.50 - 10.00	B					
		10.00	SPT					

Continued on next sheet

Remarks

1. Excavated by hand to 1.20mbgl. 2. Drilled with Dando 150 Cable percussive rig. 3. No groundwater strike identified. 4. Hole terminated at 22.36mbgl. 5. Backfilled with gravel and arisings.

Borehole Log

Borehole No. **BH01**

Sheet 2 of 3

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524216.77 - 212628.80	Hole Type CP
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.32	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		10.00		N=19 (2,2/3,5,5,6)				
		10.50 - 11.00	B		10.50	73.82		Medium dense dark brown (locally light brown) clayey (locally very clayey) silty very sandy GRAVEL. High cobble content. Gravel is fine to coarse subangular flint. (GLACIOFLUVIAL DEPOSITS).
		11.00	SPT					
		11.00		N=26 (6,6/8,6,6,6)				
		11.50 - 12.00	B		11.50	72.82		Dense to very dense light brown slightly clayey very sandy GRAVEL. Low cobble content. Gravel is fine to coarse angular to rounded flint, sandstone and chalk. (GLACIOFLUVIAL DEPOSITS).
		11.75	D					
		11.75	ES					
		12.00		50 (7,15/50 for 255mm)				
		12.50 - 13.00	B					
		13.00		N=38 (7,10/8,8,10,12)				
		13.50 - 14.00	B					
		14.00	SPT					
		14.00		N=15 (3,3/3,4,4,4)	14.20	70.12		Structureless CHALK comprising of stiff compact cream slightly sandy clayey SILT. Traces of light brown CLAY. (SEAFORD CHALK FORMATION, Grade Dm).
		14.50 - 15.00	B					
		15.00 - 15.30	U					
		15.50 - 16.00	B					
		16.00	SPT					
		16.00		N=20 (3,1/9,3,4,4)				
		16.50 - 17.00	B		16.60	67.72		Extremely weak to very weak, white and cream, very closely fractured CHALK. (SEAFORD CHALK FORMATION, Grade C4/5).
		17.00	D					
		17.00	ES					
		17.00 - 17.25	U					
		17.50 - 18.00	B					
		18.00	SPT					
		18.00		N=13 (2,1/2,5,3,3)				
		18.50 - 19.00	B					
		19.00	D					
		19.00 - 19.25	U					
		19.50 - 20.00	B					
		20.00	SPT					

Continued on next sheet

Remarks

1. Excavated by hand to 1.20mbgl. 2. Drilled with Dando 150 Cable percussive rig. 3. No groundwater strike identified. 4. Hole terminated at 22.36mbgl. 5. Backfilled with gravel and arisings.

Borehole Log

Borehole No. **BH01**

Sheet 3 of 3

Project Name:	Broadwater Road	Project No. 13896	Co-ords: 524216.77 - 212628.80	Hole Type CP
Location:	29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.32	Scale 1:50
Client:	Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		20.00		N=19 (5,4/5,5,6,3)				
		20.50 - 21.00	B					
		21.00 - 21.15	U					
		21.50 - 22.00	B		21.50	62.82		Very weak, white and cream, very closely fractured CHALK. (SEAFORD CHALK FORMATION, Grade C4/5).
		22.00 22.00	SPT	50 (8,12/50 for 210mm)	22.36	61.96		End of borehole at 22.36 m

Remarks

1. Excavated by hand to 1.20mbgl. 2. Drilled with Dando 150 Cable percussive rig. 3. No groundwater strike identified. 4. Hole terminated at 22.36mbgl. 5. Backfilled with gravel and arisings.

Borehole Log

Borehole No. **BH02**

Sheet 1 of 2

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524291.58 - 212670.27	Hole Type CP
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.35	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.50	D					MADE GROUND: Loose to medium dense (?) slightly clayey slightly silty very gravelly fine to coarse angular to subrounded SAND. Medium cobble content. Gravel is fine to coarse angular to subangular flint, chert, concrete, chalk, and metalwork, cables and plastic.
		0.50	ES					
		0.50	V					
		0.50 - 1.00	B					
		0.90	D		1.10	83.24		
		1.00	D					MADE GROUND: Medium dense brown to orange-brown (locally red-brown) gravelly very clayey fine to medium SAND. Low cobble content. Gravel is fine to coarse angular to subrounded flint, chert and chalk.
		1.00	ES					
		1.00	V					
		1.20	SPT					
		1.20		N=18 (3,3/3,4,4,7)				
		1.50 - 2.00	B					
		1.75	D					
		1.75	ES					
		1.75	V					
		2.00	SPT					
		2.00		N=29 (5,6/9,6,6,8)				
		2.50 - 3.00	B					
		3.00	D					
		3.00	ES					
		3.00	SPT					
		3.00		N=16 (2,2/4,4,4,4)	3.50	80.84		
		3.50 - 4.00	B					MADE GROUND: Firm brown to light brown sandy (locally very sandy) silty very gravelly CLAY. Gravel is fine to coarse angular to subrounded flint and chert.
		4.00	D					
		4.00	ES					
		4.00	SPT					
		4.00		N=11 (2,2/2,2,3,4)				
		4.60 - 5.00	B		4.60	79.74		Stiff grey-brown slightly gravelly slightly sandy silty CLAY. Low cobble content. Gravel is fine to medium angular to subrounded chalk, mudstone and sandstone. (GLACIAL TILL DEPOSITS).
		5.00	D					
		5.00	ES					
		5.00	SPT					
		5.00		N=16 (1,2/3,3,5,5)	5.50	78.84		
		5.50 - 6.00	B					Very stiff brown to grey brown gravelly sandy silty CLAY. Low cobble content. Gravel is fine to coarse angular to subrounded flint, chert and chalk. (GLACIAL TILL DEPOSITS).
		6.00	SPT					
		6.00		50 (4,11/50 for 184mm)	6.20	78.14		
		6.50 - 7.00	B					Very dense light brown to grey-brown slightly silty very sandy GRAVEL. (Locally very gravelly SAND). Low cobble content. Gravel is fine to coarse angular to rounded flint, chert and chalk. (GLACIOFLUVIAL DEPOSITS).
		6.75	D					
		6.75	ES					
		7.00		50 (6,15/50 for 100mm)				
		7.50 - 8.00	B					
		8.00		50 (25 for 120mm/50 for 72mm)				
		8.30 - 8.60	B					
		8.60 - 9.00	B		8.60	75.74		Structureless CHALK comprising of stiff compact cream gravelly sandy SILT. The gravel is fine to medium angular to subrounded very weak, low density white to light grey very weak chalk and occasional flint. Traces of white clay. (SEAFORD CHALK FORMATION, Grade Dm).
		8.75	D					
		8.75	ES					
		9.00	SPT					
		9.00		N=12 (2,2/3,3,3,3)				
		10.00 - 10.45	U					

Continued on next sheet

Remarks

Borehole Log

Borehole No. **BH02**

Sheet 2 of 2

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524291.58 - 212670.27	Hole Type CP
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.35	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		10.50	D		10.50	73.84		Extremely weak to very weak, white and cream, very closely fractured CHALK. (SEAFORD CHALK FORMATION, Grade C4/5).
		10.50 - 11.00	B					
		11.00	SPT					
		11.00		N=14 (3,3/3,3,4,4)				
		11.50 - 12.00	B					
		12.00	D					
		12.00	ES					
		12.50 - 13.00	B					
		13.00	SPT					
		13.00		N=14 (3,3/3,3,4,4)				
		13.50 - 14.00	B		13.50	70.84		Extremely weak to very weak, white and cream, very closely fractured CHALK. (SEAFORD CHALK FORMATION, Grade C4/5).
		14.00	D					
		14.00 - 14.45	U					
		14.50 - 15.00	B		14.50	69.84		Very weak, white and cream, very closely fractured CHALK. (SEAFORD CHALK FORMATION, Grade C4/5).
		15.00	SPT					
		15.00		N=14 (3,3/3,3,4,4)				
		15.50 - 16.00	B					
		16.50 - 17.00	B					
		17.00	SPT					
		17.00		N=28 (3,5/5,6,7,10)				
		17.50 - 18.00	B					
		18.00	D					
		18.00		50 (6,7/50 for 250mm)	18.40	65.94		End of borehole at 18.40 m

Remarks

AGS

Borehole Log

Borehole No. **BH03**

Sheet 1 of 3

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524266.69 - 212621.01	Hole Type CP
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.31	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.00 - 0.50	B					MADE GROUND: Medium dense (?) dark brown slightly clayey silty very gravelly fine to coarse subangular SAND. Medium cobble content. Gravel is fine to medium angular to subrounded chert, flint and concrete. Locally organic. Nodules of slightly organic sandy silty CLAY.
		0.40	D		0.50	83.81		
		0.40	ES					
		0.40	V					
		0.50 - 1.20	B					MADE GROUND: Medium dense brown to red-brown slightly silty slightly clayey very gravelly fine to coarse angular to subrounded SAND. Low cobble content. Gravel is fine to coarse angular to subrounded flint, chert, concrete and brick.
		1.20	SPT		1.30	83.01		
		1.20		N=16 (4,5/3,4,4,5)				
		1.50 - 2.00	B					MADE GROUND: Medium dense brown silty very clayey very gravelly fine to coarse subangular SAND. (locally very sandy CLAY). Gravel is fine to medium angular to subrounded chert, flint and sandstone. Locally organic. Nodules of slightly organic sandy silty CLAY.
		1.60	D					
		1.60	ES					
		1.60	V					
		2.00	SPT		2.20	82.11		
		2.00		N=26 (6,5/5,5,7,9)				
		2.50 - 3.00	B					MADE GROUND: Medium dense brown silty clayey (locally very clayey) very sandy GRAVEL. Low cobble content. Gravel is fine to coarse angular to subrounded flint and chert. Clay content increases with depth with increase in frequency of around 10cm wide by 5cm thick nodules of firm light brown to orange-brown and light grey mottled slightly gravelly CLAY.
		2.75	D					
		2.75	ES					
		3.00	SPT					
		3.00		N=18 (2,4/6,4,4,4)				
		3.50 - 4.00	B					
		3.80	D					
		3.80	ES					
		4.00	SPT		4.20	80.11		
		4.00		N=16 (4,3/4,3,5,4)				
		4.50 - 5.00	B					Stiff becoming very stiff grey-brown to brown (becomes dark grey-brown by 5.2mbgl) slightly gravelly sandy CLAY. Low cobble content. Gravel is fine to medium angular to subrounded chalk and sandstone. (GLACIAL TILL DEPOSITS).
		4.60	D					
		4.60	ES					
		4.60	V	HVP=120				
		5.00	SPT					
		5.00		N=13 (2,3/3,3,3,4)				
		5.50 - 6.00	B	HVP=120				
		6.00	SPT					
		6.00		N=38 (2,5/10,9,9,10)	6.15	78.16		
		6.50 - 7.00	B					Medium dense to dense light brown slightly clayey very sandy GRAVEL) Low cobble content. Gravel is fine to coarse angular to rounded flint, sandstone and chalk. (GLACIOFLUVIAL DEPOSITS).
		6.75	D					
		6.75	ES					
		6.75	V					
		7.00	SPT					
		7.00		50 (3,8/50 for 230mm)				
		7.50 - 8.00	B					
		8.00		N=37 (10,13/10,12,6,9)				
		8.50 - 9.00	B					
		8.75	D					
		8.75	ES					
		9.00		N=25 (5,6/8,8,9,0)				
		9.50 - 10.00	B					

Continued on next sheet

Remarks

Borehole Log

Borehole No. **BH03**

Sheet 2 of 3

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524266.69 - 212621.01	Hole Type CP
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.31	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		10.00		N=34 (25 for 120mm/12,8,7,7)				
		10.50 - 11.00	B					
		11.00	SPT					
		11.00		50 (13,8/50 for 225mm)				
		11.50 - 12.00	D					
		11.75	D					
		11.75	ES					
		12.00	D					
		12.00	SPT		12.20	72.11		
		12.00		N=15 (5,6/3,4,4,4)				Structureless CHALK comprising of stiff compact cream slightly gravelly SILT. The gravel is fine to coarse angular to subangular very to extremely weak, low density, cream chalk. (SEAFORD CHALK FORMATION, Grade Dm).
		12.50 - 13.00	B					
		13.00 - 13.45	U					
		13.50	D					
		13.50	ES					
		13.50 - 14.00	B					
		14.00	SPT					
		14.00		N=16 (2,3/3,4,4,5)				
		14.50 - 15.00	B					
		15.00 - 15.45	U					
		15.50	D					
		15.50 - 16.00	B					
		16.00	SPT		16.00	68.31		
		16.00		N=20 (3,3/4,5,4,7)				Extremely weak to very weak, white and cream, very closely fractured CHALK. (SEAFORD CHALK FORMATION, Grade C4/5).
		16.50 - 17.00	B					
		17.00 - 17.15	U					
		17.50	D					
		17.50 - 18.00	B					
		18.00	SPT		18.00	66.31		
		18.00		N=13 (1,2/2,2,3,6)				Extremely weak to very weak, white and cream, very closely fractured CHALK. (SEAFORD CHALK FORMATION, Grade C4/5).
		18.50 - 19.00	B					
		19.00 - 19.20	D		19.00	65.31		
		19.10	D					Very weak, white and cream, very closely fractured CHALK. (SEAFORD CHALK FORMATION, Grade C4/5).
		19.10	ES					
		19.50 - 20.00	B					
		20.00	SPT					

Continued on next sheet

Remarks

Borehole Log

Borehole No. **BH03**

Sheet 3 of 3

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524266.69 - 212621.01	Hole Type CP
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.31	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		20.00		50 (7,8/50 for 185mm)	20.34	63.97		End of borehole at 20.34 m

Remarks

AGS

Borehole Log

Borehole No. **DPSH39**

Sheet 1 of 2

Project Name:	Broadwater Road	Project No. 13896	Co-ords:	524248.17 - 212664.63	Hole Type CP
Location:	29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level:	84.08	Scale 1:50
Client:	Hightown Housing Association ltd.		Dates:	-	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.75	D		0.60	83.48		MADE GROUND: Stiff to very stiff orange-brown to brown silty very gravelly very sandy CLAY (locally very clayey GRAVEL). Gravel is fine to coarse angular to subrounded flint, and concrete.
								MADE GROUND: Medium dense (?) orange-brown becoming dark brown slightly gravelly clayey silty fine to medium SAND. Gravel is fine to coarse subangular flint.
					3.50	80.58		MADE GROUND: Loose (?) grey-brown to green-brown silty very clayey very sandy GRAVEL. Hydrocarbon odour.
		3.80	D		4.00	80.08		Firm dark grey-brown slightly gravelly (locally slightly sandy) silty CLAY. Gravel is fine to medium angular to subrounded chalk and sandstone. (GLACIAL TILL DEPOSITS).
		3.80	ES					
		3.80	V					
		4.20	D					
		4.20	ES					
		4.20	V					
		6.00	D		5.70	78.38		Very stiff dark grey-brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to medium angular to subangular chalk and sandstone. (GLACIAL TILL DEPOSITS).
		6.00	ES					
		6.00	V					
		6.80	D		6.60	77.47		Firm to stiff orange-brown brown and grey mottled (locally slightly gravelly) sandy to very sandy silty to very silty CLAY. Locally organic. Gravel is fine to coarse subrounded flint and quartz. (GLACIOFLUVIAL DEPOSITS).
		6.80	ES					
		6.80	V					
		7.30	D		7.20	76.88		Dense (?) dark brown slightly gravelly silty very clayey fine to medium SAND. Gravel is fine to medium subrounded flint and quartz. (GLACIOFLUVIAL DEPOSITS).
		7.30	ES		7.50	76.58		Dense (?) light brown slightly clayey slightly silty very sandy GRAVEL. Gravel is fine to coarse subangular to rounded flint, chert, sandstone, chalk and quartz. Low to medium cobble content. (GLACIOFLUVIAL DEPOSITS).
		7.30	V					
		7.60	D					
		10.00 - 10.50	B					

Continued on next sheet

Remarks

Borehole Log

Borehole No. **DPSH39**

Sheet 2 of 2

Project Name:	Broadwater Road	Project No. 13896	Co-ords: 524248.17 - 212664.63	Hole Type CP
Location:	29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.08	Scale 1:50
Client:	Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		13.00 - 14.00	D		13.00	71.08		Structureless CHALK comprising of firm cream to light yellow gravelly sandy clayey SILT. Gravel is of fine to coarse angular to subrounded very weak chalk and medium strong flint. (SEAFORD CHALK FORMATION, Grade Dm).
					14.00	70.08		End of borehole at 14.00 m

Remarks

Borehole Log

Borehole No. **DPSH45**

Sheet 1 of 2

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524241.12 - 212661.79	Hole Type CP
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 83.94	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50 0.50	D ES					MADE GROUND: Stiff to very stiff brown to light brown gravelly sandy (becoming very sandy) silty CLAY (locally very clayey GRAVEL). Low cobble content. Gravel is fine to coarse angular to subrounded flint, chert, brick and concrete.
		1.00	D		0.80	83.14		MADE GROUND: Medium dense (?) brown to orange-brown gravelly silty very clayey fine to medium SAND. Gravel is fine to coarse subangular flint, chert, sandstone and brick.
		2.00 - 2.50	B		1.50	82.44		MADE GROUND: Medium dense (?) brown silty very clayey very gravelly GRAVEL. Gravel is fine t coarse angular to subangular flint, chert, mudstone, limestone and concrete.
	▼							
		4.70	D		4.50	79.44		Very stiff dark grey-brown (locally grey) slightly gravelly (locally slightly sandy) silty CLAY. Gravel is fine to medium angular to subrounded chalk, sandstone, mudstone and flint. (GLACIAL TILL DEPOSITS).
		5.50	D					
					6.40	77.54		Medium dense (?) brown clayey (locally very clayey) silty gravelly fine to medium SAND. Low cobble content. Gravel is fine to coarse subangular to rounded flint, chert and sandstone. (GLACIOFLUVIAL DEPOSITS).
		7.00 - 7.50	B		6.60	77.34		Dense (?) light brown slightly clayey slightly silty very sandy GRAVEL. Gravel is fine to coarse subangular to rounded flint, chert, sandstone, chalk and quartz. Low to medium cobble content. (GLACIOFLUVIAL DEPOSITS).
		8.00 - 8.50	B					
		9.50 - 10.00	B					

Continued on next sheet

Remarks

Borehole Log

Borehole No. **DPSH45**
Sheet 2 of 2

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524241.12 - 212661.79	Hole Type CP
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 83.94	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		10.40 - 11.00	D		10.40	73.54		Structureless CHALK comprising of firm cream gravelly clayey SILT. Gravel is of medium angular very weak chalk and medium strong flint. (SEAFORD CHALK FORMATION, Grade Dm).
					11.00	72.94		End of borehole at 11.00 m

Remarks

Borehole Log

Borehole No. **WS01**

Sheet 1 of 1

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524272.96 - 212610.57	Hole Type WS
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.24	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.50	D		0.55	83.69		MADE GROUND: Loose (?) orange-brown slightly silty gravelly fine to medium SAND. Gravel is fine to coarse angular to subangular flint, concrete and glass.
		0.50	ES					
		0.50	V					
		0.75	D					
		1.00		N=9 (3,2/3,2,2,2)	1.10	83.14		MADE GROUND: Stiff brown to orange-brown gravelly sandy silty CLAY. Gravel is fine to coarse subangular to subrounded flint and sandstone.
		1.10 - 2.00	D					MADE GROUND : Loose becoming medium dense orange-brown clayey silty (locally slightly gravelly) fine to medium subrounded SAND.
		2.00		N=18 (3,3/3,5,5,5)				
		2.50	D					
		2.50	ES					
					2.80	81.44		MADE GROUND: Medium dense brown to orange-brown silty very clayey very sandy GRAVEL. Gravel is fine to medium angular to subrounded flint.
		3.00		N=20 (5,5/5,6,5,4)				
		3.00 - 4.00	D					
		3.50	D					
		3.50	ES					
?		4.00		N=11 (4,3/2,3,3,3)				
					4.50	79.74		Stiff becoming very stiff grey-brown slightly gravelly (locally slightly sandy) CLAY. Gravel is fine to medium angular to rounded chalk and sandstone. (GLACIAL TILL DEPOSITS).
	▼			HVP=130				
		4.80	D					
		5.00		N=12 (2,3/3,3,3,3)				
					5.45	78.79		End of borehole at 5.45 m

Remarks

Borehole Log

Borehole No. **WS02**

Sheet 1 of 1

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524288.58 - 212654.18	Hole Type WS
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.39	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
					0.30	84.09		MADE GROUND: Loose (?) light brown slightly silty very sandy GRAVEL. Low cobble content. Gravel is fine to coarse angular to subrounded chert and concrete.
		0.50	D					
		0.50	ES					
		0.50	V					
		0.75	D					
		0.90	D		1.10	83.29		MADE GROUND: Very stiff dark grey-brown becoming orange-brown (locally light brown mottled) sandy very gravelly CLAY. Gravel is fine to coarse angular to subrounded flint and chert.
		0.90	ES					
		1.00		N=32 (4,4/5,6,8,13)	1.45	82.94		MADE GROUND: Dense light brown clayey sandy GRAVEL. Low cobble content. Gravel is fine to coarse angular to subrounded flint and chert.
		1.50 - 2.50	D					
		2.00		N=43 (9,9/7,10,13,13)				MADE GROUND: Dense becoming medium dense brown to light brown clayey (locally very clayey) silty gravelly (locally very gravelly) fine to medium SAND. Gravel is fine to coarse angular to subrounded flint and chert.
		2.50	D					
		2.50	ES					
		2.50	V					
		3.00		N=30 (6,6/7,7,7,9)				
	▼	3.75	D					
		4.00		N=14 (3,3/4,4,3,3)				
					4.40	79.99		Stiff becoming very stiff grey-brown slightly gravelly (locally slightly sandy) CLAY. Gravel is fine to medium angular to subrounded chalk and sandstone. (GLACIAL TILL DEPOSITS).
				HVP=99				
?		4.75	D					
				HVP=112				
				HVP=110				
		5.00		N=8 (2,2/2,2,2,2)				
					5.45	78.94		End of borehole at 5.45 m

Remarks

Borehole Log

Borehole No. **WS03**

Sheet 1 of 1

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524234.64 - 212644.69	Hole Type WS
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 83.72	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.60	D		0.70	83.02		MADE GROUND: Stiff brown to orange-brown silty very gravelly very sandy CLAY. Gravel is fine to coarse angular to subrounded chert, flint, sandstone and ceramic.
		0.60	ES					
		0.60	V					
		1.00	D					MADE GROUND: Medium dense orange-brown slightly clayey slightly silty very gravelly fine to coarse angular to subangular SAND. Gravel is fine to coarse angular flint and chert.
		1.00		N=17 (5,3/4,3,4,6)				
		1.75	D		2.00	81.72		
		1.75	ES					
		1.75	V					MADE GROUND: Medium dense brown to light brown silty very clayey very sandy GRAVEL. Gravel is fine to coarse angular to subrounded flint and chert.
		2.00		N=14 (3,2/2,4,3,5)				
		2.00 - 3.00	D					
		3.00		N=14 (3,3/2,4,4,4)	3.20	80.52		MADE GROUND Stiff brown to light brown sandy silty very gravelly CLAY.
		3.75	D					
		4.00		N=15 (3,2/3,4,4,4)				
				HVP=130	4.30	79.42		Stiff becoming very stiff grey-brown slightly gravelly (locally slightly sandy) CLAY. Gravel is fine to medium angular to rounded chalk, flint and sandstone. (GLACIAL TILL DEPOSITS).
		4.60	D					
		4.80	D					
		4.80	ES					
				HVP=150	5.10	78.62		Medium dense brown to grey-brown silty very sandy GRAVEL. Low cobble content (?). Gravel is fine to coarse angular to subangular flint. (GLACIOFLUVIAL DEPOSITS).
		5.00		N=28 (5,4/6,6,6,10)	5.45	78.27		End of borehole at 5.45 m

Remarks

AGS

Borehole Log

Borehole No. **WS04**

Sheet 1 of 1

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524255.58 - 212644.23	Hole Type WS
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 83.63	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50 - 3.00	D		0.40	83.23		MADE GROUND: Very stiff brown silty very sandy very gravelly CLAY. Gravel is fine to coarse angular to subrounded flint, brick and concrete.
		1.00		N=10 (2,2/2,3,3,2)				MADE GROUND: Loose brown to orange-brown silty very clayey very gravelly SAND. Gravel is fine to coarse angular to subangular flint and concrete.
		1.50	D					
		1.50	ES					
		2.00		N=7 (3,2/2,1,2,2)				
		3.00		N=4 (1,1/1,1,1,1)	3.10	80.53		MADE GROUND: Firm brown to light grey-brown slightly gravelly silty CLAY. Gravel is fine to medium angular to subrounded chalk and flint. (Reworked GLACIAL TILL DEPOSITS).
				HVP=62				
		4.00	D					
		4.00		N=16 (2,3/3,3,5,5)	4.30	79.33		Stiff becoming very stiff grey-brown slightly gravelly (locally slightly sandy) CLAY. Gravel is fine to medium angular to subrounded chalk and sandstone. (GLACIAL TILL DEPOSITS).
		4.75	D					
				HVP=140				
		4.80	D					
		4.80	ES					
		5.00		N=15 (1,2/3,4,4,4)	5.45	78.18		End of borehole at 5.45 m

Remarks

Borehole Log

Borehole No. **WS05**

Sheet 1 of 1

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524231.95 - 212655.17	Hole Type WS
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.12	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.25	D		0.50	83.62		MADE GROUND: Stiff brown to orange-brown silty very gravelly very sandy CLAY. Gravel is fine to coarse angular to subrounded chert, flint, sandstone and ceramic.
		0.76	D					MADE GROUND: Medium dense orange-brown silty very sandy very clayey GRAVEL. Gravel is fine to coarse angular flint concrete and chert.
		1.00		N=21 (2,2/4,5,6,6)				
		1.25	D					
		2.00		N=79 (18,18/16,19,21,23)	1.70 2.08	82.42 82.04		MADE GROUND: Very dense orange-brown slightly silty slightly clayey very gravelly fine to coarse SAND. Medium cobble content. Gravel is fine to coarse angular to subrounded flint, chert and concrete. End of borehole at 2.08 m

Remarks

Borehole Log

Borehole No. **WS06**

Sheet 1 of 1

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524235.84 - 212670.15	Hole Type WS
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 83.94	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50	D					MADE GROUND: Stiff orange-brown silty very gravelly very sandy CLAY. Gravel is fine to coarse subangular to subrounded flint , brick, ceramic, concrete and sandstone.
		1.00		N=4 (1,1/1,1,1,1)	1.20	82.74		
		1.50 - 2.00	D					MADE GROUND: Loose becoming medium dense orange-brown slightly silty slightly clayey slightly gravelly fine to medium SAND. Gravel is fine to medium angular to subrounded angular flint and chert.
		2.00		N=23 (8,5/6,5,6,6)				
		3.00		N=13 (4,3/3,3,3,4)				
	▼				3.50	80.44		MADE GROUND: Medium dense brown silty sandy very clayey GRAVEL. Gravel is fine to coarse angular to subrounded flint.
		3.75	D					
		4.00		N=14 (3,3/3,3,4,4)	4.10	79.84		Stiff becoming very stiff grey-brown slightly gravelly (locally slightly sandy) CLAY. Gravel is fine to medium angular to rounded chalk and sandstone. (GLACIAL TILL DEPOSITS).
		5.00		72 (3,4/72 for 225mm)				
					5.45	78.49		End of borehole at 5.45 m

Remarks

Borehole Log

Borehole No. **WS07**

Sheet 1 of 1

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524254.06 - 212664.08	Hole Type WS
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.06	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50	D		0.60	83.46		MADE GROUND: Stiff brown to orange-brown silty very gravelly very sandy CLAY. Gravel is fine to coarse angular to subrounded chert, flint, sandstone and ceramic.
		0.50	ES					
		0.50	V					
		0.90	D		1.00	83.06		MADE GROUND: Medium dense orange-brown clayey silty fine to medium angular to subrounded SAND.
		0.90	ES					
		0.90	V					
		1.00		N=29 (6,6/7,7,8,7)				MADE GROUND: Medium dense orange-brown clayey silty (locally very gravelly) fine to medium angular to subrounded SAND.
		1.00 - 2.00	D					
		2.00		N=21 (7,6/5,5,6,5)	2.00	82.06		MADE GROUND: Medium dense brown silty clayey (locally very clayey) very sandy GRAVEL. Gravel is fine to coarse angular to subrounded flint and chert.
		2.50	D					
		3.00		N=7 (3,2/1,2,2,2)	2.90	81.16		MADE GROUND: Loose brown slightly sandy silty very clayey GRAVEL. Gravel is fine to coarse angular to subangular flint. Hydrocarbon odour.
		3.30	D					
	▼	3.30	ES					
		3.30	V					
		4.00		N=5 (0,1/1,1,1,2)	4.00	80.06		Stiff becoming very stiff grey-brown slightly gravelly (locally slightly sandy) CLAY. Gravel is fine to medium angular to subrounded chalk and sandstone. (GLACIAL TILL DEPOSITS).
		5.00		N=22 (4,4/5,4,6,7)				
					5.45	78.61		End of borehole at 5.45 m

Remarks

AGS

Borehole Log

Borehole No. **WS08**

Sheet 1 of 1

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524243.79 - 212661.77	Hole Type WS
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.08	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.75	D					MADE GROUND: Very stiff brown (locally black and orange-brown) silty very sandy very gravelly CLAY. Gravel is fine to coarse angular to subrounded flint, brick and plastic.
		0.90	D		0.90	83.18		
		0.90	ES					MADE GROUND : Medium dense dark brown to orange-brown clayey silty slightly gravelly fine to coarse angular to subrounded SAND. Gravel is fine to coarse subangular flint, brick and quartz.
		1.00		N=21 (4,4/4,5,6,6)				
		1.30	D		1.40	82.68		
		1.50 - 4.00	D					Medium dense light brown very clayey very sandy very silty GRAVEL. Gravel is fine to coarse angular to subrounded flint, chert and brick.
		2.00		N=14 (2,2/3,3,4,4)				
		3.00		N=14 (5,3/3,3,4,4)				
	▼	3.70	D					
		3.70	ES					
		4.00		N=3 (2,1/1,1,0,1)				
					4.20	79.88		Firm light brown sandy silty CLAY. (GLACIAL TILL DEPOSITS).
		4.50	D		4.50	79.58		Stiff becoming very stiff grey-brown slightly gravelly (locally slightly sandy) CLAY. Gravel is fine to medium angular to subrounded chalk and sandstone. (GLACIAL TILL DEPOSITS).
				HVP=64				
				HVP=54				
				HVP=130				
		5.00		N=13 (2,1/2,3,3,5)				
					5.45	78.62		End of borehole at 5.45 m

1 2 3 4 5 6 7 8 9 10

Remarks

AGS

Borehole Log

Borehole No. **WS09**

Sheet 1 of 1

Project Name: Broadwater Road	Project No. 13896	Co-ords: 524247.55 - 212678.06	Hole Type WS
Location: 29 Broadwater Road, Welwyn Garden City, Hertforshire, AL7 3BQ		Level: 84.07	Scale 1:50
Client: Hightown Housing Association ltd.		Dates: -	Logged By TS

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30	D					MADE GROUND: Stiff brown to orange-brown silty very gravelly very sandy CLAY. Gravel is fine to coarse angular to subrounded chert, flint, sandstone and ceramic.
		0.30	ES					
		0.30	V		0.60	83.47		
		0.75	D					MADE GROUND: Medium dense orange-brown clayey silty fine to medium angular to subrounded SAND.
		0.80	D					
		0.80	ES					
		1.00		N=30 (4,5/6,6,9,9)	1.20	82.87		
		1.50 - 2.50	D					MADE GROUND: Medium dense becoming loose brown silty clayey (locally very clayey) very sandy GRAVEL. Gravel is fine to coarse angular to subrounded flint and chert.
		2.00		N=27 (6,5/8,7,7,5)				
		3.00		N=8 (3,2/2,2,2,2)				
					3.20	80.87		
	▼							MADE GROUND: Loose to medium dense brown slightly sandy silty very clayey GRAVEL. Gravel is fine to coarse angular to subangular flint.
?		4.00		N=10 (1,2/2,2,3,3)				
					4.20	79.87		
		4.50	D					Stiff becoming very stiff grey-brown slightly gravelly (locally slightly sandy) CLAY. Gravel is fine to medium angular to subrounded chalk and sandstone. (GLACIAL TILL DEPOSITS).
		4.50	ES					
		4.50	V					
		4.60	D					
				HVP=94				
				HVP=74				
		5.00		50 (3,3/50 for 250mm)	5.45	78.62		End of borehole at 5.45 m

Remarks

AGS

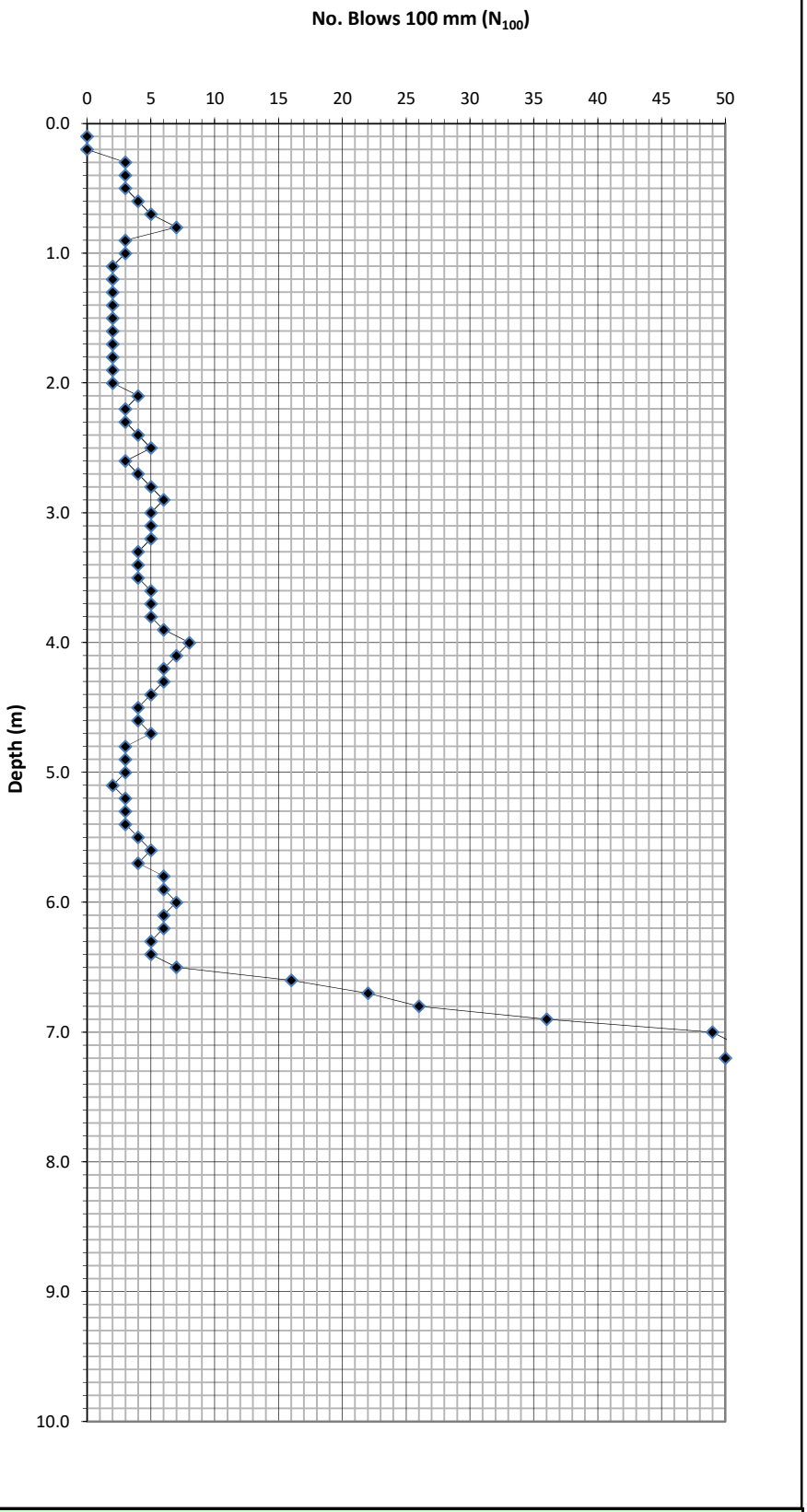
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 01**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
0	0.1	3	5.2
0	0.2	3	5.3
3	0.3	3	5.4
3	0.4	4	5.5
3	0.5	5	5.6
4	0.6	4	5.7
5	0.7	6	5.8
7	0.8	6	5.9
3	0.9	7	6.0
3	1.0	6	6.1
2	1.1	6	6.2
2	1.2	5	6.3
2	1.3	5	6.4
2	1.4	7	6.5
2	1.5	16	6.6
2	1.6	22	6.7
2	1.7	26	6.8
2	1.8	36	6.9
2	1.9	49	7.0
2	2.0	51	7.1
4	2.1	50	7.2
3	2.2		7.3
3	2.3		7.4
4	2.4		7.5
5	2.5		7.6
3	2.6		7.7
4	2.7		7.8
5	2.8		7.9
6	2.9		8.0
5	3.0		8.1
5	3.1		8.2
5	3.2		8.3
4	3.3		8.4
4	3.4		8.5
4	3.5		8.6
5	3.6		8.7
5	3.7		8.8
5	3.8		8.9
6	3.9		9.0
8	4.0		9.1
7	4.1		9.2
6	4.2		9.3
6	4.3		9.4
5	4.4		9.5
4	4.5		9.6
4	4.6		9.7
5	4.7		9.8
3	4.8		9.9
3	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

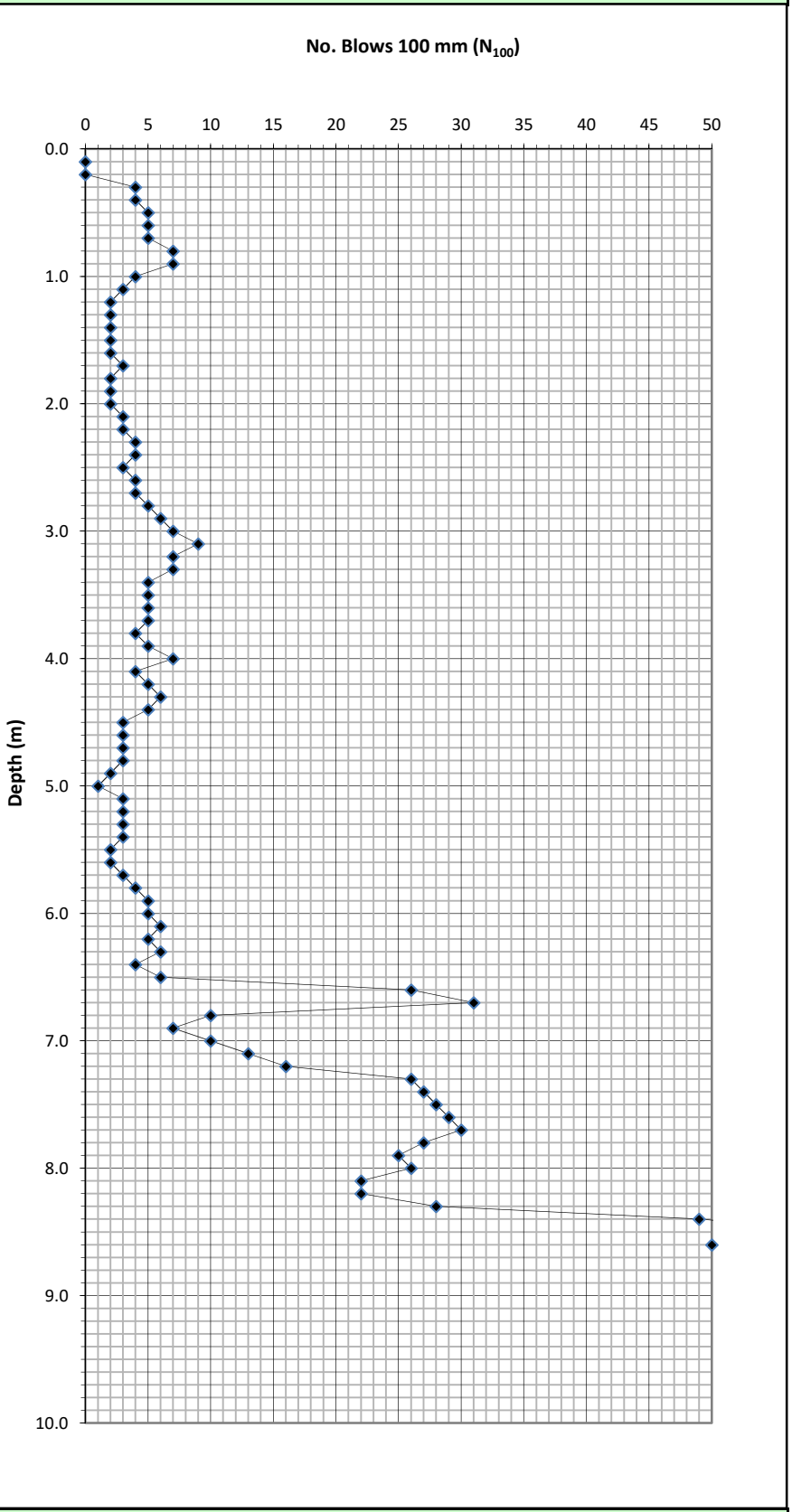
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 02**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
0	0.1	3	5.2
0	0.2	3	5.3
4	0.3	3	5.4
4	0.4	2	5.5
5	0.5	2	5.6
5	0.6	3	5.7
5	0.7	4	5.8
7	0.8	5	5.9
7	0.9	5	6.0
4	1.0	6	6.1
3	1.1	5	6.2
2	1.2	6	6.3
2	1.3	4	6.4
2	1.4	6	6.5
2	1.5	26	6.6
2	1.6	31	6.7
3	1.7	10	6.8
2	1.8	7	6.9
2	1.9	10	7.0
2	2.0	13	7.1
3	2.1	16	7.2
3	2.2	26	7.3
4	2.3	27	7.4
4	2.4	28	7.5
3	2.5	29	7.6
4	2.6	30	7.7
4	2.7	27	7.8
5	2.8	25	7.9
6	2.9	26	8.0
7	3.0	22	8.1
9	3.1	22	8.2
7	3.2	28	8.3
7	3.3	49	8.4
5	3.4	61	8.5
5	3.5	50	8.6
5	3.6		8.7
5	3.7		8.8
4	3.8		8.9
5	3.9		9.0
7	4.0		9.1
4	4.1		9.2
5	4.2		9.3
6	4.3		9.4
5	4.4		9.5
3	4.5		9.6
3	4.6		9.7
3	4.7		9.8
3	4.8		9.9
2	4.9		10.0
1	5.0		



Notes: Sheet 1 of 1.

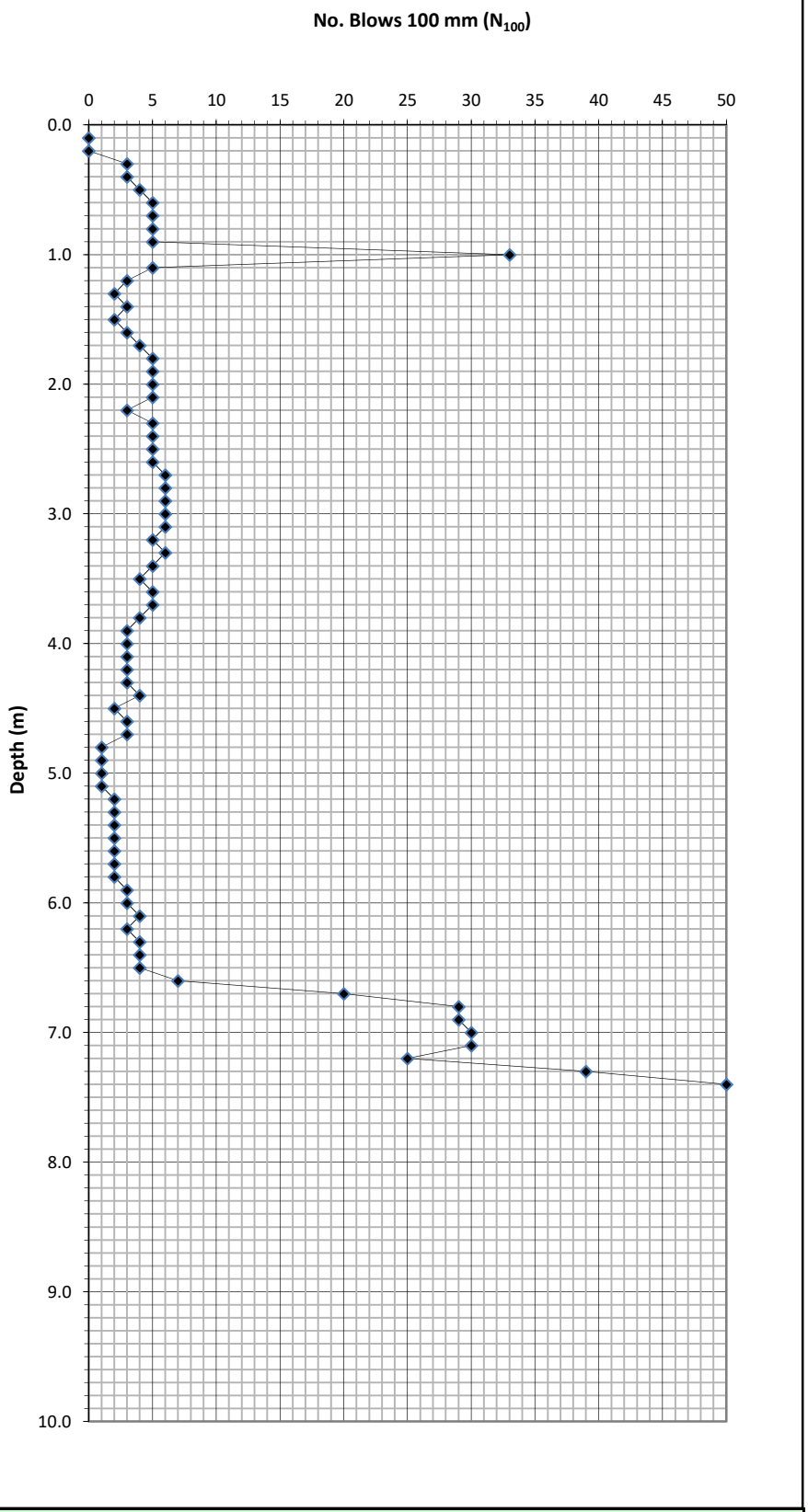
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 03**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	1	5.1
0	0.1	2	5.2
0	0.2	2	5.3
3	0.3	2	5.4
3	0.4	2	5.5
4	0.5	2	5.6
5	0.6	2	5.7
5	0.7	2	5.8
5	0.8	3	5.9
5	0.9	3	6.0
33	1.0	4	6.1
5	1.1	3	6.2
3	1.2	4	6.3
2	1.3	4	6.4
3	1.4	4	6.5
2	1.5	7	6.6
3	1.6	20	6.7
4	1.7	29	6.8
5	1.8	29	6.9
5	1.9	30	7.0
5	2.0	30	7.1
5	2.1	25	7.2
3	2.2	39	7.3
5	2.3	50	7.4
5	2.4	70	7.5
5	2.5		7.6
5	2.6		7.7
6	2.7		7.8
6	2.8		7.9
6	2.9		8.0
6	3.0		8.1
6	3.1		8.2
5	3.2		8.3
6	3.3		8.4
5	3.4		8.5
4	3.5		8.6
5	3.6		8.7
5	3.7		8.8
4	3.8		8.9
3	3.9		9.0
3	4.0		9.1
3	4.1		9.2
3	4.2		9.3
3	4.3		9.4
4	4.4		9.5
2	4.5		9.6
3	4.6		9.7
3	4.7		9.8
1	4.8		9.9
1	4.9		10.0
1	5.0		



Notes: Sheet 1 of 1.

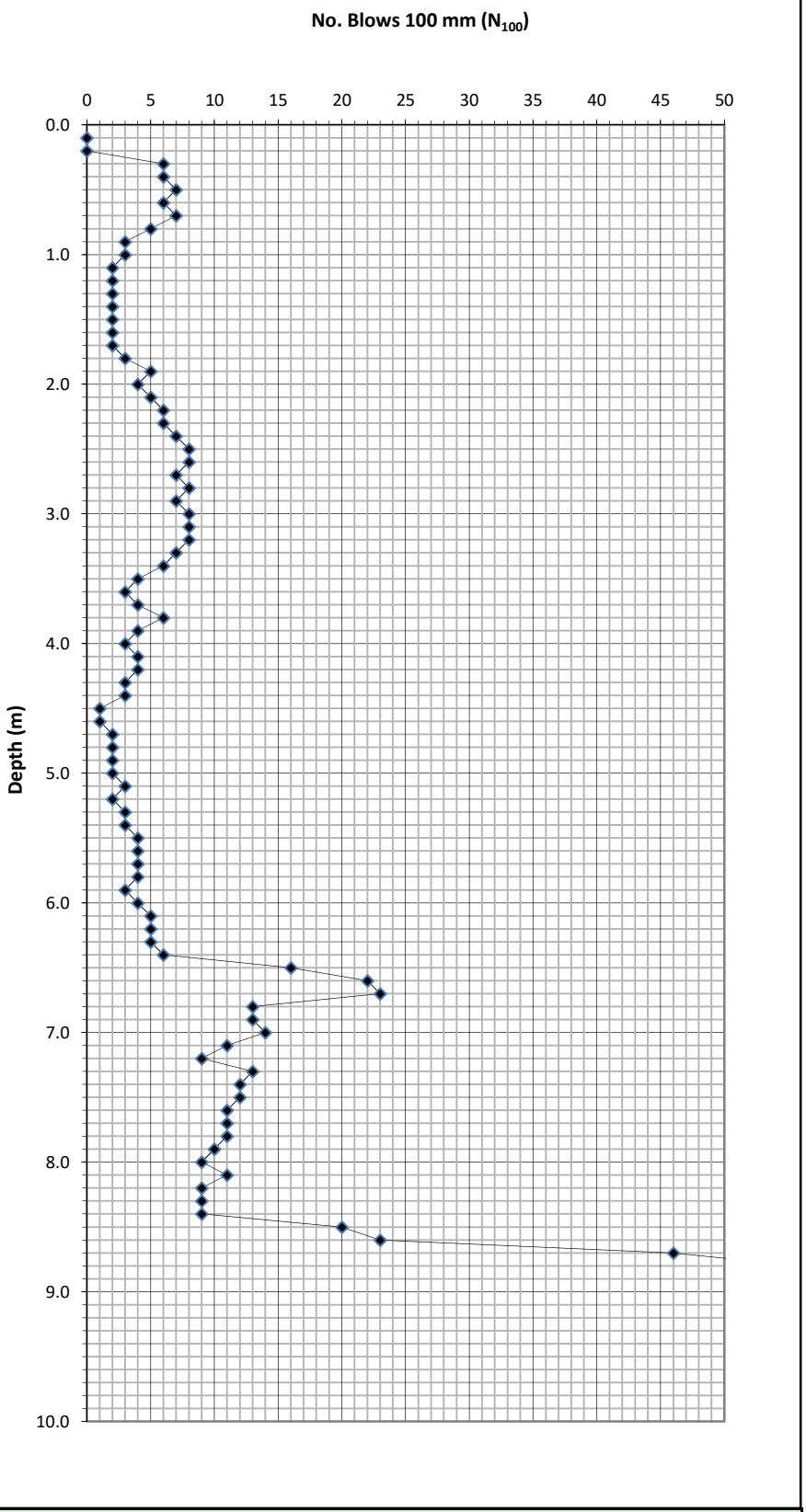
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 04**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
0	0.1	2	5.2
0	0.2	3	5.3
6	0.3	3	5.4
6	0.4	4	5.5
7	0.5	4	5.6
6	0.6	4	5.7
7	0.7	4	5.8
5	0.8	3	5.9
3	0.9	4	6.0
3	1.0	5	6.1
2	1.1	5	6.2
2	1.2	5	6.3
2	1.3	6	6.4
2	1.4	16	6.5
2	1.5	22	6.6
2	1.6	23	6.7
2	1.7	13	6.8
3	1.8	13	6.9
5	1.9	14	7.0
4	2.0	11	7.1
5	2.1	9	7.2
6	2.2	13	7.3
6	2.3	12	7.4
7	2.4	12	7.5
8	2.5	11	7.6
8	2.6	11	7.7
7	2.7	11	7.8
8	2.8	10	7.9
7	2.9	9	8.0
8	3.0	11	8.1
8	3.1	9	8.2
8	3.2	9	8.3
7	3.3	9	8.4
6	3.4	20	8.5
4	3.5	23	8.6
3	3.6	46	8.7
4	3.7	56	8.8
6	3.8	61	8.9
4	3.9		9.0
3	4.0		9.1
4	4.1		9.2
4	4.2		9.3
3	4.3		9.4
3	4.4		9.5
1	4.5		9.6
1	4.6		9.7
2	4.7		9.8
2	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 2.

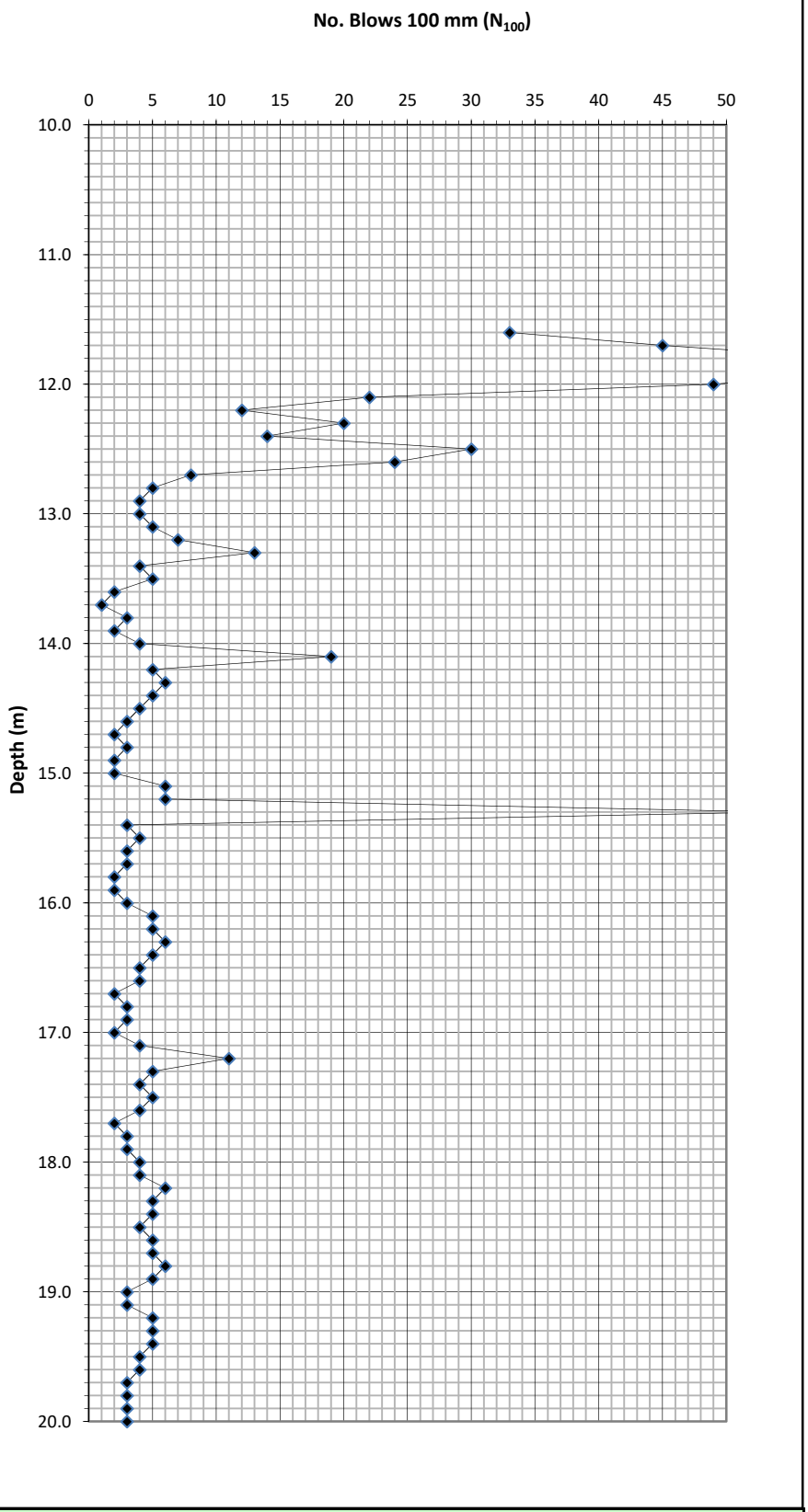
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 04 continued**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	10.0	6	15.1
	10.1	6	15.2
	10.2	54	15.3
	10.3	3	15.4
	10.4	4	15.5
	10.5	3	15.6
	10.6	3	15.7
	10.7	2	15.8
	10.8	2	15.9
	10.9	3	16.0
	11.0	5	16.1
	11.1	5	16.2
	11.2	6	16.3
	11.3	5	16.4
	11.4	4	16.5
	11.5	4	16.6
33	11.6	2	16.7
45	11.7	3	16.8
60	11.8	3	16.9
60	11.9	2	17.0
49	12.0	4	17.1
22	12.1	11	17.2
12	12.2	5	17.3
20	12.3	4	17.4
14	12.4	5	17.5
30	12.5	4	17.6
24	12.6	2	17.7
8	12.7	3	17.8
5	12.8	3	17.9
4	12.9	4	18.0
4	13.0	4	18.1
5	13.1	6	18.2
7	13.2	5	18.3
13	13.3	5	18.4
4	13.4	4	18.5
5	13.5	5	18.6
2	13.6	5	18.7
1	13.7	6	18.8
3	13.8	5	18.9
2	13.9	3	19.0
4	14.0	3	19.1
19	14.1	5	19.2
5	14.2	5	19.3
6	14.3	5	19.4
5	14.4	4	19.5
4	14.5	4	19.6
3	14.6	3	19.7
2	14.7	3	19.8
3	14.8	3	19.9
2	14.9	3	20.0
2	15.0		



Notes: Sheet 2 of 2.

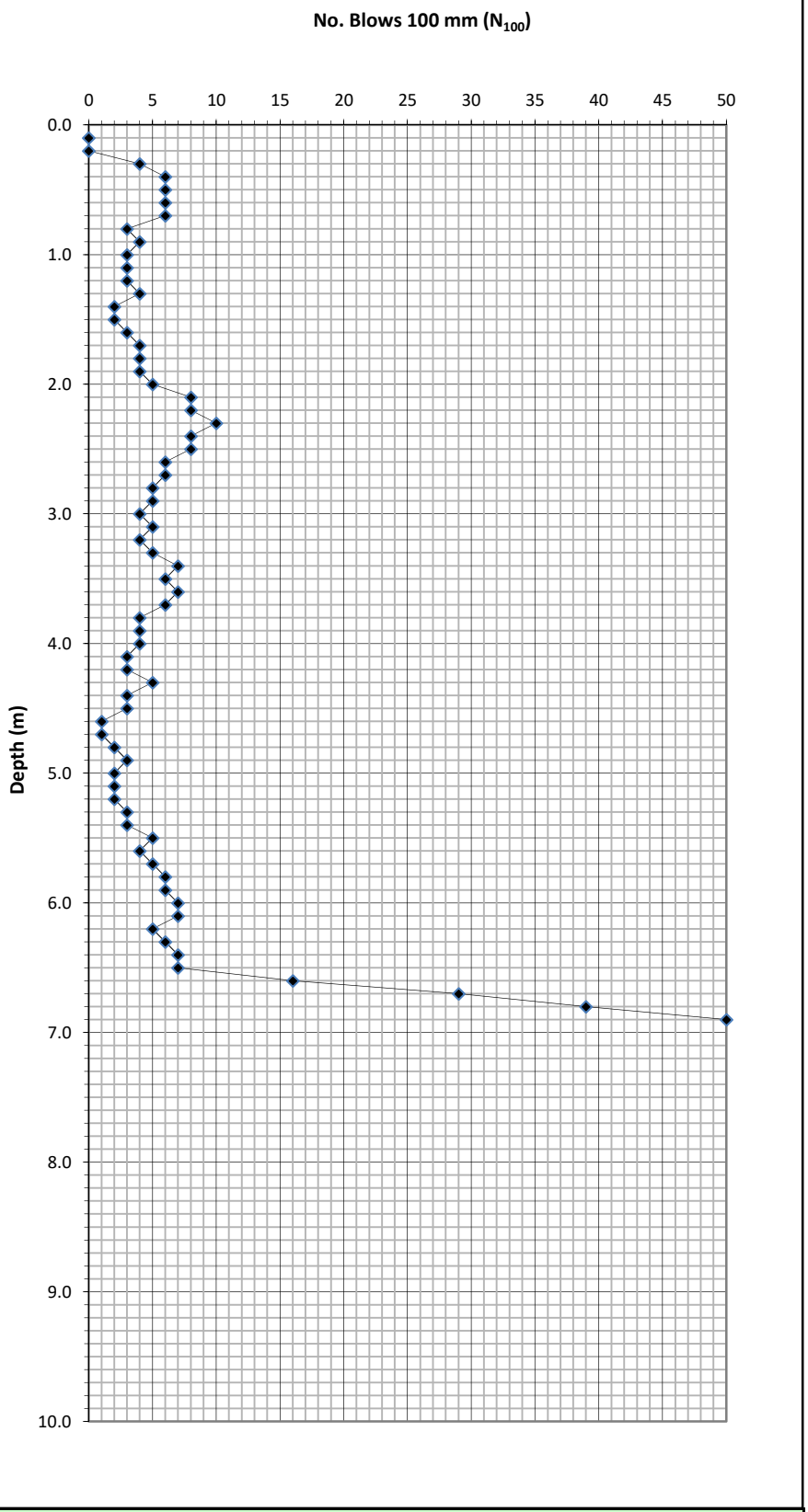
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 05**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
0	0.1	2	5.2
0	0.2	3	5.3
4	0.3	3	5.4
6	0.4	5	5.5
6	0.5	4	5.6
6	0.6	5	5.7
6	0.7	6	5.8
3	0.8	6	5.9
4	0.9	7	6.0
3	1.0	7	6.1
3	1.1	5	6.2
3	1.2	6	6.3
4	1.3	7	6.4
2	1.4	7	6.5
2	1.5	16	6.6
3	1.6	29	6.7
4	1.7	39	6.8
4	1.8	50	6.9
4	1.9	61	7.0
5	2.0		7.1
8	2.1		7.2
8	2.2		7.3
10	2.3		7.4
8	2.4		7.5
8	2.5		7.6
6	2.6		7.7
6	2.7		7.8
5	2.8		7.9
5	2.9		8.0
4	3.0		8.1
5	3.1		8.2
4	3.2		8.3
5	3.3		8.4
7	3.4		8.5
6	3.5		8.6
7	3.6		8.7
6	3.7		8.8
4	3.8		8.9
4	3.9		9.0
4	4.0		9.1
3	4.1		9.2
3	4.2		9.3
5	4.3		9.4
3	4.4		9.5
3	4.5		9.6
1	4.6		9.7
1	4.7		9.8
2	4.8		9.9
3	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

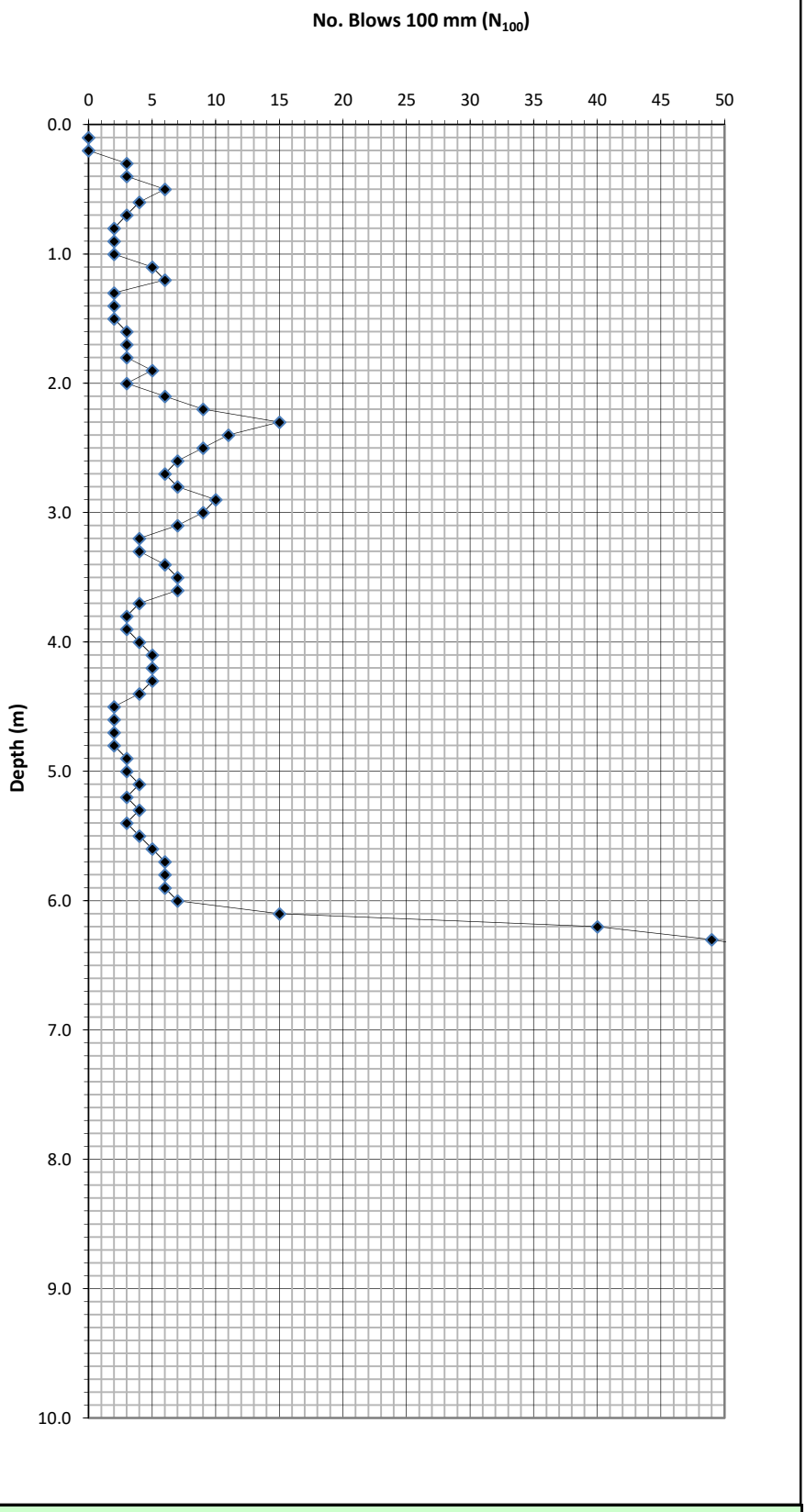
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 06**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	4	5.1
0	0.1	3	5.2
0	0.2	4	5.3
3	0.3	3	5.4
3	0.4	4	5.5
6	0.5	5	5.6
4	0.6	6	5.7
3	0.7	6	5.8
2	0.8	6	5.9
2	0.9	7	6.0
2	1.0	15	6.1
5	1.1	40	6.2
6	1.2	49	6.3
2	1.3	55	6.4
2	1.4		6.5
2	1.5		6.6
3	1.6		6.7
3	1.7		6.8
3	1.8		6.9
5	1.9		7.0
3	2.0		7.1
6	2.1		7.2
9	2.2		7.3
15	2.3		7.4
11	2.4		7.5
9	2.5		7.6
7	2.6		7.7
6	2.7		7.8
7	2.8		7.9
10	2.9		8.0
9	3.0		8.1
7	3.1		8.2
4	3.2		8.3
4	3.3		8.4
6	3.4		8.5
7	3.5		8.6
7	3.6		8.7
4	3.7		8.8
3	3.8		8.9
3	3.9		9.0
4	4.0		9.1
5	4.1		9.2
5	4.2		9.3
5	4.3		9.4
4	4.4		9.5
2	4.5		9.6
2	4.6		9.7
2	4.7		9.8
2	4.8		9.9
3	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

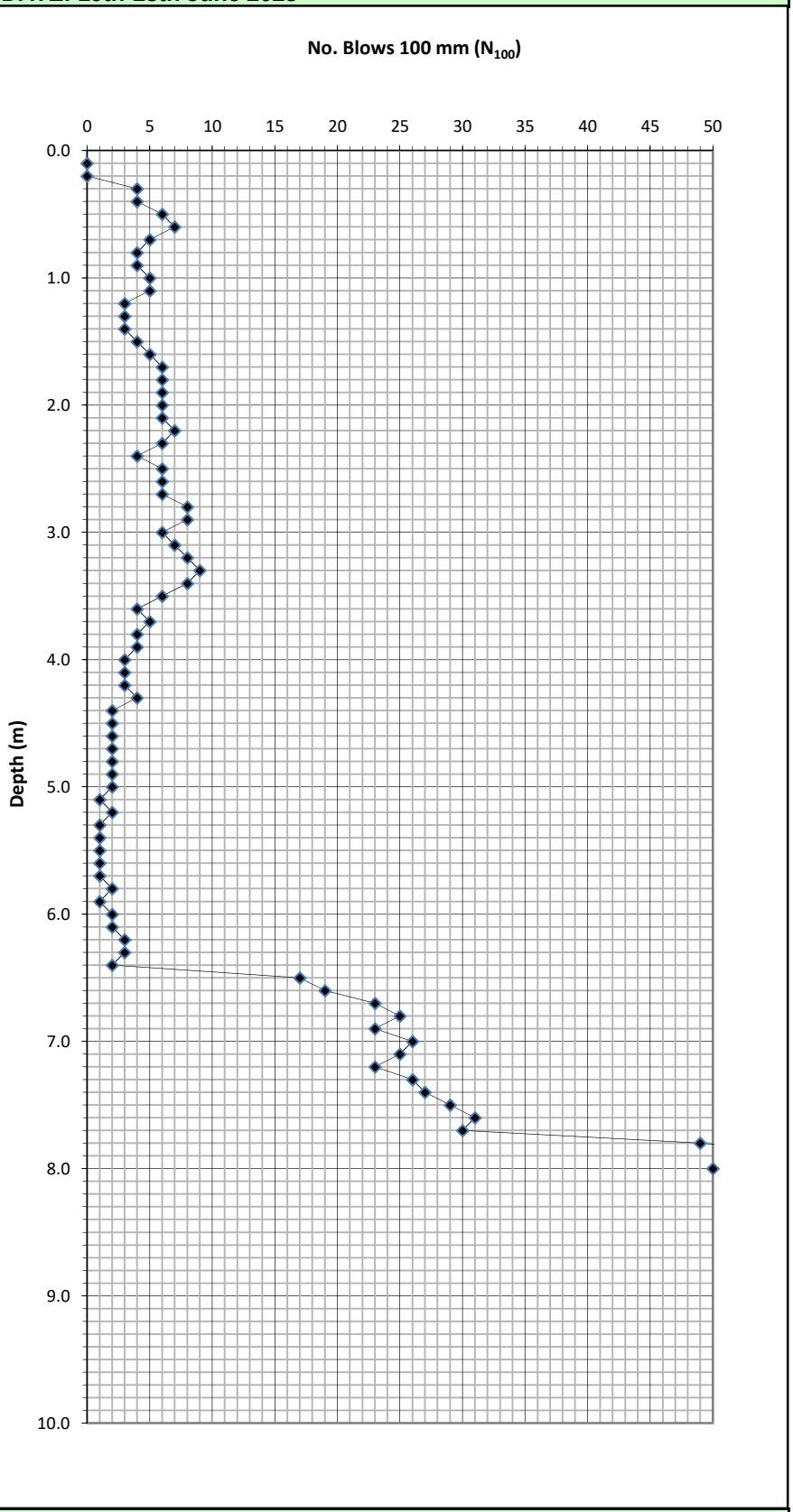
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 07**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	1	5.1
0	0.1	2	5.2
0	0.2	1	5.3
4	0.3	1	5.4
4	0.4	1	5.5
6	0.5	1	5.6
7	0.6	1	5.7
5	0.7	2	5.8
4	0.8	1	5.9
4	0.9	2	6.0
5	1.0	2	6.1
5	1.1	3	6.2
3	1.2	3	6.3
3	1.3	2	6.4
3	1.4	17	6.5
4	1.5	19	6.6
5	1.6	23	6.7
6	1.7	25	6.8
6	1.8	23	6.9
6	1.9	26	7.0
6	2.0	25	7.1
6	2.1	23	7.2
7	2.2	26	7.3
6	2.3	27	7.4
4	2.4	29	7.5
6	2.5	31	7.6
6	2.6	30	7.7
6	2.7	49	7.8
8	2.8	60	7.9
8	2.9	50	8.0
6	3.0		8.1
7	3.1		8.2
8	3.2		8.3
9	3.3		8.4
8	3.4		8.5
6	3.5		8.6
4	3.6		8.7
5	3.7		8.8
4	3.8		8.9
4	3.9		9.0
3	4.0		9.1
3	4.1		9.2
3	4.2		9.3
4	4.3		9.4
2	4.4		9.5
2	4.5		9.6
2	4.6		9.7
2	4.7		9.8
2	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

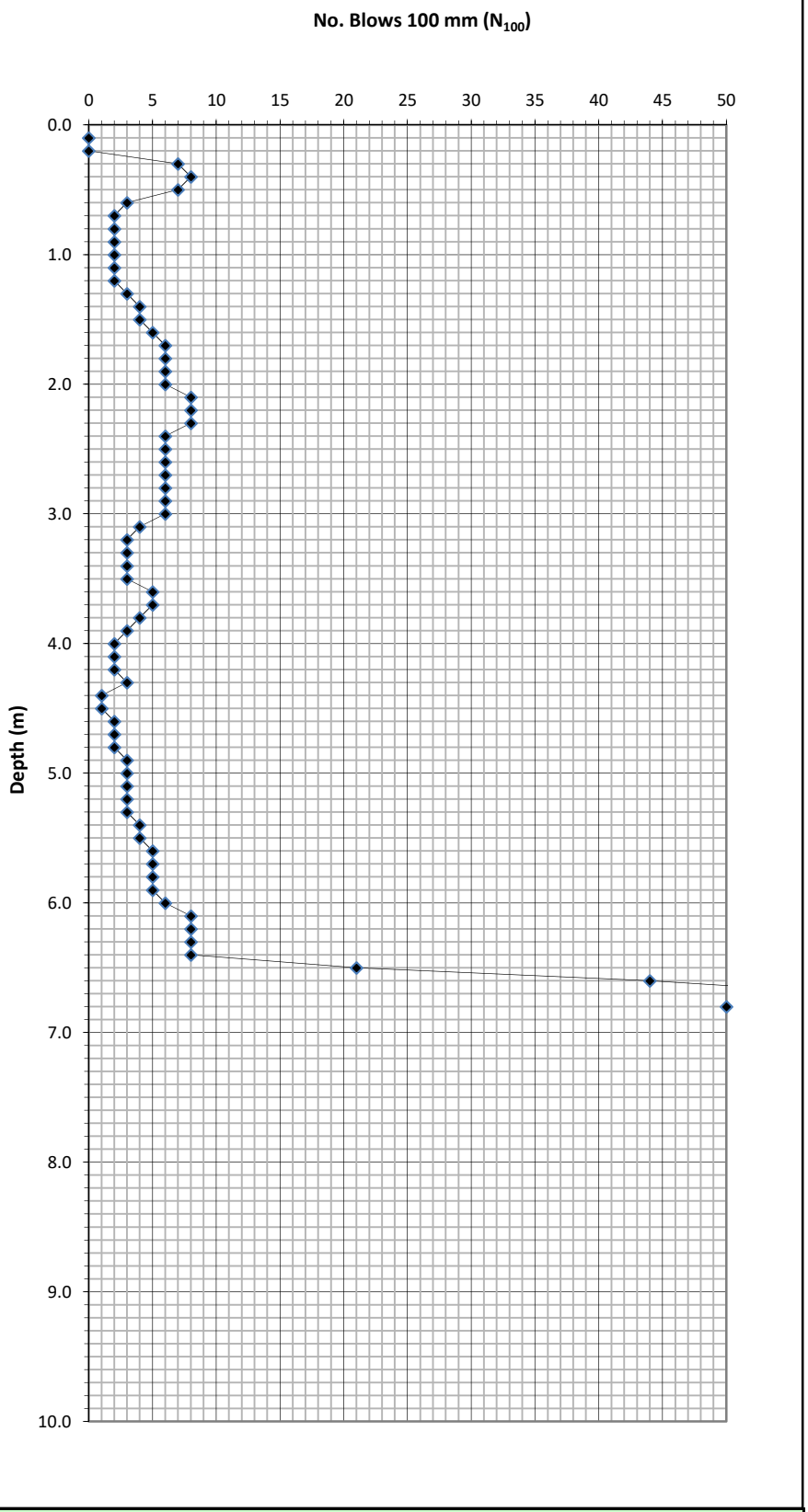
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 08**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
0	0.1	3	5.2
0	0.2	3	5.3
7	0.3	4	5.4
8	0.4	4	5.5
7	0.5	5	5.6
3	0.6	5	5.7
2	0.7	5	5.8
2	0.8	5	5.9
2	0.9	6	6.0
2	1.0	8	6.1
2	1.1	8	6.2
2	1.2	8	6.3
3	1.3	8	6.4
4	1.4	21	6.5
4	1.5	44	6.6
5	1.6	60	6.7
6	1.7	50	6.8
6	1.8		6.9
6	1.9		7.0
6	2.0		7.1
8	2.1		7.2
8	2.2		7.3
8	2.3		7.4
6	2.4		7.5
6	2.5		7.6
6	2.6		7.7
6	2.7		7.8
6	2.8		7.9
6	2.9		8.0
6	3.0		8.1
4	3.1		8.2
3	3.2		8.3
3	3.3		8.4
3	3.4		8.5
3	3.5		8.6
5	3.6		8.7
5	3.7		8.8
4	3.8		8.9
3	3.9		9.0
2	4.0		9.1
2	4.1		9.2
2	4.2		9.3
3	4.3		9.4
1	4.4		9.5
1	4.5		9.6
2	4.6		9.7
2	4.7		9.8
2	4.8		9.9
3	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

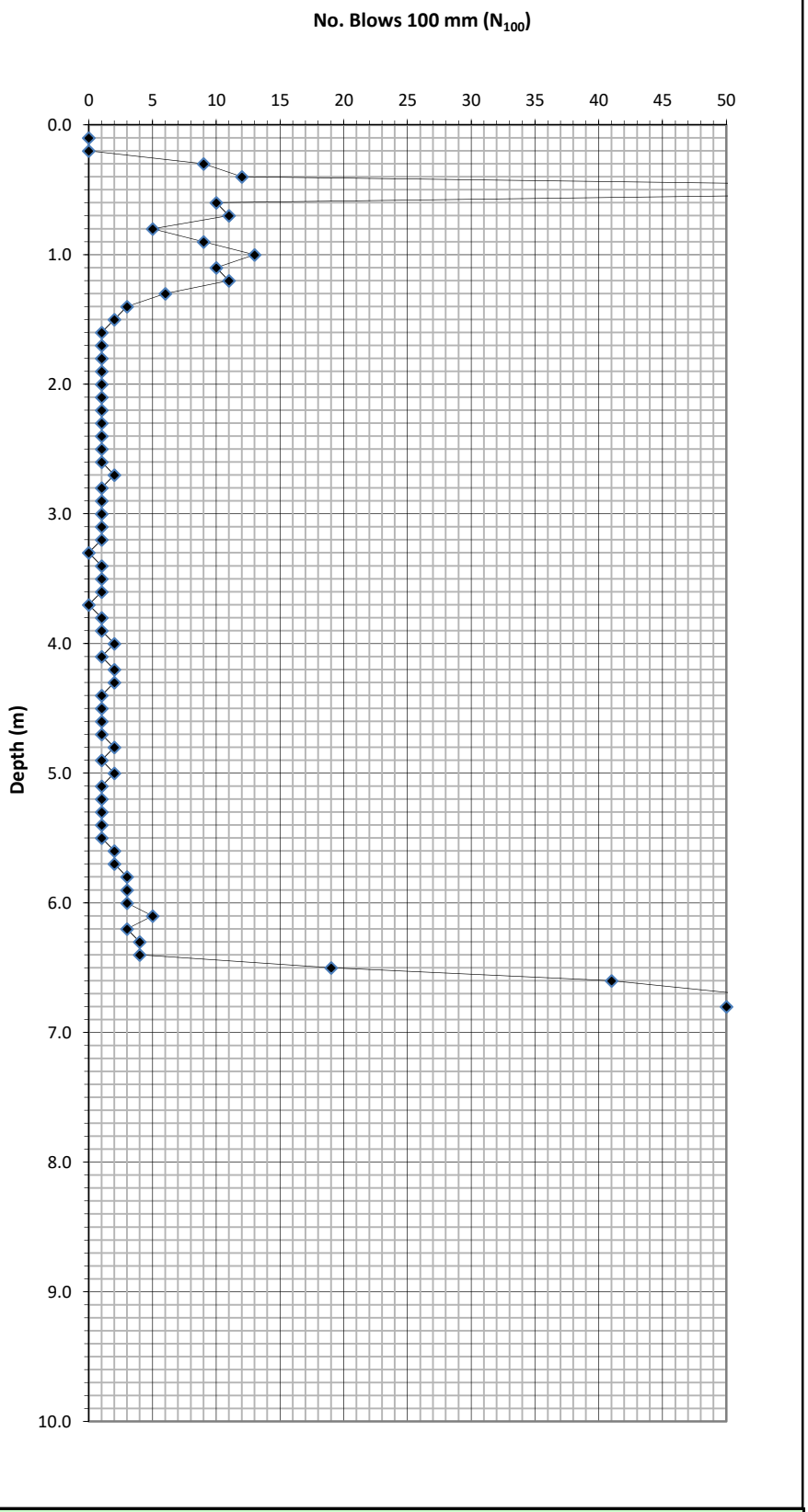
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 09**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	1	5.1
0	0.1	1	5.2
0	0.2	1	5.3
9	0.3	1	5.4
12	0.4	1	5.5
88	0.5	2	5.6
10	0.6	2	5.7
11	0.7	3	5.8
5	0.8	3	5.9
9	0.9	3	6.0
13	1.0	5	6.1
10	1.1	3	6.2
11	1.2	4	6.3
6	1.3	4	6.4
3	1.4	19	6.5
2	1.5	41	6.6
1	1.6	51	6.7
1	1.7	50	6.8
1	1.8		6.9
1	1.9		7.0
1	2.0		7.1
1	2.1		7.2
1	2.2		7.3
1	2.3		7.4
1	2.4		7.5
1	2.5		7.6
1	2.6		7.7
2	2.7		7.8
1	2.8		7.9
1	2.9		8.0
1	3.0		8.1
1	3.1		8.2
1	3.2		8.3
0	3.3		8.4
1	3.4		8.5
1	3.5		8.6
1	3.6		8.7
0	3.7		8.8
1	3.8		8.9
1	3.9		9.0
2	4.0		9.1
1	4.1		9.2
2	4.2		9.3
2	4.3		9.4
1	4.4		9.5
1	4.5		9.6
1	4.6		9.7
1	4.7		9.8
2	4.8		9.9
1	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

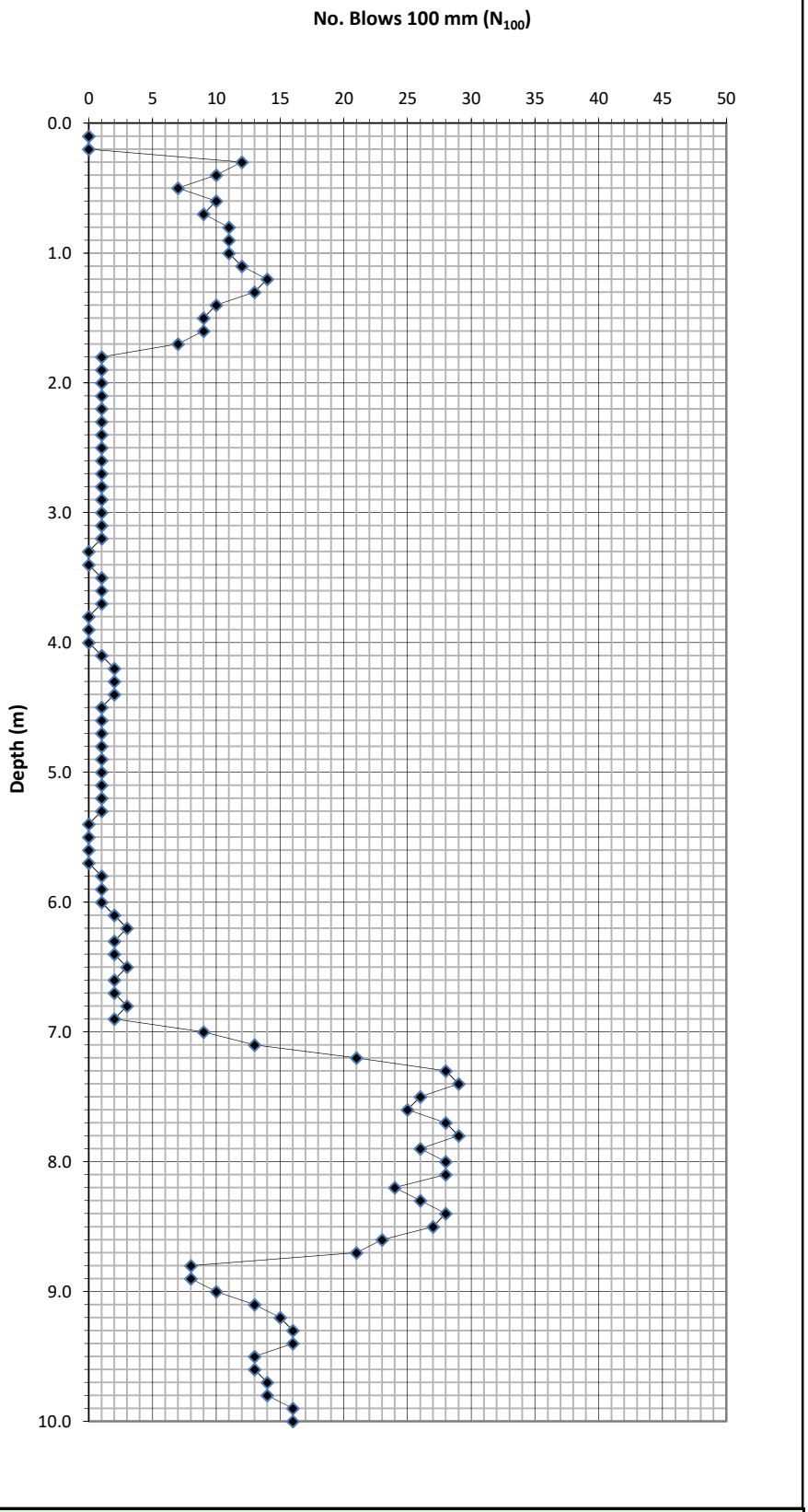
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 10**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	1	5.1
0	0.1	1	5.2
0	0.2	1	5.3
12	0.3	0	5.4
10	0.4	0	5.5
7	0.5	0	5.6
10	0.6	0	5.7
9	0.7	1	5.8
11	0.8	1	5.9
11	0.9	1	6.0
11	1.0	2	6.1
12	1.1	3	6.2
14	1.2	2	6.3
13	1.3	2	6.4
10	1.4	3	6.5
9	1.5	2	6.6
9	1.6	2	6.7
7	1.7	3	6.8
1	1.8	2	6.9
1	1.9	9	7.0
1	2.0	13	7.1
1	2.1	21	7.2
1	2.2	28	7.3
1	2.3	29	7.4
1	2.4	26	7.5
1	2.5	25	7.6
1	2.6	28	7.7
1	2.7	29	7.8
1	2.8	26	7.9
1	2.9	28	8.0
1	3.0	28	8.1
1	3.1	24	8.2
1	3.2	26	8.3
0	3.3	28	8.4
0	3.4	27	8.5
1	3.5	23	8.6
1	3.6	21	8.7
1	3.7	8	8.8
0	3.8	8	8.9
0	3.9	10	9.0
0	4.0	13	9.1
1	4.1	15	9.2
2	4.2	16	9.3
2	4.3	16	9.4
2	4.4	13	9.5
1	4.5	13	9.6
1	4.6	14	9.7
1	4.7	14	9.8
1	4.8	16	9.9
1	4.9	16	10.0
1	5.0		



Notes: Sheet 1 of 1.

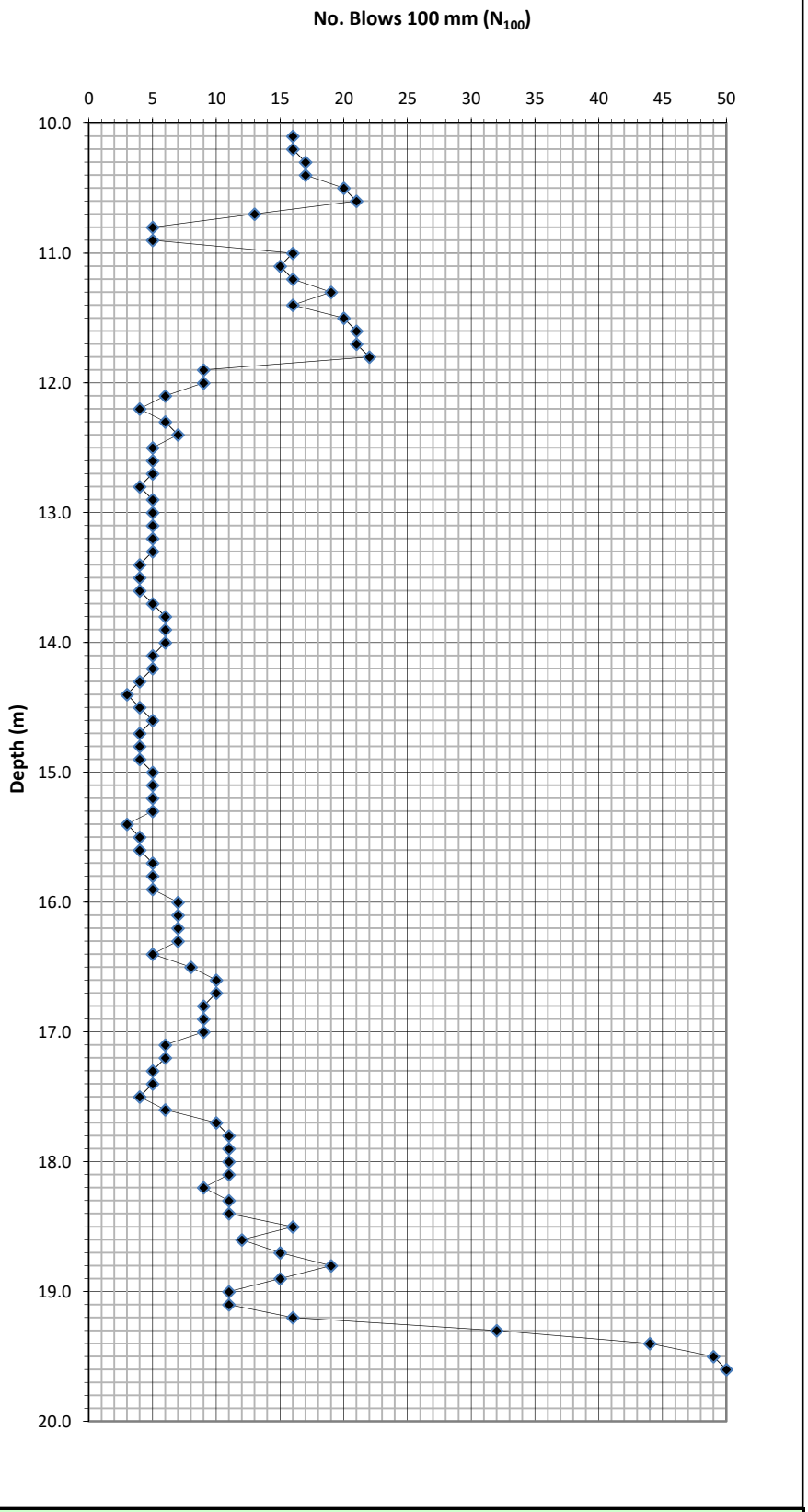
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 10**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	10.0	5	15.1
16	10.1	5	15.2
16	10.2	5	15.3
17	10.3	3	15.4
17	10.4	4	15.5
20	10.5	4	15.6
21	10.6	5	15.7
13	10.7	5	15.8
5	10.8	5	15.9
5	10.9	7	16.0
16	11.0	7	16.1
15	11.1	7	16.2
16	11.2	7	16.3
19	11.3	5	16.4
16	11.4	8	16.5
20	11.5	10	16.6
21	11.6	10	16.7
21	11.7	9	16.8
22	11.8	9	16.9
9	11.9	9	17.0
9	12.0	6	17.1
6	12.1	6	17.2
4	12.2	5	17.3
6	12.3	5	17.4
7	12.4	4	17.5
5	12.5	6	17.6
5	12.6	10	17.7
5	12.7	11	17.8
4	12.8	11	17.9
5	12.9	11	18.0
5	13.0	11	18.1
5	13.1	9	18.2
5	13.2	11	18.3
5	13.3	11	18.4
4	13.4	16	18.5
4	13.5	12	18.6
4	13.6	15	18.7
5	13.7	19	18.8
6	13.8	15	18.9
6	13.9	11	19.0
6	14.0	11	19.1
5	14.1	16	19.2
5	14.2	32	19.3
4	14.3	44	19.4
3	14.4	49	19.5
4	14.5	50	19.6
5	14.6		19.7
4	14.7		19.8
4	14.8		19.9
4	14.9		20.0
5	15.0		



Notes: Sheet 1 of 1.

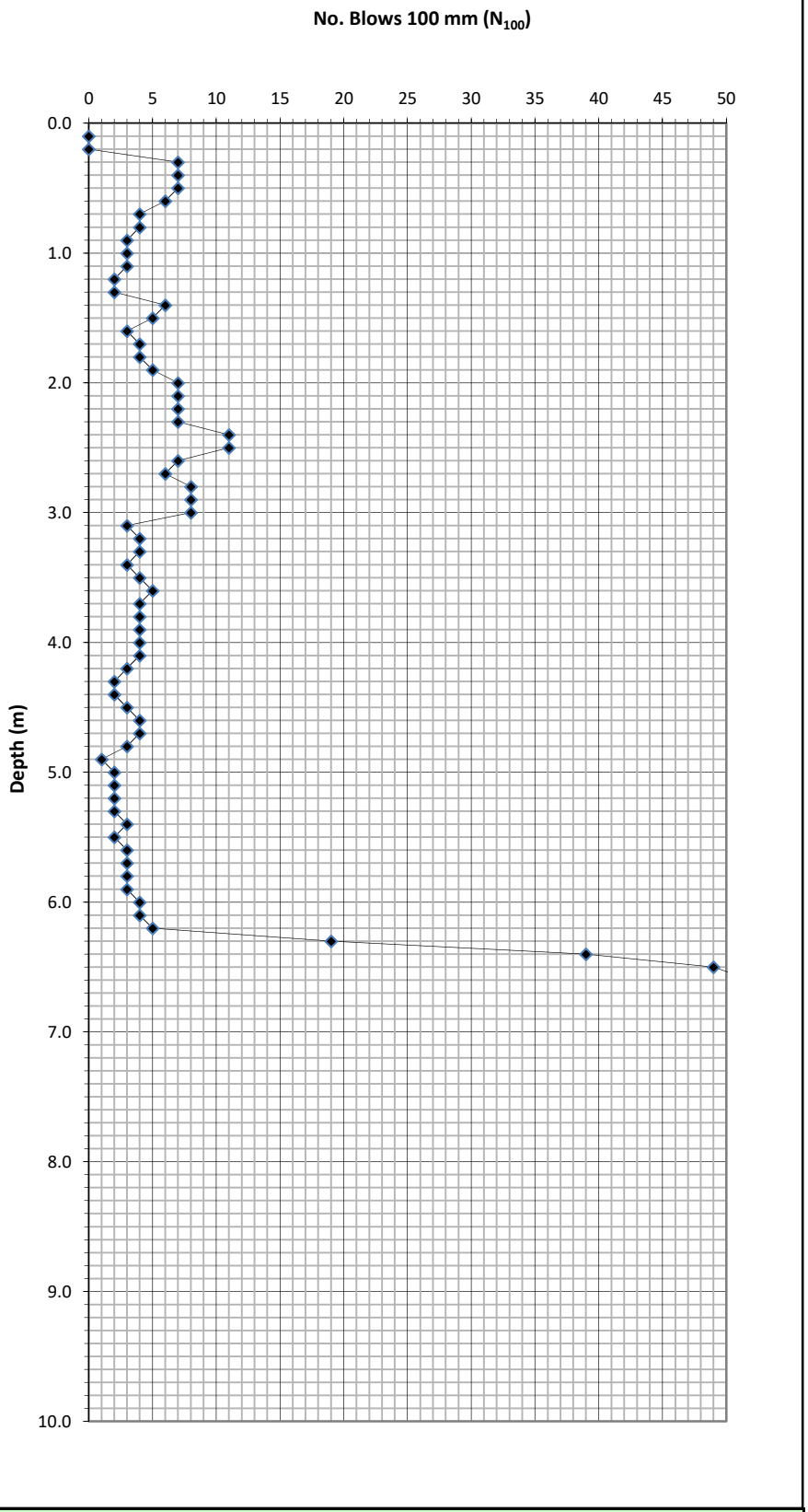
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 11**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
0	0.1	2	5.2
0	0.2	2	5.3
7	0.3	3	5.4
7	0.4	2	5.5
7	0.5	3	5.6
6	0.6	3	5.7
4	0.7	3	5.8
4	0.8	3	5.9
3	0.9	4	6.0
3	1.0	4	6.1
3	1.1	5	6.2
2	1.2	19	6.3
2	1.3	39	6.4
6	1.4	49	6.5
5	1.5	52	6.6
3	1.6		6.7
4	1.7		6.8
4	1.8		6.9
5	1.9		7.0
7	2.0		7.1
7	2.1		7.2
7	2.2		7.3
7	2.3		7.4
11	2.4		7.5
11	2.5		7.6
7	2.6		7.7
6	2.7		7.8
8	2.8		7.9
8	2.9		8.0
8	3.0		8.1
3	3.1		8.2
4	3.2		8.3
4	3.3		8.4
3	3.4		8.5
4	3.5		8.6
5	3.6		8.7
4	3.7		8.8
4	3.8		8.9
4	3.9		9.0
4	4.0		9.1
4	4.1		9.2
3	4.2		9.3
2	4.3		9.4
2	4.4		9.5
3	4.5		9.6
4	4.6		9.7
4	4.7		9.8
3	4.8		9.9
1	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

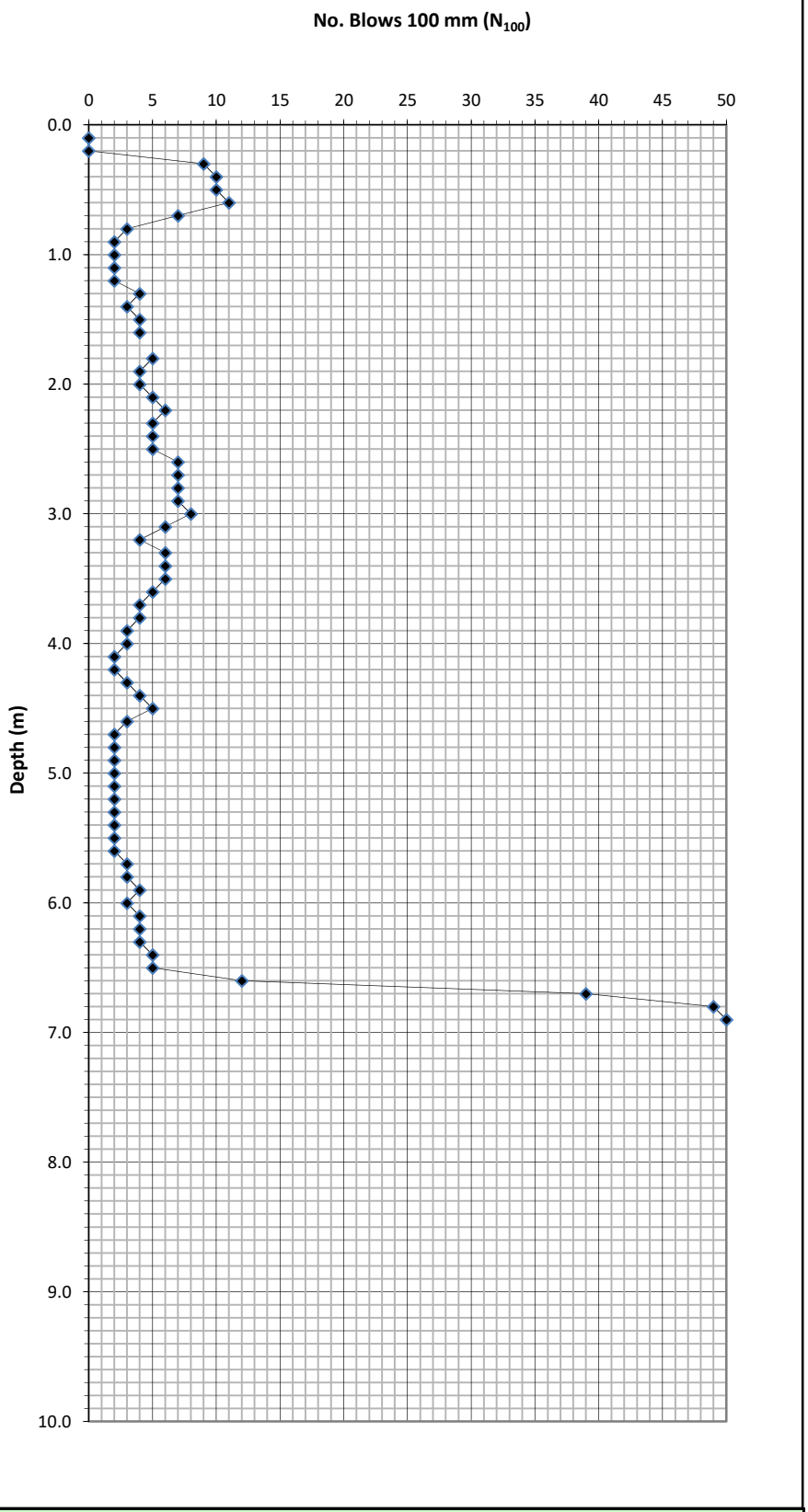
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 12**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
0	0.1	2	5.2
0	0.2	2	5.3
9	0.3	2	5.4
10	0.4	2	5.5
10	0.5	2	5.6
11	0.6	3	5.7
7	0.7	3	5.8
3	0.8	4	5.9
2	0.9	3	6.0
2	1.0	4	6.1
2	1.1	4	6.2
2	1.2	4	6.3
4	1.3	5	6.4
3	1.4	5	6.5
4	1.5	12	6.6
4	1.6	39	6.7
	1.7	49	6.8
5	1.8	50	6.9
4	1.9		7.0
4	2.0		7.1
5	2.1		7.2
6	2.2		7.3
5	2.3		7.4
5	2.4		7.5
5	2.5		7.6
7	2.6		7.7
7	2.7		7.8
7	2.8		7.9
7	2.9		8.0
8	3.0		8.1
6	3.1		8.2
4	3.2		8.3
6	3.3		8.4
6	3.4		8.5
6	3.5		8.6
5	3.6		8.7
4	3.7		8.8
4	3.8		8.9
3	3.9		9.0
3	4.0		9.1
2	4.1		9.2
2	4.2		9.3
3	4.3		9.4
4	4.4		9.5
5	4.5		9.6
3	4.6		9.7
2	4.7		9.8
2	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

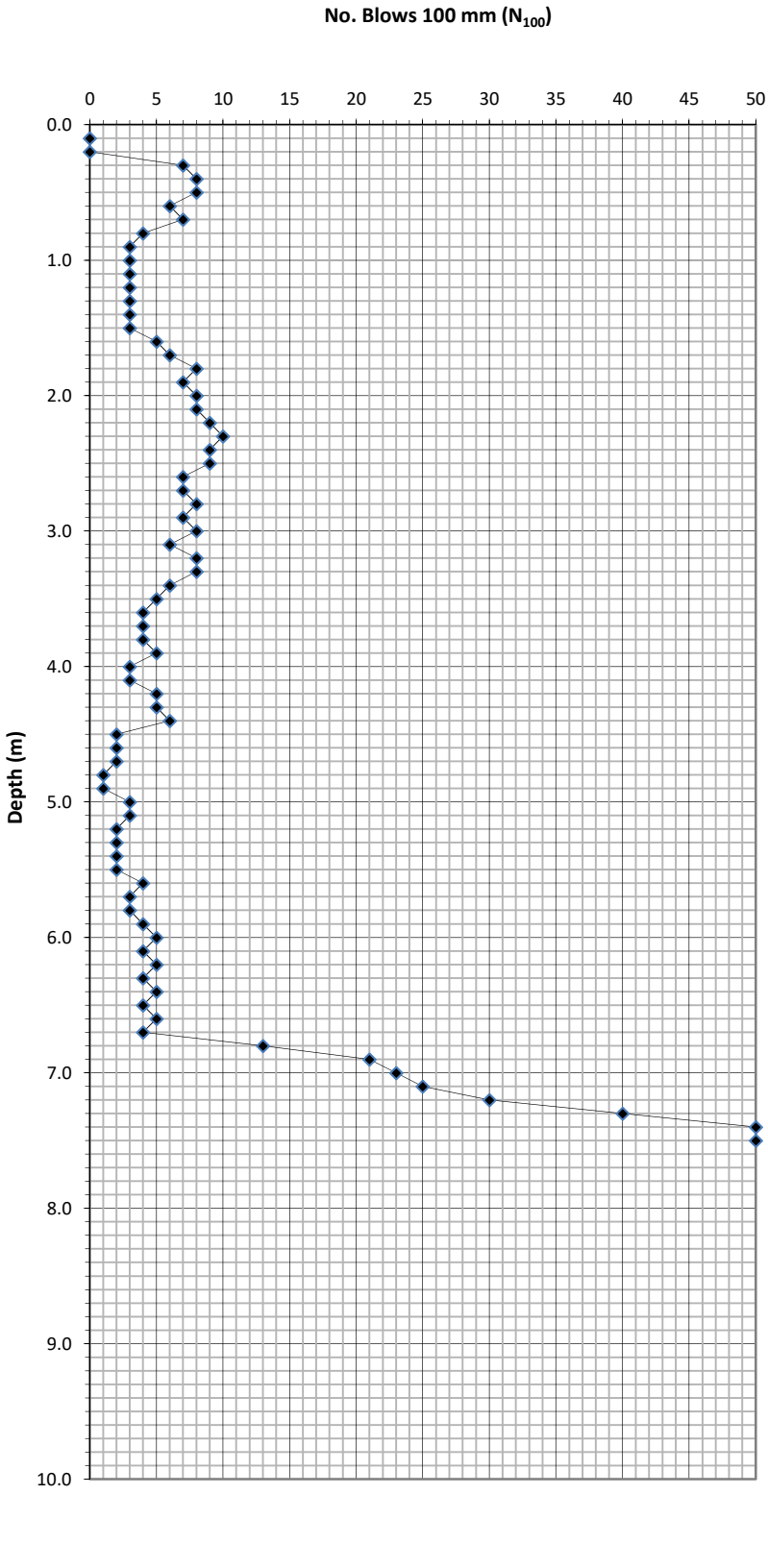
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 13**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
0	0.1	2	5.2
0	0.2	2	5.3
7	0.3	2	5.4
8	0.4	2	5.5
8	0.5	4	5.6
6	0.6	3	5.7
7	0.7	3	5.8
4	0.8	4	5.9
3	0.9	5	6.0
3	1.0	4	6.1
3	1.1	5	6.2
3	1.2	4	6.3
3	1.3	5	6.4
3	1.4	4	6.5
3	1.5	5	6.6
5	1.6	4	6.7
6	1.7	13	6.8
8	1.8	21	6.9
7	1.9	23	7.0
8	2.0	25	7.1
8	2.1	30	7.2
9	2.2	40	7.3
10	2.3	50	7.4
9	2.4	50	7.5
9	2.5		7.6
7	2.6		7.7
7	2.7		7.8
8	2.8		7.9
7	2.9		8.0
8	3.0		8.1
6	3.1		8.2
8	3.2		8.3
8	3.3		8.4
6	3.4		8.5
5	3.5		8.6
4	3.6		8.7
4	3.7		8.8
4	3.8		8.9
5	3.9		9.0
3	4.0		9.1
3	4.1		9.2
5	4.2		9.3
5	4.3		9.4
6	4.4		9.5
2	4.5		9.6
2	4.6		9.7
2	4.7		9.8
1	4.8		9.9
1	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

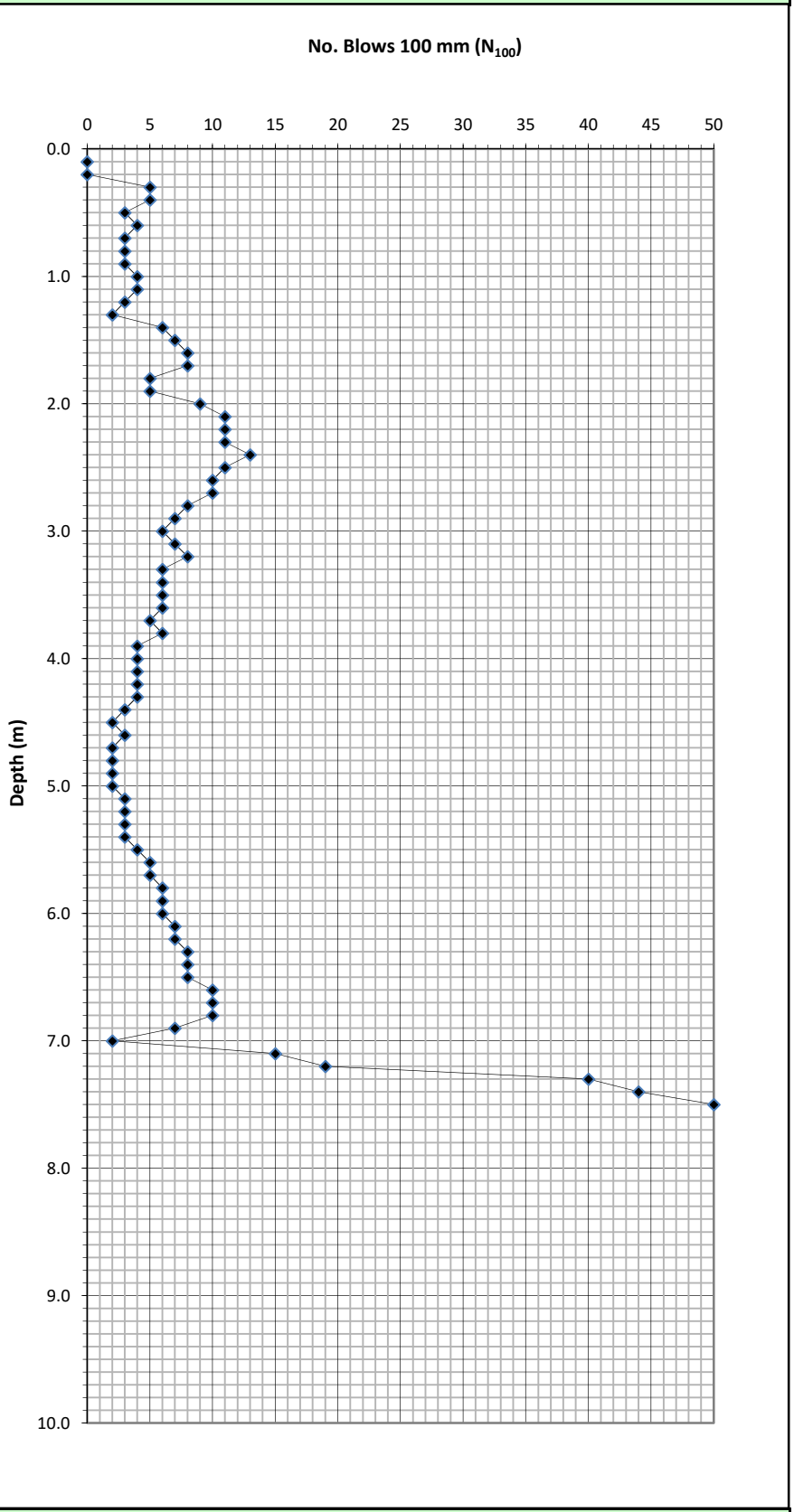
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 14**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
0	0.1	3	5.2
0	0.2	3	5.3
5	0.3	3	5.4
5	0.4	4	5.5
3	0.5	5	5.6
4	0.6	5	5.7
3	0.7	6	5.8
3	0.8	6	5.9
3	0.9	6	6.0
4	1.0	7	6.1
4	1.1	7	6.2
3	1.2	8	6.3
2	1.3	8	6.4
6	1.4	8	6.5
7	1.5	10	6.6
8	1.6	10	6.7
8	1.7	10	6.8
5	1.8	7	6.9
5	1.9	2	7.0
9	2.0	15	7.1
11	2.1	19	7.2
11	2.2	40	7.3
11	2.3	44	7.4
13	2.4	50	7.5
11	2.5		7.6
10	2.6		7.7
10	2.7		7.8
8	2.8		7.9
7	2.9		8.0
6	3.0		8.1
7	3.1		8.2
8	3.2		8.3
6	3.3		8.4
6	3.4		8.5
6	3.5		8.6
6	3.6		8.7
5	3.7		8.8
6	3.8		8.9
4	3.9		9.0
4	4.0		9.1
4	4.1		9.2
4	4.2		9.3
4	4.3		9.4
3	4.4		9.5
2	4.5		9.6
3	4.6		9.7
2	4.7		9.8
2	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

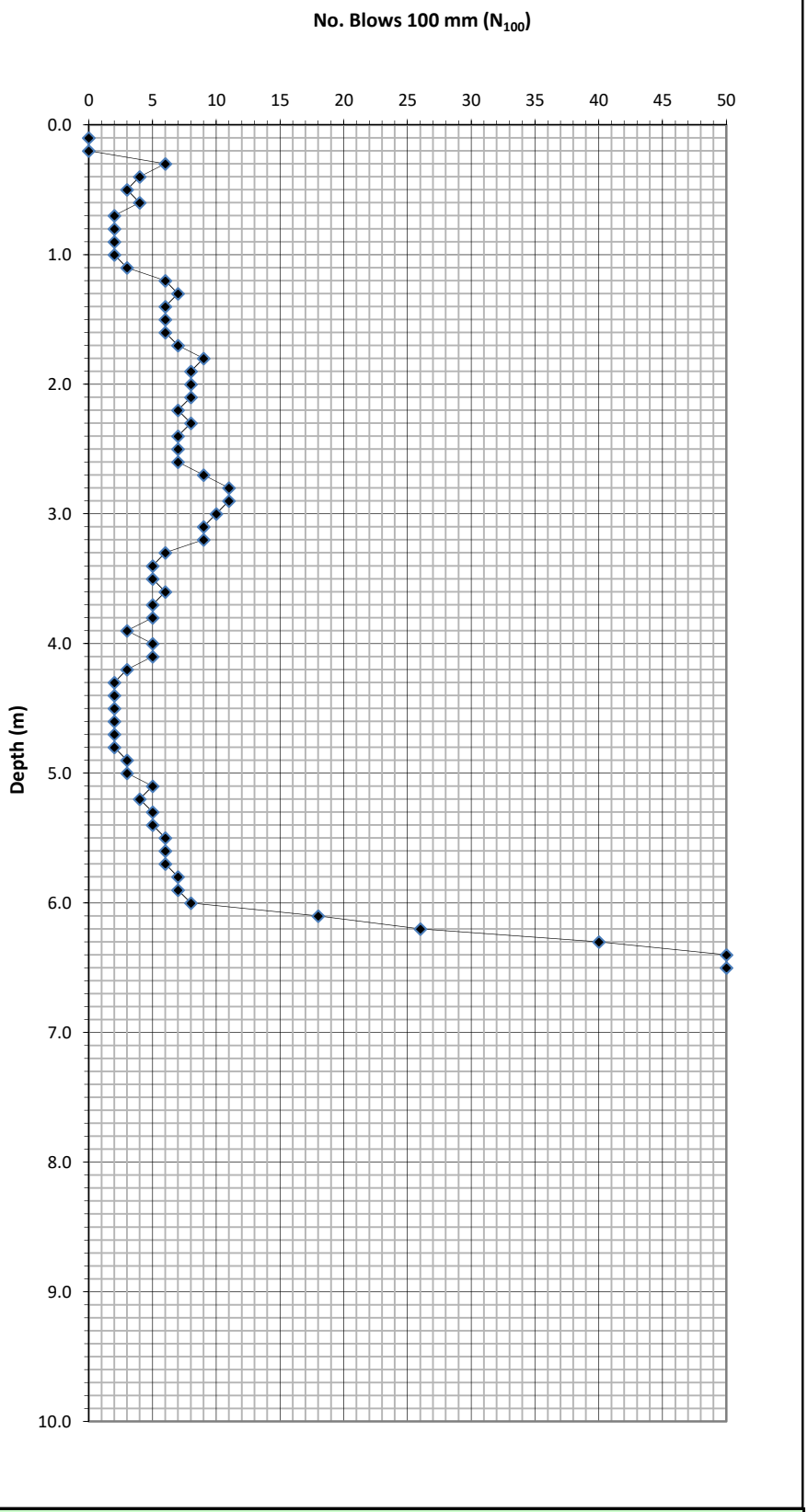
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 15**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	5	5.1
0	0.1	4	5.2
0	0.2	5	5.3
6	0.3	5	5.4
4	0.4	6	5.5
3	0.5	6	5.6
4	0.6	6	5.7
2	0.7	7	5.8
2	0.8	7	5.9
2	0.9	8	6.0
2	1.0	18	6.1
3	1.1	26	6.2
6	1.2	40	6.3
7	1.3	50	6.4
6	1.4	50	6.5
6	1.5		6.6
6	1.6		6.7
7	1.7		6.8
9	1.8		6.9
8	1.9		7.0
8	2.0		7.1
8	2.1		7.2
7	2.2		7.3
8	2.3		7.4
7	2.4		7.5
7	2.5		7.6
7	2.6		7.7
9	2.7		7.8
11	2.8		7.9
11	2.9		8.0
10	3.0		8.1
9	3.1		8.2
9	3.2		8.3
6	3.3		8.4
5	3.4		8.5
5	3.5		8.6
6	3.6		8.7
5	3.7		8.8
5	3.8		8.9
3	3.9		9.0
5	4.0		9.1
5	4.1		9.2
3	4.2		9.3
2	4.3		9.4
2	4.4		9.5
2	4.5		9.6
2	4.6		9.7
2	4.7		9.8
2	4.8		9.9
3	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

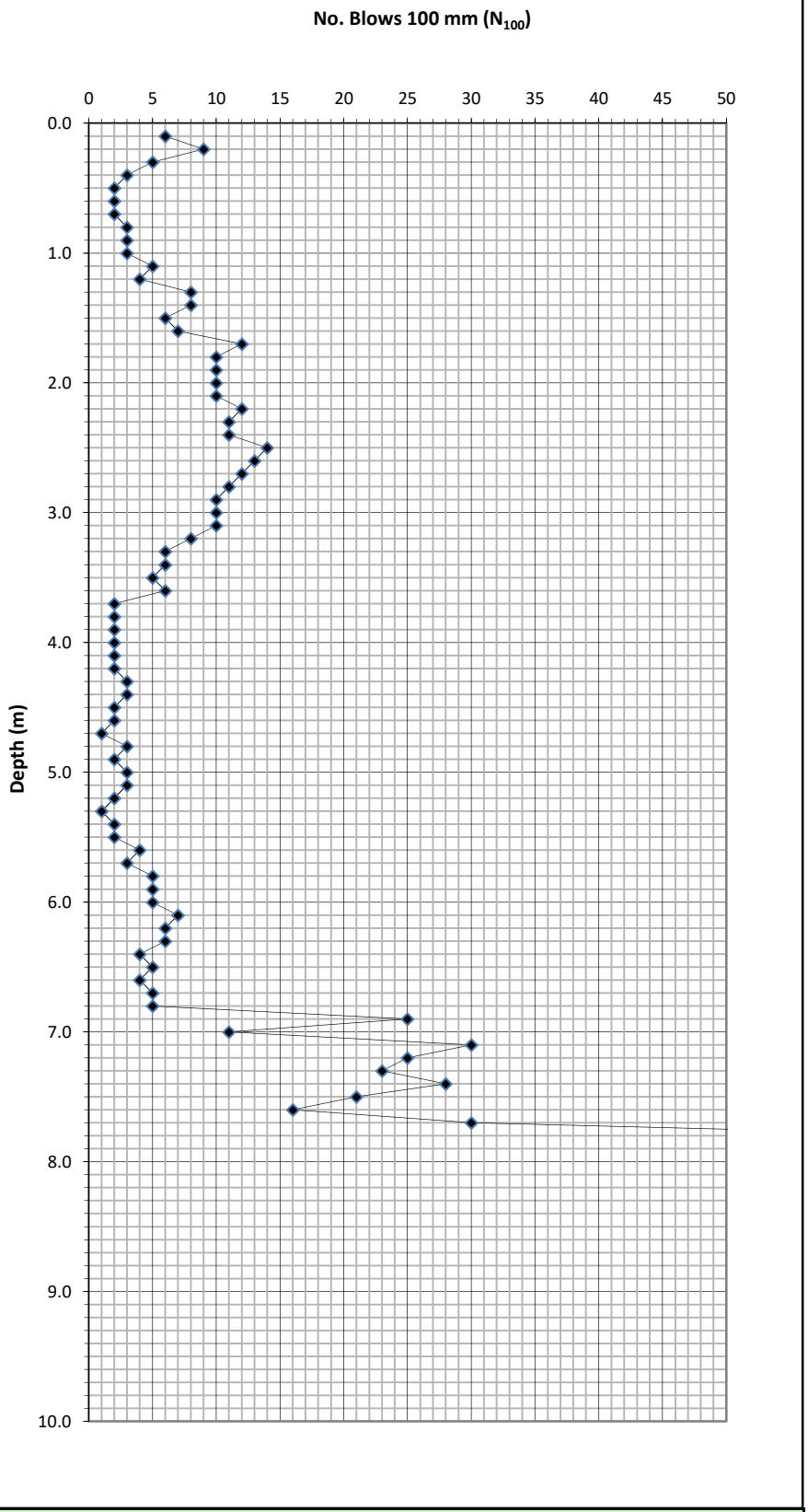
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 16**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
6	0.1	2	5.2
9	0.2	1	5.3
5	0.3	2	5.4
3	0.4	2	5.5
2	0.5	4	5.6
2	0.6	3	5.7
2	0.7	5	5.8
3	0.8	5	5.9
3	0.9	5	6.0
3	1.0	7	6.1
5	1.1	6	6.2
4	1.2	6	6.3
8	1.3	4	6.4
8	1.4	5	6.5
6	1.5	4	6.6
7	1.6	5	6.7
12	1.7	5	6.8
10	1.8	25	6.9
10	1.9	11	7.0
10	2.0	30	7.1
10	2.1	25	7.2
12	2.2	23	7.3
11	2.3	28	7.4
11	2.4	21	7.5
14	2.5	16	7.6
13	2.6	30	7.7
12	2.7	70	7.8
11	2.8	75	7.9
10	2.9		8.0
10	3.0		8.1
10	3.1		8.2
8	3.2		8.3
6	3.3		8.4
6	3.4		8.5
5	3.5		8.6
6	3.6		8.7
2	3.7		8.8
2	3.8		8.9
2	3.9		9.0
2	4.0		9.1
2	4.1		9.2
2	4.2		9.3
3	4.3		9.4
3	4.4		9.5
2	4.5		9.6
2	4.6		9.7
1	4.7		9.8
3	4.8		9.9
2	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

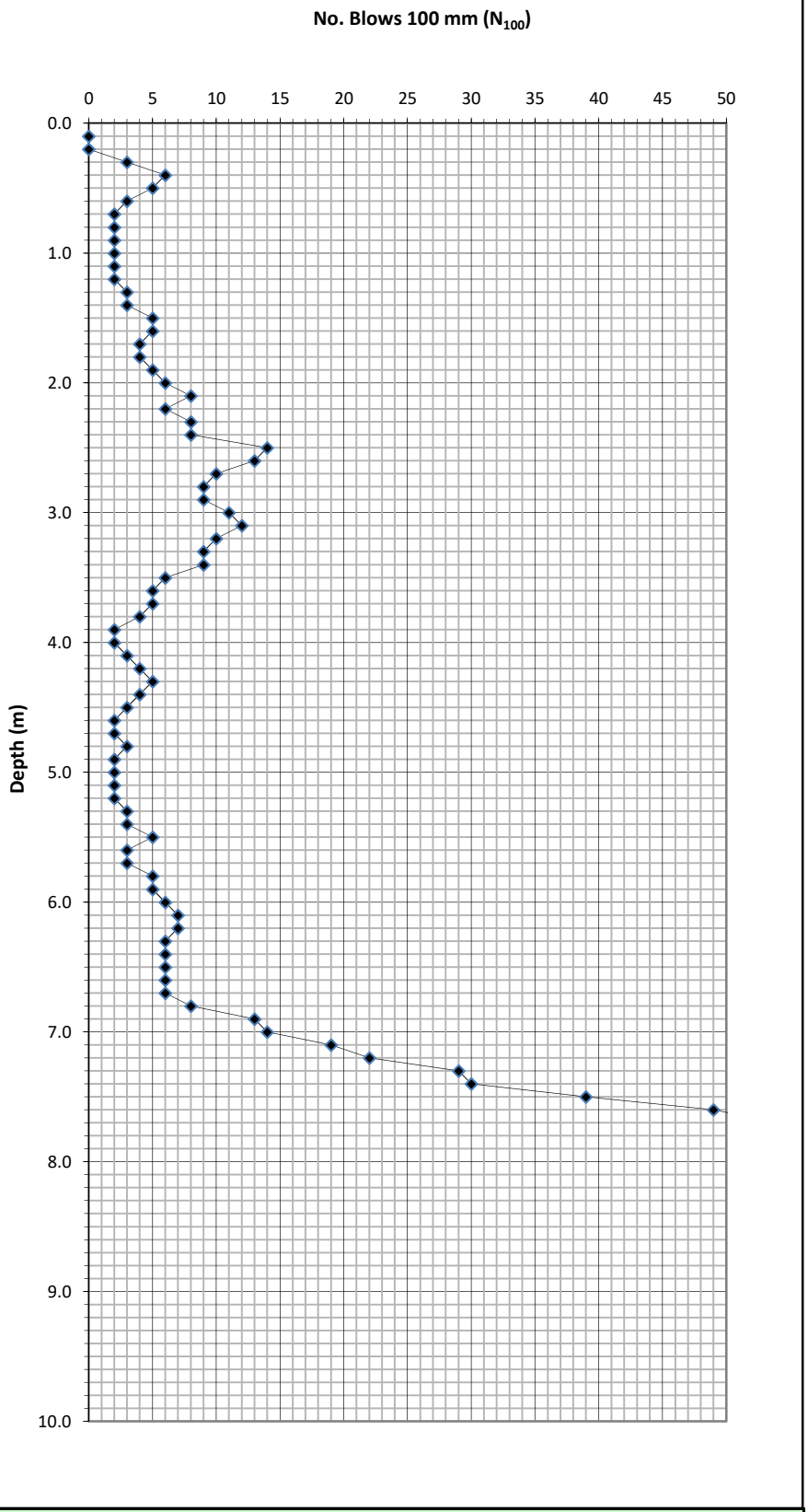
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 17**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
0	0.1	2	5.2
0	0.2	3	5.3
3	0.3	3	5.4
6	0.4	5	5.5
5	0.5	3	5.6
3	0.6	3	5.7
2	0.7	5	5.8
2	0.8	5	5.9
2	0.9	6	6.0
2	1.0	7	6.1
2	1.1	7	6.2
2	1.2	6	6.3
3	1.3	6	6.4
3	1.4	6	6.5
5	1.5	6	6.6
5	1.6	6	6.7
4	1.7	8	6.8
4	1.8	13	6.9
5	1.9	14	7.0
6	2.0	19	7.1
8	2.1	22	7.2
6	2.2	29	7.3
8	2.3	30	7.4
8	2.4	39	7.5
14	2.5	49	7.6
13	2.6	54	7.7
10	2.7		7.8
9	2.8		7.9
9	2.9		8.0
11	3.0		8.1
12	3.1		8.2
10	3.2		8.3
9	3.3		8.4
9	3.4		8.5
6	3.5		8.6
5	3.6		8.7
5	3.7		8.8
4	3.8		8.9
2	3.9		9.0
2	4.0		9.1
3	4.1		9.2
4	4.2		9.3
5	4.3		9.4
4	4.4		9.5
3	4.5		9.6
2	4.6		9.7
2	4.7		9.8
3	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

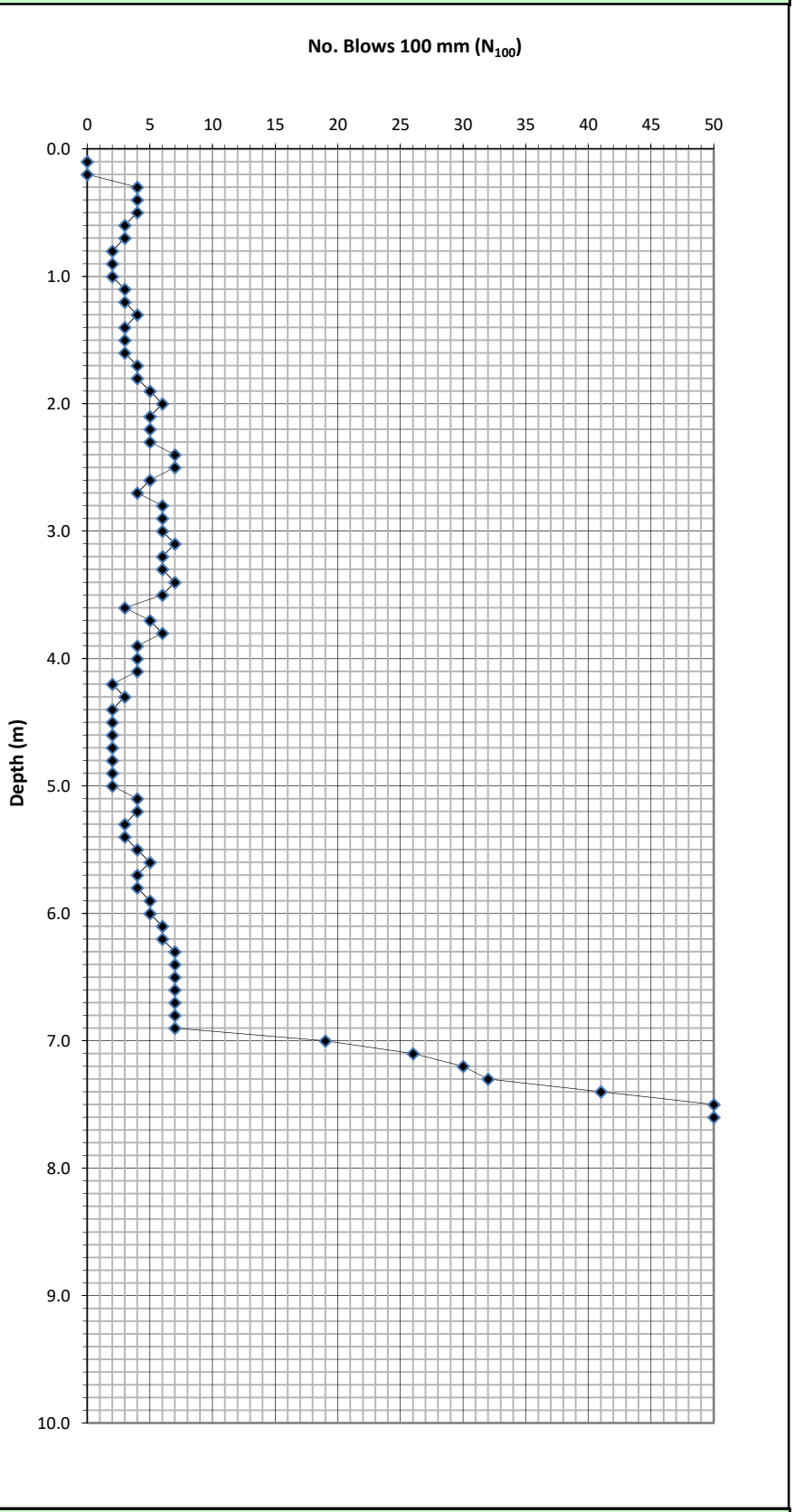
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 18**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	4	5.1
0	0.1	4	5.2
0	0.2	3	5.3
4	0.3	3	5.4
4	0.4	4	5.5
4	0.5	5	5.6
3	0.6	4	5.7
3	0.7	4	5.8
2	0.8	5	5.9
2	0.9	5	6.0
2	1.0	6	6.1
3	1.1	6	6.2
3	1.2	7	6.3
4	1.3	7	6.4
3	1.4	7	6.5
3	1.5	7	6.6
3	1.6	7	6.7
4	1.7	7	6.8
4	1.8	7	6.9
5	1.9	19	7.0
6	2.0	26	7.1
5	2.1	30	7.2
5	2.2	32	7.3
5	2.3	41	7.4
7	2.4	50	7.5
7	2.5	50	7.6
5	2.6		7.7
4	2.7		7.8
6	2.8		7.9
6	2.9		8.0
6	3.0		8.1
7	3.1		8.2
6	3.2		8.3
6	3.3		8.4
7	3.4		8.5
6	3.5		8.6
3	3.6		8.7
5	3.7		8.8
6	3.8		8.9
4	3.9		9.0
4	4.0		9.1
4	4.1		9.2
2	4.2		9.3
3	4.3		9.4
2	4.4		9.5
2	4.5		9.6
2	4.6		9.7
2	4.7		9.8
2	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

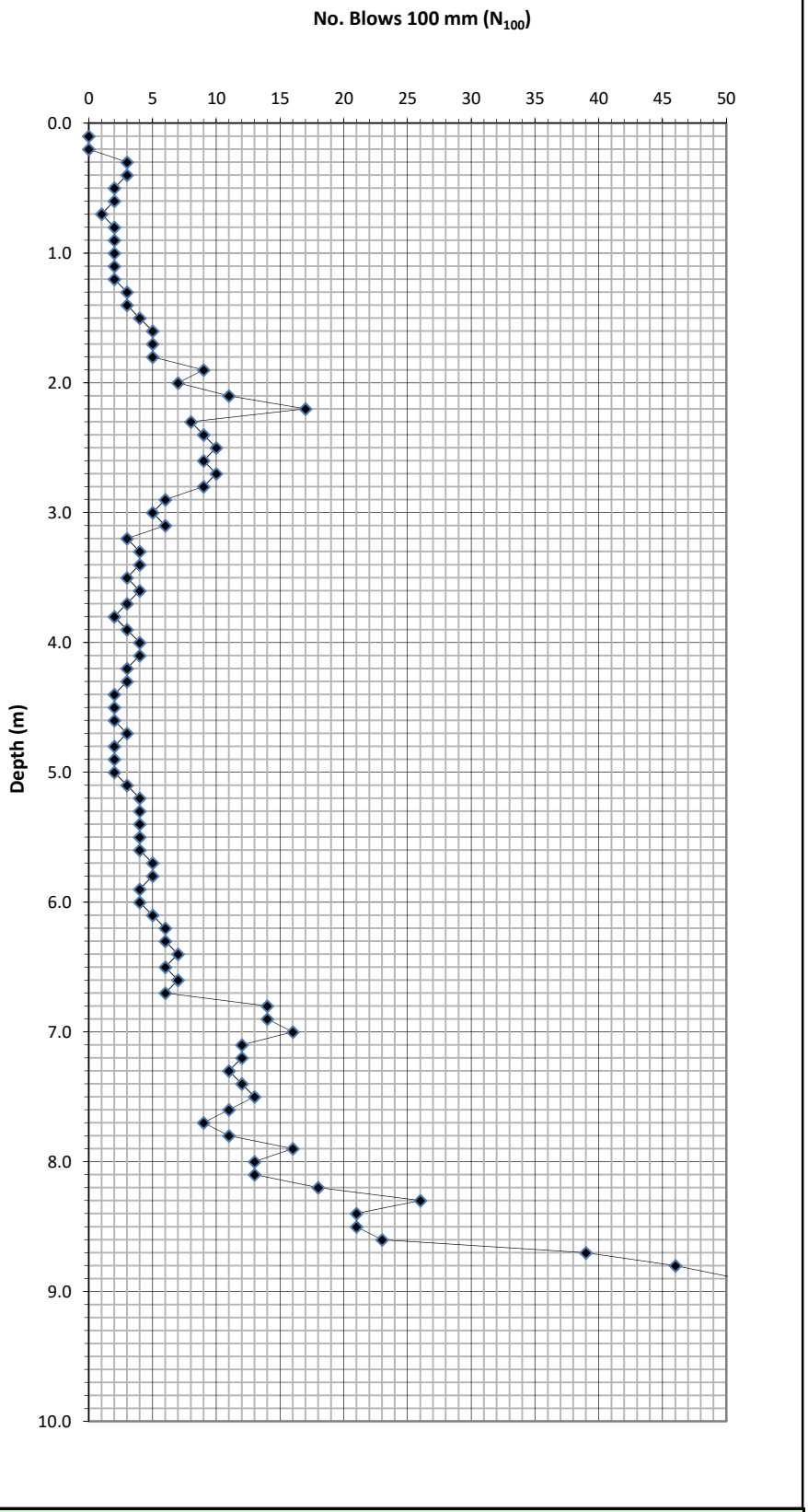
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 19**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
0	0.1	4	5.2
0	0.2	4	5.3
3	0.3	4	5.4
3	0.4	4	5.5
2	0.5	4	5.6
2	0.6	5	5.7
1	0.7	5	5.8
2	0.8	4	5.9
2	0.9	4	6.0
2	1.0	5	6.1
2	1.1	6	6.2
2	1.2	6	6.3
3	1.3	7	6.4
3	1.4	6	6.5
4	1.5	7	6.6
5	1.6	6	6.7
5	1.7	14	6.8
5	1.8	14	6.9
9	1.9	16	7.0
7	2.0	12	7.1
11	2.1	12	7.2
17	2.2	11	7.3
8	2.3	12	7.4
9	2.4	13	7.5
10	2.5	11	7.6
9	2.6	9	7.7
10	2.7	11	7.8
9	2.8	16	7.9
6	2.9	13	8.0
5	3.0	13	8.1
6	3.1	18	8.2
3	3.2	26	8.3
4	3.3	21	8.4
4	3.4	21	8.5
3	3.5	23	8.6
4	3.6	39	8.7
3	3.7	46	8.8
2	3.8	51	8.9
3	3.9		9.0
4	4.0		9.1
4	4.1		9.2
3	4.2		9.3
3	4.3		9.4
2	4.4		9.5
2	4.5		9.6
2	4.6		9.7
3	4.7		9.8
2	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

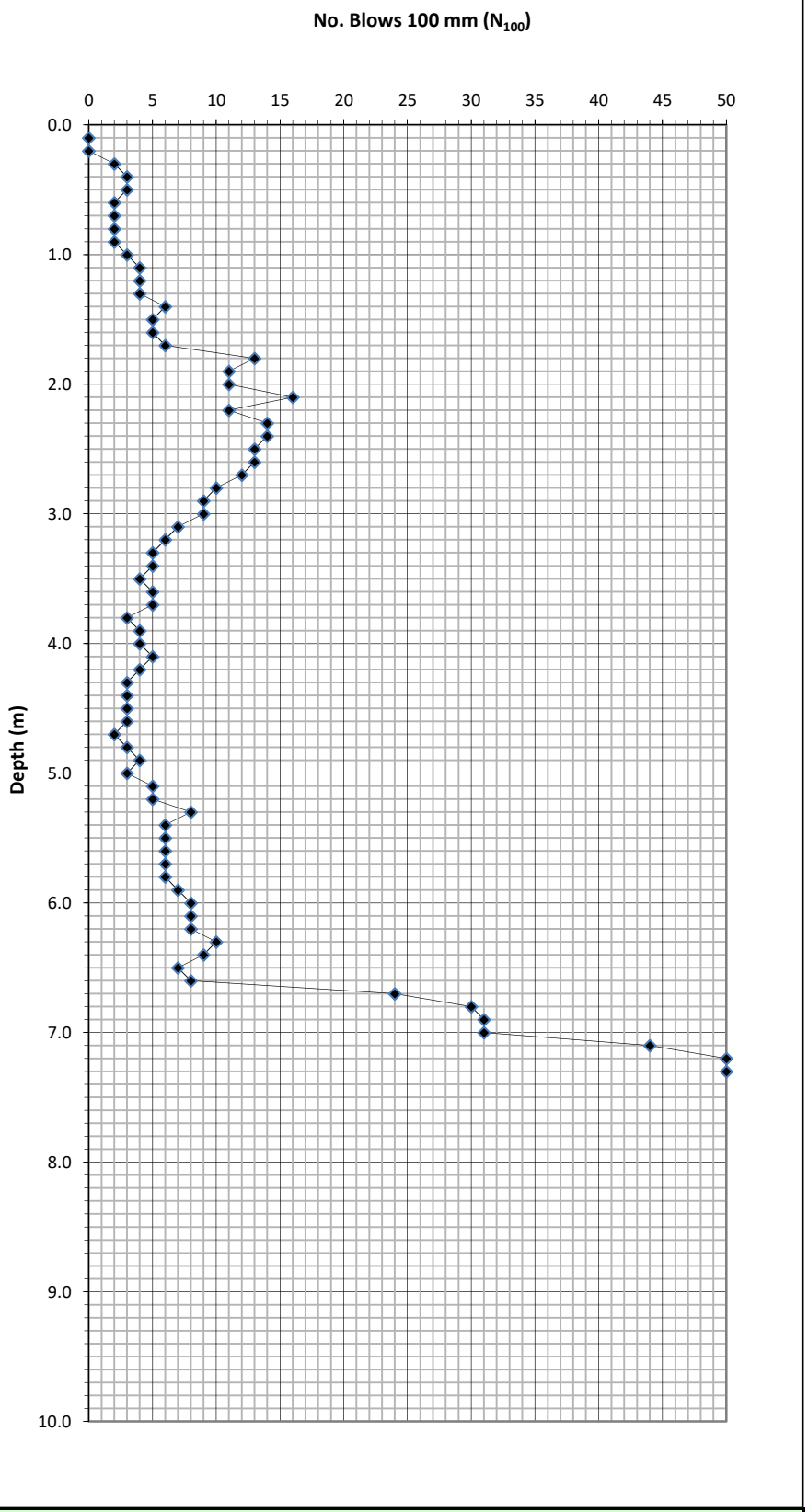
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 20**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	5	5.1
0	0.1	5	5.2
0	0.2	8	5.3
2	0.3	6	5.4
3	0.4	6	5.5
3	0.5	6	5.6
2	0.6	6	5.7
2	0.7	6	5.8
2	0.8	7	5.9
2	0.9	8	6.0
3	1.0	8	6.1
4	1.1	8	6.2
4	1.2	10	6.3
4	1.3	9	6.4
6	1.4	7	6.5
5	1.5	8	6.6
5	1.6	24	6.7
6	1.7	30	6.8
13	1.8	31	6.9
11	1.9	31	7.0
11	2.0	44	7.1
16	2.1	50	7.2
11	2.2	50	7.3
14	2.3		7.4
14	2.4		7.5
13	2.5		7.6
13	2.6		7.7
12	2.7		7.8
10	2.8		7.9
9	2.9		8.0
9	3.0		8.1
7	3.1		8.2
6	3.2		8.3
5	3.3		8.4
5	3.4		8.5
4	3.5		8.6
5	3.6		8.7
5	3.7		8.8
3	3.8		8.9
4	3.9		9.0
4	4.0		9.1
5	4.1		9.2
4	4.2		9.3
3	4.3		9.4
3	4.4		9.5
3	4.5		9.6
3	4.6		9.7
2	4.7		9.8
3	4.8		9.9
4	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

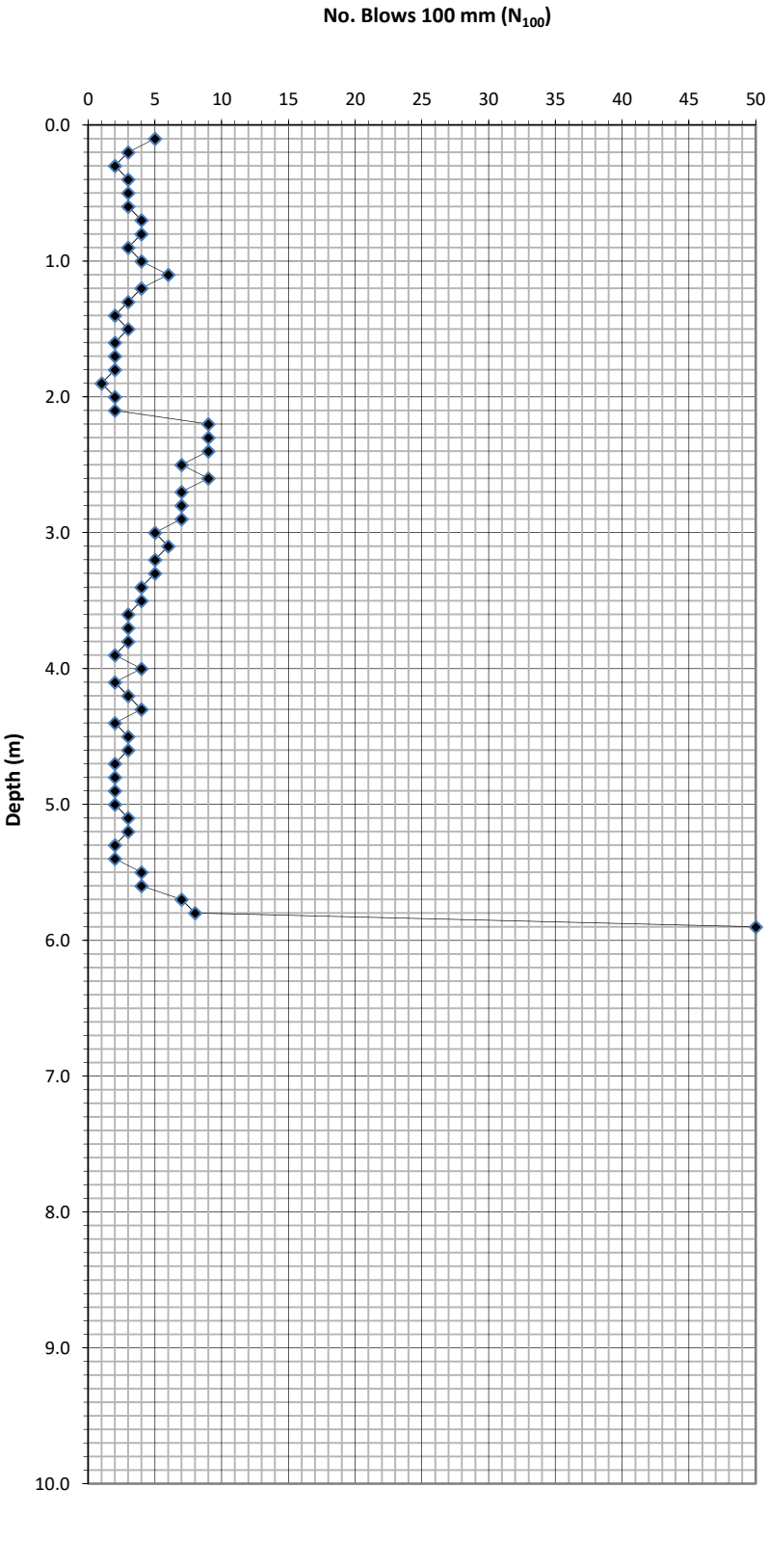
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 21**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
5	0.1	3	5.2
3	0.2	2	5.3
2	0.3	2	5.4
3	0.4	4	5.5
3	0.5	4	5.6
3	0.6	7	5.7
4	0.7	8	5.8
4	0.8	50	5.9
3	0.9		6.0
4	1.0		6.1
6	1.1		6.2
4	1.2		6.3
3	1.3		6.4
2	1.4		6.5
3	1.5		6.6
2	1.6		6.7
2	1.7		6.8
2	1.8		6.9
1	1.9		7.0
2	2.0		7.1
2	2.1		7.2
9	2.2		7.3
9	2.3		7.4
9	2.4		7.5
7	2.5		7.6
9	2.6		7.7
7	2.7		7.8
7	2.8		7.9
7	2.9		8.0
5	3.0		8.1
6	3.1		8.2
5	3.2		8.3
5	3.3		8.4
4	3.4		8.5
4	3.5		8.6
3	3.6		8.7
3	3.7		8.8
3	3.8		8.9
2	3.9		9.0
4	4.0		9.1
2	4.1		9.2
3	4.2		9.3
4	4.3		9.4
2	4.4		9.5
3	4.5		9.6
3	4.6		9.7
2	4.7		9.8
2	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

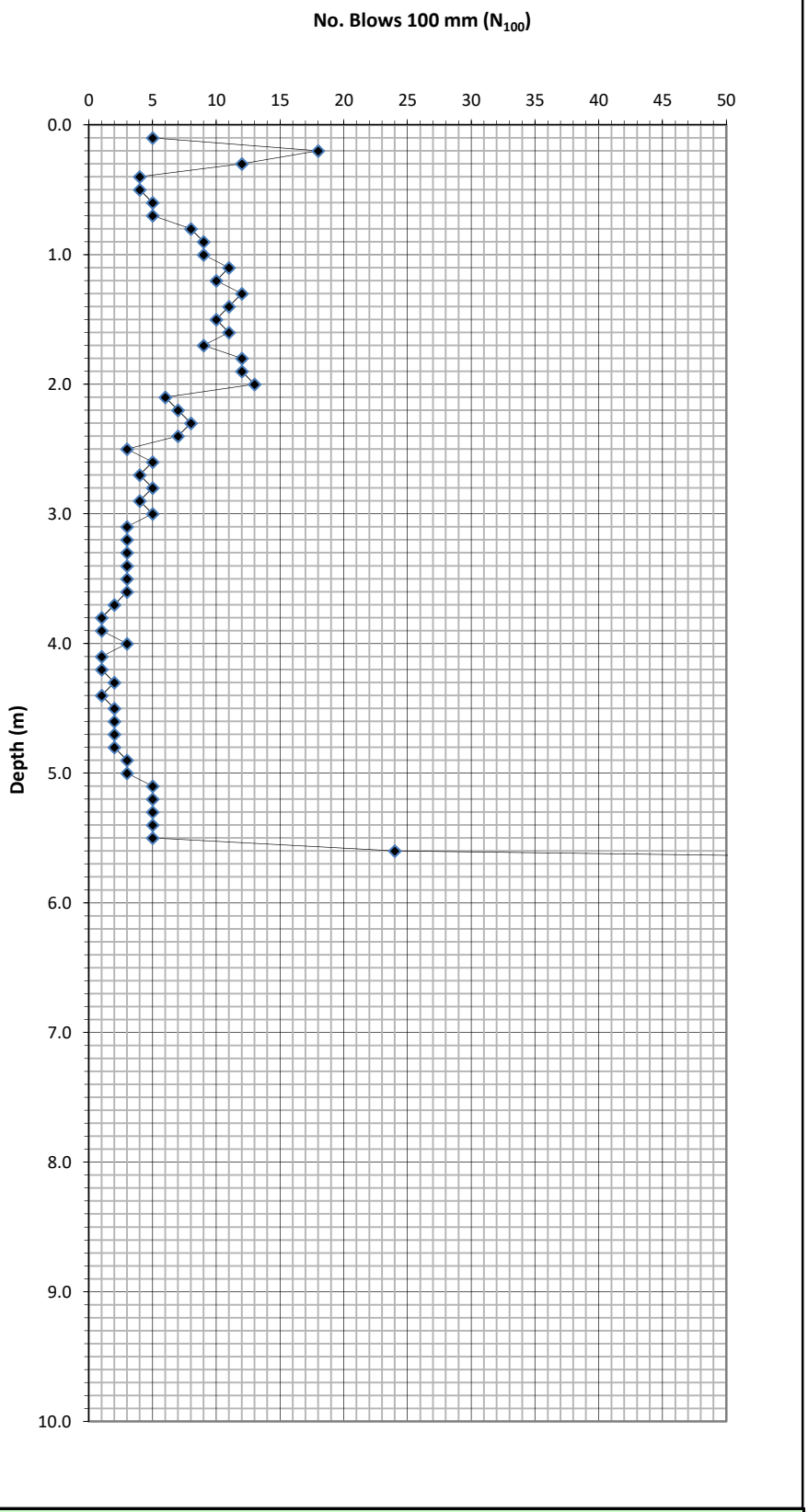
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 22**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	5	5.1
5	0.1	5	5.2
18	0.2	5	5.3
12	0.3	5	5.4
4	0.4	5	5.5
4	0.5	24	5.6
5	0.6	100	5.7
5	0.7	162	5.8
8	0.8		5.9
9	0.9		6.0
9	1.0		6.1
11	1.1		6.2
10	1.2		6.3
12	1.3		6.4
11	1.4		6.5
10	1.5		6.6
11	1.6		6.7
9	1.7		6.8
12	1.8		6.9
12	1.9		7.0
13	2.0		7.1
6	2.1		7.2
7	2.2		7.3
8	2.3		7.4
7	2.4		7.5
3	2.5		7.6
5	2.6		7.7
4	2.7		7.8
5	2.8		7.9
4	2.9		8.0
5	3.0		8.1
3	3.1		8.2
3	3.2		8.3
3	3.3		8.4
3	3.4		8.5
3	3.5		8.6
3	3.6		8.7
2	3.7		8.8
1	3.8		8.9
1	3.9		9.0
3	4.0		9.1
1	4.1		9.2
1	4.2		9.3
2	4.3		9.4
1	4.4		9.5
2	4.5		9.6
2	4.6		9.7
2	4.7		9.8
2	4.8		9.9
3	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

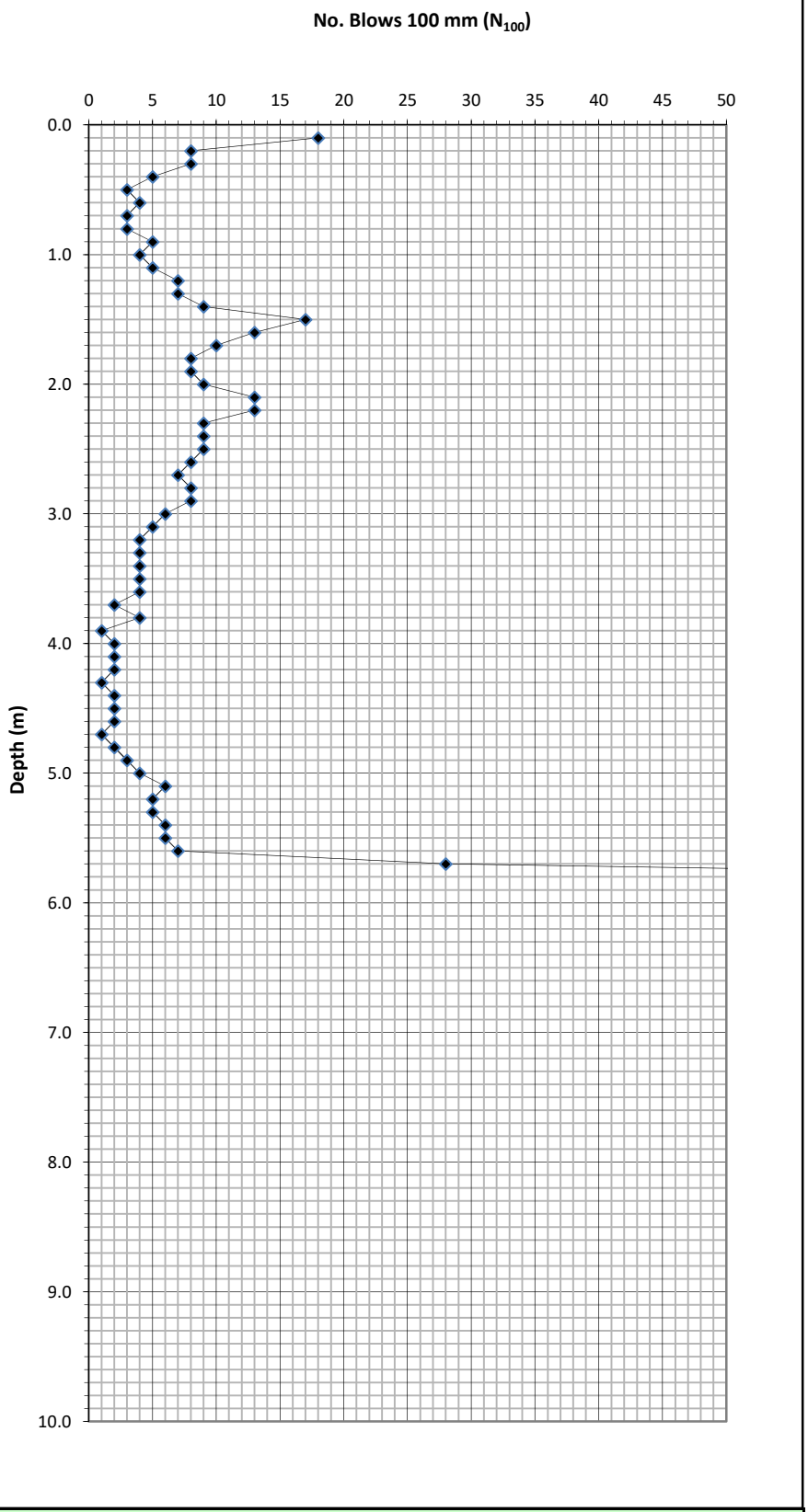
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 23**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	6	5.1
18	0.1	5	5.2
8	0.2	5	5.3
8	0.3	6	5.4
5	0.4	6	5.5
3	0.5	7	5.6
4	0.6	28	5.7
3	0.7	91	5.8
3	0.8		5.9
5	0.9		6.0
4	1.0		6.1
5	1.1		6.2
7	1.2		6.3
7	1.3		6.4
9	1.4		6.5
17	1.5		6.6
13	1.6		6.7
10	1.7		6.8
8	1.8		6.9
8	1.9		7.0
9	2.0		7.1
13	2.1		7.2
13	2.2		7.3
9	2.3		7.4
9	2.4		7.5
9	2.5		7.6
8	2.6		7.7
7	2.7		7.8
8	2.8		7.9
8	2.9		8.0
6	3.0		8.1
5	3.1		8.2
4	3.2		8.3
4	3.3		8.4
4	3.4		8.5
4	3.5		8.6
4	3.6		8.7
2	3.7		8.8
4	3.8		8.9
1	3.9		9.0
2	4.0		9.1
2	4.1		9.2
2	4.2		9.3
1	4.3		9.4
2	4.4		9.5
2	4.5		9.6
2	4.6		9.7
1	4.7		9.8
2	4.8		9.9
3	4.9		10.0
4	5.0		



Notes: Sheet 1 of 1.

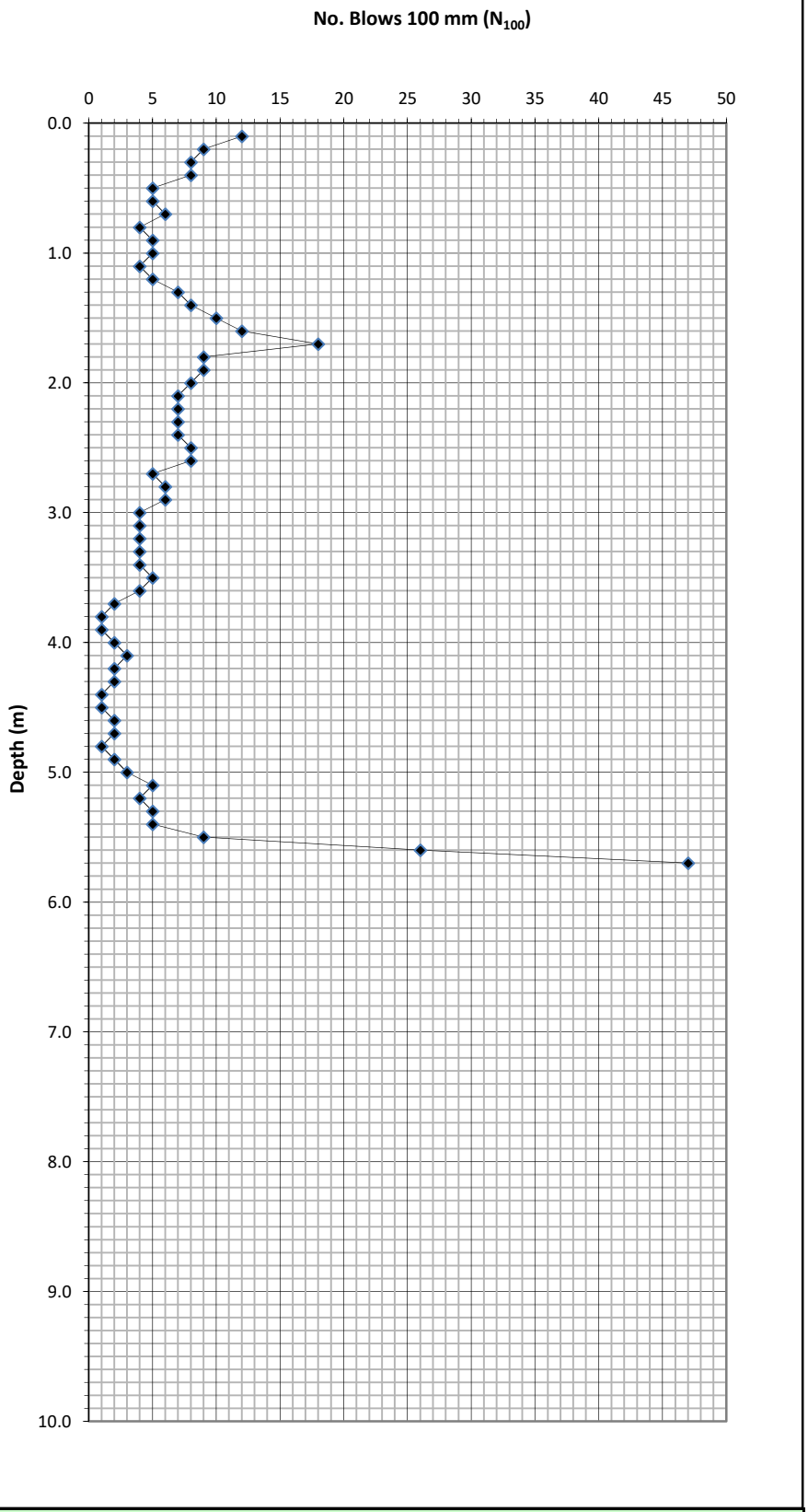
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 24**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	5	5.1
12	0.1	4	5.2
9	0.2	5	5.3
8	0.3	5	5.4
8	0.4	9	5.5
5	0.5	26	5.6
5	0.6	47	5.7
6	0.7		5.8
4	0.8		5.9
5	0.9		6.0
5	1.0		6.1
4	1.1		6.2
5	1.2		6.3
7	1.3		6.4
8	1.4		6.5
10	1.5		6.6
12	1.6		6.7
18	1.7		6.8
9	1.8		6.9
9	1.9		7.0
8	2.0		7.1
7	2.1		7.2
7	2.2		7.3
7	2.3		7.4
7	2.4		7.5
8	2.5		7.6
8	2.6		7.7
5	2.7		7.8
6	2.8		7.9
6	2.9		8.0
4	3.0		8.1
4	3.1		8.2
4	3.2		8.3
4	3.3		8.4
4	3.4		8.5
5	3.5		8.6
4	3.6		8.7
2	3.7		8.8
1	3.8		8.9
1	3.9		9.0
2	4.0		9.1
3	4.1		9.2
2	4.2		9.3
2	4.3		9.4
1	4.4		9.5
1	4.5		9.6
2	4.6		9.7
2	4.7		9.8
1	4.8		9.9
2	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

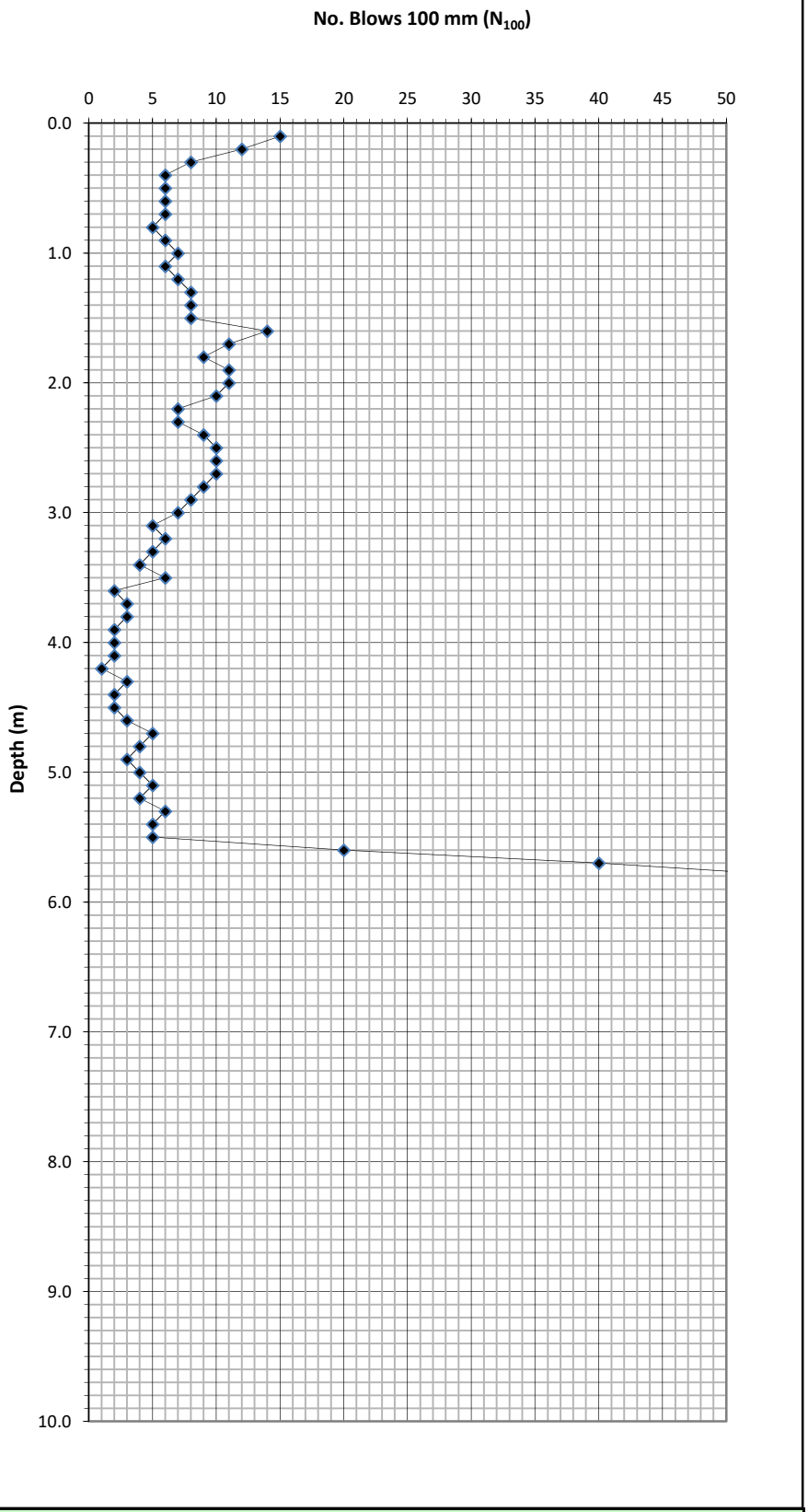
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 25**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	5	5.1
15	0.1	4	5.2
12	0.2	6	5.3
8	0.3	5	5.4
6	0.4	5	5.5
6	0.5	20	5.6
6	0.6	40	5.7
6	0.7	56	5.8
5	0.8		5.9
6	0.9		6.0
7	1.0		6.1
6	1.1		6.2
7	1.2		6.3
8	1.3		6.4
8	1.4		6.5
8	1.5		6.6
14	1.6		6.7
11	1.7		6.8
9	1.8		6.9
11	1.9		7.0
11	2.0		7.1
10	2.1		7.2
7	2.2		7.3
7	2.3		7.4
9	2.4		7.5
10	2.5		7.6
10	2.6		7.7
10	2.7		7.8
9	2.8		7.9
8	2.9		8.0
7	3.0		8.1
5	3.1		8.2
6	3.2		8.3
5	3.3		8.4
4	3.4		8.5
6	3.5		8.6
2	3.6		8.7
3	3.7		8.8
3	3.8		8.9
2	3.9		9.0
2	4.0		9.1
2	4.1		9.2
1	4.2		9.3
3	4.3		9.4
2	4.4		9.5
2	4.5		9.6
3	4.6		9.7
5	4.7		9.8
4	4.8		9.9
3	4.9		10.0
4	5.0		



Notes: Sheet 1 of 1.

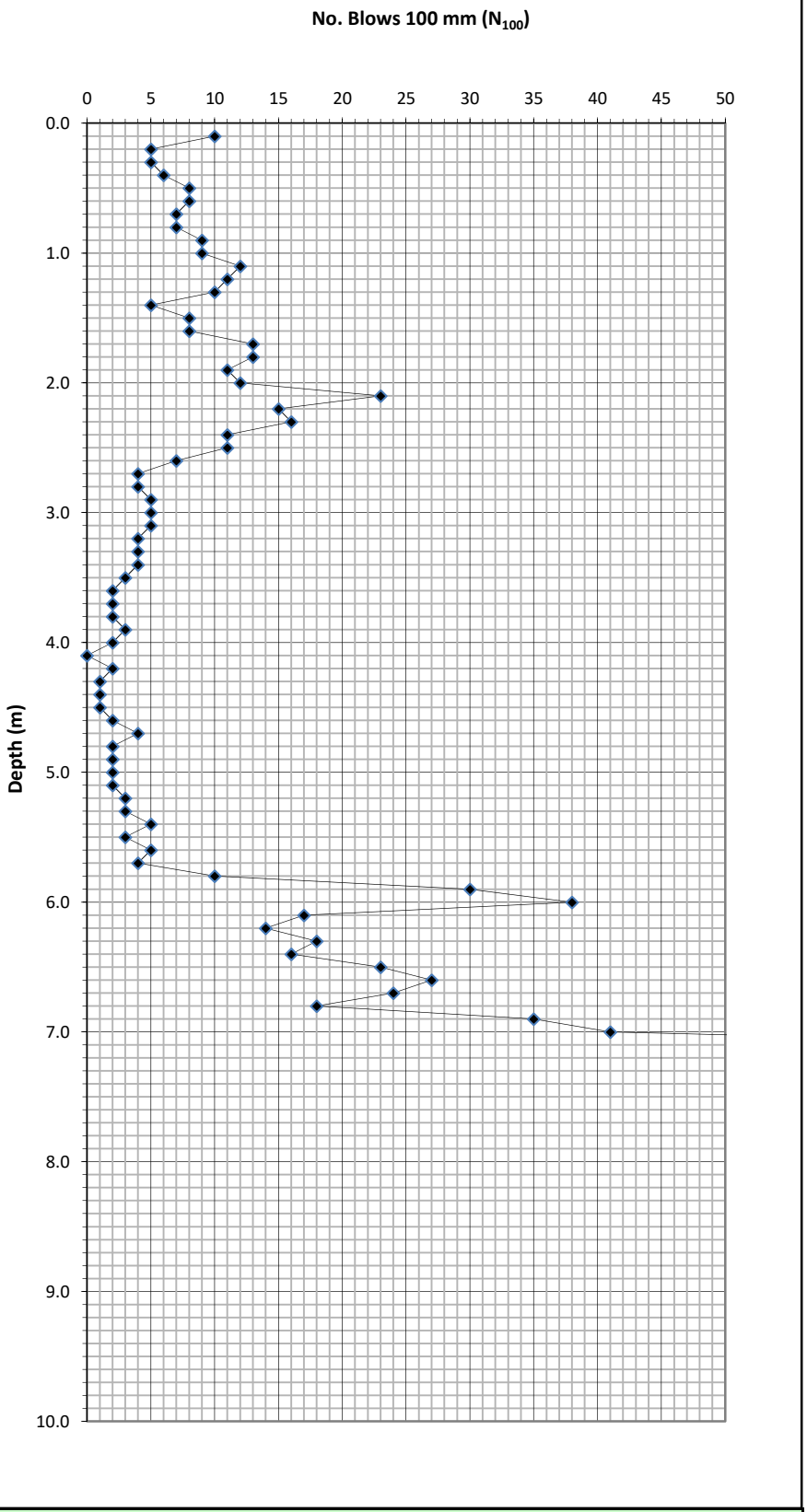
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 26**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
10	0.1	3	5.2
5	0.2	3	5.3
5	0.3	5	5.4
6	0.4	3	5.5
8	0.5	5	5.6
8	0.6	4	5.7
7	0.7	10	5.8
7	0.8	30	5.9
9	0.9	38	6.0
9	1.0	17	6.1
12	1.1	14	6.2
11	1.2	18	6.3
10	1.3	16	6.4
5	1.4	23	6.5
8	1.5	27	6.6
8	1.6	24	6.7
13	1.7	18	6.8
13	1.8	35	6.9
11	1.9	41	7.0
12	2.0	82	7.1
23	2.1		7.2
15	2.2		7.3
16	2.3		7.4
11	2.4		7.5
11	2.5		7.6
7	2.6		7.7
4	2.7		7.8
4	2.8		7.9
5	2.9		8.0
5	3.0		8.1
5	3.1		8.2
4	3.2		8.3
4	3.3		8.4
4	3.4		8.5
3	3.5		8.6
2	3.6		8.7
2	3.7		8.8
2	3.8		8.9
3	3.9		9.0
2	4.0		9.1
0	4.1		9.2
2	4.2		9.3
1	4.3		9.4
1	4.4		9.5
1	4.5		9.6
2	4.6		9.7
4	4.7		9.8
2	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

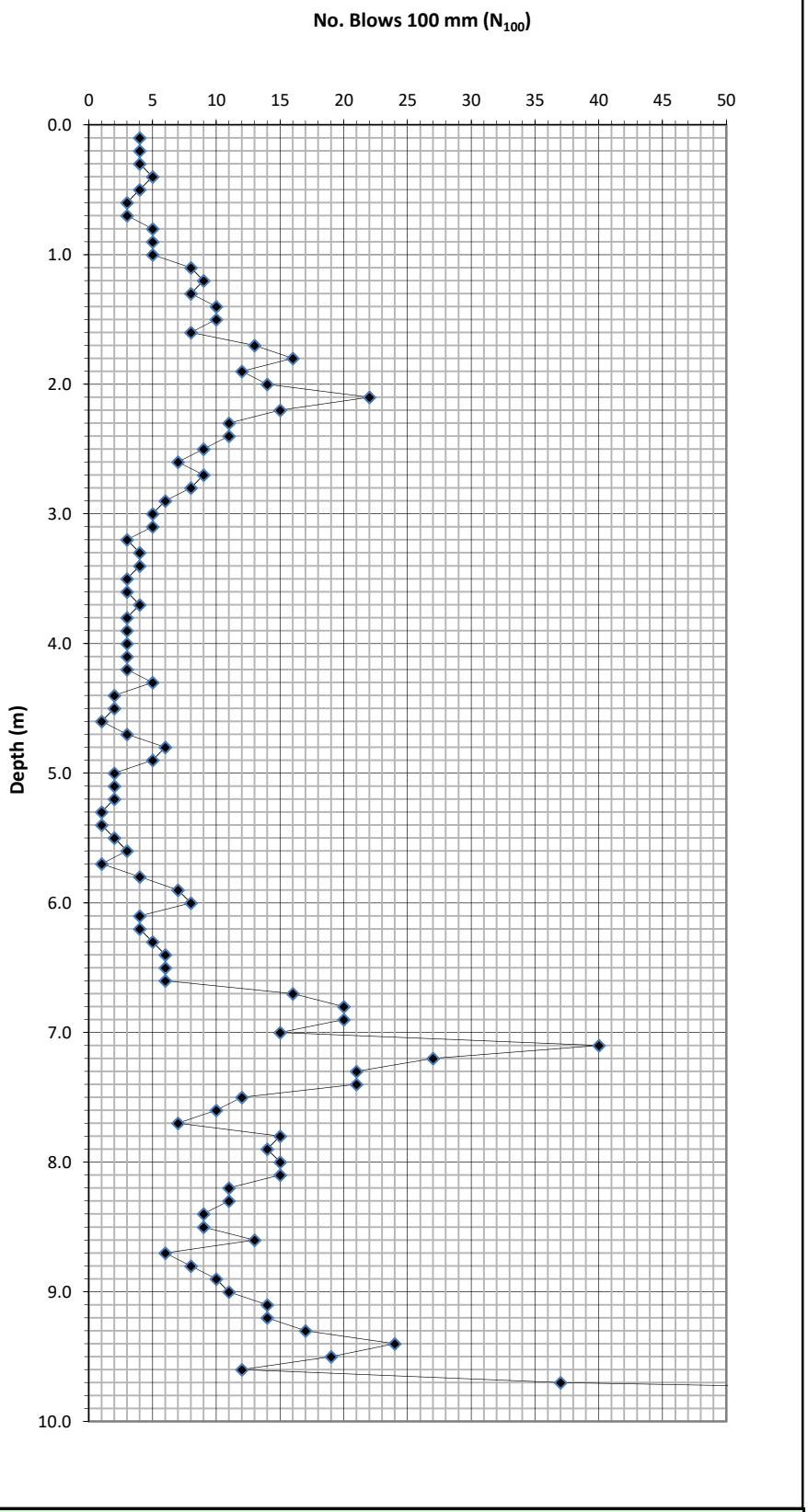
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 27**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
4	0.1	2	5.2
4	0.2	1	5.3
4	0.3	1	5.4
5	0.4	2	5.5
4	0.5	3	5.6
3	0.6	1	5.7
3	0.7	4	5.8
5	0.8	7	5.9
5	0.9	8	6.0
5	1.0	4	6.1
8	1.1	4	6.2
9	1.2	5	6.3
8	1.3	6	6.4
10	1.4	6	6.5
10	1.5	6	6.6
8	1.6	16	6.7
13	1.7	20	6.8
16	1.8	20	6.9
12	1.9	15	7.0
14	2.0	40	7.1
22	2.1	27	7.2
15	2.2	21	7.3
11	2.3	21	7.4
11	2.4	12	7.5
9	2.5	10	7.6
7	2.6	7	7.7
9	2.7	15	7.8
8	2.8	14	7.9
6	2.9	15	8.0
5	3.0	15	8.1
5	3.1	11	8.2
3	3.2	11	8.3
4	3.3	9	8.4
4	3.4	9	8.5
3	3.5	13	8.6
3	3.6	6	8.7
4	3.7	8	8.8
3	3.8	10	8.9
3	3.9	11	9.0
3	4.0	14	9.1
3	4.1	14	9.2
3	4.2	17	9.3
5	4.3	24	9.4
2	4.4	19	9.5
2	4.5	12	9.6
1	4.6	37	9.7
3	4.7	92	9.8
6	4.8		9.9
5	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

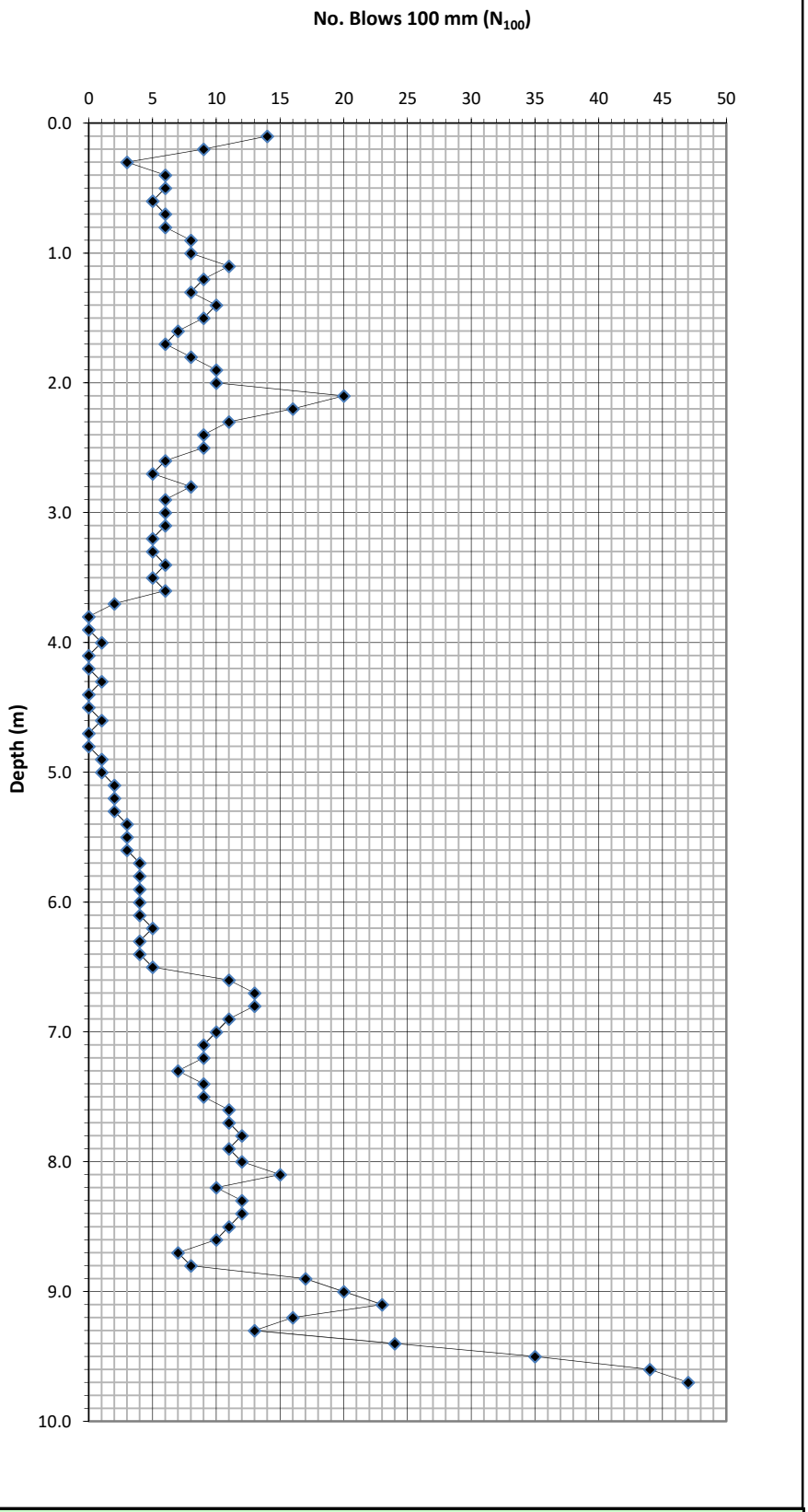
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 28**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
14	0.1	2	5.2
9	0.2	2	5.3
3	0.3	3	5.4
6	0.4	3	5.5
6	0.5	3	5.6
5	0.6	4	5.7
6	0.7	4	5.8
6	0.8	4	5.9
8	0.9	4	6.0
8	1.0	4	6.1
11	1.1	5	6.2
9	1.2	4	6.3
8	1.3	4	6.4
10	1.4	5	6.5
9	1.5	11	6.6
7	1.6	13	6.7
6	1.7	13	6.8
8	1.8	11	6.9
10	1.9	10	7.0
10	2.0	9	7.1
20	2.1	9	7.2
16	2.2	7	7.3
11	2.3	9	7.4
9	2.4	9	7.5
9	2.5	11	7.6
6	2.6	11	7.7
5	2.7	12	7.8
8	2.8	11	7.9
6	2.9	12	8.0
6	3.0	15	8.1
6	3.1	10	8.2
5	3.2	12	8.3
5	3.3	12	8.4
6	3.4	11	8.5
5	3.5	10	8.6
6	3.6	7	8.7
2	3.7	8	8.8
0	3.8	17	8.9
0	3.9	20	9.0
1	4.0	23	9.1
0	4.1	16	9.2
0	4.2	13	9.3
1	4.3	24	9.4
0	4.4	35	9.5
0	4.5	44	9.6
1	4.6	47	9.7
0	4.7		9.8
0	4.8		9.9
1	4.9		10.0
1	5.0		



Notes: Sheet 1 of 1.

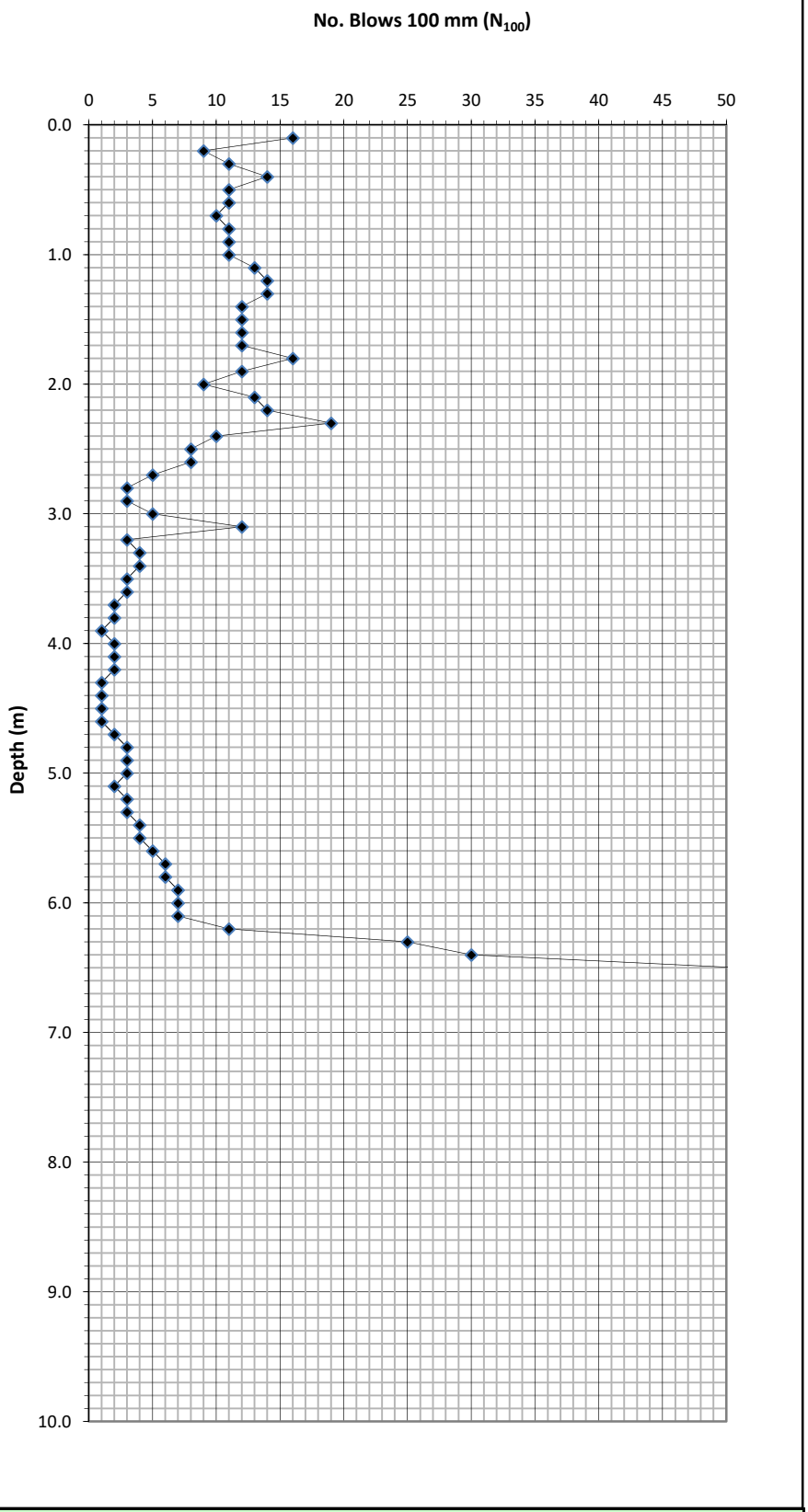
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 29**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
16	0.1	3	5.2
9	0.2	3	5.3
11	0.3	4	5.4
14	0.4	4	5.5
11	0.5	5	5.6
11	0.6	6	5.7
10	0.7	6	5.8
11	0.8	7	5.9
11	0.9	7	6.0
11	1.0	7	6.1
13	1.1	11	6.2
14	1.2	25	6.3
14	1.3	30	6.4
12	1.4	51	6.5
12	1.5	67	6.6
12	1.6		6.7
12	1.7		6.8
16	1.8		6.9
12	1.9		7.0
9	2.0		7.1
13	2.1		7.2
14	2.2		7.3
19	2.3		7.4
10	2.4		7.5
8	2.5		7.6
8	2.6		7.7
5	2.7		7.8
3	2.8		7.9
3	2.9		8.0
5	3.0		8.1
12	3.1		8.2
3	3.2		8.3
4	3.3		8.4
4	3.4		8.5
3	3.5		8.6
3	3.6		8.7
2	3.7		8.8
2	3.8		8.9
1	3.9		9.0
2	4.0		9.1
2	4.1		9.2
2	4.2		9.3
1	4.3		9.4
1	4.4		9.5
1	4.5		9.6
1	4.6		9.7
2	4.7		9.8
3	4.8		9.9
3	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

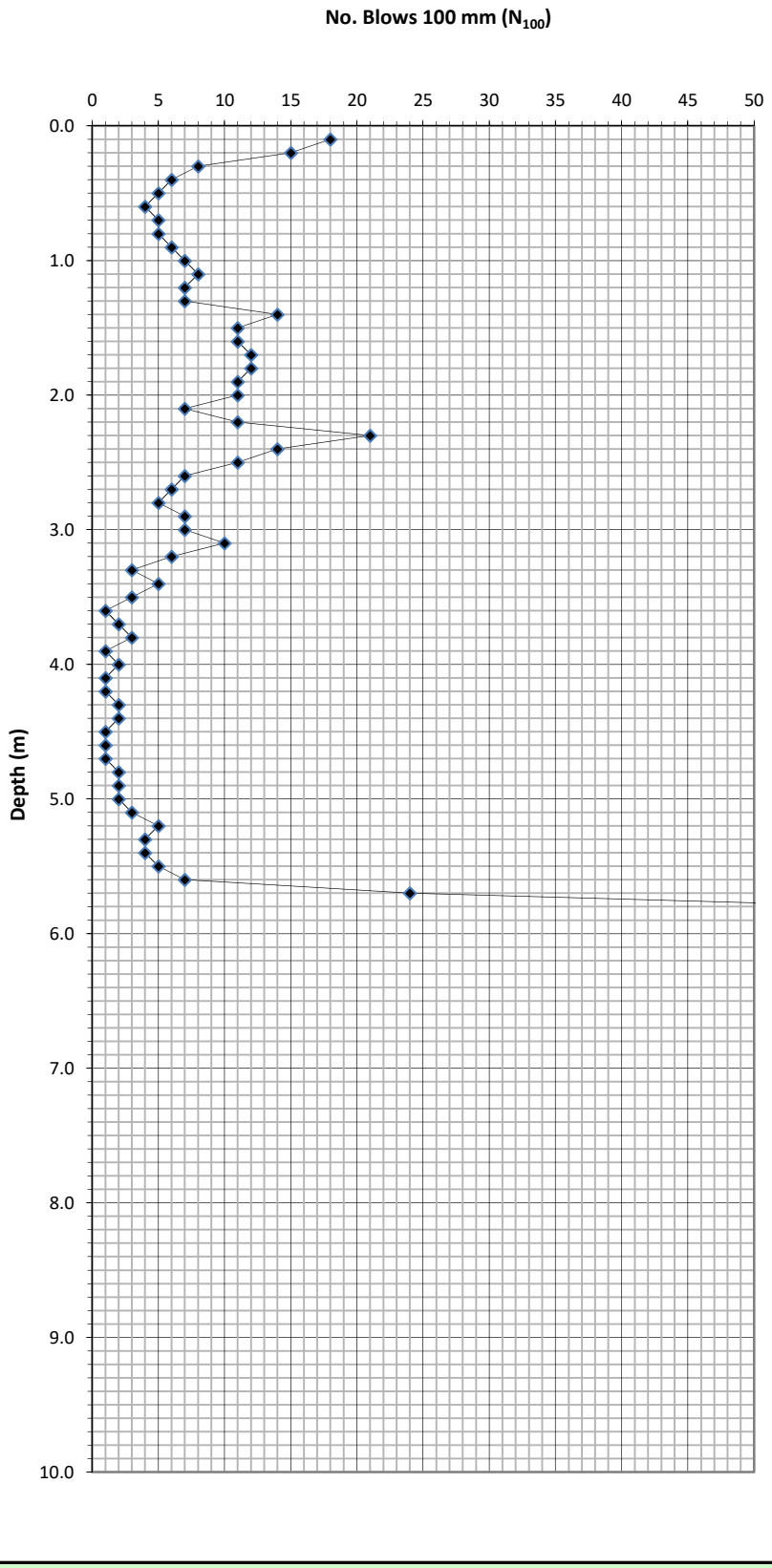
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 30**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
18	0.1	5	5.2
15	0.2	4	5.3
8	0.3	4	5.4
6	0.4	5	5.5
5	0.5	7	5.6
4	0.6	24	5.7
5	0.7	60	5.8
5	0.8	88	5.9
6	0.9		6.0
7	1.0		6.1
8	1.1		6.2
7	1.2		6.3
7	1.3		6.4
14	1.4		6.5
11	1.5		6.6
11	1.6		6.7
12	1.7		6.8
12	1.8		6.9
11	1.9		7.0
11	2.0		7.1
7	2.1		7.2
11	2.2		7.3
21	2.3		7.4
14	2.4		7.5
11	2.5		7.6
7	2.6		7.7
6	2.7		7.8
5	2.8		7.9
7	2.9		8.0
7	3.0		8.1
10	3.1		8.2
6	3.2		8.3
3	3.3		8.4
5	3.4		8.5
3	3.5		8.6
1	3.6		8.7
2	3.7		8.8
3	3.8		8.9
1	3.9		9.0
2	4.0		9.1
1	4.1		9.2
1	4.2		9.3
2	4.3		9.4
2	4.4		9.5
1	4.5		9.6
1	4.6		9.7
1	4.7		9.8
2	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

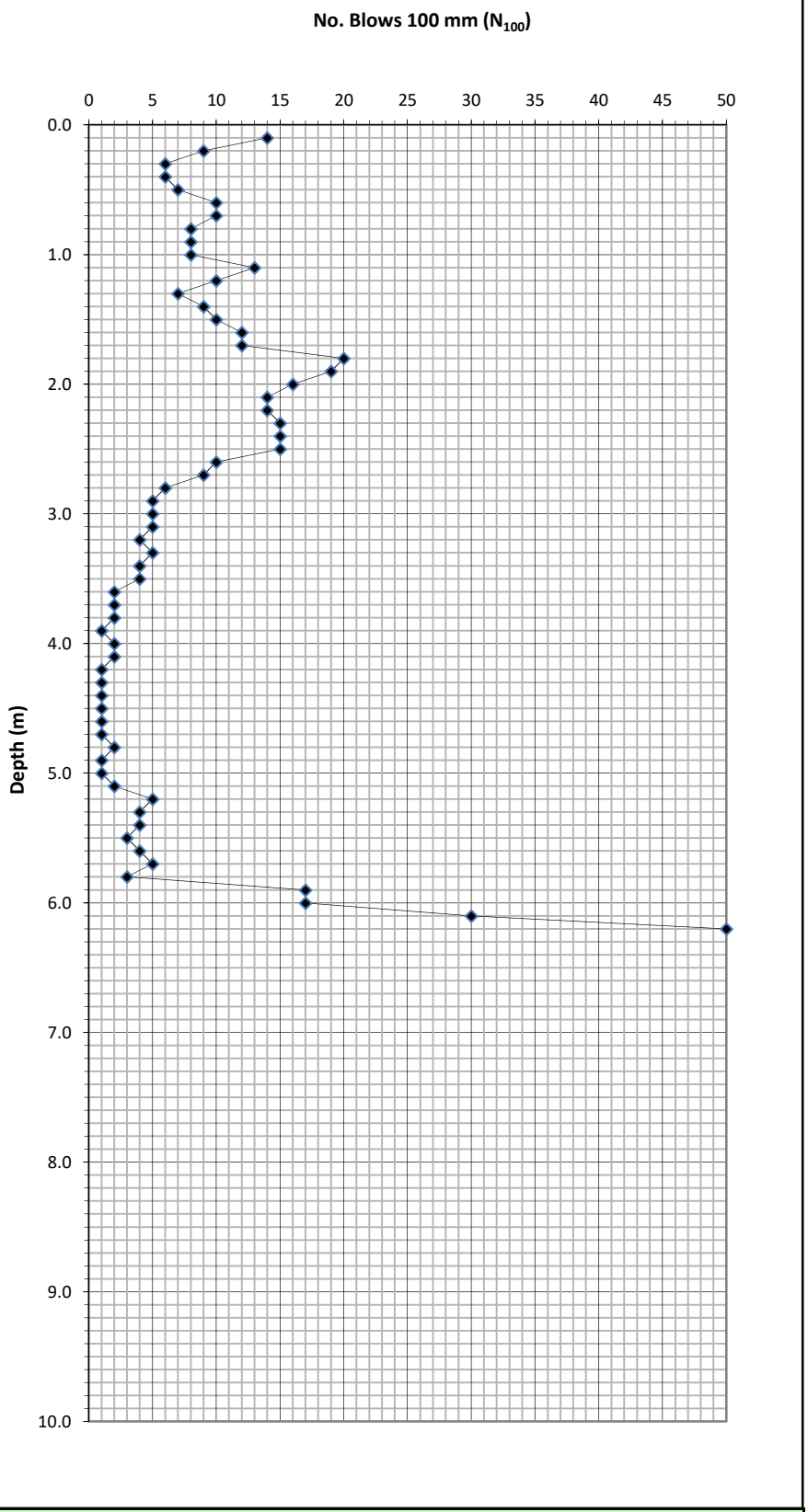
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 31**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
14	0.1	5	5.2
9	0.2	4	5.3
6	0.3	4	5.4
6	0.4	3	5.5
7	0.5	4	5.6
10	0.6	5	5.7
10	0.7	3	5.8
8	0.8	17	5.9
8	0.9	17	6.0
8	1.0	30	6.1
13	1.1	50	6.2
10	1.2	61	6.3
7	1.3		6.4
9	1.4		6.5
10	1.5		6.6
12	1.6		6.7
12	1.7		6.8
20	1.8		6.9
19	1.9		7.0
16	2.0		7.1
14	2.1		7.2
14	2.2		7.3
15	2.3		7.4
15	2.4		7.5
15	2.5		7.6
10	2.6		7.7
9	2.7		7.8
6	2.8		7.9
5	2.9		8.0
5	3.0		8.1
5	3.1		8.2
4	3.2		8.3
5	3.3		8.4
4	3.4		8.5
4	3.5		8.6
2	3.6		8.7
2	3.7		8.8
2	3.8		8.9
1	3.9		9.0
2	4.0		9.1
2	4.1		9.2
1	4.2		9.3
1	4.3		9.4
1	4.4		9.5
1	4.5		9.6
1	4.6		9.7
1	4.7		9.8
2	4.8		9.9
1	4.9		10.0
1	5.0		



Notes: Sheet 1 of 1.

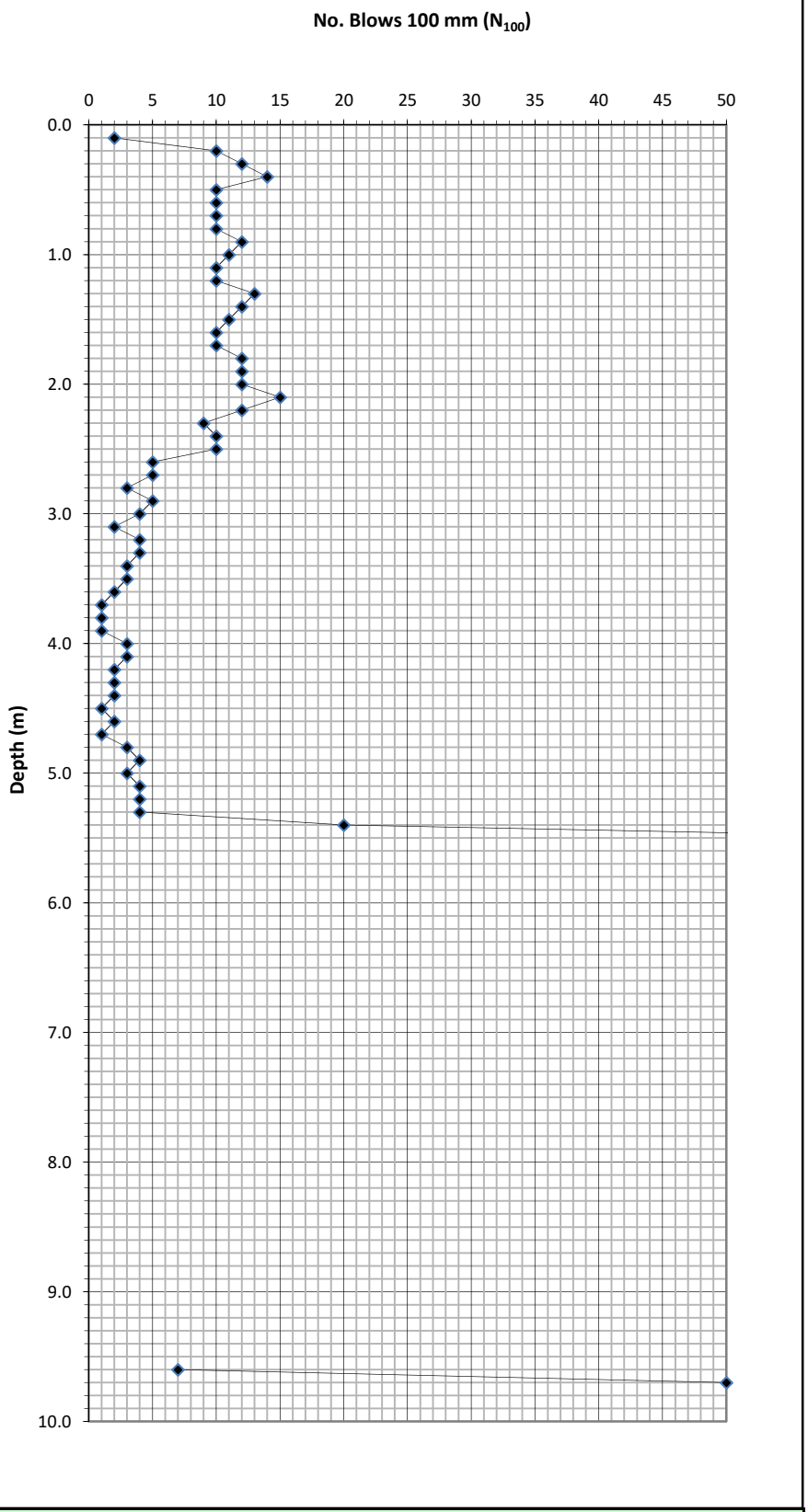
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 32**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	4	5.1
2	0.1	4	5.2
10	0.2	4	5.3
12	0.3	20	5.4
14	0.4	70	5.5
10	0.5	97	5.6
10	0.6		5.7
10	0.7		5.8
10	0.8		5.9
12	0.9		6.0
11	1.0		6.1
10	1.1		6.2
10	1.2		6.3
13	1.3		6.4
12	1.4		6.5
11	1.5		6.6
10	1.6		6.7
10	1.7		6.8
12	1.8		6.9
12	1.9		7.0
12	2.0		7.1
15	2.1		7.2
12	2.2		7.3
9	2.3		7.4
10	2.4		7.5
10	2.5		7.6
5	2.6		7.7
5	2.7		7.8
3	2.8		7.9
5	2.9		8.0
4	3.0		8.1
2	3.1		8.2
4	3.2		8.3
4	3.3		8.4
3	3.4		8.5
3	3.5		8.6
2	3.6		8.7
1	3.7		8.8
1	3.8		8.9
1	3.9		9.0
3	4.0		9.1
3	4.1		9.2
2	4.2		9.3
2	4.3		9.4
2	4.4		9.5
1	4.5	7	9.6
2	4.6	50	9.7
1	4.7		9.8
3	4.8		9.9
4	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

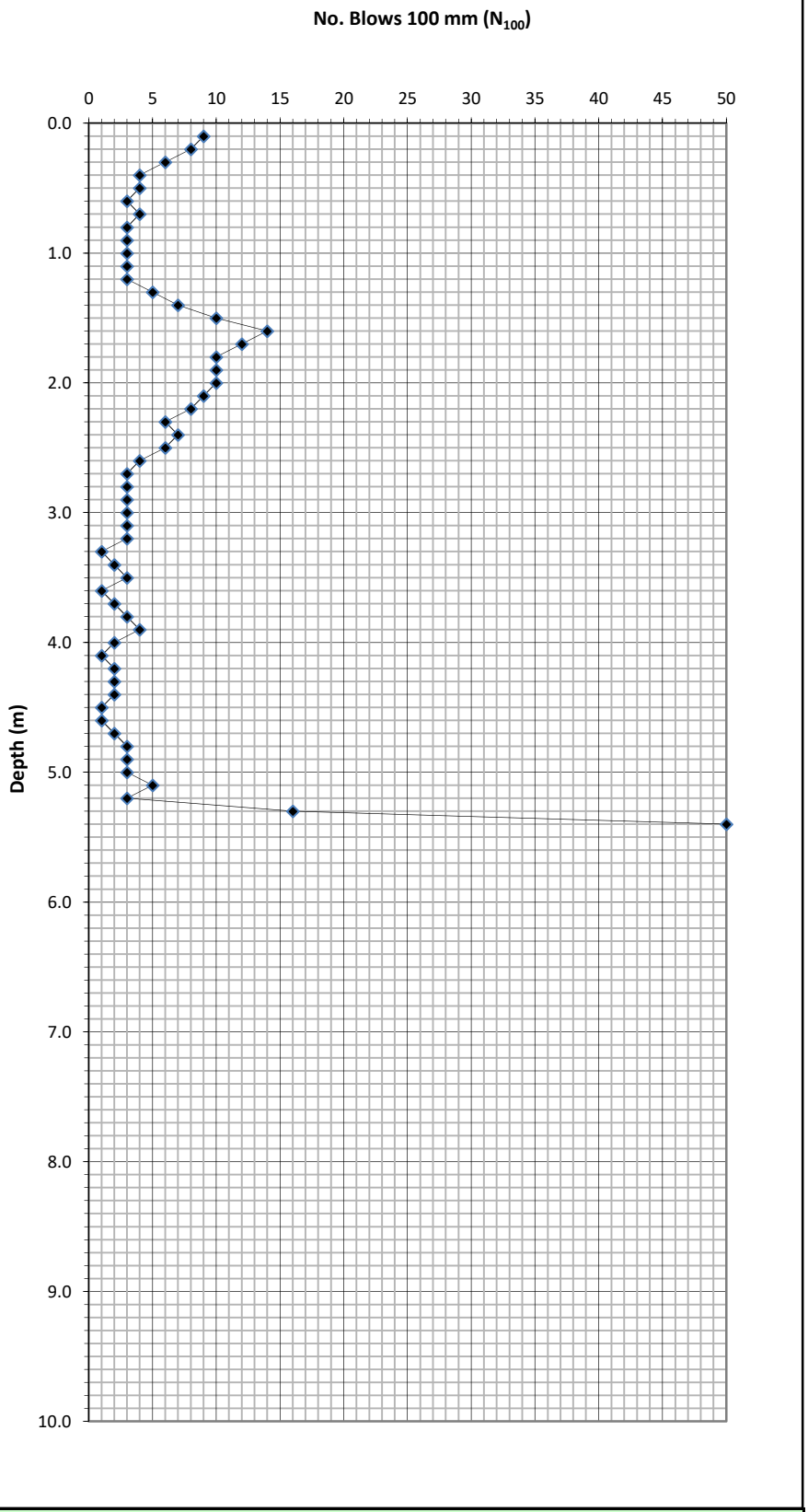
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 33**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	5	5.1
9	0.1	3	5.2
8	0.2	16	5.3
6	0.3	50	5.4
4	0.4	142	5.5
4	0.5		5.6
3	0.6		5.7
4	0.7		5.8
3	0.8		5.9
3	0.9		6.0
3	1.0		6.1
3	1.1		6.2
3	1.2		6.3
5	1.3		6.4
7	1.4		6.5
10	1.5		6.6
14	1.6		6.7
12	1.7		6.8
10	1.8		6.9
10	1.9		7.0
10	2.0		7.1
9	2.1		7.2
8	2.2		7.3
6	2.3		7.4
7	2.4		7.5
6	2.5		7.6
4	2.6		7.7
3	2.7		7.8
3	2.8		7.9
3	2.9		8.0
3	3.0		8.1
3	3.1		8.2
3	3.2		8.3
1	3.3		8.4
2	3.4		8.5
3	3.5		8.6
1	3.6		8.7
2	3.7		8.8
3	3.8		8.9
4	3.9		9.0
2	4.0		9.1
1	4.1		9.2
2	4.2		9.3
2	4.3		9.4
2	4.4		9.5
1	4.5		9.6
1	4.6		9.7
2	4.7		9.8
3	4.8		9.9
3	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

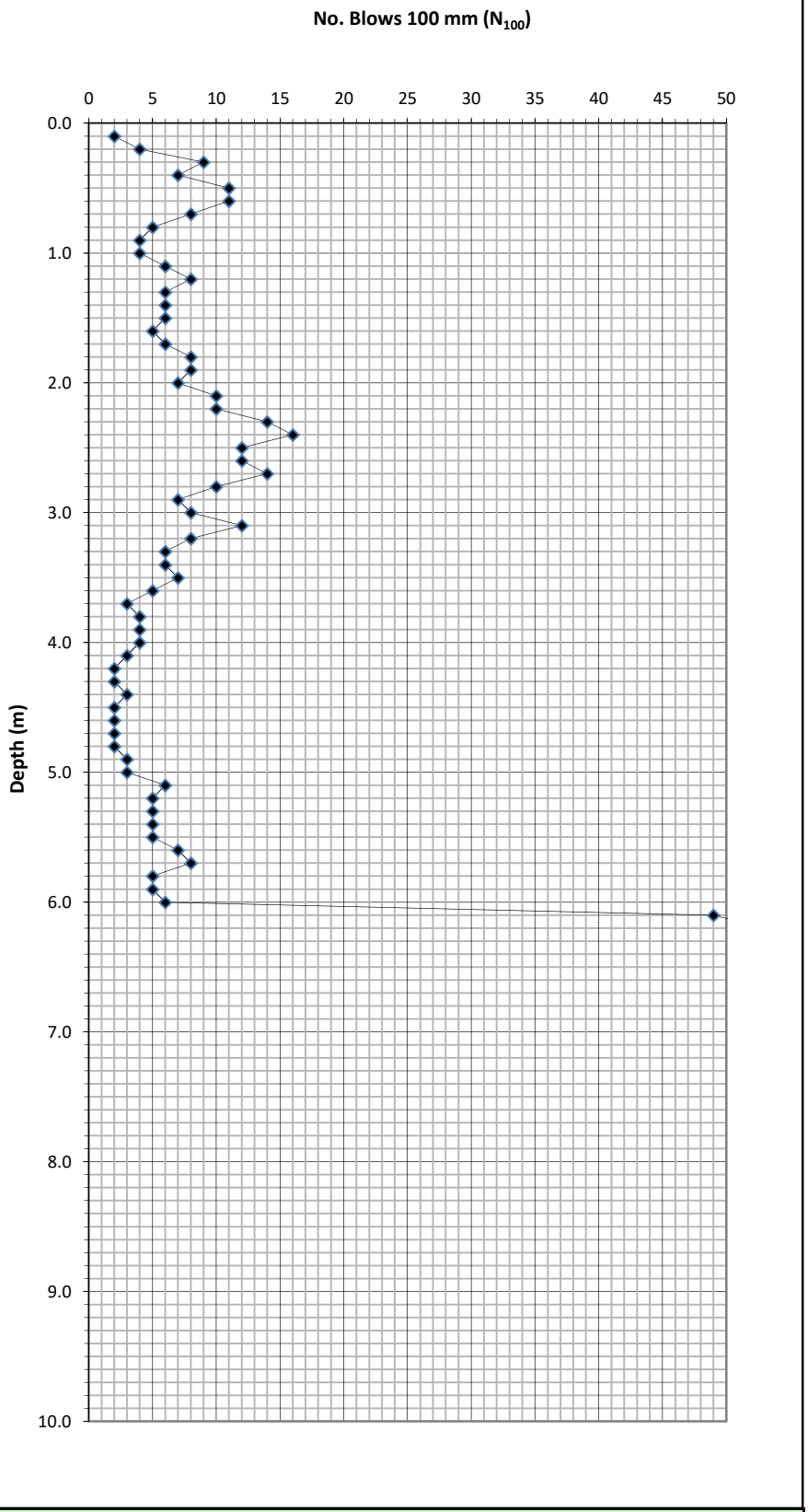
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 34**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	6	5.1
2	0.1	5	5.2
4	0.2	5	5.3
9	0.3	5	5.4
7	0.4	5	5.5
11	0.5	7	5.6
11	0.6	8	5.7
8	0.7	5	5.8
5	0.8	5	5.9
4	0.9	6	6.0
4	1.0	49	6.1
6	1.1	53	6.2
8	1.2	60	6.3
6	1.3	62	6.4
6	1.4	65	6.5
6	1.5	63	6.6
5	1.6	59	6.7
6	1.7	62	6.8
8	1.8	70	6.9
8	1.9		7.0
7	2.0		7.1
10	2.1		7.2
10	2.2		7.3
14	2.3		7.4
16	2.4		7.5
12	2.5		7.6
12	2.6		7.7
14	2.7		7.8
10	2.8		7.9
7	2.9		8.0
8	3.0		8.1
12	3.1		8.2
8	3.2		8.3
6	3.3		8.4
6	3.4		8.5
7	3.5		8.6
5	3.6		8.7
3	3.7		8.8
4	3.8		8.9
4	3.9		9.0
4	4.0		9.1
3	4.1		9.2
2	4.2		9.3
2	4.3		9.4
3	4.4		9.5
2	4.5		9.6
2	4.6		9.7
2	4.7		9.8
2	4.8		9.9
3	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

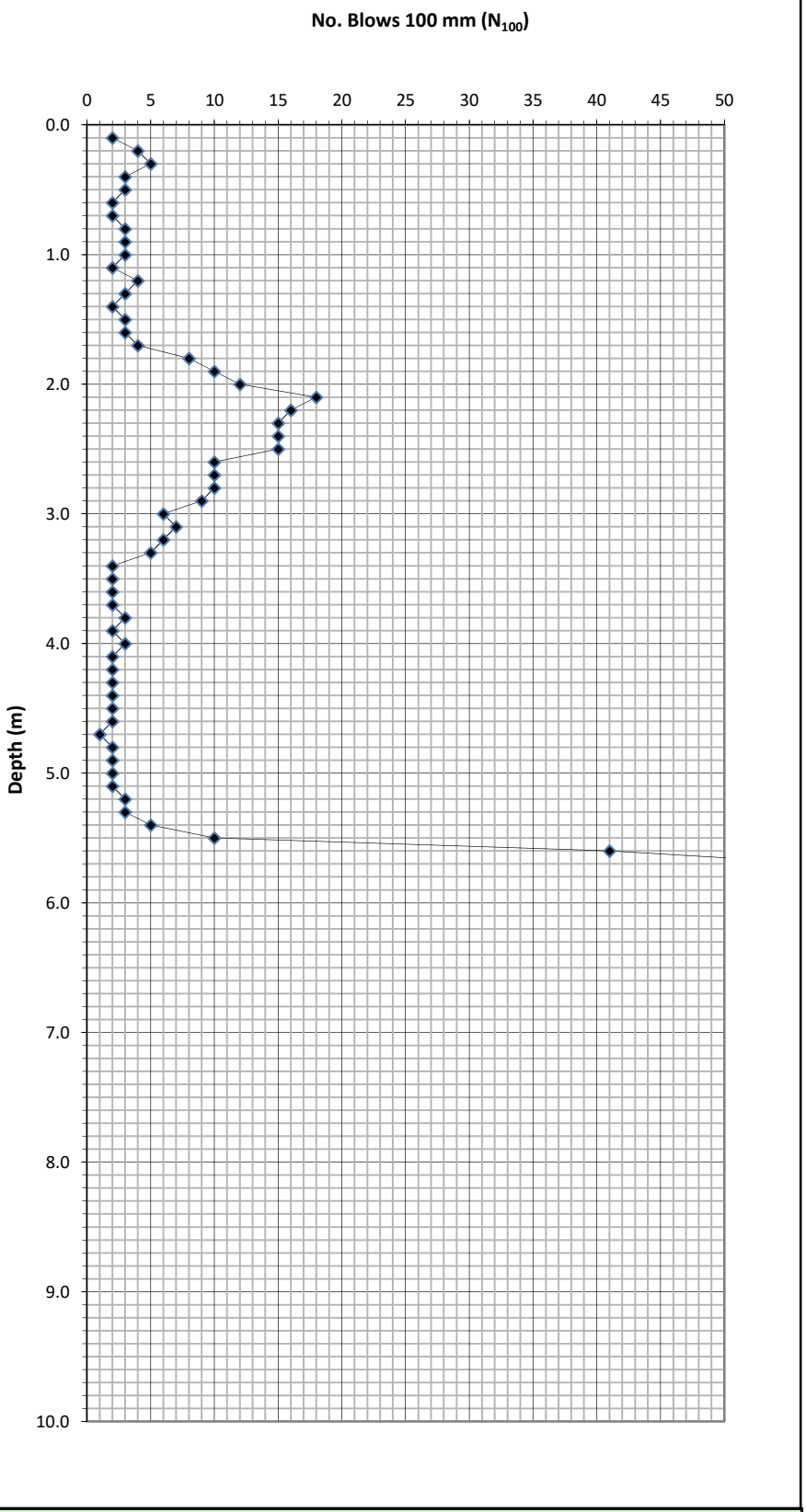
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 35**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
2	0.1	3	5.2
4	0.2	3	5.3
5	0.3	5	5.4
3	0.4	10	5.5
3	0.5	41	5.6
2	0.6	58	5.7
2	0.7		5.8
3	0.8		5.9
3	0.9		6.0
3	1.0		6.1
2	1.1		6.2
4	1.2		6.3
3	1.3		6.4
2	1.4		6.5
3	1.5		6.6
3	1.6		6.7
4	1.7		6.8
8	1.8		6.9
10	1.9		7.0
12	2.0		7.1
18	2.1		7.2
16	2.2		7.3
15	2.3		7.4
15	2.4		7.5
15	2.5		7.6
10	2.6		7.7
10	2.7		7.8
10	2.8		7.9
9	2.9		8.0
6	3.0		8.1
7	3.1		8.2
6	3.2		8.3
5	3.3		8.4
2	3.4		8.5
2	3.5		8.6
2	3.6		8.7
2	3.7		8.8
3	3.8		8.9
2	3.9		9.0
3	4.0		9.1
2	4.1		9.2
2	4.2		9.3
2	4.3		9.4
2	4.4		9.5
2	4.5		9.6
2	4.6		9.7
1	4.7		9.8
2	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

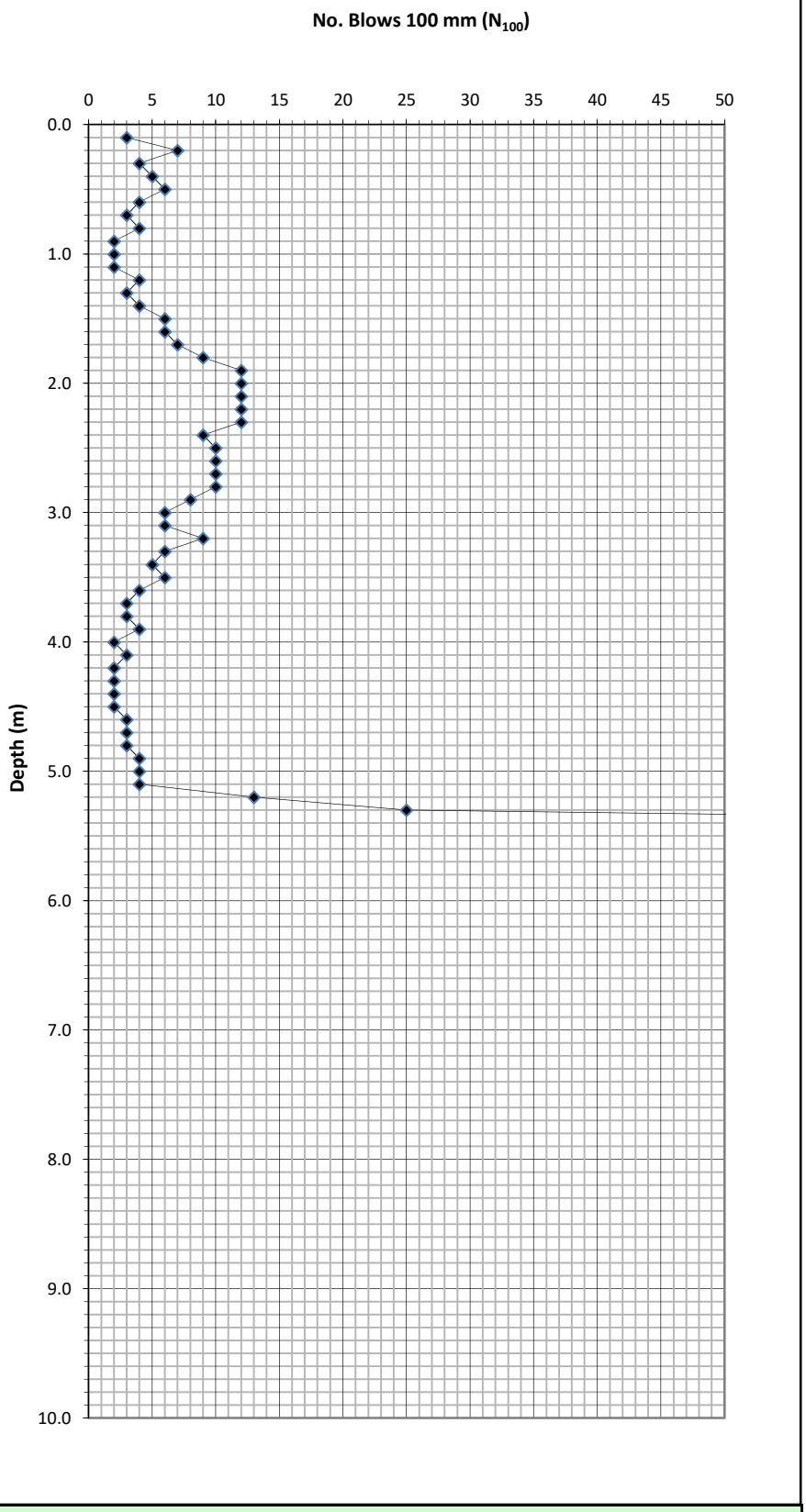
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 36**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	4	5.1
3	0.1	13	5.2
7	0.2	25	5.3
4	0.3	102	5.4
5	0.4		5.5
6	0.5		5.6
4	0.6		5.7
3	0.7		5.8
4	0.8		5.9
2	0.9		6.0
2	1.0		6.1
2	1.1		6.2
4	1.2		6.3
3	1.3		6.4
4	1.4		6.5
6	1.5		6.6
6	1.6		6.7
7	1.7		6.8
9	1.8		6.9
12	1.9		7.0
12	2.0		7.1
12	2.1		7.2
12	2.2		7.3
12	2.3		7.4
9	2.4		7.5
10	2.5		7.6
10	2.6		7.7
10	2.7		7.8
10	2.8		7.9
8	2.9		8.0
6	3.0		8.1
6	3.1		8.2
9	3.2		8.3
6	3.3		8.4
5	3.4		8.5
6	3.5		8.6
4	3.6		8.7
3	3.7		8.8
3	3.8		8.9
4	3.9		9.0
2	4.0		9.1
3	4.1		9.2
2	4.2		9.3
2	4.3		9.4
2	4.4		9.5
2	4.5		9.6
3	4.6		9.7
3	4.7		9.8
3	4.8		9.9
4	4.9		10.0
4	5.0		



Notes: Sheet 1 of 1.

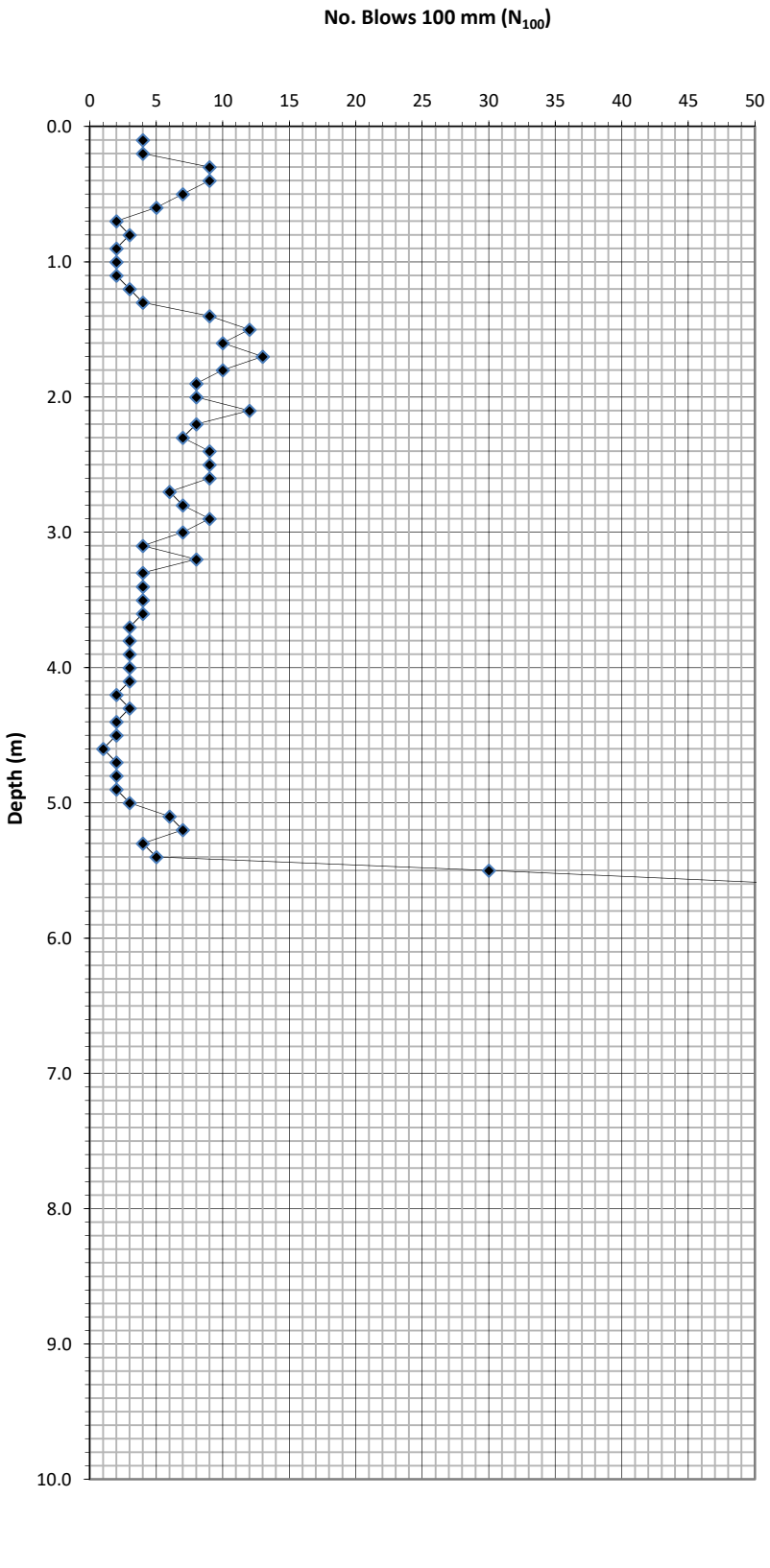
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 37**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	6	5.1
4	0.1	7	5.2
4	0.2	4	5.3
9	0.3	5	5.4
9	0.4	30	5.5
7	0.5	53	5.6
5	0.6	60	5.7
2	0.7		5.8
3	0.8		5.9
2	0.9		6.0
2	1.0		6.1
2	1.1		6.2
3	1.2		6.3
4	1.3		6.4
9	1.4		6.5
12	1.5		6.6
10	1.6		6.7
13	1.7		6.8
10	1.8		6.9
8	1.9		7.0
8	2.0		7.1
12	2.1		7.2
8	2.2		7.3
7	2.3		7.4
9	2.4		7.5
9	2.5		7.6
9	2.6		7.7
6	2.7		7.8
7	2.8		7.9
9	2.9		8.0
7	3.0		8.1
4	3.1		8.2
8	3.2		8.3
4	3.3		8.4
4	3.4		8.5
4	3.5		8.6
4	3.6		8.7
3	3.7		8.8
3	3.8		8.9
3	3.9		9.0
3	4.0		9.1
3	4.1		9.2
2	4.2		9.3
3	4.3		9.4
2	4.4		9.5
2	4.5		9.6
1	4.6		9.7
2	4.7		9.8
2	4.8		9.9
2	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

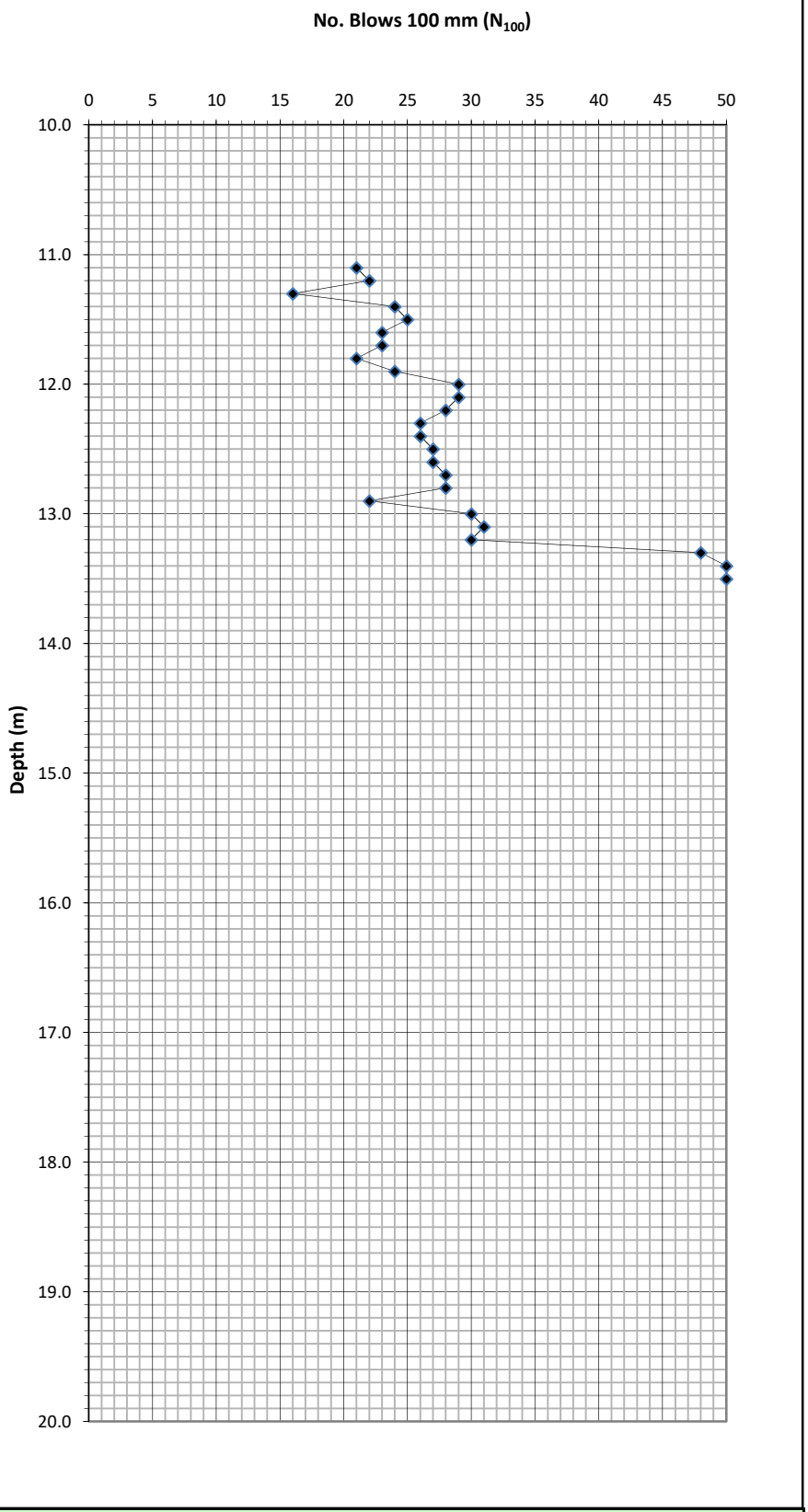
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 37**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	10.0		15.1
	10.1		15.2
	10.2		15.3
	10.3		15.4
	10.4		15.5
	10.5		15.6
	10.6		15.7
	10.7		15.8
	10.8		15.9
	10.9		16.0
	11.0		16.1
21	11.1		16.2
22	11.2		16.3
16	11.3		16.4
24	11.4		16.5
25	11.5		16.6
23	11.6		16.7
23	11.7		16.8
21	11.8		16.9
24	11.9		17.0
29	12.0		17.1
29	12.1		17.2
28	12.2		17.3
26	12.3		17.4
26	12.4		17.5
27	12.5		17.6
27	12.6		17.7
28	12.7		17.8
28	12.8		17.9
22	12.9		18.0
30	13.0		18.1
31	13.1		18.2
30	13.2		18.3
48	13.3		18.4
50	13.4		18.5
50	13.5		18.6
	13.6		18.7
	13.7		18.8
	13.8		18.9
	13.9		19.0
	14.0		19.1
	14.1		19.2
	14.2		19.3
	14.3		19.4
	14.4		19.5
	14.5		19.6
	14.6		19.7
	14.7		19.8
	14.8		19.9
	14.9		20.0
	15.0		



Notes: Sheet 1 of 1.

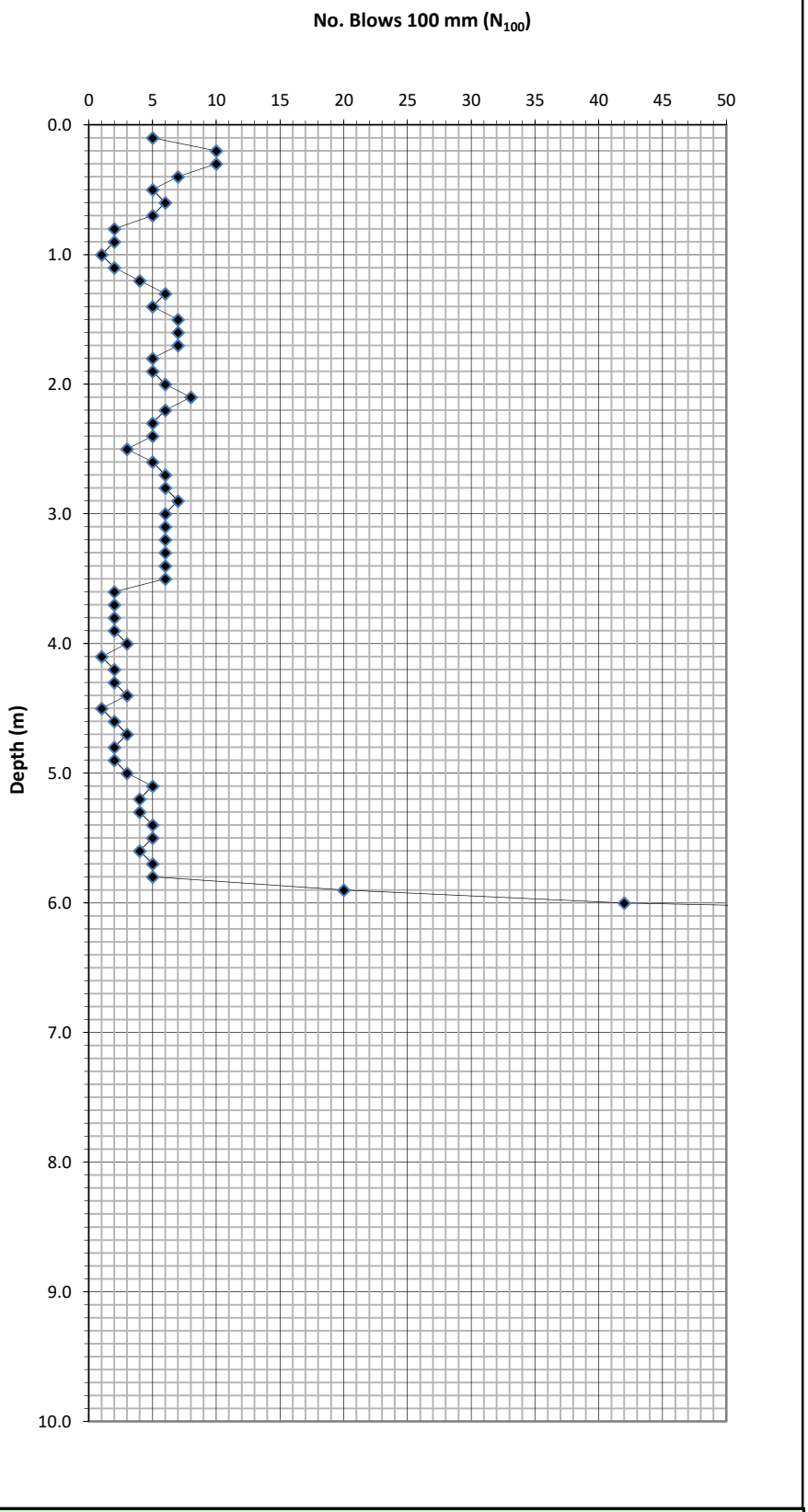
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 38**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	5	5.1
5	0.1	4	5.2
10	0.2	4	5.3
10	0.3	5	5.4
7	0.4	5	5.5
5	0.5	4	5.6
6	0.6	5	5.7
5	0.7	5	5.8
2	0.8	20	5.9
2	0.9	42	6.0
1	1.0	90	6.1
2	1.1		6.2
4	1.2		6.3
6	1.3		6.4
5	1.4		6.5
7	1.5		6.6
7	1.6		6.7
7	1.7		6.8
5	1.8		6.9
5	1.9		7.0
6	2.0		7.1
8	2.1		7.2
6	2.2		7.3
5	2.3		7.4
5	2.4		7.5
3	2.5		7.6
5	2.6		7.7
6	2.7		7.8
6	2.8		7.9
7	2.9		8.0
6	3.0		8.1
6	3.1		8.2
6	3.2		8.3
6	3.3		8.4
6	3.4		8.5
6	3.5		8.6
2	3.6		8.7
2	3.7		8.8
2	3.8		8.9
2	3.9		9.0
3	4.0		9.1
1	4.1		9.2
2	4.2		9.3
2	4.3		9.4
3	4.4		9.5
1	4.5		9.6
2	4.6		9.7
3	4.7		9.8
2	4.8		9.9
2	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

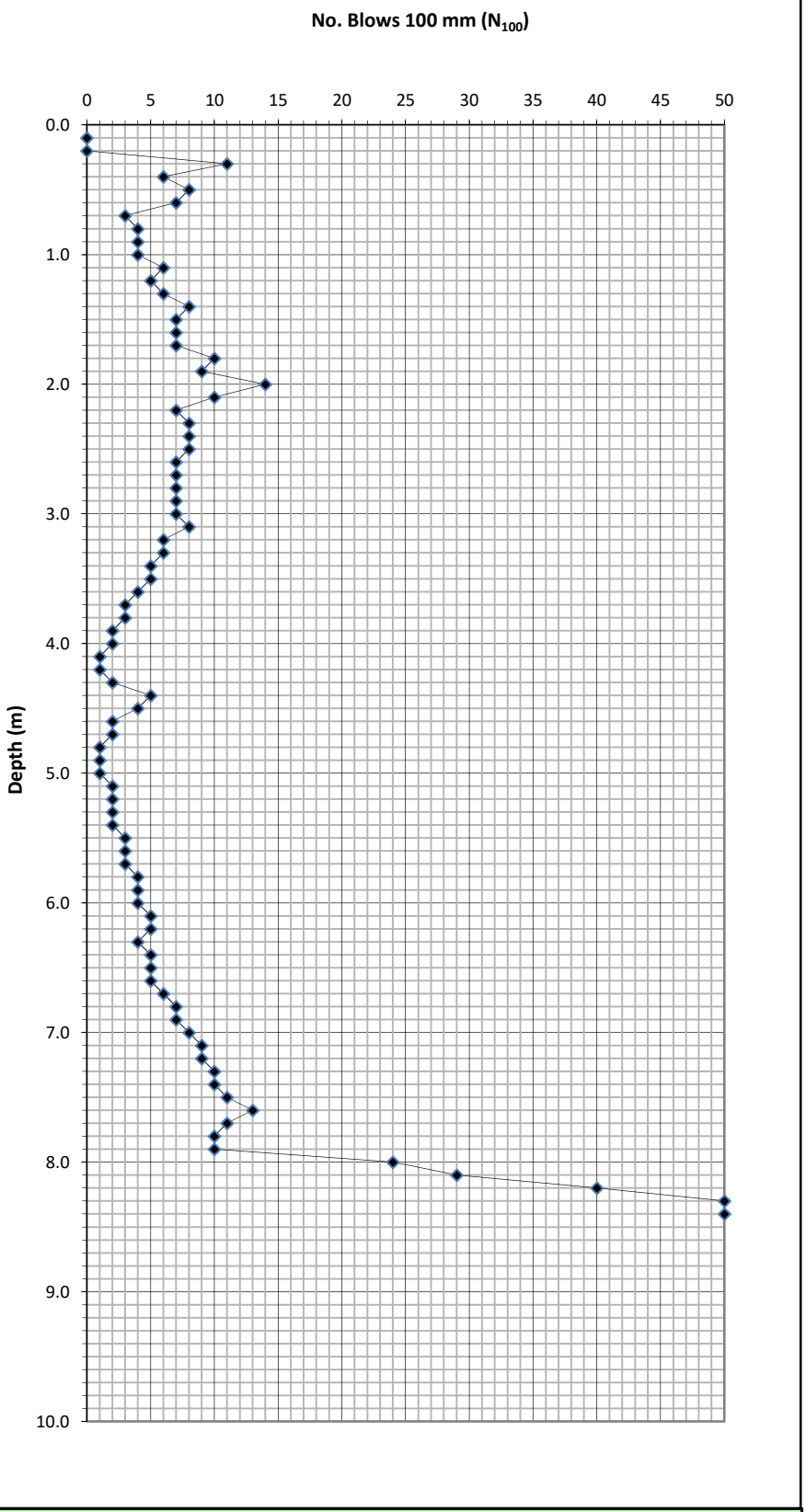
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 39**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
0	0.1	2	5.2
0	0.2	2	5.3
11	0.3	2	5.4
6	0.4	3	5.5
8	0.5	3	5.6
7	0.6	3	5.7
3	0.7	4	5.8
4	0.8	4	5.9
4	0.9	4	6.0
4	1.0	5	6.1
6	1.1	5	6.2
5	1.2	4	6.3
6	1.3	5	6.4
8	1.4	5	6.5
7	1.5	5	6.6
7	1.6	6	6.7
7	1.7	7	6.8
10	1.8	7	6.9
9	1.9	8	7.0
14	2.0	9	7.1
10	2.1	9	7.2
7	2.2	10	7.3
8	2.3	10	7.4
8	2.4	11	7.5
8	2.5	13	7.6
7	2.6	11	7.7
7	2.7	10	7.8
7	2.8	10	7.9
7	2.9	24	8.0
7	3.0	29	8.1
8	3.1	40	8.2
6	3.2	50	8.3
6	3.3	50	8.4
5	3.4		8.5
5	3.5		8.6
4	3.6		8.7
3	3.7		8.8
3	3.8		8.9
2	3.9		9.0
2	4.0		9.1
1	4.1		9.2
1	4.2		9.3
2	4.3		9.4
5	4.4		9.5
4	4.5		9.6
2	4.6		9.7
2	4.7		9.8
1	4.8		9.9
1	4.9		10.0
1	5.0		



Notes: Sheet 1 of 3.

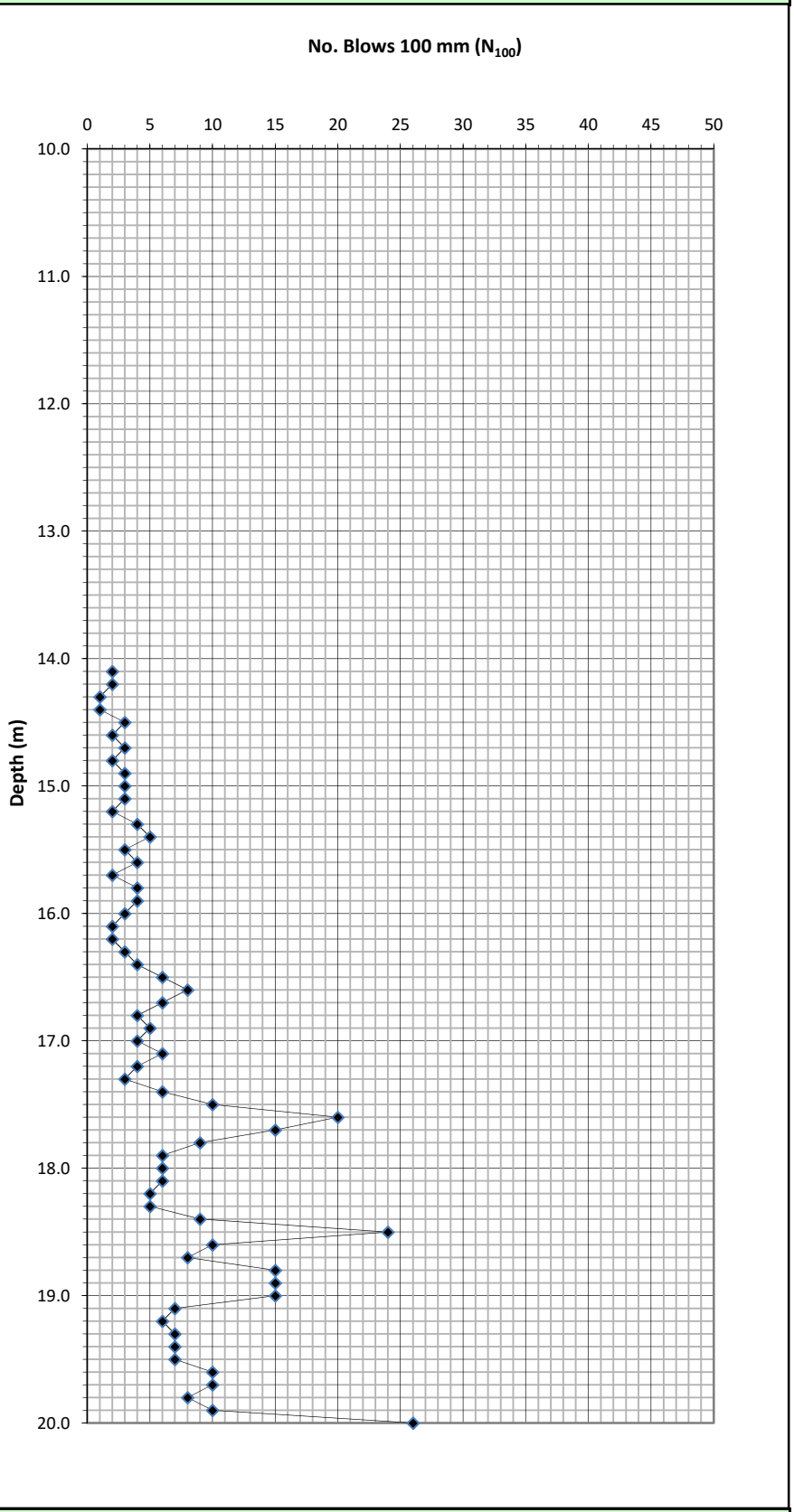
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 39 Continued**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	10.0	3	15.1
	10.1	2	15.2
	10.2	4	15.3
	10.3	5	15.4
	10.4	3	15.5
	10.5	4	15.6
	10.6	2	15.7
	10.7	4	15.8
	10.8	4	15.9
	10.9	3	16.0
	11.0	2	16.1
	11.1	2	16.2
	11.2	3	16.3
	11.3	4	16.4
	11.4	6	16.5
	11.5	8	16.6
	11.6	6	16.7
	11.7	4	16.8
	11.8	5	16.9
	11.9	4	17.0
	12.0	6	17.1
	12.1	4	17.2
	12.2	3	17.3
	12.3	6	17.4
	12.4	10	17.5
	12.5	20	17.6
	12.6	15	17.7
	12.7	9	17.8
	12.8	6	17.9
	12.9	6	18.0
	13.0	6	18.1
	13.1	5	18.2
	13.2	5	18.3
	13.3	9	18.4
	13.4	24	18.5
	13.5	10	18.6
	13.6	8	18.7
	13.7	15	18.8
	13.8	15	18.9
	13.9	15	19.0
	14.0	7	19.1
2	14.1	6	19.2
2	14.2	7	19.3
1	14.3	7	19.4
1	14.4	7	19.5
3	14.5	10	19.6
2	14.6	10	19.7
3	14.7	8	19.8
2	14.8	10	19.9
3	14.9	26	20.0
3	15.0		



Notes: Sheet 2 of 3.

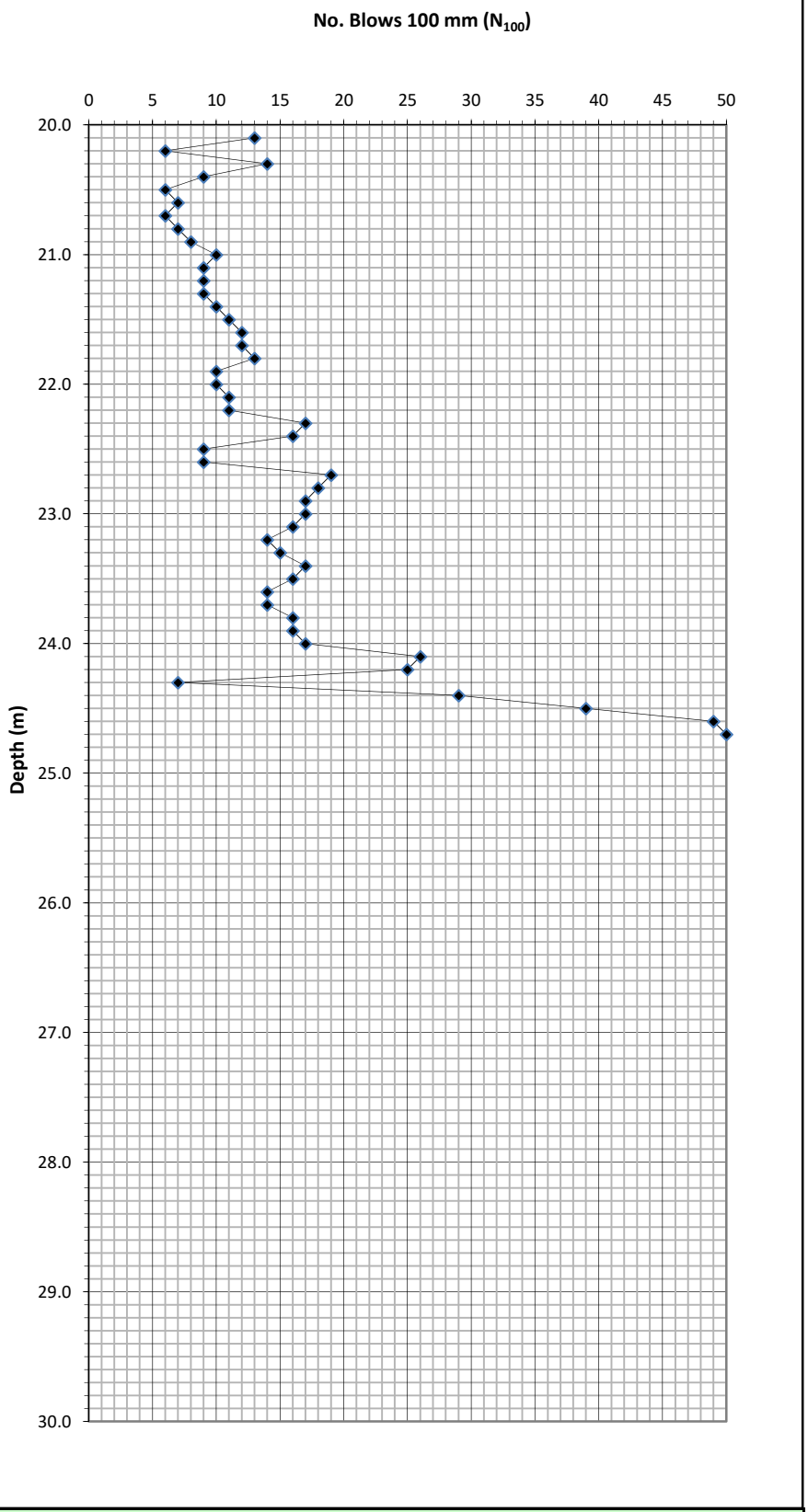
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 39 continued**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	20.0		25.1
13	20.1		25.2
6	20.2		25.3
14	20.3		25.4
9	20.4		25.5
6	20.5		25.6
7	20.6		25.7
6	20.7		25.8
7	20.8		25.9
8	20.9		26.0
10	21.0		26.1
9	21.1		26.2
9	21.2		26.3
9	21.3		26.4
10	21.4		26.5
11	21.5		26.6
12	21.6		26.7
12	21.7		26.8
13	21.8		26.9
10	21.9		27.0
10	22.0		27.1
11	22.1		27.2
11	22.2		27.3
17	22.3		27.4
16	22.4		27.5
9	22.5		27.6
9	22.6		27.7
19	22.7		27.8
18	22.8		27.9
17	22.9		28.0
17	23.0		28.1
16	23.1		28.2
14	23.2		28.3
15	23.3		28.4
17	23.4		28.5
16	23.5		28.6
14	23.6		28.7
14	23.7		28.8
16	23.8		28.9
16	23.9		29.0
17	24.0		29.1
26	24.1		29.2
25	24.2		29.3
7	24.3		29.4
29	24.4		29.5
39	24.5		29.6
49	24.6		29.7
50	24.7		29.8
	24.8		29.9
	24.9		30.0
	25.0		



Notes: Sheet 3 of 3.

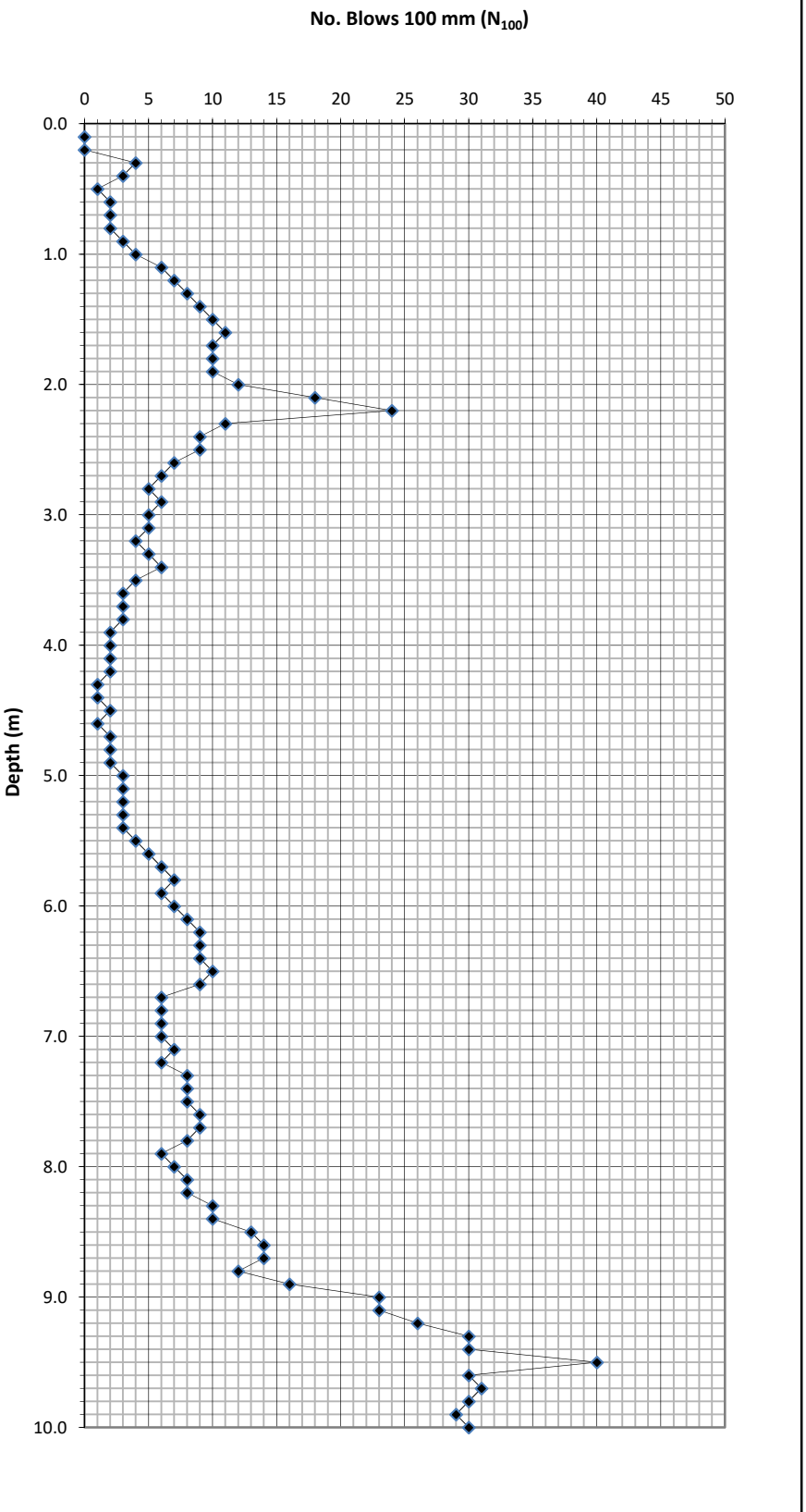
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 41**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
0	0.1	3	5.2
0	0.2	3	5.3
4	0.3	3	5.4
3	0.4	4	5.5
1	0.5	5	5.6
2	0.6	6	5.7
2	0.7	7	5.8
2	0.8	6	5.9
3	0.9	7	6.0
4	1.0	8	6.1
6	1.1	9	6.2
7	1.2	9	6.3
8	1.3	9	6.4
9	1.4	10	6.5
10	1.5	9	6.6
11	1.6	6	6.7
10	1.7	6	6.8
10	1.8	6	6.9
10	1.9	6	7.0
12	2.0	7	7.1
18	2.1	6	7.2
24	2.2	8	7.3
11	2.3	8	7.4
9	2.4	8	7.5
9	2.5	9	7.6
7	2.6	9	7.7
6	2.7	8	7.8
5	2.8	6	7.9
6	2.9	7	8.0
5	3.0	8	8.1
5	3.1	8	8.2
4	3.2	10	8.3
5	3.3	10	8.4
6	3.4	13	8.5
4	3.5	14	8.6
3	3.6	14	8.7
3	3.7	12	8.8
3	3.8	16	8.9
2	3.9	23	9.0
2	4.0	23	9.1
2	4.1	26	9.2
2	4.2	30	9.3
1	4.3	30	9.4
1	4.4	40	9.5
2	4.5	30	9.6
1	4.6	31	9.7
2	4.7	30	9.8
2	4.8	29	9.9
2	4.9	30	10.0
3	5.0		



Notes: Sheet 1 of 1.

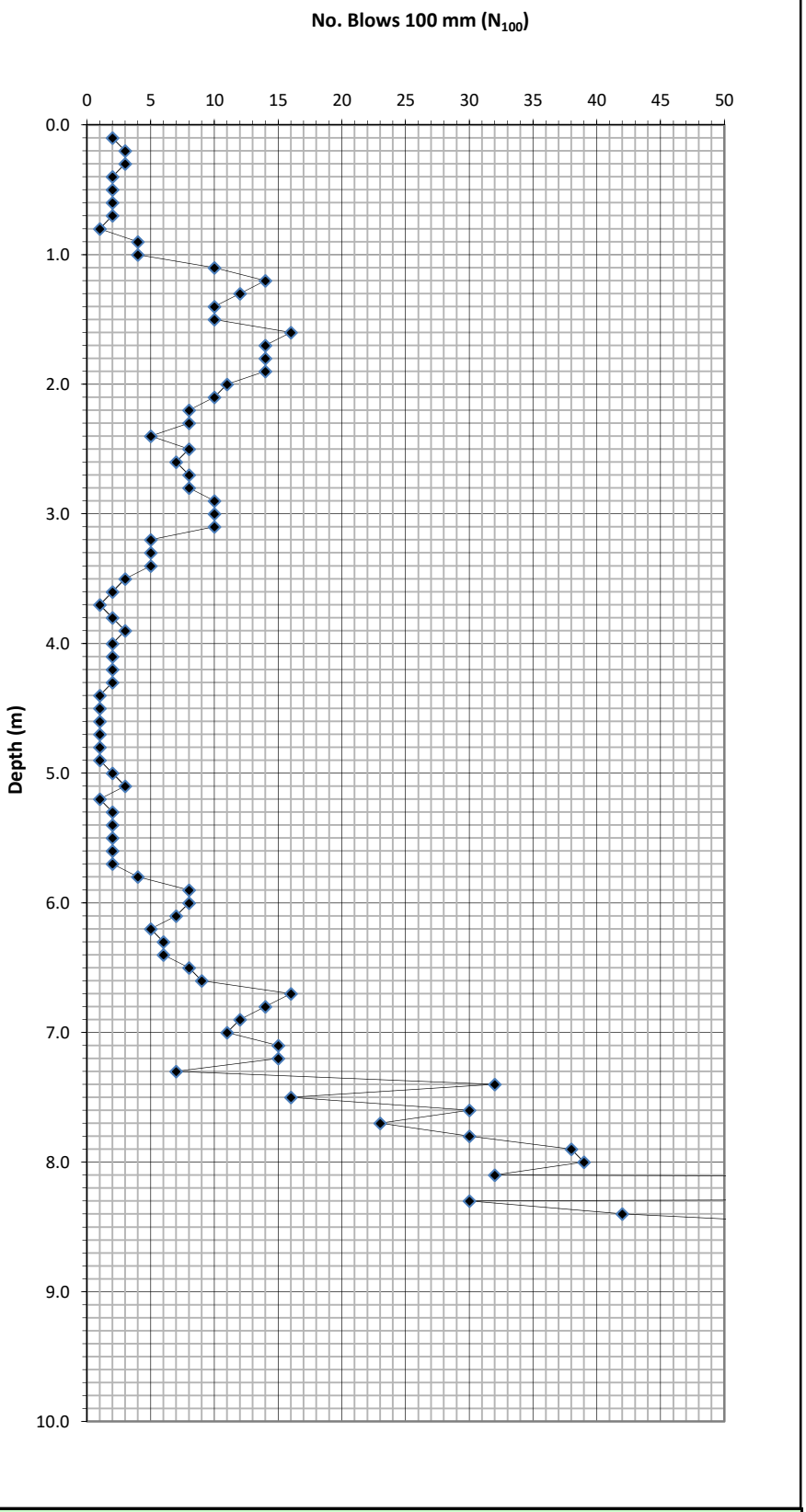
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 42**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
2	0.1	1	5.2
3	0.2	2	5.3
3	0.3	2	5.4
2	0.4	2	5.5
2	0.5	2	5.6
2	0.6	2	5.7
2	0.7	4	5.8
1	0.8	8	5.9
4	0.9	8	6.0
4	1.0	7	6.1
10	1.1	5	6.2
14	1.2	6	6.3
12	1.3	6	6.4
10	1.4	8	6.5
10	1.5	9	6.6
16	1.6	16	6.7
14	1.7	14	6.8
14	1.8	12	6.9
14	1.9	11	7.0
11	2.0	15	7.1
10	2.1	15	7.2
8	2.2	7	7.3
8	2.3	32	7.4
5	2.4	16	7.5
8	2.5	30	7.6
7	2.6	23	7.7
8	2.7	30	7.8
8	2.8	38	7.9
10	2.9	39	8.0
10	3.0	32	8.1
10	3.1	342	8.2
5	3.2	30	8.3
5	3.3	42	8.4
5	3.4	63	8.5
3	3.5		8.6
2	3.6		8.7
1	3.7		8.8
2	3.8		8.9
3	3.9		9.0
2	4.0		9.1
2	4.1		9.2
2	4.2		9.3
2	4.3		9.4
1	4.4		9.5
1	4.5		9.6
1	4.6		9.7
1	4.7		9.8
1	4.8		9.9
1	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

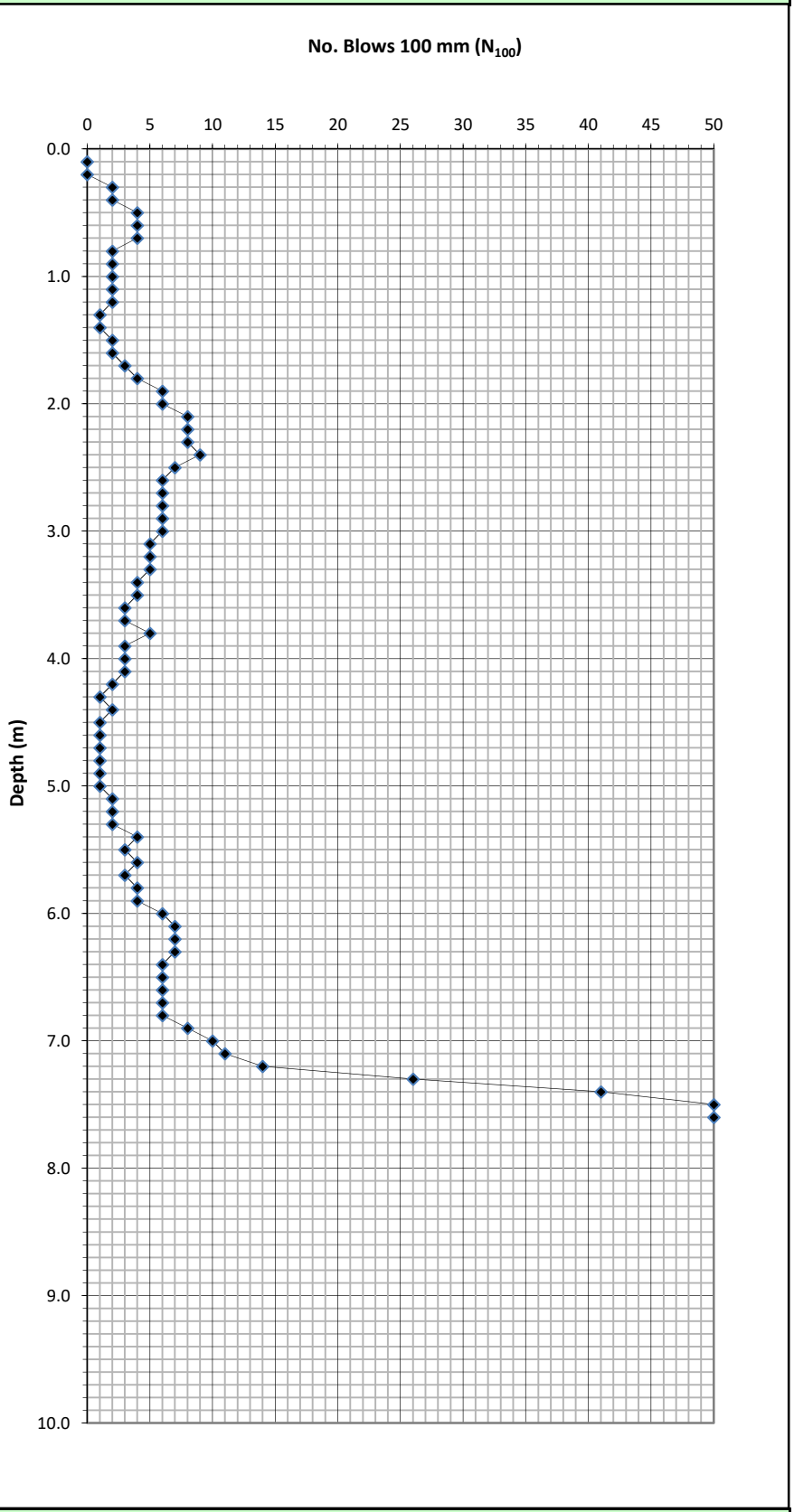
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 43**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
0	0.1	2	5.2
0	0.2	2	5.3
2	0.3	4	5.4
2	0.4	3	5.5
4	0.5	4	5.6
4	0.6	3	5.7
4	0.7	4	5.8
2	0.8	4	5.9
2	0.9	6	6.0
2	1.0	7	6.1
2	1.1	7	6.2
2	1.2	7	6.3
1	1.3	6	6.4
1	1.4	6	6.5
2	1.5	6	6.6
2	1.6	6	6.7
3	1.7	6	6.8
4	1.8	8	6.9
6	1.9	10	7.0
6	2.0	11	7.1
8	2.1	14	7.2
8	2.2	26	7.3
8	2.3	41	7.4
9	2.4	50	7.5
7	2.5	50	7.6
6	2.6		7.7
6	2.7		7.8
6	2.8		7.9
6	2.9		8.0
6	3.0		8.1
5	3.1		8.2
5	3.2		8.3
5	3.3		8.4
4	3.4		8.5
4	3.5		8.6
3	3.6		8.7
3	3.7		8.8
5	3.8		8.9
3	3.9		9.0
3	4.0		9.1
3	4.1		9.2
2	4.2		9.3
1	4.3		9.4
2	4.4		9.5
1	4.5		9.6
1	4.6		9.7
1	4.7		9.8
1	4.8		9.9
1	4.9		10.0
1	5.0		



Notes: Sheet 1 of 1.

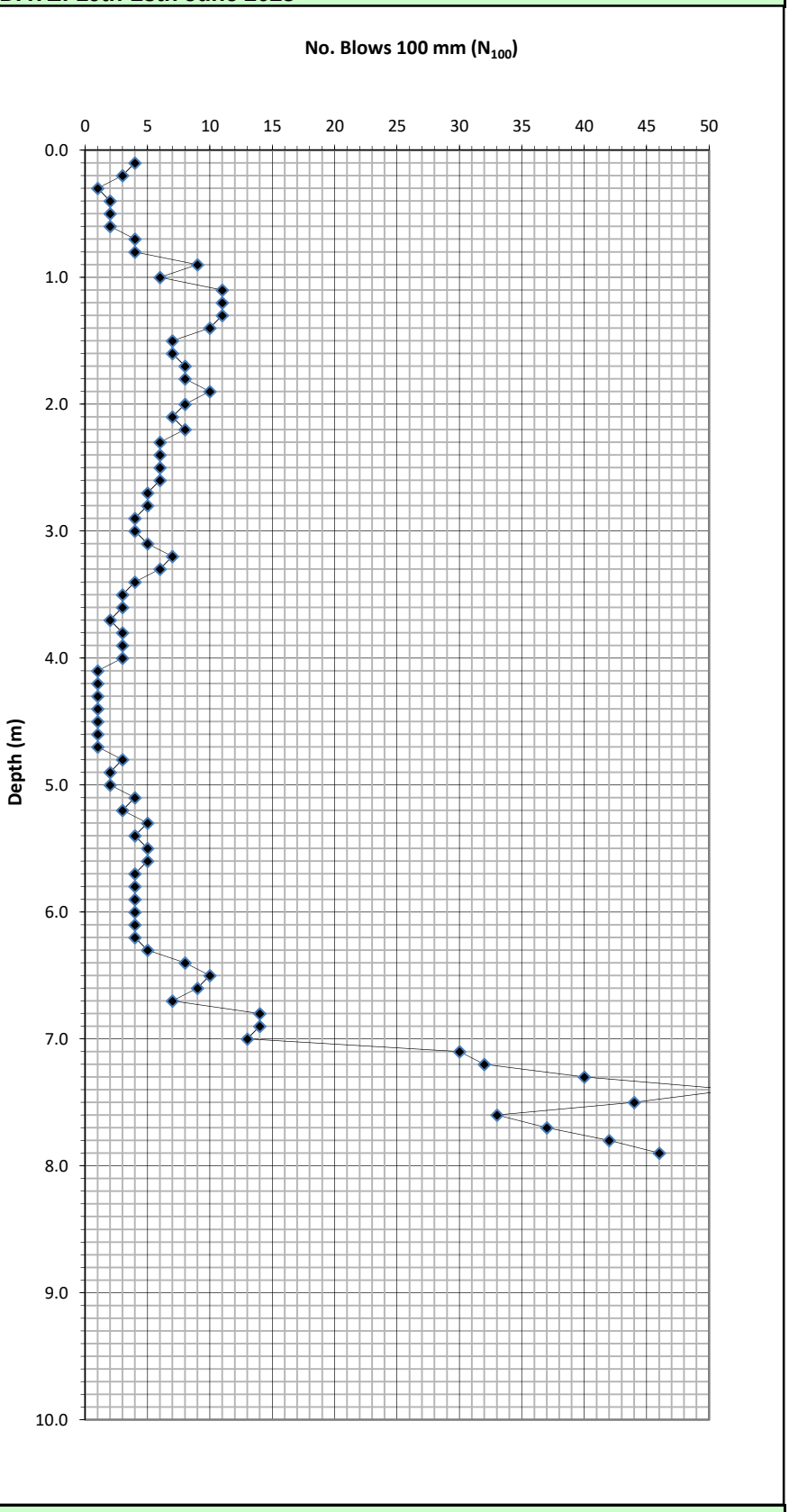
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 44**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	4	5.1
4	0.1	3	5.2
3	0.2	5	5.3
1	0.3	4	5.4
2	0.4	5	5.5
2	0.5	5	5.6
2	0.6	4	5.7
4	0.7	4	5.8
4	0.8	4	5.9
9	0.9	4	6.0
6	1.0	4	6.1
11	1.1	4	6.2
11	1.2	5	6.3
11	1.3	8	6.4
10	1.4	10	6.5
7	1.5	9	6.6
7	1.6	7	6.7
8	1.7	14	6.8
8	1.8	14	6.9
10	1.9	13	7.0
8	2.0	30	7.1
7	2.1	32	7.2
8	2.2	40	7.3
6	2.3	52	7.4
6	2.4	44	7.5
6	2.5	33	7.6
6	2.6	37	7.7
5	2.7	42	7.8
5	2.8	46	7.9
4	2.9		8.0
4	3.0		8.1
5	3.1		8.2
7	3.2		8.3
6	3.3		8.4
4	3.4		8.5
3	3.5		8.6
3	3.6		8.7
2	3.7		8.8
3	3.8		8.9
3	3.9		9.0
3	4.0		9.1
1	4.1		9.2
1	4.2		9.3
1	4.3		9.4
1	4.4		9.5
1	4.5		9.6
1	4.6		9.7
1	4.7		9.8
3	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

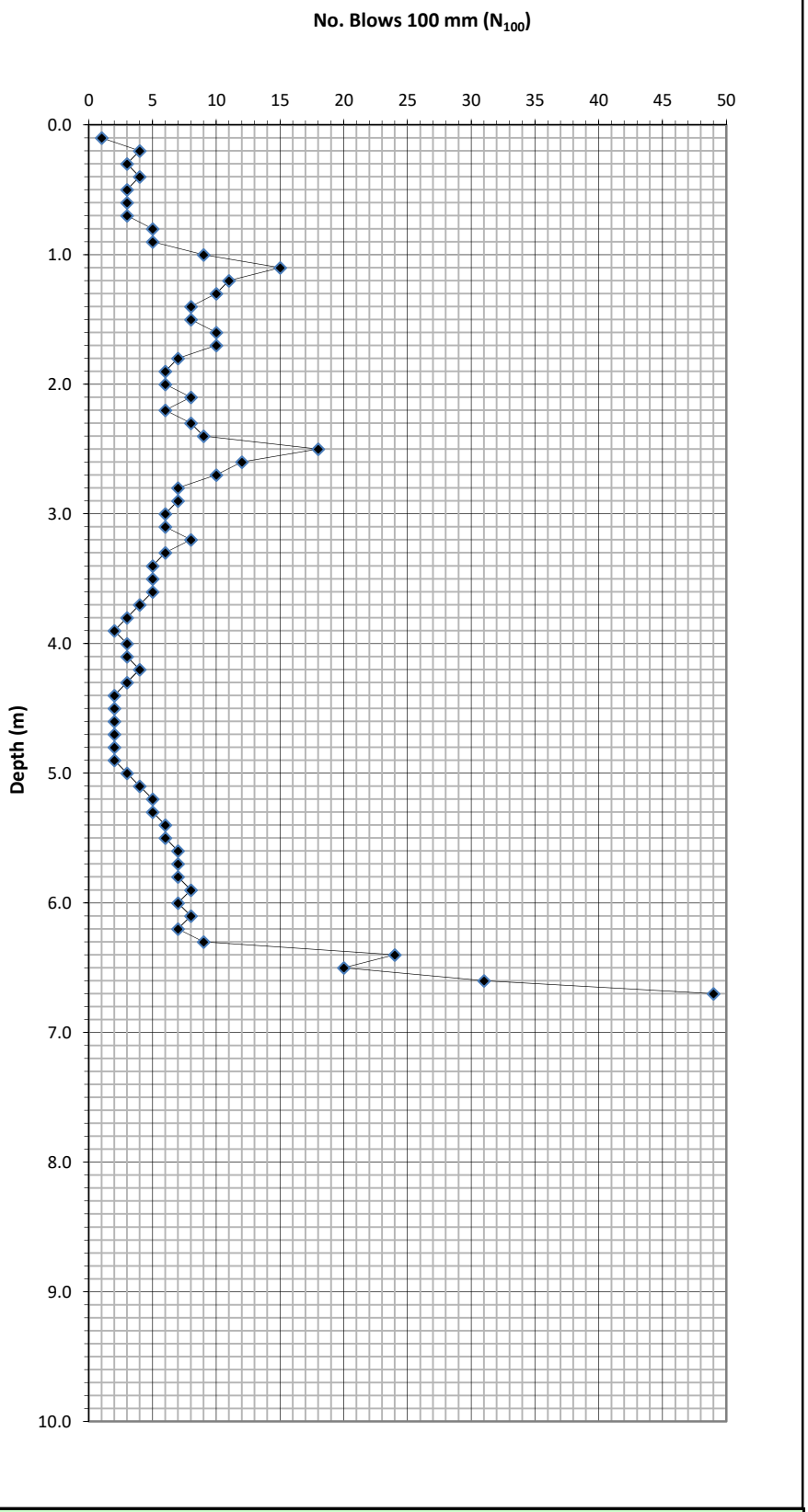
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 45**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	4	5.1
1	0.1	5	5.2
4	0.2	5	5.3
3	0.3	6	5.4
4	0.4	6	5.5
3	0.5	7	5.6
3	0.6	7	5.7
3	0.7	7	5.8
5	0.8	8	5.9
5	0.9	7	6.0
9	1.0	8	6.1
15	1.1	7	6.2
11	1.2	9	6.3
10	1.3	24	6.4
8	1.4	20	6.5
8	1.5	31	6.6
10	1.6	49	6.7
10	1.7		6.8
7	1.8		6.9
6	1.9		7.0
6	2.0		7.1
8	2.1		7.2
6	2.2		7.3
8	2.3		7.4
9	2.4		7.5
18	2.5		7.6
12	2.6		7.7
10	2.7		7.8
7	2.8		7.9
7	2.9		8.0
6	3.0		8.1
6	3.1		8.2
8	3.2		8.3
6	3.3		8.4
5	3.4		8.5
5	3.5		8.6
5	3.6		8.7
4	3.7		8.8
3	3.8		8.9
2	3.9		9.0
3	4.0		9.1
3	4.1		9.2
4	4.2		9.3
3	4.3		9.4
2	4.4		9.5
2	4.5		9.6
2	4.6		9.7
2	4.7		9.8
2	4.8		9.9
2	4.9		10.0
3	5.0		



Notes: Sheet 1 of 2.

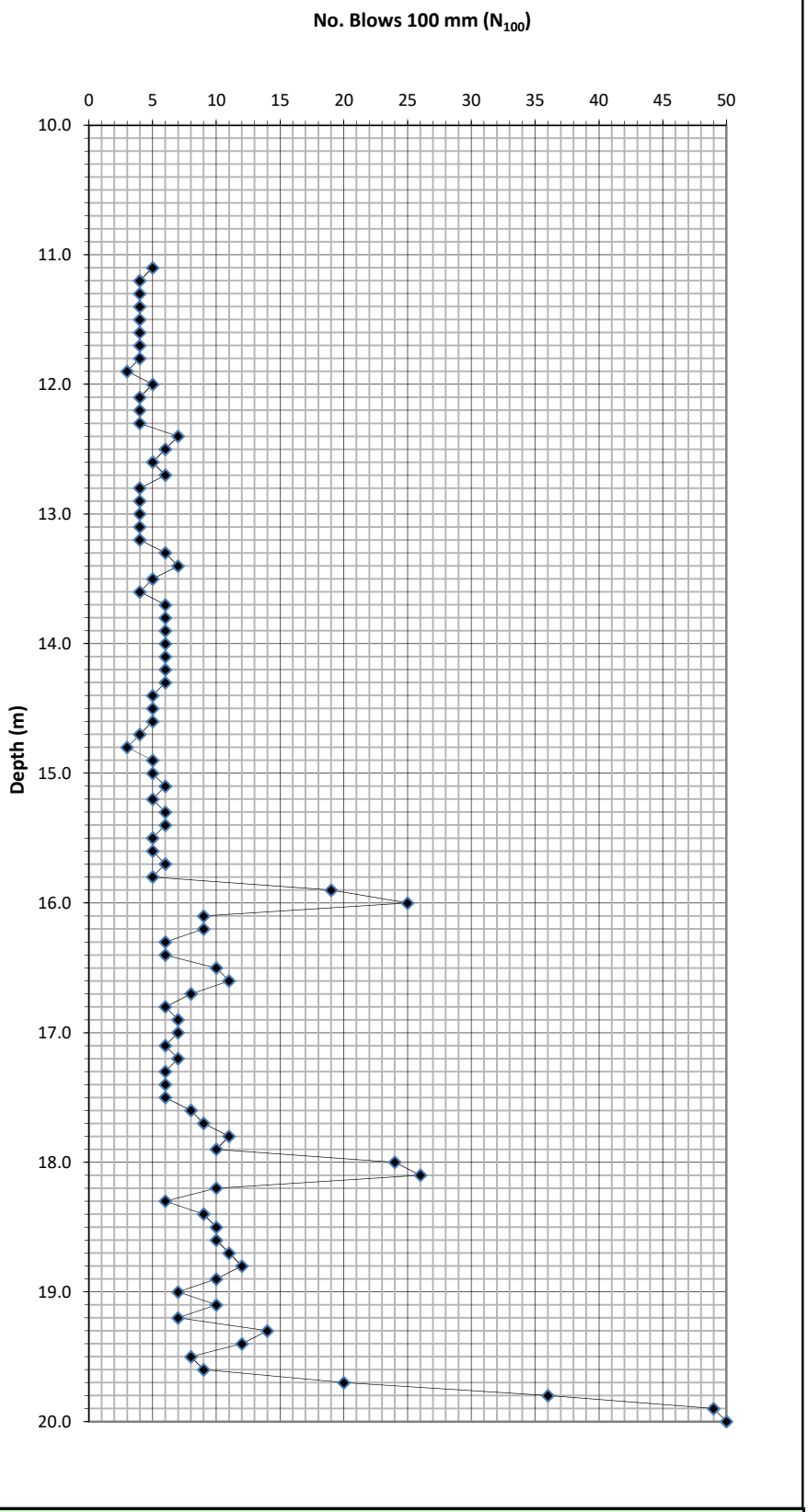
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 45 Continued**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	10.0	6	15.1
	10.1	5	15.2
	10.2	6	15.3
	10.3	6	15.4
	10.4	5	15.5
	10.5	5	15.6
	10.6	6	15.7
	10.7	5	15.8
	10.8	19	15.9
	10.9	25	16.0
	11.0	9	16.1
5	11.1	9	16.2
4	11.2	6	16.3
4	11.3	6	16.4
4	11.4	10	16.5
4	11.5	11	16.6
4	11.6	8	16.7
4	11.7	6	16.8
4	11.8	7	16.9
3	11.9	7	17.0
5	12.0	6	17.1
4	12.1	7	17.2
4	12.2	6	17.3
4	12.3	6	17.4
7	12.4	6	17.5
6	12.5	8	17.6
5	12.6	9	17.7
6	12.7	11	17.8
4	12.8	10	17.9
4	12.9	24	18.0
4	13.0	26	18.1
4	13.1	10	18.2
4	13.2	6	18.3
6	13.3	9	18.4
7	13.4	10	18.5
5	13.5	10	18.6
4	13.6	11	18.7
6	13.7	12	18.8
6	13.8	10	18.9
6	13.9	7	19.0
6	14.0	10	19.1
6	14.1	7	19.2
6	14.2	14	19.3
6	14.3	12	19.4
5	14.4	8	19.5
5	14.5	9	19.6
5	14.6	20	19.7
4	14.7	36	19.8
3	14.8	49	19.9
5	14.9	50	20.0
5	15.0		



Notes: Sheet 2 of 2.

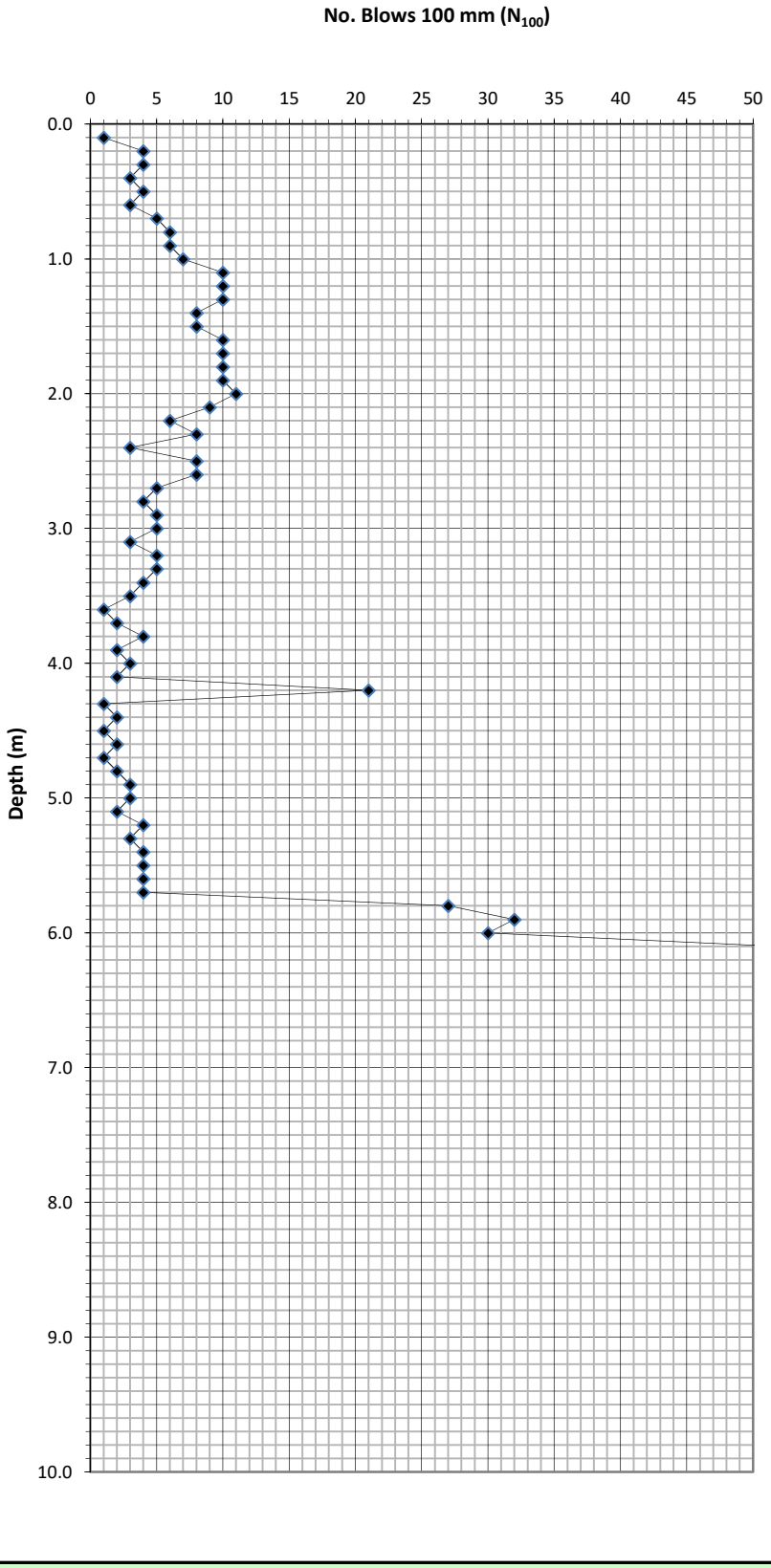
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 46**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
1	0.1	4	5.2
4	0.2	3	5.3
4	0.3	4	5.4
3	0.4	4	5.5
4	0.5	4	5.6
3	0.6	4	5.7
5	0.7	27	5.8
6	0.8	32	5.9
6	0.9	30	6.0
7	1.0	52	6.1
10	1.1	72	6.2
10	1.2		6.3
10	1.3		6.4
8	1.4		6.5
8	1.5		6.6
10	1.6		6.7
10	1.7		6.8
10	1.8		6.9
10	1.9		7.0
11	2.0		7.1
9	2.1		7.2
6	2.2		7.3
8	2.3		7.4
3	2.4		7.5
8	2.5		7.6
8	2.6		7.7
5	2.7		7.8
4	2.8		7.9
5	2.9		8.0
5	3.0		8.1
3	3.1		8.2
5	3.2		8.3
5	3.3		8.4
4	3.4		8.5
3	3.5		8.6
1	3.6		8.7
2	3.7		8.8
4	3.8		8.9
2	3.9		9.0
3	4.0		9.1
2	4.1		9.2
21	4.2		9.3
1	4.3		9.4
2	4.4		9.5
1	4.5		9.6
2	4.6		9.7
1	4.7		9.8
2	4.8		9.9
3	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

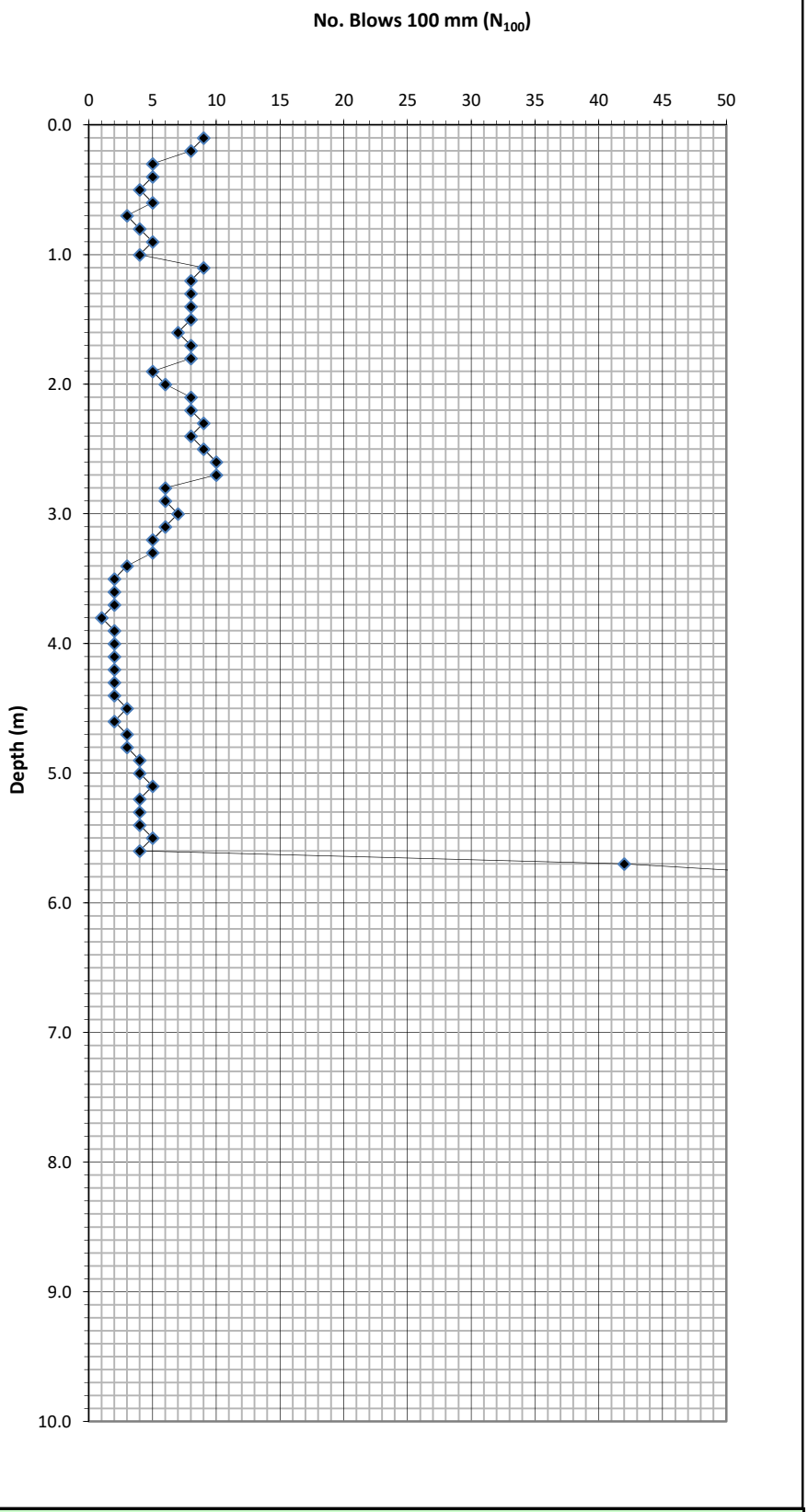
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 47**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	5	5.1
9	0.1	4	5.2
8	0.2	4	5.3
5	0.3	4	5.4
5	0.4	5	5.5
4	0.5	4	5.6
5	0.6	42	5.7
3	0.7	59	5.8
4	0.8	103	5.9
5	0.9		6.0
4	1.0		6.1
9	1.1		6.2
8	1.2		6.3
8	1.3		6.4
8	1.4		6.5
8	1.5		6.6
7	1.6		6.7
8	1.7		6.8
8	1.8		6.9
5	1.9		7.0
6	2.0		7.1
8	2.1		7.2
8	2.2		7.3
9	2.3		7.4
8	2.4		7.5
9	2.5		7.6
10	2.6		7.7
10	2.7		7.8
6	2.8		7.9
6	2.9		8.0
7	3.0		8.1
6	3.1		8.2
5	3.2		8.3
5	3.3		8.4
3	3.4		8.5
2	3.5		8.6
2	3.6		8.7
2	3.7		8.8
1	3.8		8.9
2	3.9		9.0
2	4.0		9.1
2	4.1		9.2
2	4.2		9.3
2	4.3		9.4
2	4.4		9.5
3	4.5		9.6
2	4.6		9.7
3	4.7		9.8
3	4.8		9.9
4	4.9		10.0
4	5.0		



Notes: Sheet 1 of 1.

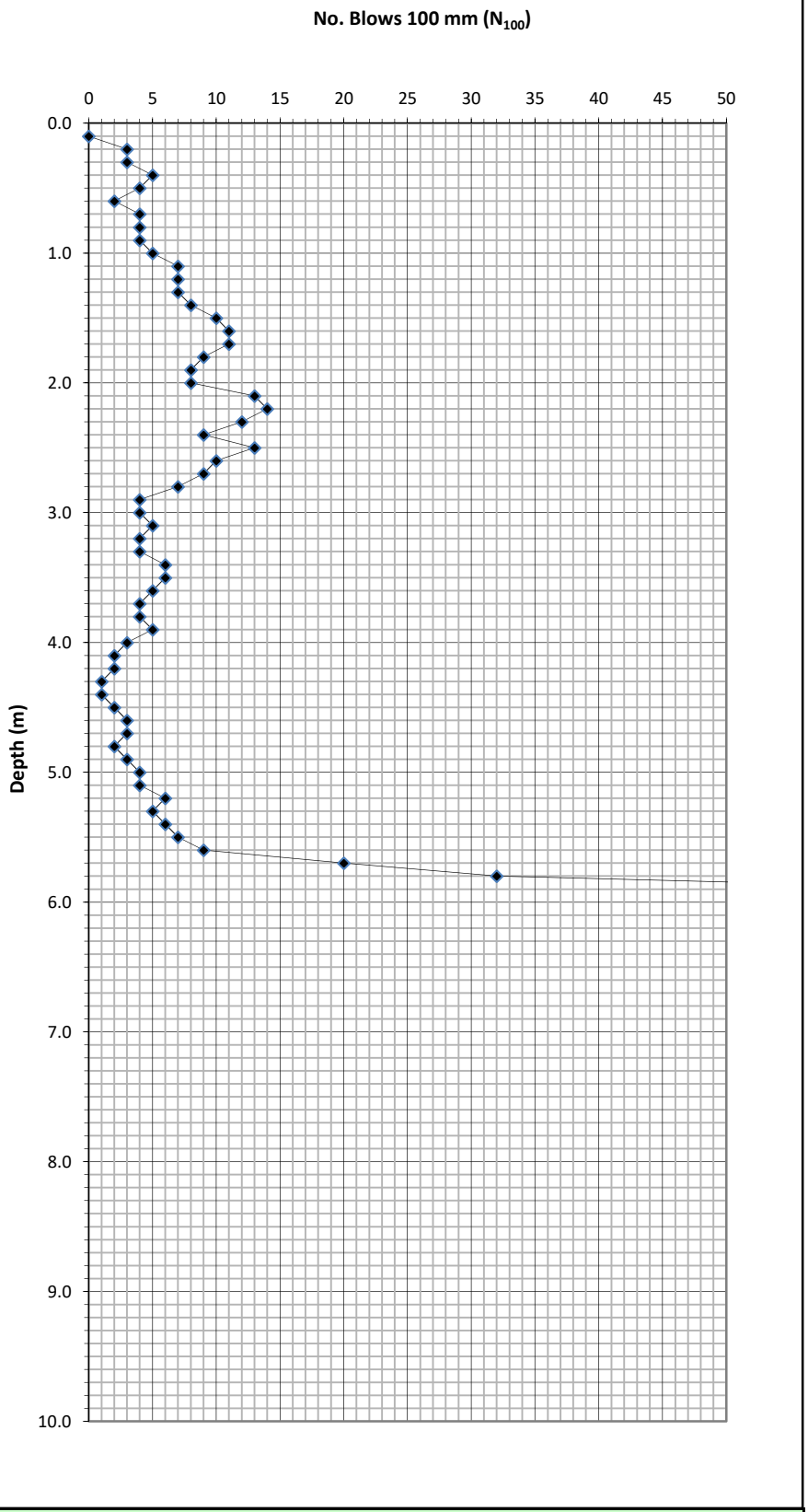
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 48**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	4	5.1
0	0.1	6	5.2
3	0.2	5	5.3
3	0.3	6	5.4
5	0.4	7	5.5
4	0.5	9	5.6
2	0.6	20	5.7
4	0.7	32	5.8
4	0.8	72	5.9
4	0.9		6.0
5	1.0		6.1
7	1.1		6.2
7	1.2		6.3
7	1.3		6.4
8	1.4		6.5
10	1.5		6.6
11	1.6		6.7
11	1.7		6.8
9	1.8		6.9
8	1.9		7.0
8	2.0		7.1
13	2.1		7.2
14	2.2		7.3
12	2.3		7.4
9	2.4		7.5
13	2.5		7.6
10	2.6		7.7
9	2.7		7.8
7	2.8		7.9
4	2.9		8.0
4	3.0		8.1
5	3.1		8.2
4	3.2		8.3
4	3.3		8.4
6	3.4		8.5
6	3.5		8.6
5	3.6		8.7
4	3.7		8.8
4	3.8		8.9
5	3.9		9.0
3	4.0		9.1
2	4.1		9.2
2	4.2		9.3
1	4.3		9.4
1	4.4		9.5
2	4.5		9.6
3	4.6		9.7
3	4.7		9.8
2	4.8		9.9
3	4.9		10.0
4	5.0		



Notes: Sheet 1 of 1.

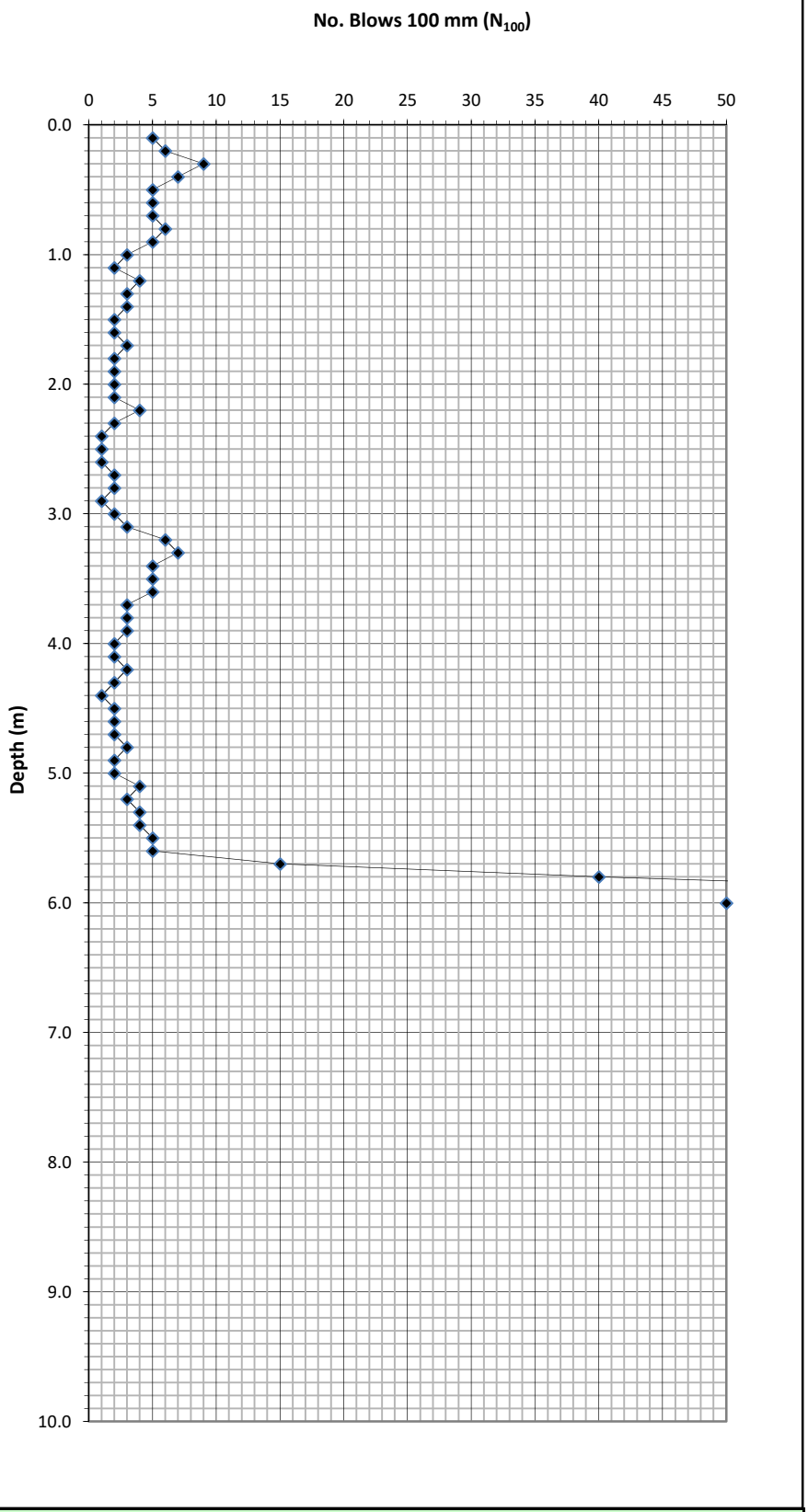
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 49**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	4	5.1
5	0.1	3	5.2
6	0.2	4	5.3
9	0.3	4	5.4
7	0.4	5	5.5
5	0.5	5	5.6
5	0.6	15	5.7
5	0.7	40	5.8
6	0.8	72	5.9
5	0.9	50	6.0
3	1.0		6.1
2	1.1		6.2
4	1.2		6.3
3	1.3		6.4
3	1.4		6.5
2	1.5		6.6
2	1.6		6.7
3	1.7		6.8
2	1.8		6.9
2	1.9		7.0
2	2.0		7.1
2	2.1		7.2
4	2.2		7.3
2	2.3		7.4
1	2.4		7.5
1	2.5		7.6
1	2.6		7.7
2	2.7		7.8
2	2.8		7.9
1	2.9		8.0
2	3.0		8.1
3	3.1		8.2
6	3.2		8.3
7	3.3		8.4
5	3.4		8.5
5	3.5		8.6
5	3.6		8.7
3	3.7		8.8
3	3.8		8.9
3	3.9		9.0
2	4.0		9.1
2	4.1		9.2
3	4.2		9.3
2	4.3		9.4
1	4.4		9.5
2	4.5		9.6
2	4.6		9.7
2	4.7		9.8
3	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

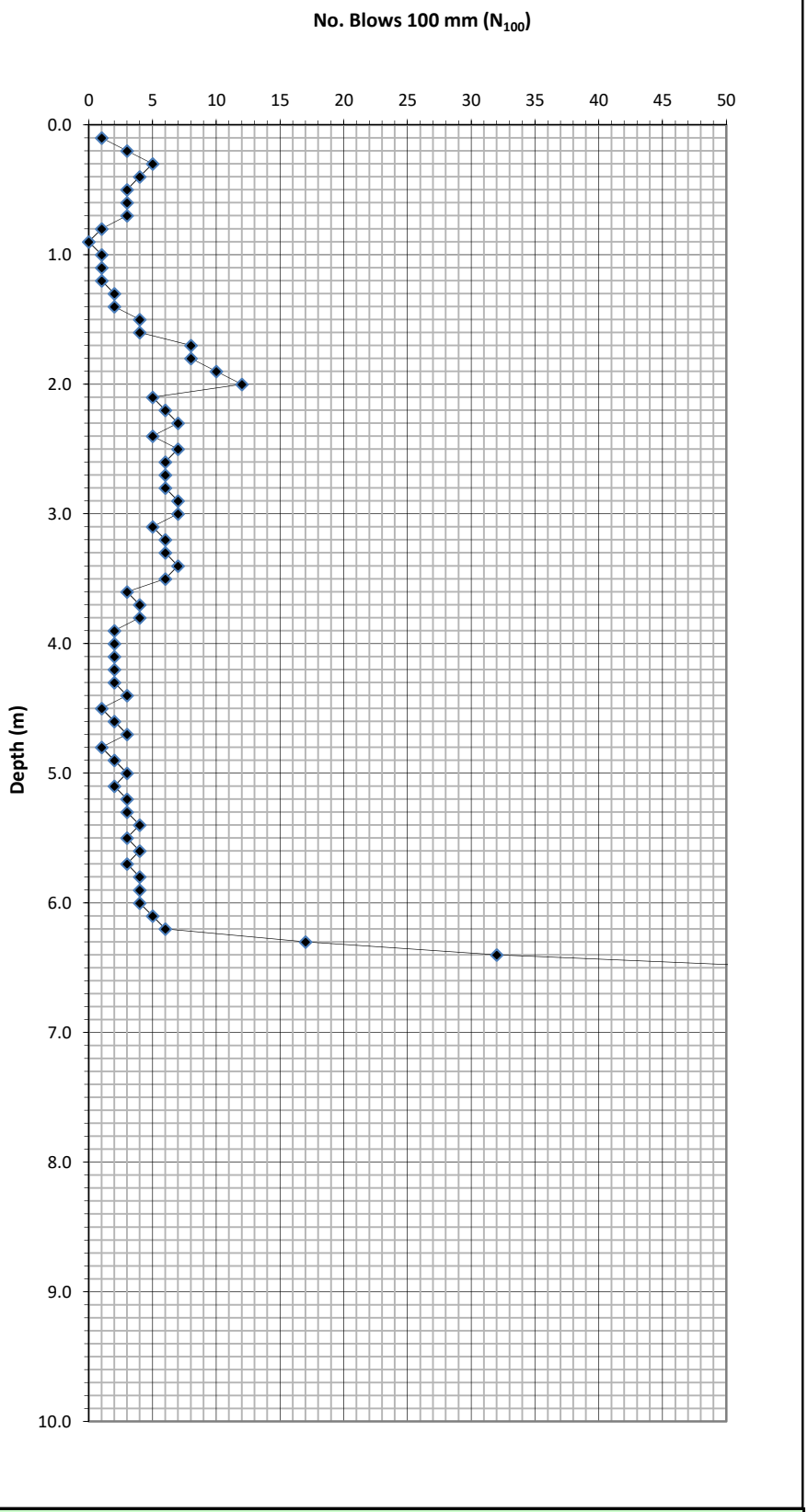
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 50**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	2	5.1
1	0.1	3	5.2
3	0.2	3	5.3
5	0.3	4	5.4
4	0.4	3	5.5
3	0.5	4	5.6
3	0.6	3	5.7
3	0.7	4	5.8
1	0.8	4	5.9
0	0.9	4	6.0
1	1.0	5	6.1
1	1.1	6	6.2
1	1.2	17	6.3
2	1.3	32	6.4
2	1.4	56	6.5
4	1.5	75	6.6
4	1.6		6.7
8	1.7		6.8
8	1.8		6.9
10	1.9		7.0
12	2.0		7.1
5	2.1		7.2
6	2.2		7.3
7	2.3		7.4
5	2.4		7.5
7	2.5		7.6
6	2.6		7.7
6	2.7		7.8
6	2.8		7.9
7	2.9		8.0
7	3.0		8.1
5	3.1		8.2
6	3.2		8.3
6	3.3		8.4
7	3.4		8.5
6	3.5		8.6
3	3.6		8.7
4	3.7		8.8
4	3.8		8.9
2	3.9		9.0
2	4.0		9.1
2	4.1		9.2
2	4.2		9.3
2	4.3		9.4
3	4.4		9.5
1	4.5		9.6
2	4.6		9.7
3	4.7		9.8
1	4.8		9.9
2	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

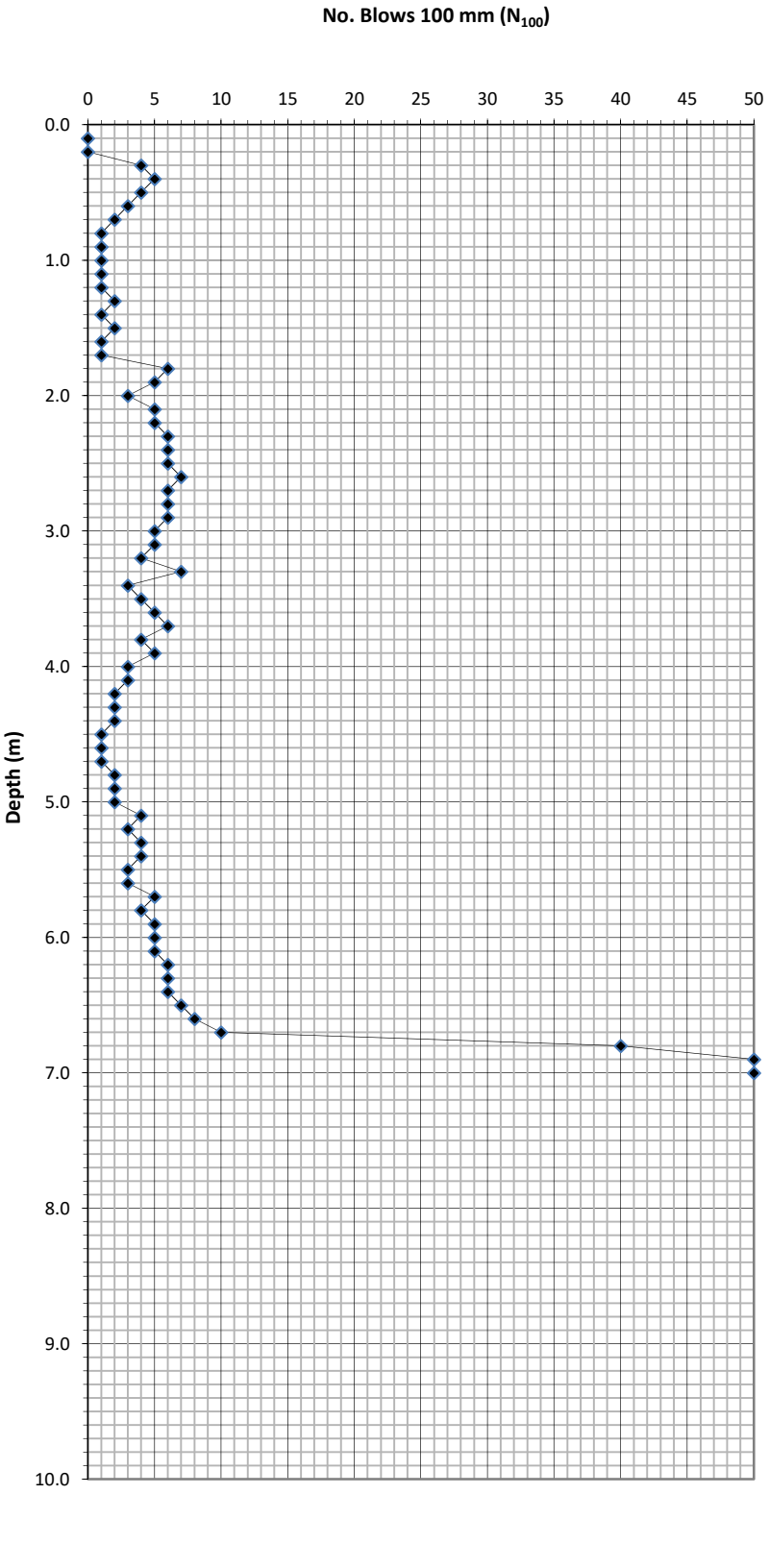
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 51**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	4	5.1
0	0.1	3	5.2
0	0.2	4	5.3
4	0.3	4	5.4
5	0.4	3	5.5
4	0.5	3	5.6
3	0.6	5	5.7
2	0.7	4	5.8
1	0.8	5	5.9
1	0.9	5	6.0
1	1.0	5	6.1
1	1.1	6	6.2
1	1.2	6	6.3
2	1.3	6	6.4
1	1.4	7	6.5
2	1.5	8	6.6
1	1.6	10	6.7
1	1.7	40	6.8
6	1.8	50	6.9
5	1.9	50	7.0
3	2.0		7.1
5	2.1		7.2
5	2.2		7.3
6	2.3		7.4
6	2.4		7.5
6	2.5		7.6
7	2.6		7.7
6	2.7		7.8
6	2.8		7.9
6	2.9		8.0
5	3.0		8.1
5	3.1		8.2
4	3.2		8.3
7	3.3		8.4
3	3.4		8.5
4	3.5		8.6
5	3.6		8.7
6	3.7		8.8
4	3.8		8.9
5	3.9		9.0
3	4.0		9.1
3	4.1		9.2
2	4.2		9.3
2	4.3		9.4
2	4.4		9.5
1	4.5		9.6
1	4.6		9.7
1	4.7		9.8
2	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

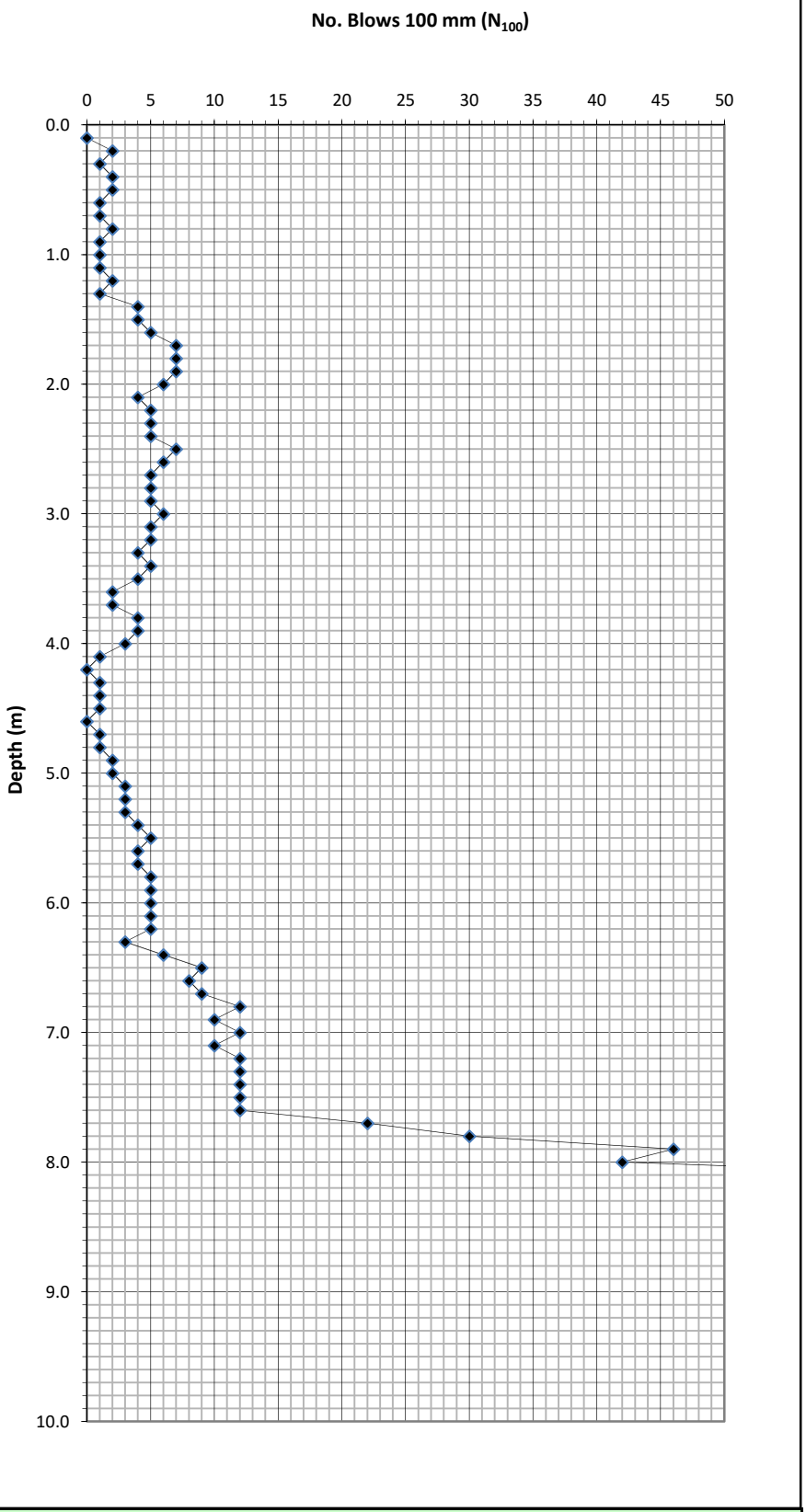
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 52**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
0	0.1	3	5.2
2	0.2	3	5.3
1	0.3	4	5.4
2	0.4	5	5.5
2	0.5	4	5.6
1	0.6	4	5.7
1	0.7	5	5.8
2	0.8	5	5.9
1	0.9	5	6.0
1	1.0	5	6.1
1	1.1	5	6.2
2	1.2	3	6.3
1	1.3	6	6.4
4	1.4	9	6.5
4	1.5	8	6.6
5	1.6	9	6.7
7	1.7	12	6.8
7	1.8	10	6.9
7	1.9	12	7.0
6	2.0	10	7.1
4	2.1	12	7.2
5	2.2	12	7.3
5	2.3	12	7.4
5	2.4	12	7.5
7	2.5	12	7.6
6	2.6	22	7.7
5	2.7	30	7.8
5	2.8	46	7.9
5	2.9	42	8.0
6	3.0	70	8.1
5	3.1		8.2
5	3.2		8.3
4	3.3		8.4
5	3.4		8.5
4	3.5		8.6
2	3.6		8.7
2	3.7		8.8
4	3.8		8.9
4	3.9		9.0
3	4.0		9.1
1	4.1		9.2
0	4.2		9.3
1	4.3		9.4
1	4.4		9.5
1	4.5		9.6
0	4.6		9.7
1	4.7		9.8
1	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

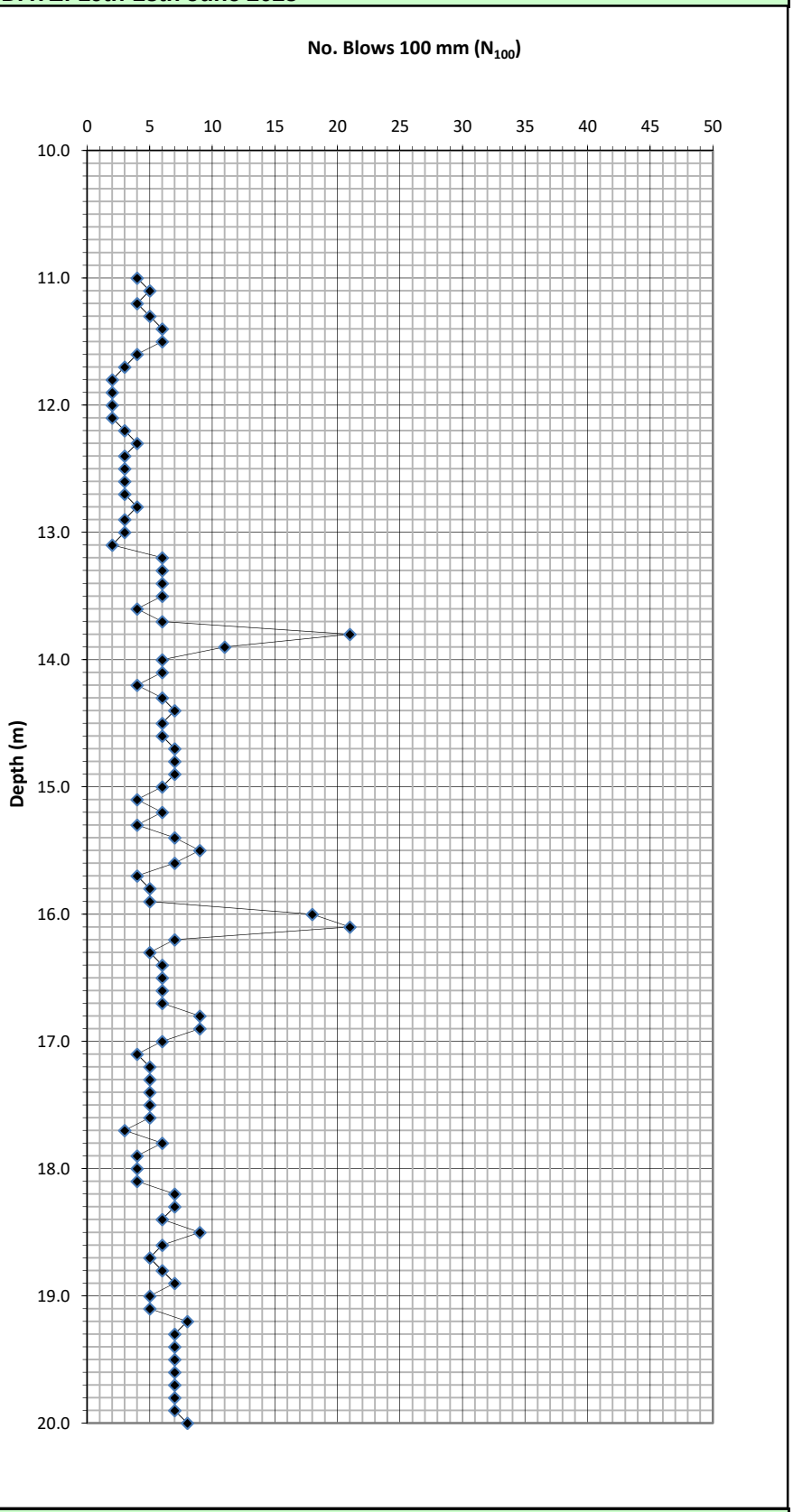
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 53**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	10.0	4	15.1
	10.1	6	15.2
	10.2	4	15.3
	10.3	7	15.4
	10.4	9	15.5
	10.5	7	15.6
	10.6	4	15.7
	10.7	5	15.8
	10.8	5	15.9
	10.9	18	16.0
4	11.0	21	16.1
5	11.1	7	16.2
4	11.2	5	16.3
5	11.3	6	16.4
6	11.4	6	16.5
6	11.5	6	16.6
4	11.6	6	16.7
3	11.7	9	16.8
2	11.8	9	16.9
2	11.9	6	17.0
2	12.0	4	17.1
2	12.1	5	17.2
3	12.2	5	17.3
4	12.3	5	17.4
3	12.4	5	17.5
3	12.5	5	17.6
3	12.6	3	17.7
3	12.7	6	17.8
4	12.8	4	17.9
3	12.9	4	18.0
3	13.0	4	18.1
2	13.1	7	18.2
6	13.2	7	18.3
6	13.3	6	18.4
6	13.4	9	18.5
6	13.5	6	18.6
4	13.6	5	18.7
6	13.7	6	18.8
21	13.8	7	18.9
11	13.9	5	19.0
6	14.0	5	19.1
6	14.1	8	19.2
4	14.2	7	19.3
6	14.3	7	19.4
7	14.4	7	19.5
6	14.5	7	19.6
6	14.6	7	19.7
7	14.7	7	19.8
7	14.8	7	19.9
7	14.9	8	20.0
6	15.0		



Notes: Sheet 1 of 2. Probe started at 11.0m BGL

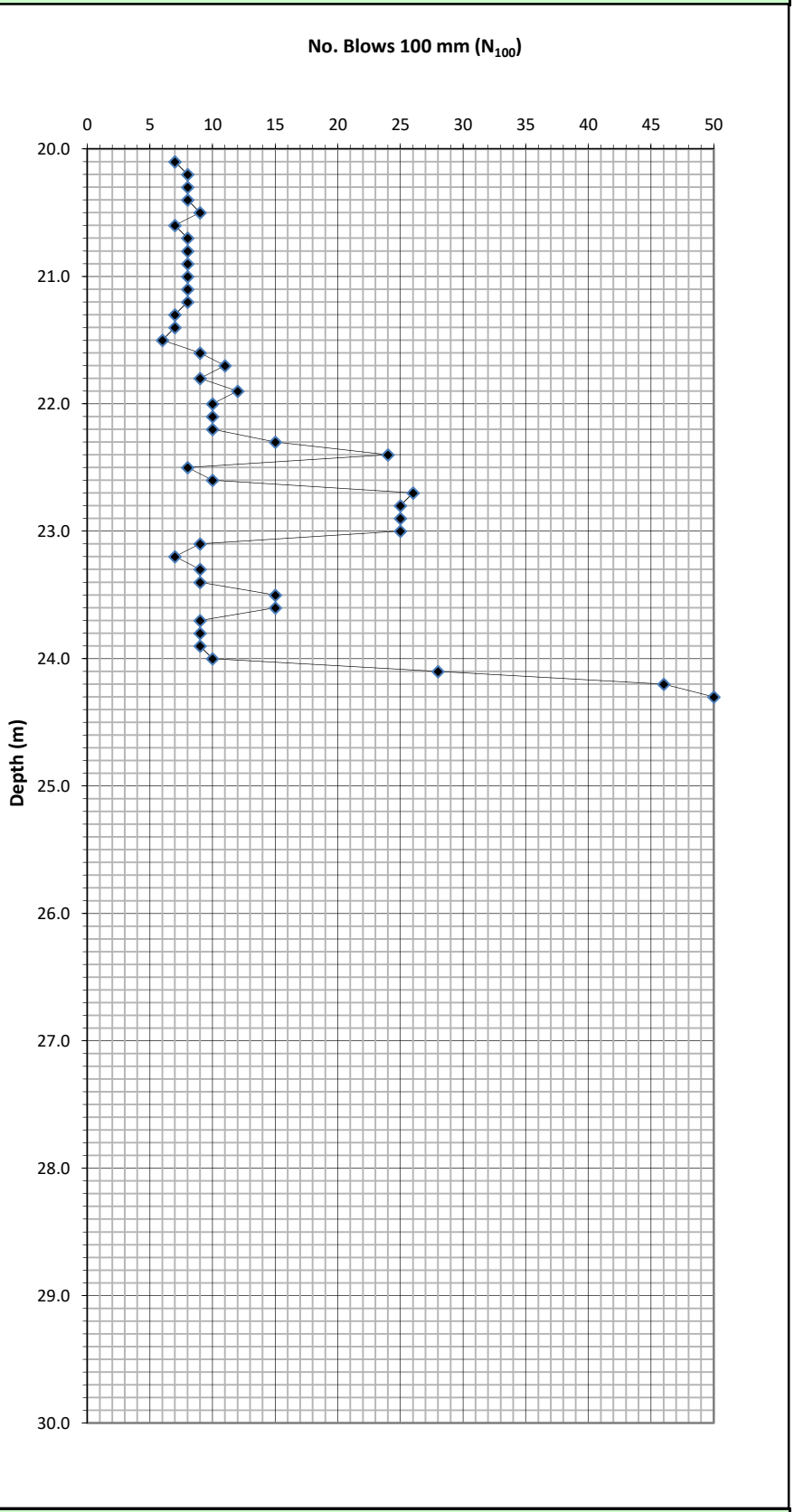
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 53 Continued**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	20.0		25.1
7	20.1		25.2
8	20.2		25.3
8	20.3		25.4
8	20.4		25.5
9	20.5		25.6
7	20.6		25.7
8	20.7		25.8
8	20.8		25.9
8	20.9		26.0
8	21.0		26.1
8	21.1		26.2
8	21.2		26.3
7	21.3		26.4
7	21.4		26.5
6	21.5		26.6
9	21.6		26.7
11	21.7		26.8
9	21.8		26.9
12	21.9		27.0
10	22.0		27.1
10	22.1		27.2
10	22.2		27.3
15	22.3		27.4
24	22.4		27.5
8	22.5		27.6
10	22.6		27.7
26	22.7		27.8
25	22.8		27.9
25	22.9		28.0
25	23.0		28.1
9	23.1		28.2
7	23.2		28.3
9	23.3		28.4
9	23.4		28.5
15	23.5		28.6
15	23.6		28.7
9	23.7		28.8
9	23.8		28.9
9	23.9		29.0
10	24.0		29.1
28	24.1		29.2
46	24.2		29.3
50	24.3		29.4
	24.4		29.5
	24.5		29.6
	24.6		29.7
	24.7		29.8
	24.8		29.9
	24.9		30.0
	25.0		



Notes: Sheet 2 of 2.

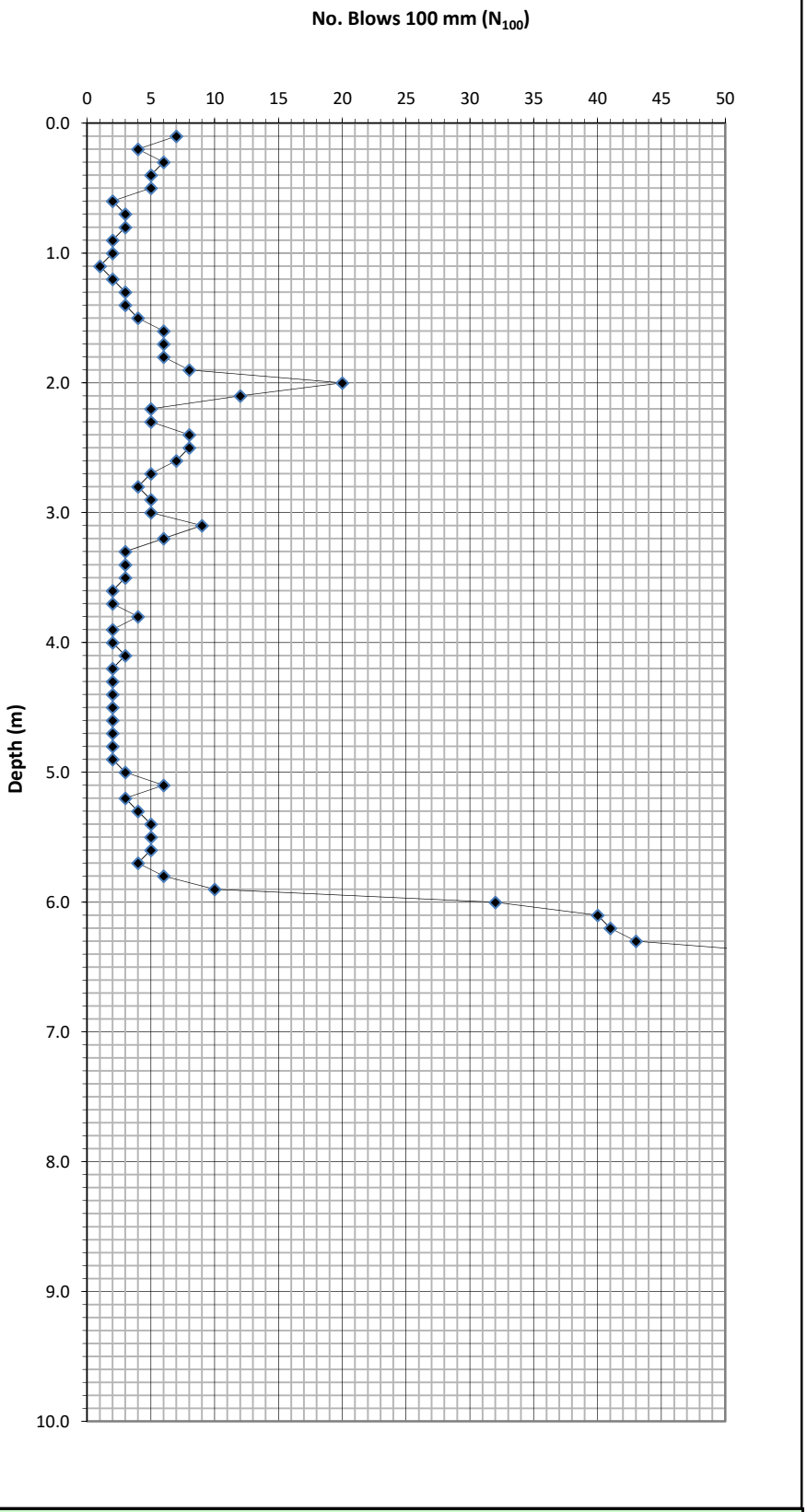
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 55**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	6	5.1
7	0.1	3	5.2
4	0.2	4	5.3
6	0.3	5	5.4
5	0.4	5	5.5
5	0.5	5	5.6
2	0.6	4	5.7
3	0.7	6	5.8
3	0.8	10	5.9
2	0.9	32	6.0
2	1.0	40	6.1
1	1.1	41	6.2
2	1.2	43	6.3
3	1.3	56	6.4
3	1.4		6.5
4	1.5		6.6
6	1.6		6.7
6	1.7		6.8
6	1.8		6.9
8	1.9		7.0
20	2.0		7.1
12	2.1		7.2
5	2.2		7.3
5	2.3		7.4
8	2.4		7.5
8	2.5		7.6
7	2.6		7.7
5	2.7		7.8
4	2.8		7.9
5	2.9		8.0
5	3.0		8.1
9	3.1		8.2
6	3.2		8.3
3	3.3		8.4
3	3.4		8.5
3	3.5		8.6
2	3.6		8.7
2	3.7		8.8
4	3.8		8.9
2	3.9		9.0
2	4.0		9.1
3	4.1		9.2
2	4.2		9.3
2	4.3		9.4
2	4.4		9.5
2	4.5		9.6
2	4.6		9.7
2	4.7		9.8
2	4.8		9.9
2	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

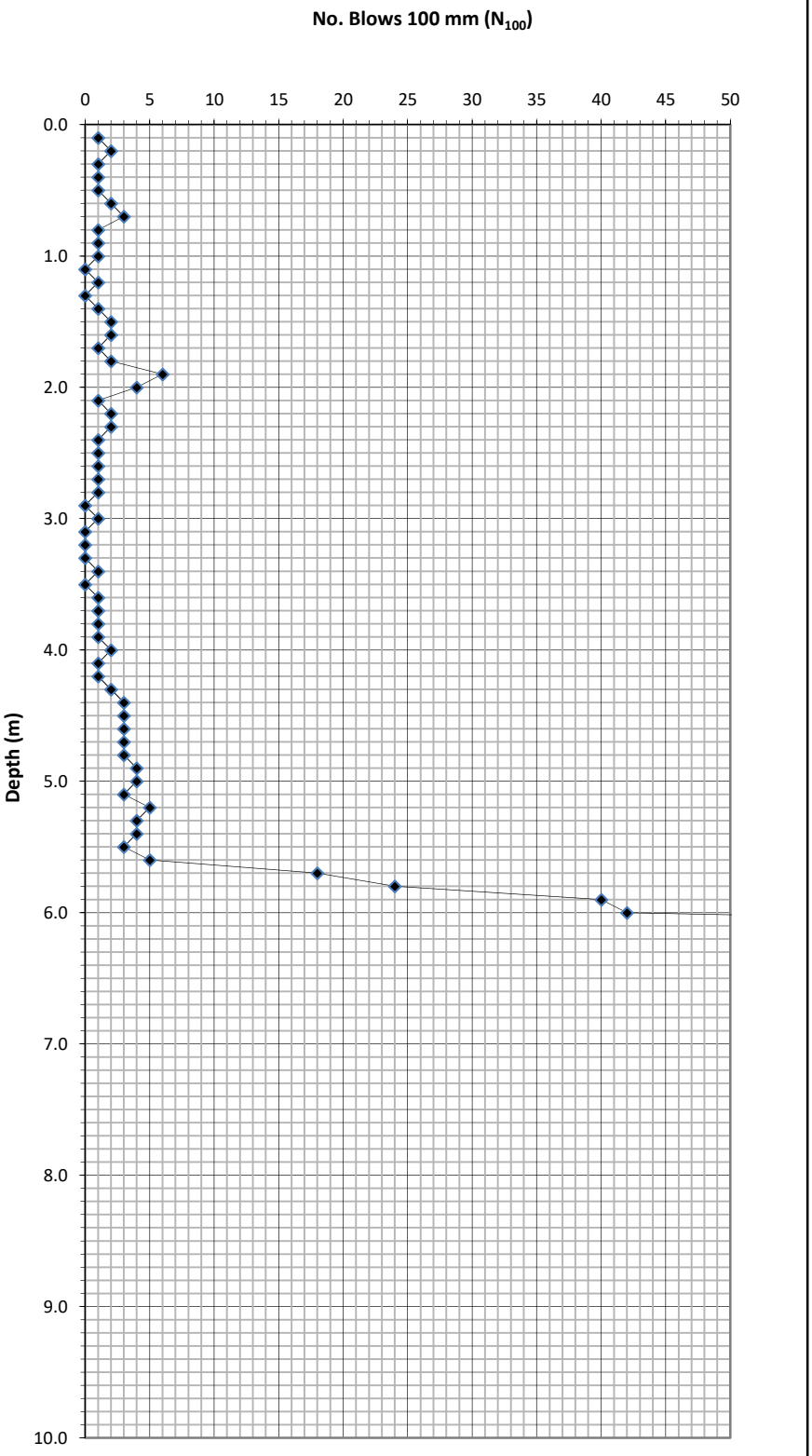
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 56**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
1	0.1	5	5.2
2	0.2	4	5.3
1	0.3	4	5.4
1	0.4	3	5.5
1	0.5	5	5.6
2	0.6	18	5.7
3	0.7	24	5.8
1	0.8	40	5.9
1	0.9	42	6.0
1	1.0	93	6.1
0	1.1		6.2
1	1.2		6.3
0	1.3		6.4
1	1.4		6.5
2	1.5		6.6
2	1.6		6.7
1	1.7		6.8
2	1.8		6.9
6	1.9		7.0
4	2.0		7.1
1	2.1		7.2
2	2.2		7.3
2	2.3		7.4
1	2.4		7.5
1	2.5		7.6
1	2.6		7.7
1	2.7		7.8
1	2.8		7.9
0	2.9		8.0
1	3.0		8.1
0	3.1		8.2
0	3.2		8.3
0	3.3		8.4
1	3.4		8.5
0	3.5		8.6
1	3.6		8.7
1	3.7		8.8
1	3.8		8.9
1	3.9		9.0
2	4.0		9.1
1	4.1		9.2
1	4.2		9.3
2	4.3		9.4
3	4.4		9.5
3	4.5		9.6
3	4.6		9.7
3	4.7		9.8
3	4.8		9.9
4	4.9		10.0
4	5.0		



Notes: Sheet 1 of 1.

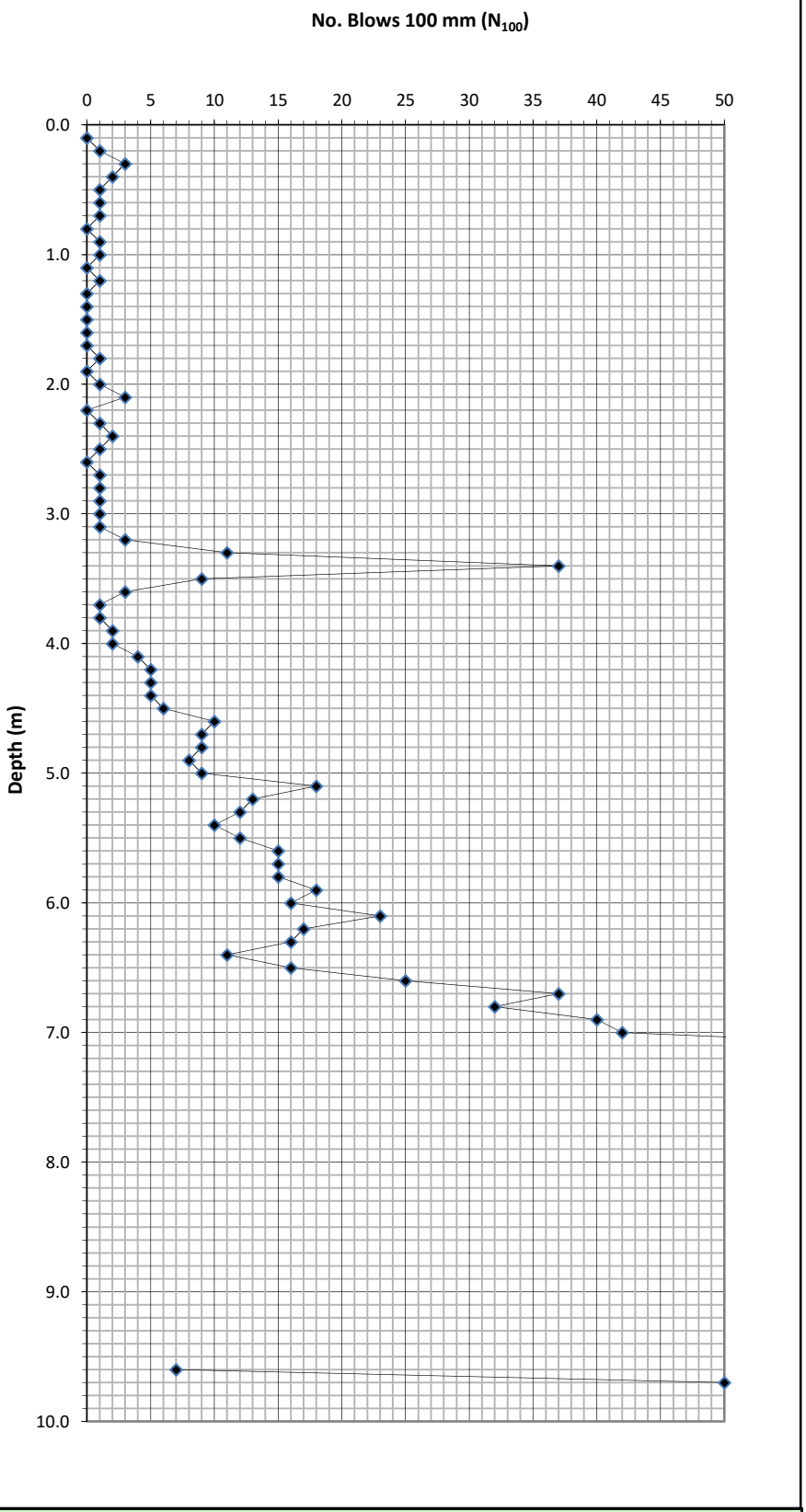
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 57**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	18	5.1
0	0.1	13	5.2
1	0.2	12	5.3
3	0.3	10	5.4
2	0.4	12	5.5
1	0.5	15	5.6
1	0.6	15	5.7
1	0.7	15	5.8
0	0.8	18	5.9
1	0.9	16	6.0
1	1.0	23	6.1
0	1.1	17	6.2
1	1.2	16	6.3
0	1.3	11	6.4
0	1.4	16	6.5
0	1.5	25	6.6
0	1.6	37	6.7
0	1.7	32	6.8
1	1.8	40	6.9
0	1.9	42	7.0
1	2.0	66	7.1
3	2.1		7.2
0	2.2		7.3
1	2.3		7.4
2	2.4		7.5
1	2.5		7.6
0	2.6		7.7
1	2.7		7.8
1	2.8		7.9
1	2.9		8.0
1	3.0		8.1
1	3.1		8.2
3	3.2		8.3
11	3.3		8.4
37	3.4		8.5
9	3.5		8.6
3	3.6		8.7
1	3.7		8.8
1	3.8		8.9
2	3.9		9.0
2	4.0		9.1
4	4.1		9.2
5	4.2		9.3
5	4.3		9.4
5	4.4		9.5
6	4.5	7	9.6
10	4.6	50	9.7
9	4.7		9.8
9	4.8		9.9
8	4.9		10.0
9	5.0		



Notes: Sheet 1 of 1.

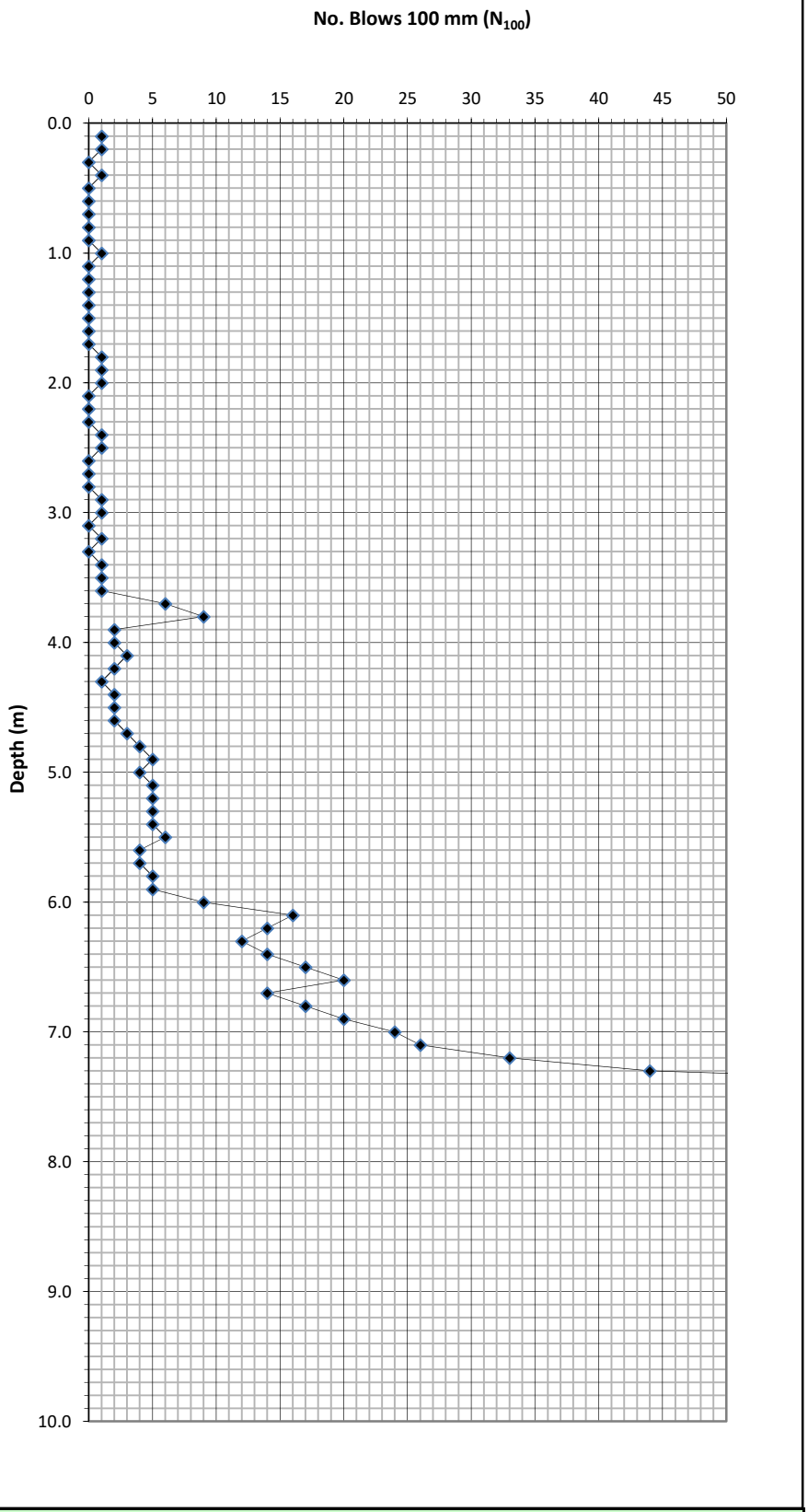
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 59**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	5	5.1
1	0.1	5	5.2
1	0.2	5	5.3
0	0.3	5	5.4
1	0.4	6	5.5
0	0.5	4	5.6
0	0.6	4	5.7
0	0.7	5	5.8
0	0.8	5	5.9
0	0.9	9	6.0
1	1.0	16	6.1
0	1.1	14	6.2
0	1.2	12	6.3
0	1.3	14	6.4
0	1.4	17	6.5
0	1.5	20	6.6
0	1.6	14	6.7
0	1.7	17	6.8
1	1.8	20	6.9
1	1.9	24	7.0
1	2.0	26	7.1
0	2.1	33	7.2
0	2.2	44	7.3
0	2.3	76	7.4
1	2.4		7.5
1	2.5		7.6
0	2.6		7.7
0	2.7		7.8
0	2.8		7.9
1	2.9		8.0
1	3.0		8.1
0	3.1		8.2
1	3.2		8.3
0	3.3		8.4
1	3.4		8.5
1	3.5		8.6
1	3.6		8.7
6	3.7		8.8
9	3.8		8.9
2	3.9		9.0
2	4.0		9.1
3	4.1		9.2
2	4.2		9.3
1	4.3		9.4
2	4.4		9.5
2	4.5		9.6
2	4.6		9.7
3	4.7		9.8
4	4.8		9.9
5	4.9		10.0
4	5.0		



Notes: Sheet 1 of 1.

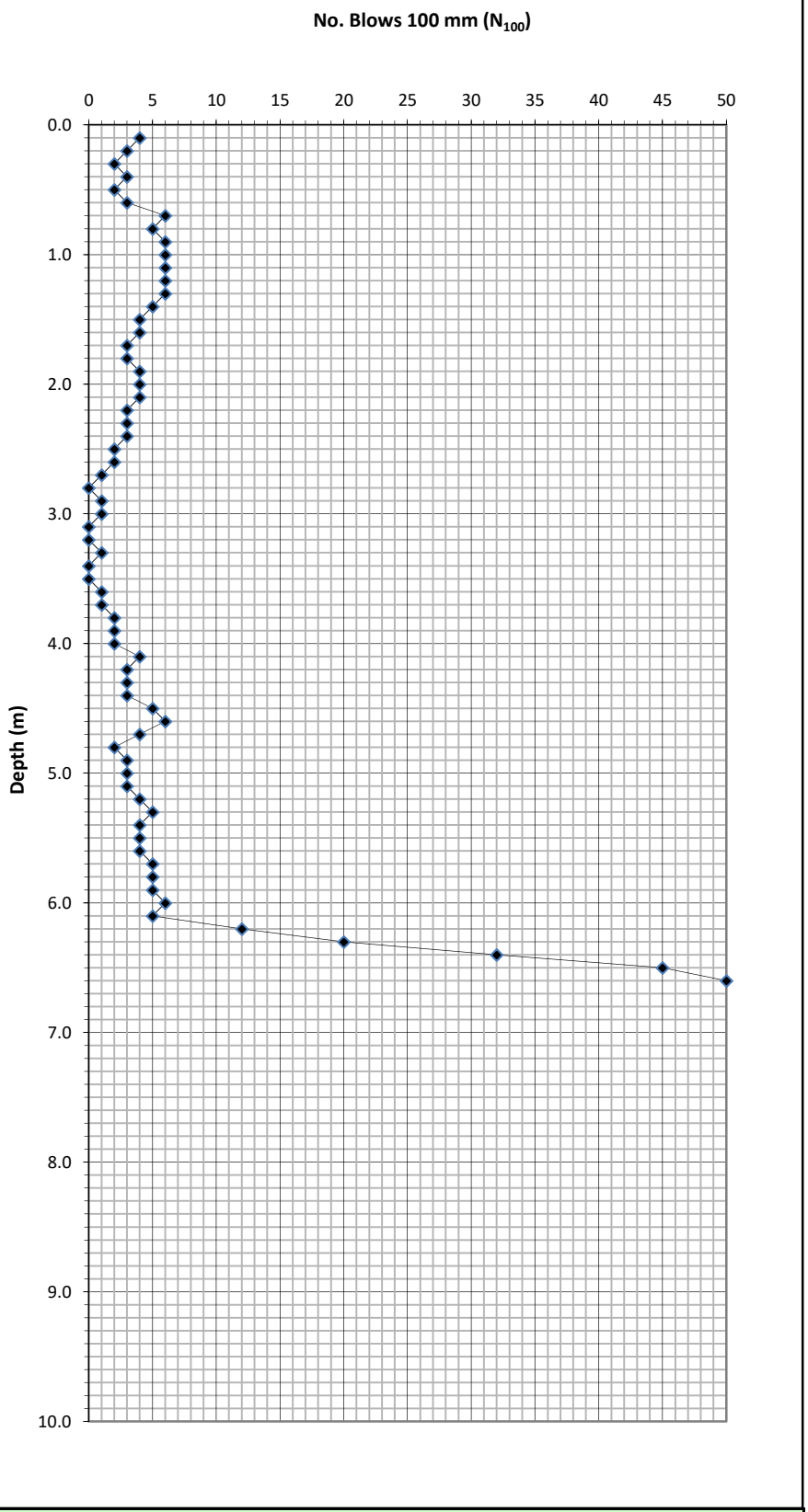
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 60**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
4	0.1	4	5.2
3	0.2	5	5.3
2	0.3	4	5.4
3	0.4	4	5.5
2	0.5	4	5.6
3	0.6	5	5.7
6	0.7	5	5.8
5	0.8	5	5.9
6	0.9	6	6.0
6	1.0	5	6.1
6	1.1	12	6.2
6	1.2	20	6.3
6	1.3	32	6.4
5	1.4	45	6.5
4	1.5	50	6.6
4	1.6		6.7
3	1.7		6.8
3	1.8		6.9
4	1.9		7.0
4	2.0		7.1
4	2.1		7.2
3	2.2		7.3
3	2.3		7.4
3	2.4		7.5
2	2.5		7.6
2	2.6		7.7
1	2.7		7.8
0	2.8		7.9
1	2.9		8.0
1	3.0		8.1
0	3.1		8.2
0	3.2		8.3
1	3.3		8.4
0	3.4		8.5
0	3.5		8.6
1	3.6		8.7
1	3.7		8.8
2	3.8		8.9
2	3.9		9.0
2	4.0		9.1
4	4.1		9.2
3	4.2		9.3
3	4.3		9.4
3	4.4		9.5
5	4.5		9.6
6	4.6		9.7
4	4.7		9.8
2	4.8		9.9
3	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

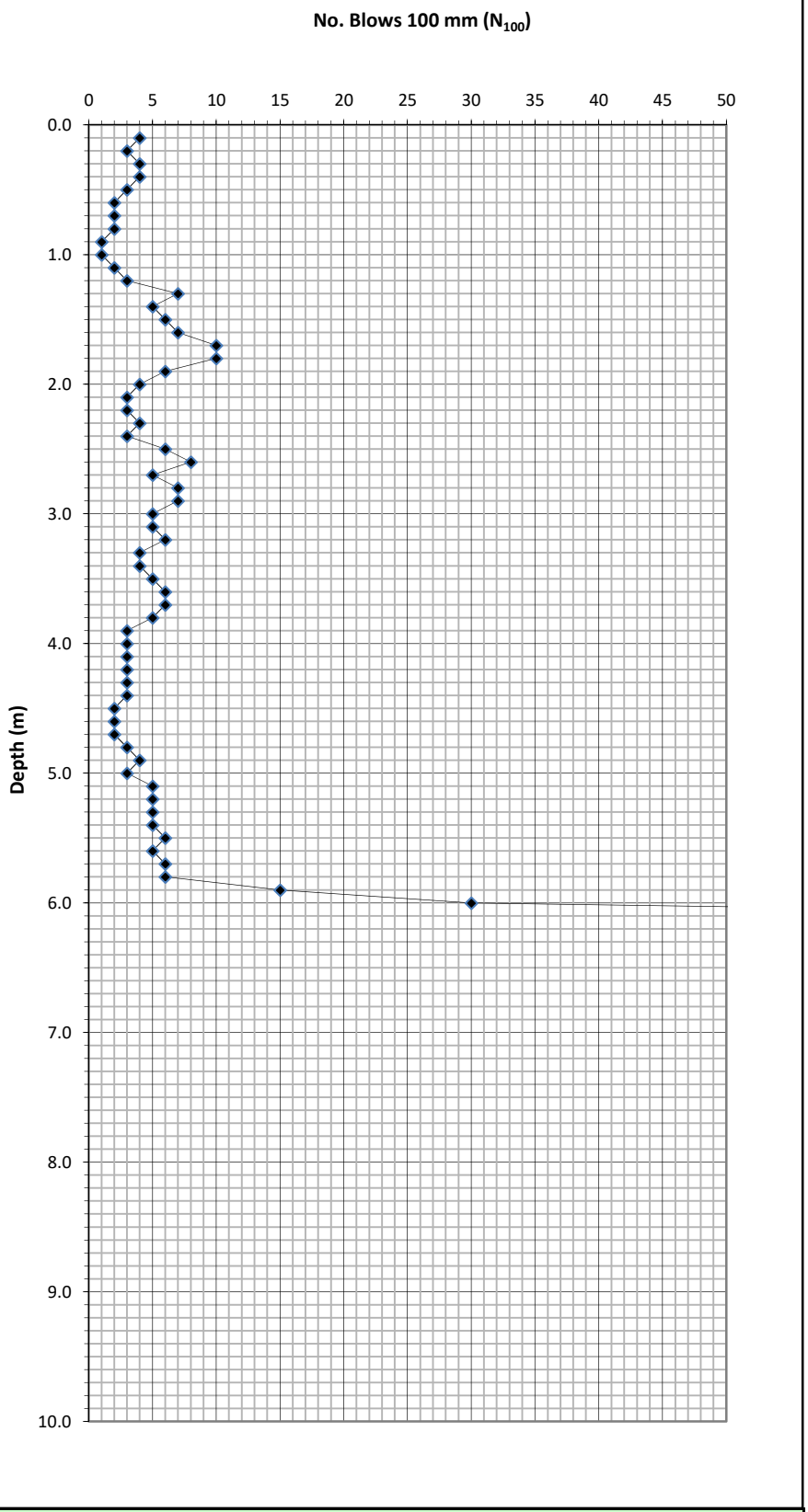
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 61**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	5	5.1
4	0.1	5	5.2
3	0.2	5	5.3
4	0.3	5	5.4
4	0.4	6	5.5
3	0.5	5	5.6
2	0.6	6	5.7
2	0.7	6	5.8
2	0.8	15	5.9
1	0.9	30	6.0
1	1.0	100	6.1
2	1.1		6.2
3	1.2		6.3
7	1.3		6.4
5	1.4		6.5
6	1.5		6.6
7	1.6		6.7
10	1.7		6.8
10	1.8		6.9
6	1.9		7.0
4	2.0		7.1
3	2.1		7.2
3	2.2		7.3
4	2.3		7.4
3	2.4		7.5
6	2.5		7.6
8	2.6		7.7
5	2.7		7.8
7	2.8		7.9
7	2.9		8.0
5	3.0		8.1
5	3.1		8.2
6	3.2		8.3
4	3.3		8.4
4	3.4		8.5
5	3.5		8.6
6	3.6		8.7
6	3.7		8.8
5	3.8		8.9
3	3.9		9.0
3	4.0		9.1
3	4.1		9.2
3	4.2		9.3
3	4.3		9.4
3	4.4		9.5
2	4.5		9.6
2	4.6		9.7
2	4.7		9.8
3	4.8		9.9
4	4.9		10.0
3	5.0		



Notes: Sheet 1 of 1.

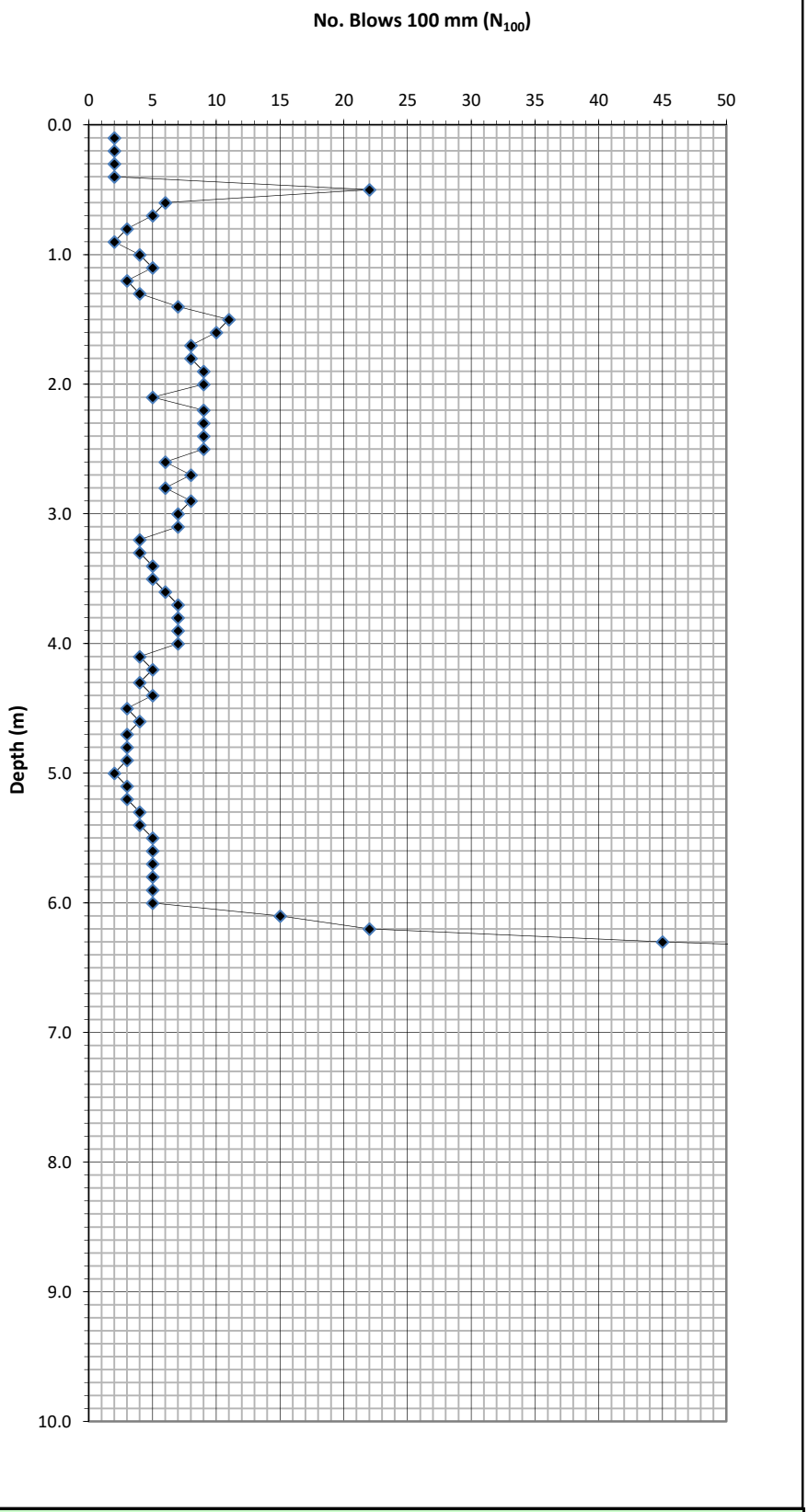
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 62**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
2	0.1	3	5.2
2	0.2	4	5.3
2	0.3	4	5.4
2	0.4	5	5.5
22	0.5	5	5.6
6	0.6	5	5.7
5	0.7	5	5.8
3	0.8	5	5.9
2	0.9	5	6.0
4	1.0	15	6.1
5	1.1	22	6.2
3	1.2	45	6.3
4	1.3	74	6.4
7	1.4		6.5
11	1.5		6.6
10	1.6		6.7
8	1.7		6.8
8	1.8		6.9
9	1.9		7.0
9	2.0		7.1
5	2.1		7.2
9	2.2		7.3
9	2.3		7.4
9	2.4		7.5
9	2.5		7.6
6	2.6		7.7
8	2.7		7.8
6	2.8		7.9
8	2.9		8.0
7	3.0		8.1
7	3.1		8.2
4	3.2		8.3
4	3.3		8.4
5	3.4		8.5
5	3.5		8.6
6	3.6		8.7
7	3.7		8.8
7	3.8		8.9
7	3.9		9.0
7	4.0		9.1
4	4.1		9.2
5	4.2		9.3
4	4.3		9.4
5	4.4		9.5
3	4.5		9.6
4	4.6		9.7
3	4.7		9.8
3	4.8		9.9
3	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

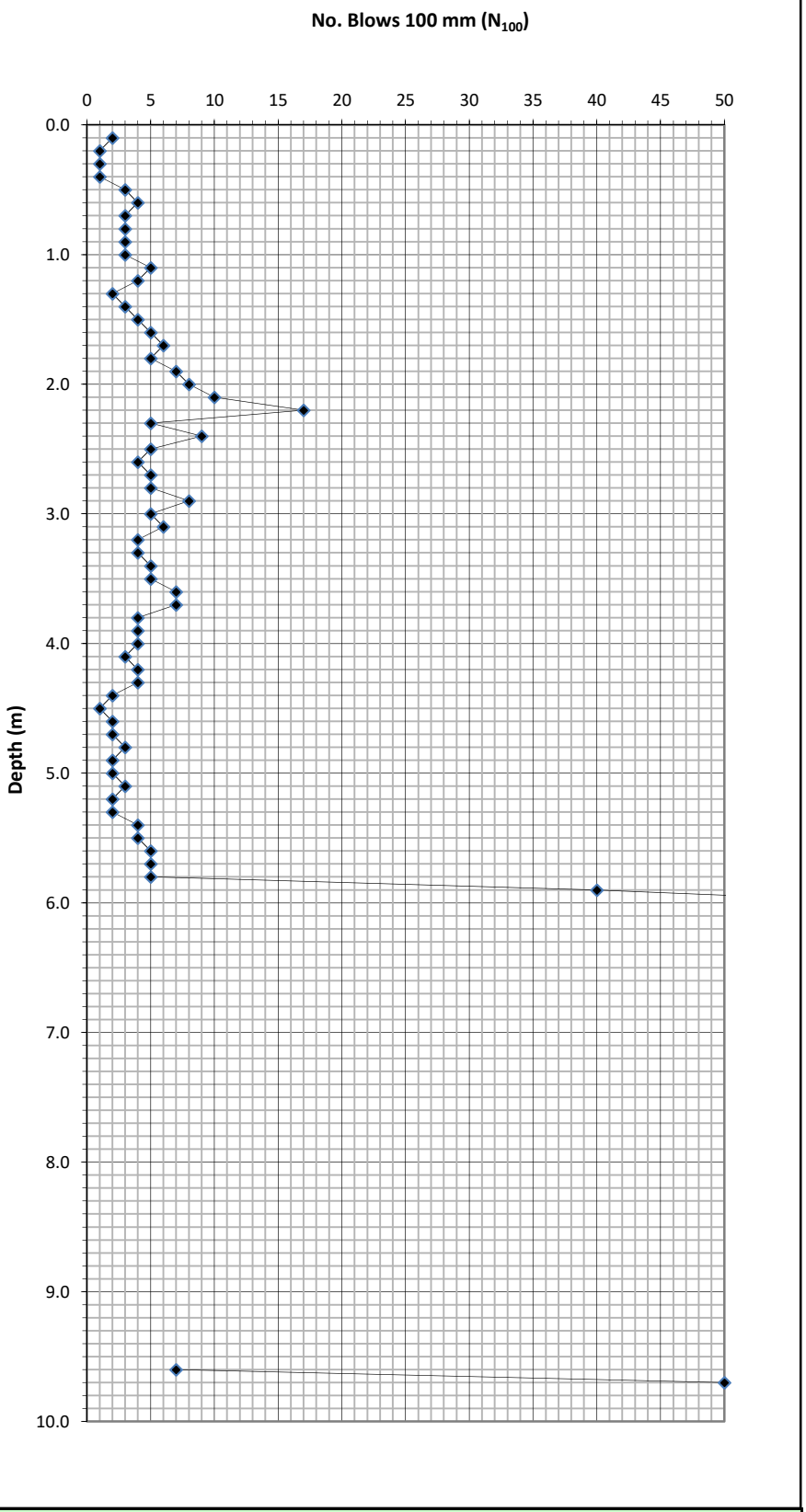
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 63**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	3	5.1
2	0.1	2	5.2
1	0.2	2	5.3
1	0.3	4	5.4
1	0.4	4	5.5
3	0.5	5	5.6
4	0.6	5	5.7
3	0.7	5	5.8
3	0.8	40	5.9
3	0.9	65	6.0
3	1.0		6.1
5	1.1		6.2
4	1.2		6.3
2	1.3		6.4
3	1.4		6.5
4	1.5		6.6
5	1.6		6.7
6	1.7		6.8
5	1.8		6.9
7	1.9		7.0
8	2.0		7.1
10	2.1		7.2
17	2.2		7.3
5	2.3		7.4
9	2.4		7.5
5	2.5		7.6
4	2.6		7.7
5	2.7		7.8
5	2.8		7.9
8	2.9		8.0
5	3.0		8.1
6	3.1		8.2
4	3.2		8.3
4	3.3		8.4
5	3.4		8.5
5	3.5		8.6
7	3.6		8.7
7	3.7		8.8
4	3.8		8.9
4	3.9		9.0
4	4.0		9.1
3	4.1		9.2
4	4.2		9.3
4	4.3		9.4
2	4.4		9.5
1	4.5	7	9.6
2	4.6	50	9.7
2	4.7		9.8
3	4.8		9.9
2	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

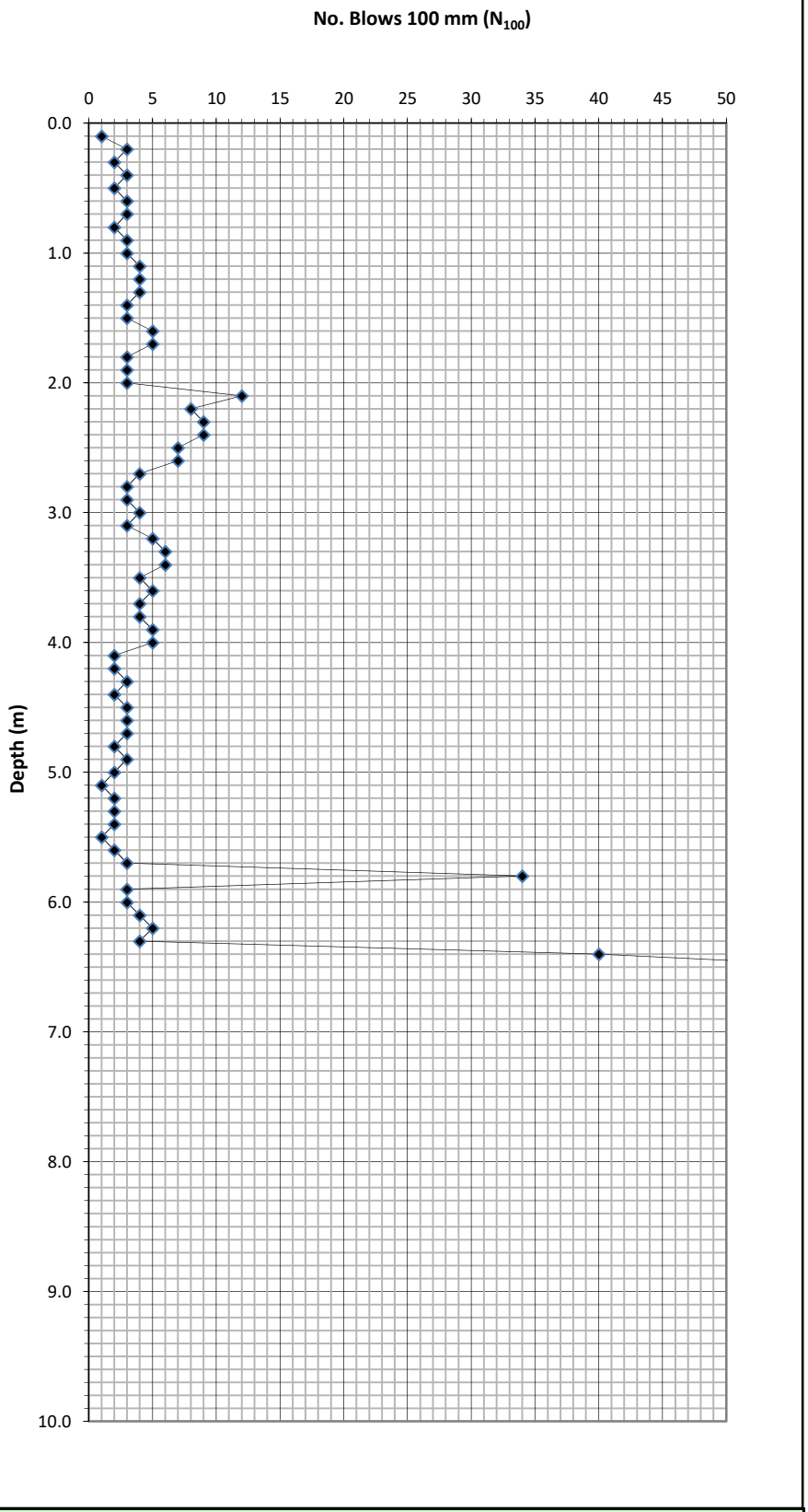
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 64**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	1	5.1
1	0.1	2	5.2
3	0.2	2	5.3
2	0.3	2	5.4
3	0.4	1	5.5
2	0.5	2	5.6
3	0.6	3	5.7
3	0.7	34	5.8
2	0.8	3	5.9
3	0.9	3	6.0
3	1.0	4	6.1
4	1.1	5	6.2
4	1.2	4	6.3
4	1.3	40	6.4
3	1.4	61	6.5
3	1.5		6.6
5	1.6		6.7
5	1.7		6.8
3	1.8		6.9
3	1.9		7.0
3	2.0		7.1
12	2.1		7.2
8	2.2		7.3
9	2.3		7.4
9	2.4		7.5
7	2.5		7.6
7	2.6		7.7
4	2.7		7.8
3	2.8		7.9
3	2.9		8.0
4	3.0		8.1
3	3.1		8.2
5	3.2		8.3
6	3.3		8.4
6	3.4		8.5
4	3.5		8.6
5	3.6		8.7
4	3.7		8.8
4	3.8		8.9
5	3.9		9.0
5	4.0		9.1
2	4.1		9.2
2	4.2		9.3
3	4.3		9.4
2	4.4		9.5
3	4.5		9.6
3	4.6		9.7
3	4.7		9.8
2	4.8		9.9
3	4.9		10.0
2	5.0		



Notes: Sheet 1 of 1.

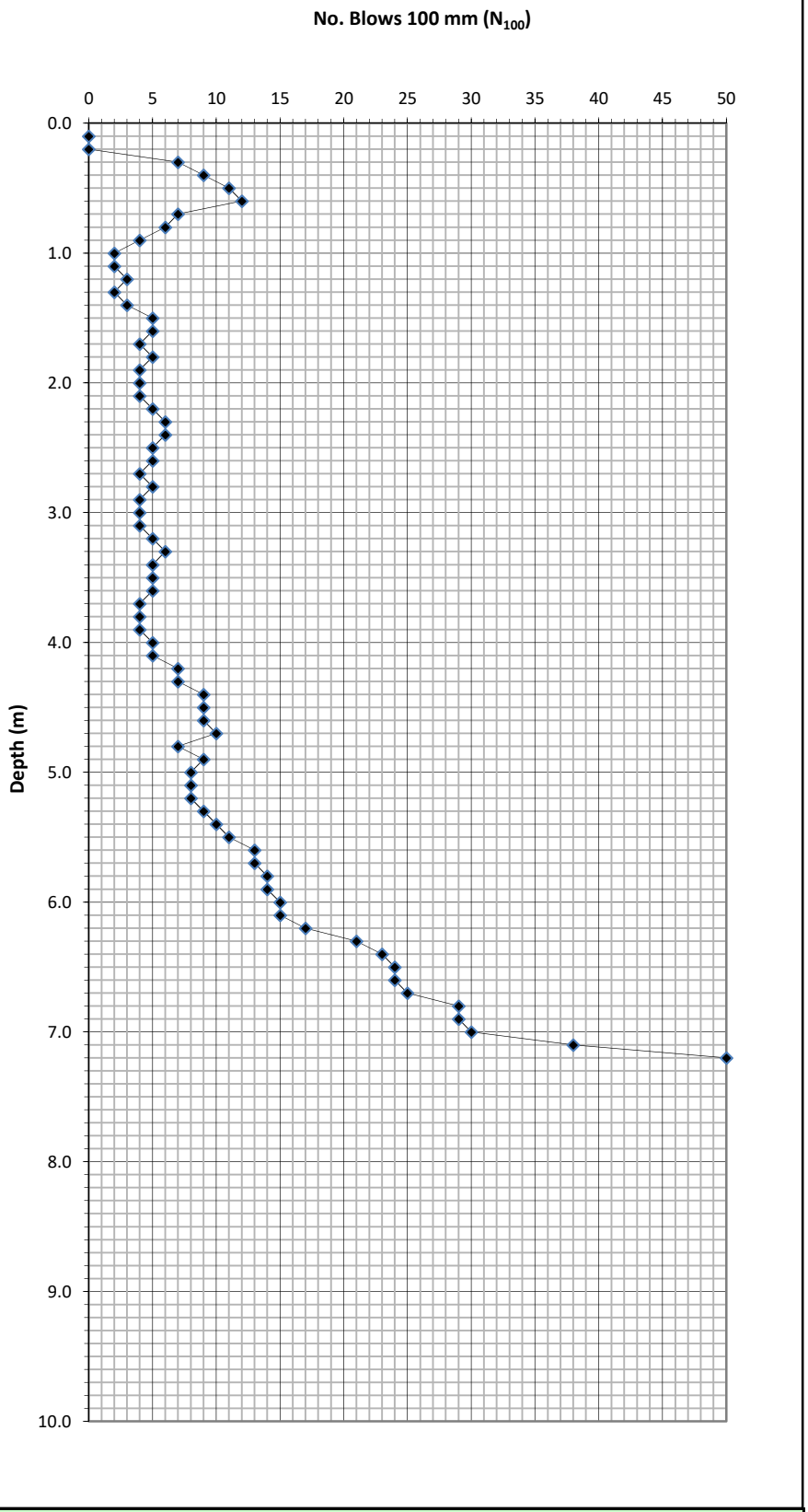
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 65**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	8	5.1
0	0.1	8	5.2
0	0.2	9	5.3
7	0.3	10	5.4
9	0.4	11	5.5
11	0.5	13	5.6
12	0.6	13	5.7
7	0.7	14	5.8
6	0.8	14	5.9
4	0.9	15	6.0
2	1.0	15	6.1
2	1.1	17	6.2
3	1.2	21	6.3
2	1.3	23	6.4
3	1.4	24	6.5
5	1.5	24	6.6
5	1.6	25	6.7
4	1.7	29	6.8
5	1.8	29	6.9
4	1.9	30	7.0
4	2.0	38	7.1
4	2.1	50	7.2
5	2.2	71	7.3
6	2.3		7.4
6	2.4		7.5
5	2.5		7.6
5	2.6		7.7
4	2.7		7.8
5	2.8		7.9
4	2.9		8.0
4	3.0		8.1
4	3.1		8.2
5	3.2		8.3
6	3.3		8.4
5	3.4		8.5
5	3.5		8.6
5	3.6		8.7
4	3.7		8.8
4	3.8		8.9
4	3.9		9.0
5	4.0		9.1
5	4.1		9.2
7	4.2		9.3
7	4.3		9.4
9	4.4		9.5
9	4.5		9.6
9	4.6		9.7
10	4.7		9.8
7	4.8		9.9
9	4.9		10.0
8	5.0		



Notes: Sheet 1 of 1.

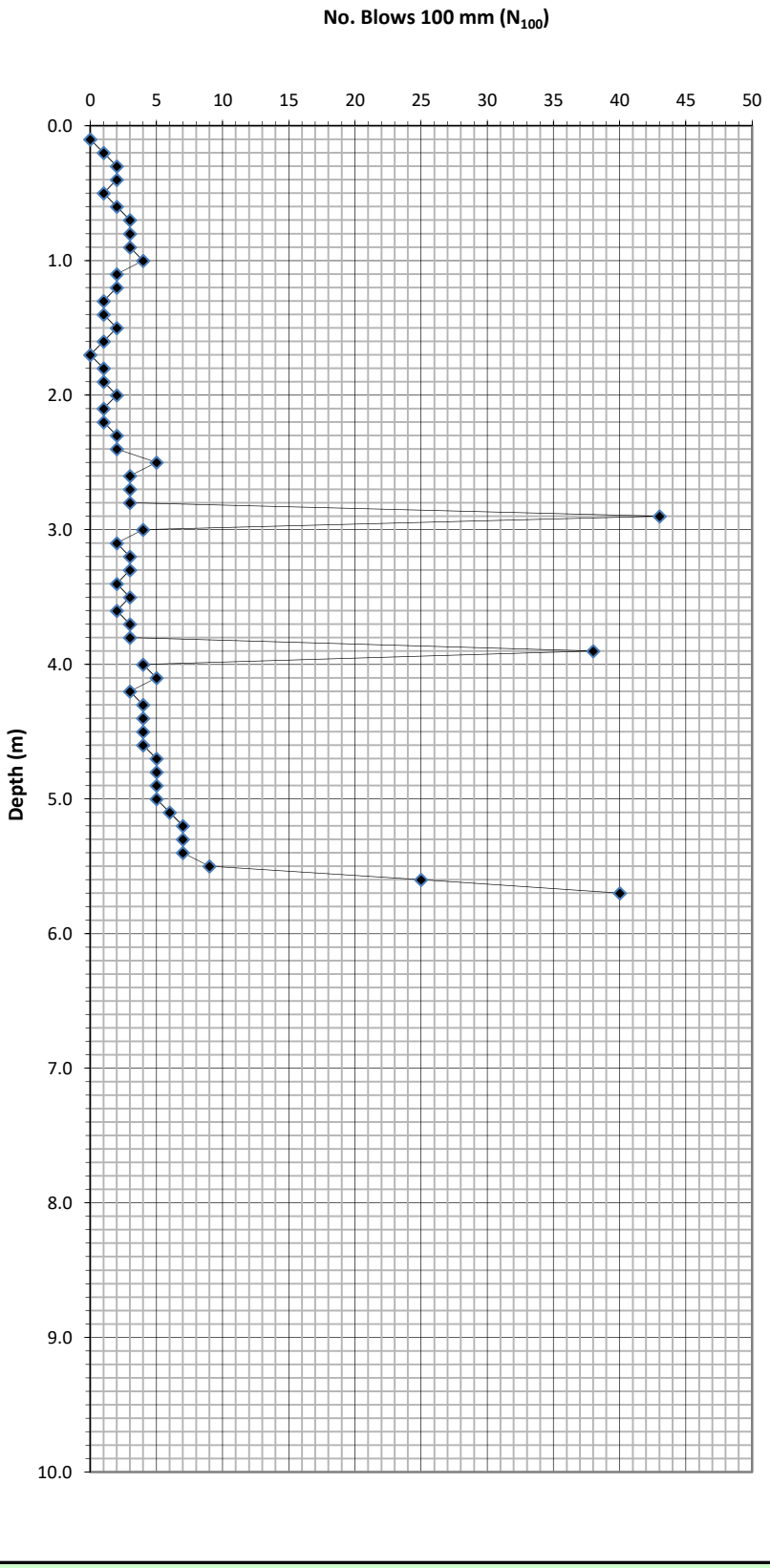
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 66**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	6	5.1
0	0.1	7	5.2
1	0.2	7	5.3
2	0.3	7	5.4
2	0.4	9	5.5
1	0.5	25	5.6
2	0.6	40	5.7
3	0.7		5.8
3	0.8		5.9
3	0.9		6.0
4	1.0		6.1
2	1.1		6.2
2	1.2		6.3
1	1.3		6.4
1	1.4		6.5
2	1.5		6.6
1	1.6		6.7
0	1.7		6.8
1	1.8		6.9
1	1.9		7.0
2	2.0		7.1
1	2.1		7.2
1	2.2		7.3
2	2.3		7.4
2	2.4		7.5
5	2.5		7.6
3	2.6		7.7
3	2.7		7.8
3	2.8		7.9
43	2.9		8.0
4	3.0		8.1
2	3.1		8.2
3	3.2		8.3
3	3.3		8.4
2	3.4		8.5
3	3.5		8.6
2	3.6		8.7
3	3.7		8.8
3	3.8		8.9
38	3.9		9.0
4	4.0		9.1
5	4.1		9.2
3	4.2		9.3
4	4.3		9.4
4	4.4		9.5
4	4.5		9.6
4	4.6		9.7
5	4.7		9.8
5	4.8		9.9
5	4.9		10.0
5	5.0		



Notes: Sheet 1 of 1.

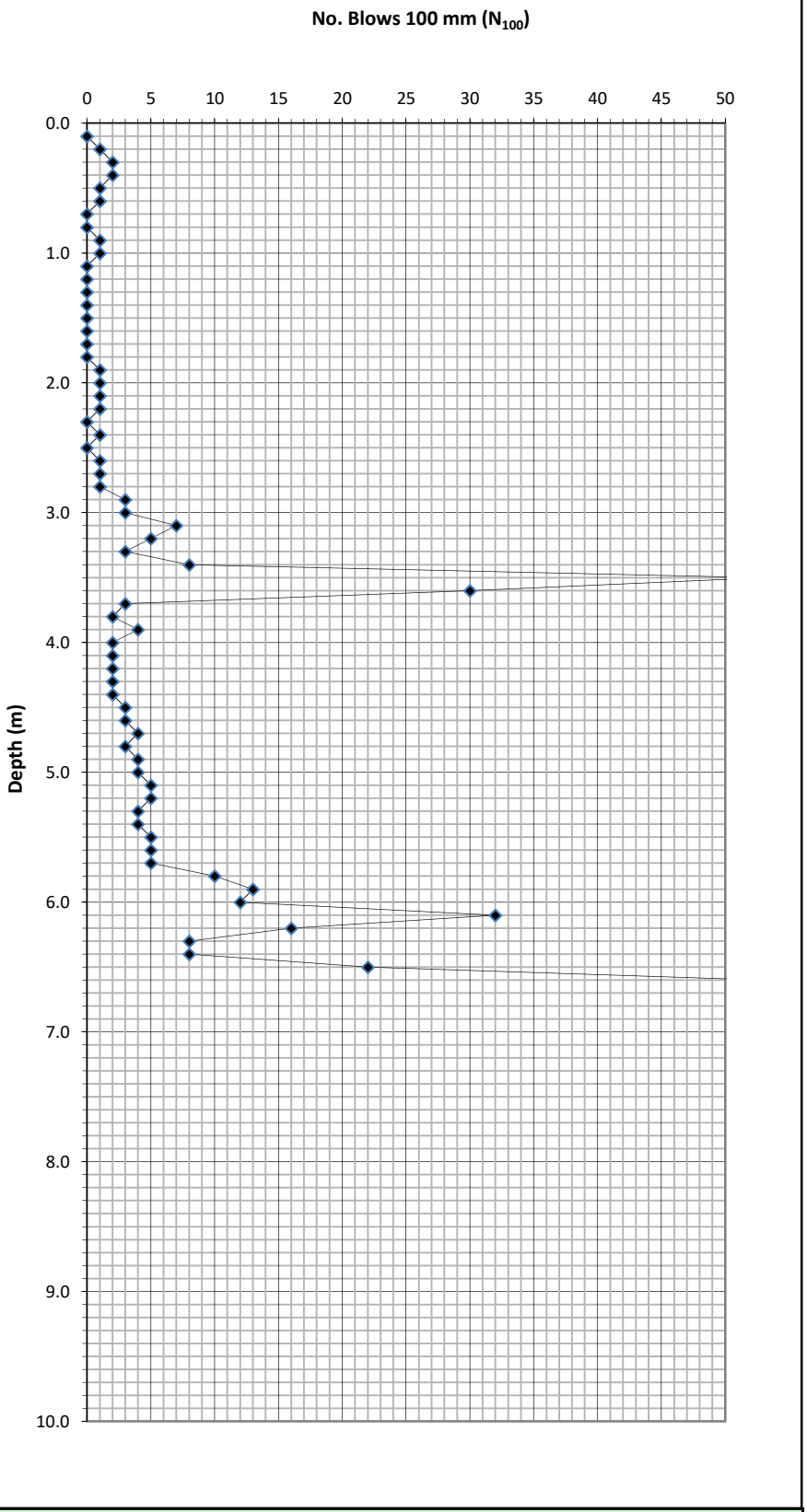
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 67**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	5	5.1
0	0.1	5	5.2
1	0.2	4	5.3
2	0.3	4	5.4
2	0.4	5	5.5
1	0.5	5	5.6
1	0.6	5	5.7
0	0.7	10	5.8
0	0.8	13	5.9
1	0.9	12	6.0
1	1.0	32	6.1
0	1.1	16	6.2
0	1.2	8	6.3
0	1.3	8	6.4
0	1.4	22	6.5
0	1.5	53	6.6
0	1.6	74	6.7
0	1.7		6.8
0	1.8		6.9
1	1.9		7.0
1	2.0		7.1
1	2.1		7.2
1	2.2		7.3
0	2.3		7.4
1	2.4		7.5
0	2.5		7.6
1	2.6		7.7
1	2.7		7.8
1	2.8		7.9
3	2.9		8.0
3	3.0		8.1
7	3.1		8.2
5	3.2		8.3
3	3.3		8.4
8	3.4		8.5
53	3.5		8.6
30	3.6		8.7
3	3.7		8.8
2	3.8		8.9
4	3.9		9.0
2	4.0		9.1
2	4.1		9.2
2	4.2		9.3
2	4.3		9.4
2	4.4		9.5
3	4.5		9.6
3	4.6		9.7
4	4.7		9.8
3	4.8		9.9
4	4.9		10.0
4	5.0		



Notes: Sheet 1 of 1.

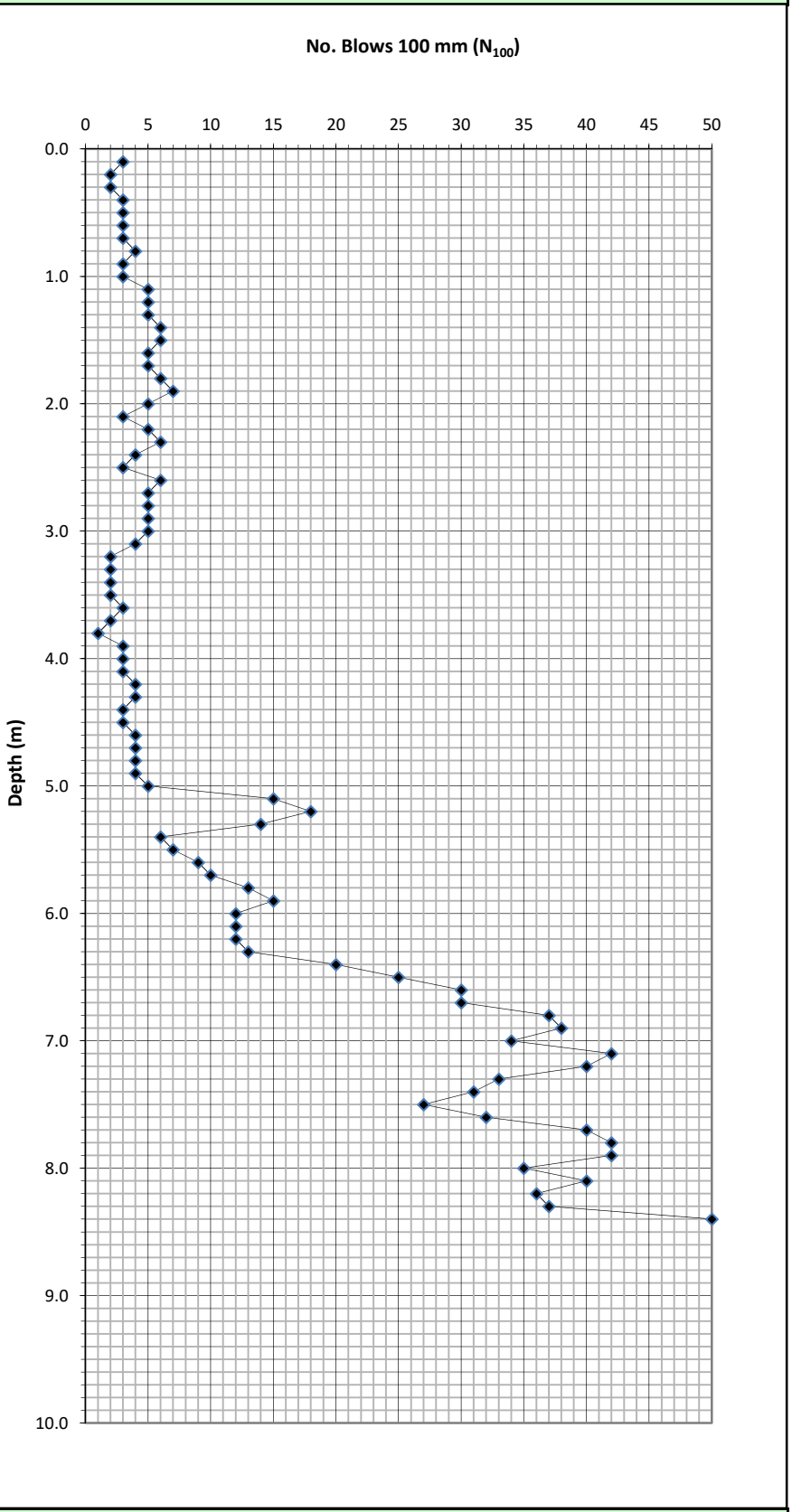
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 68**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	15	5.1
3	0.1	18	5.2
2	0.2	14	5.3
2	0.3	6	5.4
3	0.4	7	5.5
3	0.5	9	5.6
3	0.6	10	5.7
3	0.7	13	5.8
4	0.8	15	5.9
3	0.9	12	6.0
3	1.0	12	6.1
5	1.1	12	6.2
5	1.2	13	6.3
5	1.3	20	6.4
6	1.4	25	6.5
6	1.5	30	6.6
5	1.6	30	6.7
5	1.7	37	6.8
6	1.8	38	6.9
7	1.9	34	7.0
5	2.0	42	7.1
3	2.1	40	7.2
5	2.2	33	7.3
6	2.3	31	7.4
4	2.4	27	7.5
3	2.5	32	7.6
6	2.6	40	7.7
5	2.7	42	7.8
5	2.8	42	7.9
5	2.9	35	8.0
5	3.0	40	8.1
4	3.1	36	8.2
2	3.2	37	8.3
2	3.3	50	8.4
2	3.4	67	8.5
2	3.5		8.6
3	3.6		8.7
2	3.7		8.8
1	3.8		8.9
3	3.9		9.0
3	4.0		9.1
3	4.1		9.2
4	4.2		9.3
4	4.3		9.4
3	4.4		9.5
3	4.5		9.6
4	4.6		9.7
4	4.7		9.8
4	4.8		9.9
4	4.9		10.0
5	5.0		



Notes: Sheet 1 of 1.

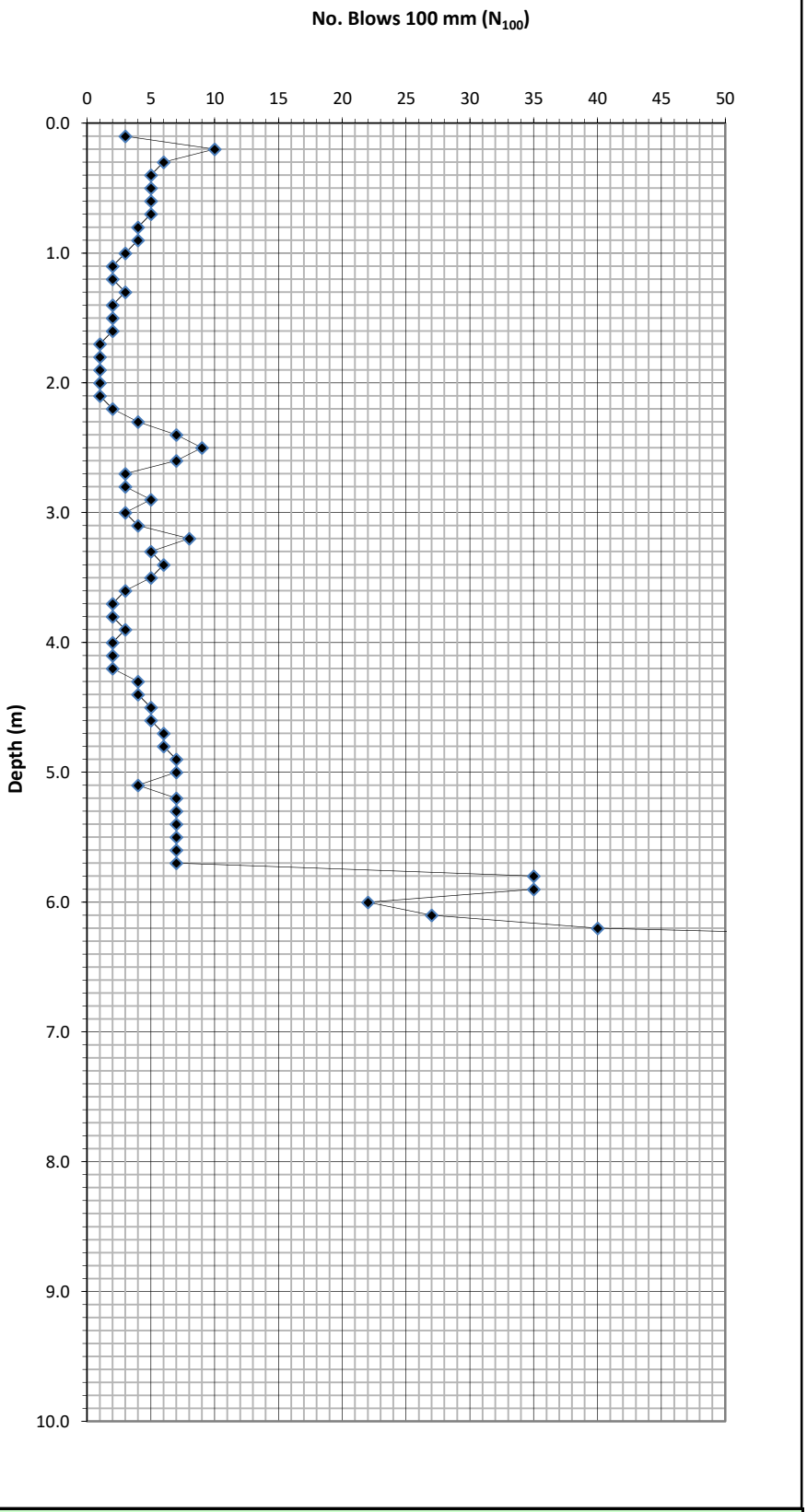
South West Geotechnical Ltd
Unit 3 Brooklands, Howden Road, Tiverton, EX16 5HW

DYNAMIC PROBE RECORD (DPSH METHOD)

Project Name: Broadwater Road | **DPSH No: 69**

Job No: 13896 | **DATE: 19th-28th June 2023**

Blows	Depth	Blows	Depth
	0.0	4	5.1
3	0.1	7	5.2
10	0.2	7	5.3
6	0.3	7	5.4
5	0.4	7	5.5
5	0.5	7	5.6
5	0.6	7	5.7
5	0.7	35	5.8
4	0.8	35	5.9
4	0.9	22	6.0
3	1.0	27	6.1
2	1.1	40	6.2
2	1.2	80	6.3
3	1.3		6.4
2	1.4		6.5
2	1.5		6.6
2	1.6		6.7
1	1.7		6.8
1	1.8		6.9
1	1.9		7.0
1	2.0		7.1
1	2.1		7.2
2	2.2		7.3
4	2.3		7.4
7	2.4		7.5
9	2.5		7.6
7	2.6		7.7
3	2.7		7.8
3	2.8		7.9
5	2.9		8.0
3	3.0		8.1
4	3.1		8.2
8	3.2		8.3
5	3.3		8.4
6	3.4		8.5
5	3.5		8.6
3	3.6		8.7
2	3.7		8.8
2	3.8		8.9
3	3.9		9.0
2	4.0		9.1
2	4.1		9.2
2	4.2		9.3
4	4.3		9.4
4	4.4		9.5
5	4.5		9.6
5	4.6		9.7
6	4.7		9.8
6	4.8		9.9
7	4.9		10.0
7	5.0		



Notes: Sheet 1 of 1.

SITE OVERVIEW PHOTOS

Overview of the site from it's northwestern corner, looking east.

Overview of the site from it's southwestern corner, looking east.

The hole near the centre of the site (centred on British National Grid Reference 524251, 212655), marking the location of the demolished basement.

EXPLORATORY HOLE PHOTOGRAPHS

BH01

Hand dug pit (0.0-1.2mbgl) for BH01.

BH01 1.5-2.0mbgl.

BH01 2.5-3.0mbgl.

BH01 3.5-4.0mbgl.

BH01 4.5-5.0mbgl.

BH01 5.5-6.0mbgl.

BH01 6.5-7.0mbgl.

BH01 7.5-8.0mbgl.

BH01 8.5-9.0mbgl.

BH01 9.5-10.0mbgl.

BH01 10.5-11.0mbgl.

BH01 11.5-12.0mbgl.

BH01 12.5-13.0mbgl.

BH01 13.5-14.0mbgl.

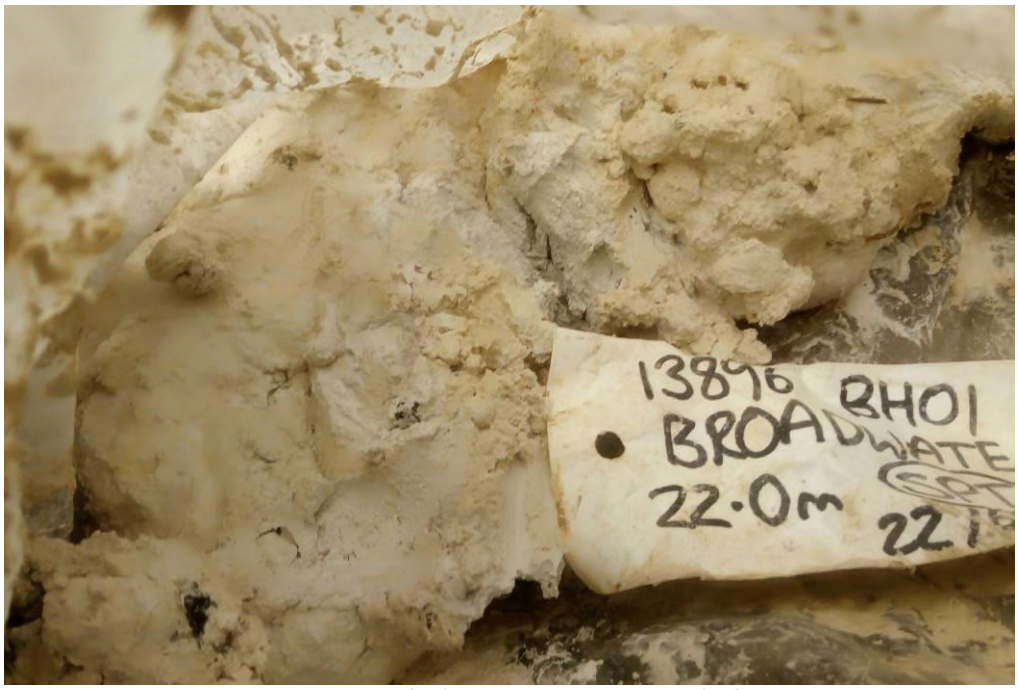
SPT sample from BH01 at 16.0mbgl.

Trimmings from UT100 shoe conducted in BH01 at 17.0mbgl.

SPT sample from BH01 at 18.0mbgl.

Trimmings from UT100 shoe conducted in BH01 at 19.0mbgl.

SPT sample from BH01 at 20.0mbgl.



SPT sample from BH01 at 22.0mbgl.

BH02

Hand dug pit (0.0-1.2mbgl) for BH02.

BH02 1.5-2.0mbgl.

BH02 2.5-3.0mbgl.

BH02 3.5-4.0mbgl.

BH02 4.5-5.0mbgl.

BH02 5.5-6.0mbgl.

BH02 6.5-7.0mbgl.

BH02 7.5-8.0mbgl

BH02 8.3-8.6mbgl.

Trimmings from the UT100 shoe conducted in BH02 at 10.0mbgl.

SPT sample from BH02 at 11.0mbgl.

Trimmings from the UT100 shoe conducted in BH02 at 12.0mbgl.