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Mr K Mawson
Gleeson Homes Ltd
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1st May 2026

Our Ref: C10128A/AL/11205

Dear Kenny,

Re: C10128A, Woolley Colliery Road, Darton - Supplementary Ground Investigation Letter Report - Northern Site Area

Further to the issue of our Geoenvironmental Appraisal (GA) Report for the above site (Sirius Report Ref. C10128, dated July 2024), we present the findings of our recently undertaken supplementary ground investigation.

Whilst this letter discusses pertinent findings of the GA report, it must be read in conjunction with that report.

INTRODUCTION

It is understood that Gleeson Homes are considering the development of the above site for a low-rise residential end use, comprising the construction of 72 No. semi-detached and detached low rise residential units with private gardens, garages and drives, as well as new access roads.

A proposed attenuation basin is shown in the far north of the site. The investigation boundary is shown on Sirius Drawing No. C10128/N/02 in Appendix A to this report.

Cut and fill earthwork proposals have been provided by the client (HBL Drawing No. 10701-HBL-XX-XX-DR-C-5205, rev. P01, included in Appendix A). This shows that finished levels are to be raised by between c. 0.5m and 2.0m above current levels across most of the site, but over 3.0m locally, and with levels being reduced locally, including by up to c. 4m within the proposed attenuation basin.

Previous Investigation

Sirius previously compiled the above-referenced GA for the site. Salient findings from the previous investigation included:

- Historically, the site remained undeveloped throughout the 19th Century, with a watercourse present on the northern site area. By 1907, railway lines associated with the adjacent Woolley Colliery were present, with spoil heaps shown on site by the 1930s. Further spoil heaps were shown on site in the 1950s, which were further extended by the 1990s.
- The intrusive site investigation identified reworked topsoil or concrete at surface, underlain by made ground, mostly comprising granular made ground to depths of up to c. 5m below ground level (bgl), but up to c. 8.5m in bgl the far west, underlain by residual cohesive soils, or locally, alluvium (soft to firm clay) in the southeast. Rockhead was encountered from depths of c. 1.5m to c. 10m bgl.
- The risk of surface instability resulting from shallow coal mine workings is considered to be low across the site. However, deep made ground was encountered in the far north of the site, apparently associated with unrecorded opencast / crop working of the thick Barnsley Coal seam. It was concluded that there is the potential for unrecorded bell pits / crop workings / day holes, etc., to the northeast of the outcrop of the Barnsley Coal seam, which could require treatment and constrain foundation solutions in this area.
- Elevated concentrations of arsenic and naphthalene were recorded within made ground across the site, along with copper, lead and benzo(a)pyrene locally. Asbestos cement fragments have been observed on the ground surface in the north-east of the site.
- It was concluded that conventional spread foundations (i.e. strip or trench fill foundations) may be feasible within a limited part of the site. Due to the combined depth of existing made ground and proposed placed fill, it was concluded that alternative foundations will be required across the rest of the site. Some localised deepening of foundations may be required within the zone of influence of trees, or where coal is encountered at shallow depth. It was noted that alternative foundation solutions should be further assessed once the precise structural loadings and other factors such as proposed ground levels and influence of trees on foundation depth for the proposed development are known. Suspended floor slabs are likely to be required across most of the site.
- A settlement assessment has shown the potential for settlement of made ground soils from self-weight (creep) and consolidation due to loading from placement of fill to raise ground levels. Excavation and re-engineering of made ground is likely to be required to mitigate settlement and to remove existing concrete slabs / obstructions.

Further ground investigation works were recommended due to limited access in areas of the site, relating to the following:

- The possible presence of bell pits / crop workings associated with the Barnsley Coal seam.
- Confirmation of ground conditions in areas where access had previously been limited due to the presence of dense vegetation / ecological exclusion zones.

Supplementary Investigation

A scope of works for a supplementary ground investigation was compiled, based on the above recommendations, and to investigate specific additional issues, which included the following:

- Trial pitting / trenching in the north of the site, to investigate potential crop workings / recorded unlicensed opencast, bell pits, etc., related to the outcrop of the Barnsley Coal seam.
- Trial pitting in the centre and west of the site to investigate previously inaccessible areas.
- Drilling of cable percussion boreholes adjacent to the site's western boundary to further investigate ground conditions in the areas of deepest identified made ground.
- Drilling of window sample boreholes along the line of a proposed retaining wall, which is located within an area of deep made ground.
- Drilling of rotary boreholes to allow installation of groundwater monitoring wells within the area of the proposed attenuation basin, followed by a period of groundwater level monitoring.

These works have now been undertaken, and are reported within this letter report.

LIMITATIONS

If the site layout and proposed cut and fill earthworks change significantly from those shown on the above-referenced drawings, then the conclusions and recommendations made in this report should be reassessed, and amendments may be required.

The comments and opinions presented in this report are based on ground conditions encountered during intrusive investigation works performed by Sirius. There may be other conditions prevailing on the site which have not been revealed by this investigation and which have not been taken into account by this report. Responsibility cannot be accepted for any conditions not revealed by this investigation. Any diagram or opinion on the possible configuration of strata, contamination or other spatially variable features between or beyond investigation positions is conjectural and given for guidance only. Confirmation of ground conditions between exploratory holes should be undertaken if deemed necessary. Evaluation of groundwater is based on observations made at the time of the investigation and monitoring visits. It should be noted that groundwater levels and quality may vary due to seasonal and other effects.

All marked site features shown on the appended drawings are given for indicative purposes only. Enclosed drawings should not be underlaid in isolation to determine proposed development layouts. Reference should be made to the text enclosed within this report for commentary on the potential location of these features including coordinates if available and any further works required to locate features.

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SCOPE OF SUPPLEMENTARY INVESTIGATION

The information contained in this report is limited to areas of land accessible during the investigation within the site boundary. A site location plan is included as Drawing No. C10128/01. An exploratory hole location plan showing the recent fieldworks is presented as Drawing No. C10128A/N/02 in Appendix A, with a plan showing all works from the 2024 and 2026 investigations included as Drawing No. C10128A/N/03.

The supplementary ground investigation, which was supervised by Sirius Geoenvironmental Engineers, took place from 9th March to 10th April 2026 and comprised:

- Drilling of 2 No. cable percussion boreholes (BH401N and BH402N) to a depth of 8.45m bgl;
- Drilling of 8 No. window sample boreholes (WS401N to WS408N) to a maximum depth of 5.0m bgl;
- Drilling of 6 No. rotary probeholes (RO401 to RO406) to a maximum depth of 10.0m bgl to install groundwater monitoring wells within the proposed attenuation basin, and to investigate the area of deep made ground associated with crop workings within the Barnsley Coal seam; and
- Excavation of 5 No. trial pits (TP408 to TP412) and 13 No. trial trenches (TT401 to TT407, plus TT401A, TT402A, TT404A – TT404D) using a 30 tonne tracked excavator, to a maximum depth of 6.0m bgl.

The cable percussion boreholes were drilled to depths at which further progress was not possible due to encountering rockhead. The window sampler boreholes were either drilled to a depth at which further progress was not possible due to the strength of strata encountered, or at the maximum practicable depth of drilling using this method within the ground conditions encountered. The majority of trial pits / trenches were excavated to depths at which natural ground was proven, except for TT404 and TT404C, where suspected asbestos cement tiles were observed within made ground, at which depth excavation was terminated.

Groundwater monitoring wells were installed in RO401 to RO403 (in the vicinity of the proposed attenuation basin), comprising 50mm diameter standpipes with slotted response zones within a combination of made ground, natural soils and bedrock. A programme of groundwater level monitoring has been carried out and is reported below.

EXPLORATORY HOLE LOCATIONS

The exploratory hole locations were selected in order to target specific areas of interest and resolve key uncertainties, as summarised in Table 1, below.

Table 1 – Exploratory Hole Position Rationale

Exploratory Hole	Rationale
WS401N - WS405N	To investigate ground conditions beneath a proposed retaining wall in the west of the site.
BH401N, BH402N and WS406N	To provide geotechnical information on the area of deeper made ground in the west of the site.

Exploratory Hole	Rationale
TT401A - TT407 **WS407N & WS408N** **RO401 - RO406**	To investigate the area of deep made ground associated with crop working of the Barnsley Coal seam, and to investigate for evidence of bell pitting / day holes (adits), etc.
TP408 - TP412	To investigate areas which were previously inaccessible, including a mound of stockpiled material.

Exploratory hole logs are included within Appendix B to this report.

Exploratory holes were positioned so as to avoid the alignment of underground utilities shown on statutory plans, including an electric duct in the far north of the site, and a low voltage electric cable (although both assumed to be defunct as they run to the now-defunct adjacent sewage works), and to avoid the location of the culvert which runs across the centre of the site.

GROUND CONDITIONS ENCOUNTERED

The ground conditions encountered during the supplementary investigation were broadly in line with those encountered during the previous phase of ground investigation at the site, as described below.

Far North (area of Barnsley Coal outcrop)

Made ground was encountered in each exploratory hole in this area, to depths of between c. 2.5m and c. 4.2m bgl, generally becoming deeper towards the north and east, but shallowing towards the far northeast. The made ground appears to be associated with piecemeal opencast extraction of the Barnsley Coal, with the base of the made ground generally coincident with the elevation at which the base of the coal would be expected where nearer to the outcrop location (although deep made ground was also present in the location of TT401, TT401A, RO302N etc., which is deeper than the anticipated seam depth in that area, and may be associated with levelling of the site, as shown by an elevation change to lower ground to the west).

The made ground present in this area generally comprised firm gravelly clay, or clayey gravel of ash, brick, clinker, sandstone, coal and rare slag, with variable quantities of coarser material and with fragments of wood, timber, metal, ceramic, plastic, glass, etc. From c. 2.6m bgl in TT404, and 3.3m bgl in TT404C, the made ground was noted to contain tiles of suspected asbestos cement, which laboratory testing has confirmed to contain chrysotile asbestos.

One trial trench (TT407) encountered a concrete slab at the base of the made ground, from 2.7 to 3.1m bgl, which was underlain by natural strata.

Natural residual soils, where present, comprised firm to stiff slightly sandy gravelly clay.

Coal was encountered at depths of between 1.7m and 4.0m bgl, being between 0.5m and 1.9m thick. No coal was present in RO401, TT401, TT401A, TT402, TT402A or TT405, and it is assumed that coal has previously been extracted from surface in these locations, which are closest to the anticipated outcrop of the Barnsley Coal. Further northeast, as the coal seam dips deeper, the coal was covered by either residual natural strata or by bedrock (mudstone).

No evidence for underground working of the coal beneath the residual strata or rock was encountered.

Underlying the coal was either sandstone or mudstone bedrock.

Site Centre (previously heavily vegetated / ecological exclusion zone)

Within trial pits TP408 and TP409, granular made ground of ash, coal, clinker, brick, mudstone, etc., was present to 1.7m and 2.1m bgl respectively, underlain by firm natural clay to 1.9m / 2.2m bgl, both underlain by sandstone bedrock.

Trial pits TP410 to TP412 were excavated into a previously vegetated mound of material. TP410 and TP412 were continued below the surface of the surrounding ground level, TP411 was terminated at the top of the concrete slab which partially underlies the mound, and extends to the west.

The material within the mound generally comprised made ground of gravelly friable clay. Material below the level of the surrounding ground surface comprised the same material, underlain by granular made ground and then soft gravelly clay with fragments of glass and plastic bags, with the made ground being present to a depth of c. 2.9m to 3.5m below surrounding ground level.

In TP410, sandstone bedrock was present directly below the made ground, and in TP412 residual clay strata were present between the made ground and underlying bedrock.

These ground conditions are generally similar to those found previously in this area of the site.

West of the Site (alignment of proposed retaining wall / area of deepest made ground)

A retaining wall is proposed in the west of the site, with retained heights of between c. 1.5m and 2.1m. Ground to the west of the proposed retaining wall will be raised above existing, with ground to the east of the wall remaining similar to present site levels.

The alignment of this structure was investigated by window sample boreholes WS401N to WS405N, aligned roughly north-south. Prior to drilling WS403N to WS405N, the shallow made ground was removed using the excavator, the concrete slab (0.3m to 0.4m thick) broken out, and the concrete removed from the pit, prior to being backfilled with made ground, to allow the boreholes to be advanced below the level of the concrete.

WS401N was taken to 5m bgl and did not encounter natural strata, with cohesive made ground (firm clay) present to 1.4m bgl, underlain by granular made ground to 5m bgl. The granular made ground was loose to c. 3m bgl, becoming very loose from c. 3m to 4m bgl, and medium dense at c. 5m bgl. Previously, WS301N was drilled nearby and encountered loose made ground to c. 5m bgl, becoming medium dense, with stiff natural clay encountered at 7.2m bgl.

Similar made ground was encountered in WS402N to WS405N, with the depth of made ground reducing from 4.6m bgl in WS402N, to 3.4m bgl in WS405N.

The made ground in all of these window sample boreholes (except WS401N) was underlain by natural clay soils, being medium strength in WS301N and WS402N, medium to high strength in WS404N and WS405N, but low strength in WS403N. Bedrock was encountered at 7.55m bgl in WS301N and 4.9m bgl in WS403N.

Boreholes BH401N, BH402N and WS406N were drilled to the west of the proposed retaining wall. These boreholes confirmed made ground to depths of 7.7m, 6.2m and >5.0m bgl, respectively. In each of these boreholes, made ground comprised a relatively thin shallow layer of cohesive material, with the remainder comprising granular made ground, as previously encountered within this area.

Overall, it appears that made ground in this area thickens from east to west as a consequence of ground raising due to the placing of made ground, rather than the former ground surface being lowered significantly, although it does also appear that the former ground surface in this area naturally sloped gently from south to north, with the adjacent lower wooded area representing the former site levels. Therefore, the area of deepest made ground is in the north of this western area (e.g. vicinity of WS302N).

EVIDENCE OF CONTAMINATION

Made ground present from 2.6m bgl in TT404 and from 3.3m bgl in TT404C was observed to contain asbestos cement tiles.

LABORATORY ANALYSIS

Due to the suspected presence of asbestos containing material (ACM) in TT404 and TT404C, a sample of the suspected ACM and a sample of the made ground soil matrix were submitted to Normec DETS, a UKAS accredited laboratory, for asbestos presence / quantification testing.

The results of the laboratory analysis, as received from the laboratory, are attached in Appendix C.

The testing confirmed the presence of chrysotile asbestos within the cement tile, and chrysotile fibre bundles within the matrix. Quantification testing of the matrix determined an asbestos concentration of 0.006% within this material.

OBSTRUCTIONS

Made ground in TT403 contained a low proportion of boulders of intact brickwork, up to c. 0.9m in size.

A low proportion of boulders was also present within made ground present above the concrete slab, within the material removed by the excavator to allow drilling of WS403N and WS404N. These boulders comprised concrete, and were up to 1.3m in size.

From information obtained during the 2024 and 2026 ground investigations, and from aerial imagery available online, the extents of existing concrete slabs have been estimated, and are shown indicatively on Drawing No. C10128A/N/04 in Appendix A. In the centre and east of the site this concrete is present at surface, however in the west and south the concrete is covered by made ground.

The concrete slab was generally c. 0.3m in thickness (maximum 0.5m) and contained reinforcing bar.

In the central part of the site, an area of concrete boulders is present. No intact concrete slab was present in TP408 or TP409, but was present surrounding this area. The boulders may therefore represent concrete which has previously been broken out from this area, although this has not been definitively proven.

SHALLOW GROUND STABILITY

Made ground within the trial pits / trenches was generally stable; however, instability was noted within TT401, TT401A and TT404.

GROUNDWATER

Tables 2 and 3, below, summarise groundwater observations made during the investigation and in subsequent monitoring visits.

Table 2 - Summary of Groundwater Observations Encountered During Site Investigation

Exploratory Hole	Depth Encountered (m bgl)	Description	Stratum
North of Site			
TT401	3.7	Rapid ingress.	Made ground
TT401A	3.4	Rapid ingress.	Made ground
TT404A	5.8	Slow ingress.	Base of coal / top of mudstone
TT404B	5.0	Slow ingress.	Base of coal / top of mudstone
TT404D	5.8	Slow ingress.	Coal
West of Site			
BH401N	7.7	No rise in 20 minutes.	Base of made ground / top of natural clay
BH402N	8.0	No rise in 20 minutes.	Sandstone
WS403N	3.5	Arisings wet.	Made ground
WS404N	4.0	Arisings wet.	Made ground
WS406N	3.5	Arisings wet.	Made ground

Table 3 - Summary of Groundwater Levels During Monitoring

Exploratory Hole	Type	Depth Encountered (m bgl)	Depth Encountered (m AOD)	Response Zone (m bgl)	Stratum
North of Site					
RO401	Standpipe	3.80 - 4.34	73.66 - 73.12	1 - 6	MG / Clay / SST
RO402	Standpipe	4.59 - 4.83	74.17 - 73.93	1 - 6	MG / SST / COAL / MST
RO403	Standpipe	3.60 - 5.19	75.12 - 73.53	1 - 6	MG Clay / SST / COAL / SST

Geotechnical

Attenuation Basin Area

Ground conditions within the area of the proposed attenuation basin (as shown on HBL Drawing No. 10701-HBL-XX-XX-DR-C-5521, Rev. P03) have been shown to comprise made ground, to below the maximum depth of the proposed attenuation pond across much of the area.

The made ground in this area generally comprises soft to firm cohesive and loose granular soil types.

In the south of the pond, there is an area within which the Barnsley Coal may be present towards the base of the pond excavation, with c. 0.5m of coal above that level. Within the southwest of the pond (e.g. TT405) the base of the basin may extend into natural clay.

Groundwater levels have been recorded from within the proposed basin area on three occasions, from RO401-RO403. On one occasion, the groundwater level was recorded at less than 1m below the base of the proposed basin within RO403. These readings were taken at a relatively wet time of year, but groundwater levels could potentially be higher at wetter times of the year. Given this, an impermeable membrane should be incorporated into the basin construction to prevent groundwater ingress (as shown to be present on the HBL drawing), however a high permeability drainage layer will also be needed below the liner to dissipate any build up of hydrostatic pressure, during periods of high groundwater levels.

The basin has been designed with sides at a gradient of c. 1 in 3, and as noted above most of the slopes will be constructed within made ground. It should therefore be ensured that the slope stability of the basin sides is assessed prior to construction, to confirm the global stability of the basin.

Retaining Walls

General:

In accordance with NHBC Standards, Chapter 10.2, all retaining structures more than 600mm high should be designed by an engineer in accordance with Technical Requirement R5.

At this stage, the construction details of any proposed retaining walls are not known. The design of the retaining walls will, to varying degrees, be dependent upon a number of factors, for example the effective strength parameters of the retained material, the strength of founding materials, deformation properties of the founding materials, global stability (i.e., slope stability) and retaining wall type.

Sirius is only able to comment on a very limited number of aspects of retaining wall design at this stage. It is generally recommended that for a gravity wall for example, it would be good practice for the foundations of the retaining wall to be taken through any made ground so as to bear onto the underlying competent natural soils. Any gravity retaining walls constructed on areas of deep made ground should be founded on a suitable thickness of re-engineered fill in accordance with an approved earthworks specification, or may require piled foundations.

Further assessment will be required once the proposed retaining wall details are known, including possible further targeted ground investigation.

Northern Area:

To the south of the attenuation basin, a retaining wall is proposed, to retain ground to the south, being between 1.2m and 3.5m in height. Existing made ground in this area is between c. 2.7m and 3.2m in thickness, underlain by firm to stiff natural clay, or coal. The underlying made ground may not be suitable as a founding stratum for this feature, and therefore further assessment should be undertaken by the retaining wall designer to ensure the global stability of this feature. It is currently anticipated that either ground improvement will be needed, or foundations for this wall may need to be taken down through the made ground to found in suitable natural strata, or, where coal is present, through the coal and into the underlying bedrock (e.g., piled foundations used).

Western Area:

As noted previously, a retaining wall of up to 2.1m in height is proposed within the west of the site. Ground conditions in this area have been confirmed as comprising made ground of between 3.4m and 7.2m in depth, underlain by natural clay strata of low to high strength, or bedrock of sandstone.

As per the northern retaining wall discussed above, the underlying made ground may not be suitable as a founding stratum for this feature, and therefore further assessment should be undertaken by the retaining wall designer to ensure the global stability of this feature, with ground improvement or piled foundations likely to be required.

Settlement Assessment

From information supplied by HBL, it is understood that ground levels in across the site will be raised by up to c. 3m above existing. The area of site with the greatest proposed raising of ground levels, and the greatest depth of existing made ground is adjacent to the site's western boundary (e.g. vicinity of plots 25-27 and 43-47), with up to 3m of ground raising (but generally up to 2m) and up to c. 8m depth of made ground in that area. Areas in the east of the site area also proposed for ground raising of up to c. 2m, with made ground being underlain by soft natural (alluvial) soils. These worst-case areas have therefore been subject to settlement assessments.

The settlement calculations have taken into account the proven ground conditions and proposed changes to site levels. For granular materials, i.e. the majority of the made ground strata, consolidation settlement is predicted to predominantly take place during surcharge loading associated with the ground raising. For cohesive soils, including cohesive made ground and alluvial soils, consolidation settlement will predominantly occur following the surcharge loading.

As well as the consolidation settlement, ongoing creep settlement of the made ground has also been taken into consideration. This assessment, using historical mapping, has assumed that the majority of the made ground was placed prior to 1960, with the remaining c. 1.5m being placed by 2008.

As described within the previous Sirius GA report, ref. C10128, it is considered that there is a low risk of inundation settlement affecting made ground at the site.

This assessment, utilising the proposed levels and made ground depths summarised above, has shown that combined creep and consolidation settlements of up to c. 60-70mm could be expected to occur and therefore the site will be at risk of unacceptable total and differential settlements associated with the presence of made ground / soft natural strata.

It is currently understood that new buildings are most likely to either be founded on piles, or on reinforced strip foundations bearing onto improved ground (e.g. by vibro stone columns).

It is also understood that site enabling works will include a site turnover of between 1m and 2m, in order to reduce post-construction settlements in external works to tolerable levels (i.e. ≤50mm), with the greatest depth of turnover in the identified western area. From the settlement assessment undertaken, it is considered that the proposed depths of turnover would be sufficient to reduce total settlement in external works to ≤50mm across the site.

This document should be forwarded to scheme's regulators / warranty provider to ensure that the proposed design settlement amount of ≤50mm in external works is acceptable to them.

Foul and Surface Water Drainage

From the supplied proposed drainage plan (HBL Drawing No. 10701-HBL-XX-XX-DR-C-5503, Rev. P03), it appears that some of the proposed access chambers / drainage runs may found in / run through loose made ground, or possibly soft natural clay. The drainage designer should therefore ensure that the drainage is suitably designed to allow for such ground conditions.

Furthermore, towards the south of the site, some of the access chamber invert levels are shown to be deeper than rockhead in this area, by up to 2m. Therefore, the use of hydraulic breakers will likely be required to penetrate competent bedrock to allow installation of the drainage.

It is understood that earthworks at the site are to be designed so as to limit future settlements in external works to less than 50mm, which may also lead to differential settlements between houses and the surrounding external ground. The drainage will therefore need to be designed to tolerate such total and differential settlements, including, for example, the provision of flexible service connections.

Foundations

From an assessment of the data obtained during the current phase of investigation, it is considered that the recommendations relating to foundations given within 7.1.6 of the previous GAR remain applicable.

That assessment was undertaken on the understanding that the site is to be developed with low rise houses, in which structural loads are assumed to be relatively light i.e. in the order of 80kN/m run. The assessment has been revised using the most recent proposed ground levels provided by the Client (HBL Proposed External Works drawings ref. 10701/HBL/XX-XX-DR-C-5201-5204 rev. P03, dated 16/11/2025); consequently, this assessment may require further revision should proposed development levels be revised.

This assessment was based on natural residual clay soils being considered to have a characteristic undrained shear strength (Cu) of at least 75 kPa at a typical minimum founding depth of 0.9m below existing ground levels. By way of example, based on Eurocode 7

compliant calculations, a 600mm wide strip foundation a depth of 0.9m bgl bearing on the natural residual clay with a characteristic undrained shear strength of at least 75 kPa, could support a line load of 100 kN/m run. The application of such a line load is expected to induce settlement of 25mm or less.

An updated assessment of potential suitable foundation types has been undertaken, based on currently proposed site layout / levels, the results of which are summarised on Drawing No. C10128A/N/05 in Appendix A. In brief, the area in the south of the site within which strip / trench fill foundations may be suitable has been slightly enlarged from previous.

Trees and shrubs may affect the moisture content of clays to greater depths and as such, foundations may be required to extend to greater depths to penetrate to a moisture stable level within the area of influence of existing or proposed trees and shrubs. A tree survey was not included in the scope of this investigation, but should be carried out prior to the production of a detailed plot-specific foundation schedule and the presence of existing and proposed trees should be taken into account during detailed foundation design.

It is understood that the Client's current preference is for at least some plots to have piled foundations, taken down through the made ground and any weak natural soils, to bear within competent natural strata. Given the proposed increases in ground levels, any made ground and low strength / loose soils could settle in relation to the pile and could induce negative skin friction on the pile, which should be taken into account within the design of any piling scheme.

It has also been proposed that vibro stone columns could be used for some areas of the site. Currently, it is understood that in the far west, where deep made ground coupled with proposed ground raising, such a method would not be suitable, due to the combined depth of existing made ground and proposed increase in ground levels, and an alternative such as controlled modulus columns (CMCs) or piles could be considered. In the east of the site, the presence of soft natural alluvial soils below the made ground is also considered likely to preclude the use of vibro stone columns, and an alternative such as CMCs or piles could be considered in that area.

The advice of specialist ground improvement / piling contractors should be sought at an early stage when considering the use of vibro stone columns, CMCs and piles.

Coal Mining

Backfilled informal crop workings (i.e., areas of made ground resulting from historical small-scale opencast extraction of coal) have been identified within the Barnsley Coal seam in the northern end of the site, extending to depths of up to 6.5m bgl.

There are no recorded mine entries within the site. However, there are recorded mine workings at depth beneath the site and therefore the possibility of encountering unrecorded mine entries cannot be discounted. It is therefore recommended that all excavations are inspected for mine entries / features. If a mine entry, mine workings or ground disturbance is suspected, advice regarding treatment / foundation precautions should be sought immediately from a suitably qualified engineer.

Contamination

Towards the eastern end of the proposed basin, excavation will be required into the made ground which has been proven to contain ACMs and asbestos fibre bundles; reference should

be made to the Remediation Strategy for the site (Sirius report ref. C10128N/RS, dated April 2026) for the correct management of asbestos impacted soils on the site. The Remediation Strategy also summarises previously identified soil contamination, and the consequent mitigation works required to enable development.

CLOSING REMARKS

The conclusions and recommendations presented in this letter report are considered reasonable based on the findings of the work described. However, these cannot be guaranteed to gain regulatory or other approvals and, therefore, this report should be passed by the client to the appropriate regulatory authorities and / or other appropriate organisations, for their comment and approval prior to undertaking any development works at the site.

We trust the above and attached are sufficient for you, however please do not hesitate to contact the undersigned should you require any further information.

Yours sincerely,

Andrew Lake
Senior Engineer
For and on behalf of Sirius Geotechnical Ltd

Appendix A: Drawings

Appendix B: Exploratory Hole Logs

Appendix C: Laboratory Testing Data

APPENDIX A
Drawings

NOTES

Site Location

REVISION	
0	For Information
A	>>
B	>>
C	>>
D	>>

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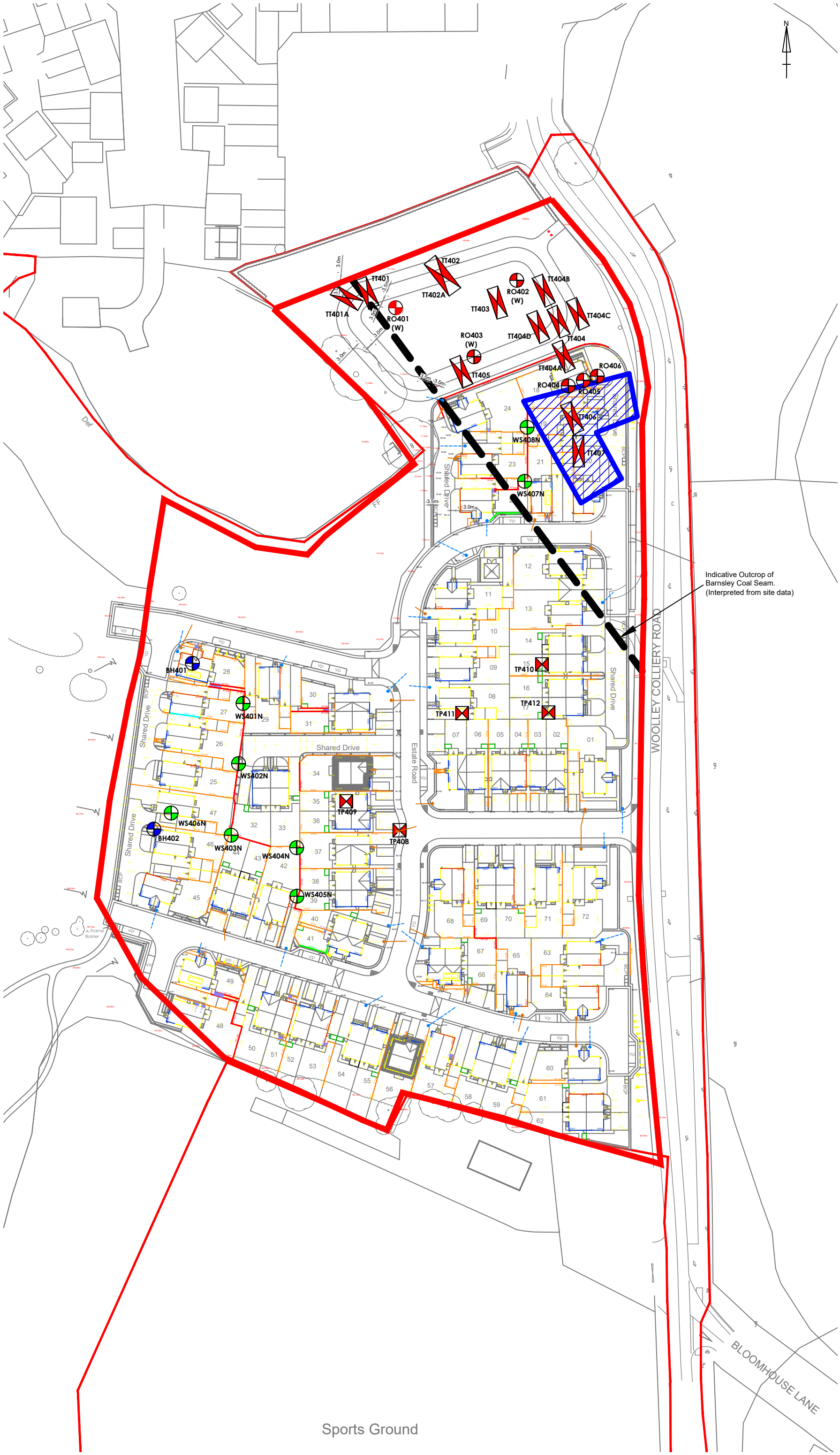
CLIENT: Gleeson Homes Ltd	DRAWING NO.: C10128/01	REVISION NO.: 0	
SITE: Woolley Colliery Road, Darton	DRAWN BY: AL	APPROVED BY: AL	
DRAWING TITLE: Site Location Plan	DATE: June 2024	SCALE: 1:25,000	A4



Key:

Approximate development boundary.

2026 Exploratory Holes:

TP401 — Trial Pit / Trial Trench

RO401 — Rotary Probehole

WS401 — Window Sample Borehole

BH401 — Cable Percussion Borehole

(W) — Monitoring well location

Area of Unlicensed Opencast - taken from Coal Authority records

Notes

1. The locations of services shown on this drawing are approximate and are based on utility plans provided by the client. Locations of services are given for the purposes of indicating constraints to the site investigation only. Reference should be made to original utility plans and HSG47 for locating of services within the site.
2. All marked site features (including historical features, mining features (ie, opencast boundaries and mineshafts), potential contaminant constraints, and any other potential constraint or feature of note) shown on this drawing are given for indicative purposes only. This drawing should not be underlaid in isolation to determine proposed development layouts. Reference should be made to the accompanying report for commentary on the potential location of these features including coordinates if available and any further works required to locate features if required.

REVISION		BY	DATE
0	For information	AL	15/04/26
A	>>	>>	>>
B	>>	>>	>>
C	>>	>>	>>
D	>>	>>	>>

SIRIUS GEOTECHNICAL LTD
4245 Park Approach,
Thorpe Park,
Leeds
LS15 8GB
www.thesiriusgroup.com
TEL: 0113 264 9960
FAX: 0113 264 9962

CLIENT

Gleeson Homes Ltd

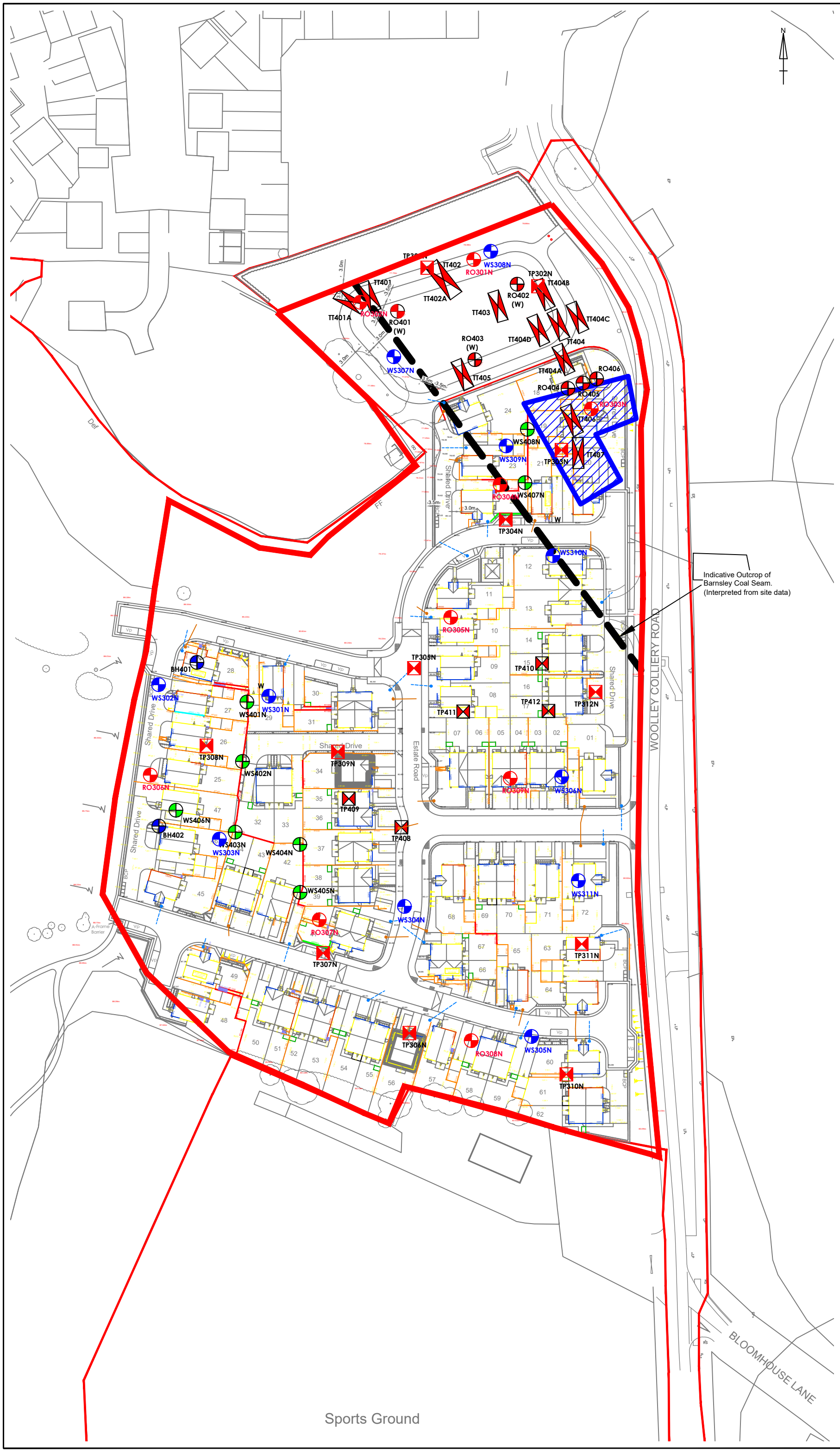
SITE

Woolley Colliery Road, Darton - Northern Area

DRAWING TITLE

Exploratory Hole Location Plan - April 2026

DRAWING NO.	REVISION NO.
C10128A/N/02	0
DRAWN BY: AL	APPROVED BY: MB
DATE: April 2026	SCALE: 1:1,000
PAPER SIZE: A3	



Key:

Approximate development boundary.

2026 Exploratory Holes:

TP401 (W) — Trial Pit / Trial Trench

RO401 — Rotary Probehole

WS401 — Window Sample Borehole

BH401 — Cable Percussion Borehole

(W) — Monitoring well location

2024 Exploratory Holes:

TP301 — Trial Pit

RO301 — Rotary Probehole

WS303 — Window Sample

Area of Unlicensed Opencast - taken from Coal Authority records

Notes

1. The locations of services shown on this drawing are approximate and are based on utility plans provided by the client. Locations of services are given for the purposes of indicating constraints to the site investigation only. Reference should be made to original utility plans and HSG47 for locating of services within the site.
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REVISION		BY	DATE
0	For information	AL	15/04/26
A	>>	>>	>>
B	>>	>>	>>
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D	>>	>>	>>

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CLIENT

Gleeson Homes Ltd

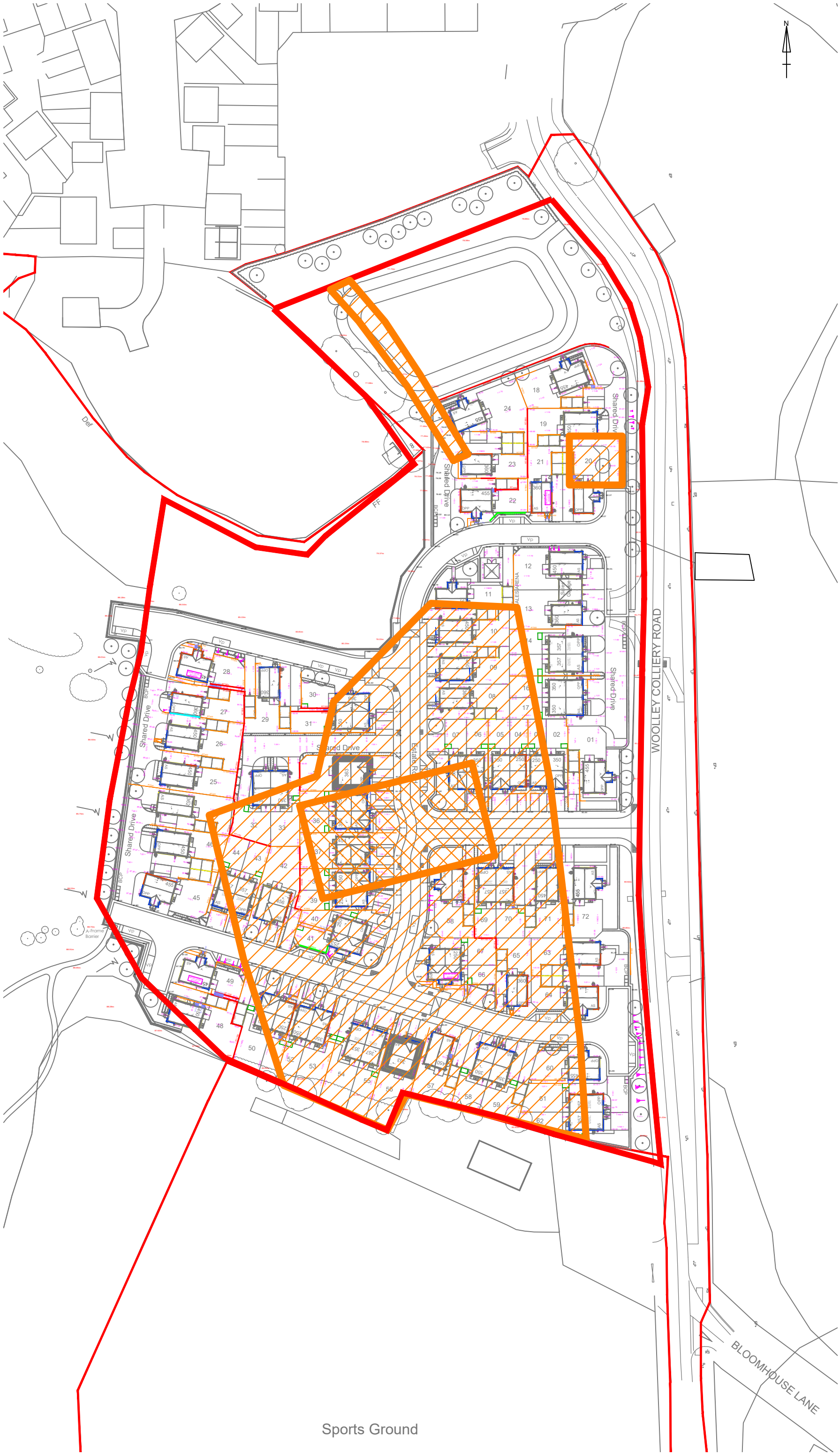
SITE

**Woolley Colliery Road,
Darton
- Northern Area**

DRAWING TITLE

**Exploratory Hole Location Plan
- 2024 and 2026**

DRAWING NO.	REVISION NO.
C10128A/N/03	0
DRAWN BY: AL	APPROVED BY: MB
DATE: April 2026	SCALE: 1:1,000
PAPER SIZE: A3	



Key:

Approximate development boundary.

Approximate extents of area underlain by concrete.

Approximate extents of area of concrete boulders.

Notes

1. The locations of services shown on this drawing are approximate and are based on utility plans provided by the client. Locations of services are given for the purposes of indicating constraints to the site investigation only. Reference should be made to original utility plans and HSG47 for locating of services within the site.
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REVISION		BY	DATE
0	For information	AL	22/04/26
A	>>	>>	>>
B	>>	>>	>>
C	>>	>>	>>
D	>>	>>	>>

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CLIENT

Gleeson Homes Ltd

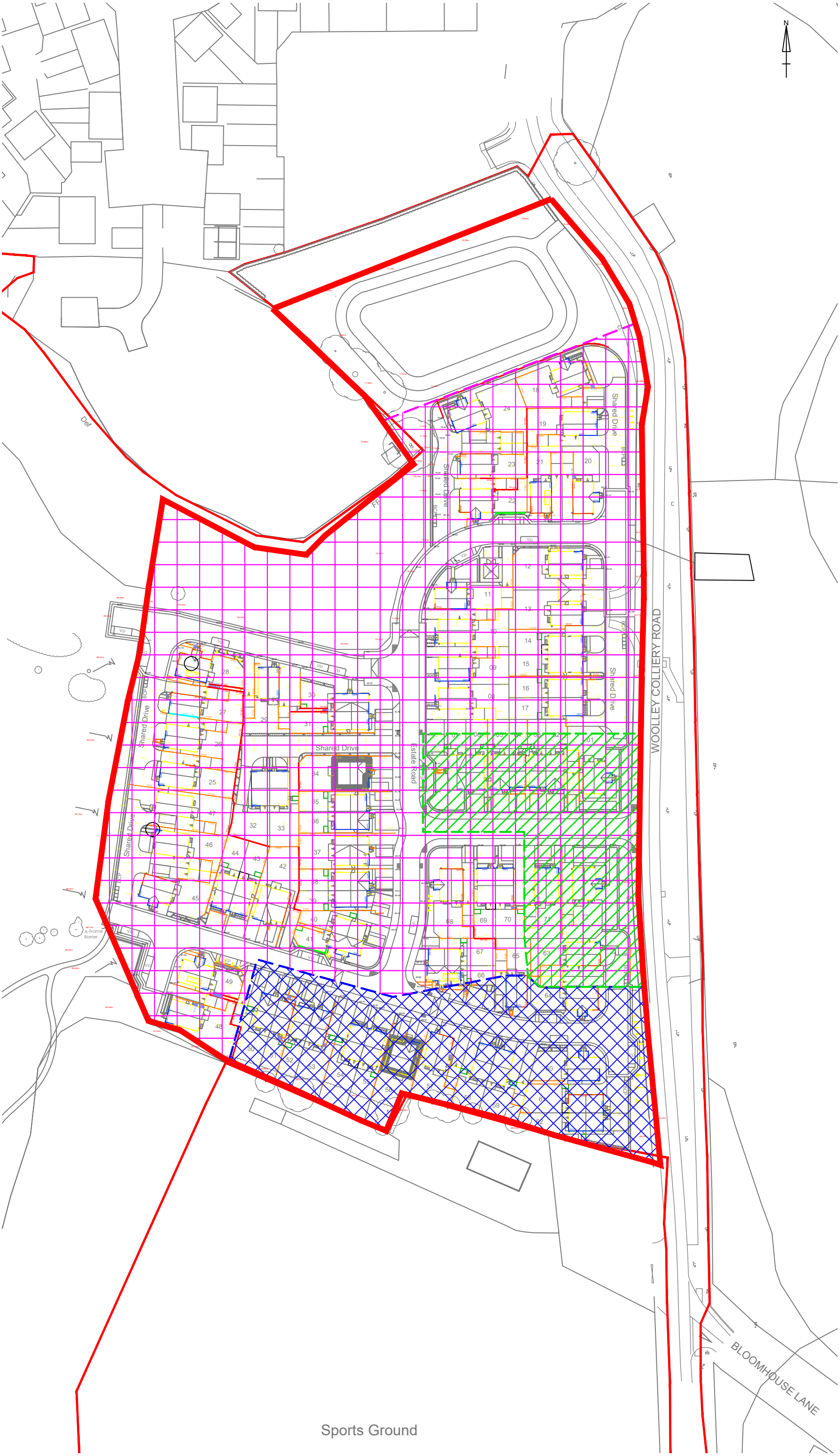
SITE

**Woolley Colliery Road,
Darton
- Northern Area**

DRAWING TITLE

Indicative Concrete Extents Plan

DRAWING NO.	REVISION NO.
C10128A/N/04	0
DRAWN BY: AL	APPROVED BY: MB
DATE: April 2026	SCALE: 1:1,000
PAPER SIZE: A3	



Key:

Approximate development boundary.

Made ground plus proposed placed fill generally <2.5m thick. Potential for strip / trench fill foundations.

Made ground / alluvial soils plus proposed placed fill generally >2.5m thick. Alternative foundations required.

Approximate extents of area underlain by soft alluvial soils. Vibro stone columns unlikely to be an alternative foundation solution within this area.

Notes

1. The locations of services shown on this drawing are approximate and are based on utility plans provided by the client. Locations of services are given for the purposes of indicating constraints to the site investigation only. Reference should be made to original utility plans and HSG47 for locating of services within the site.
2. All marked site features (including historical features, mining features (ie, opencast boundaries and mineshafts), potential contaminant constraints, and any other potential constraint or feature of note) shown on this drawing are given for indicative purposes only. This drawing should not be underlaid in isolation to determine proposed development layouts. Reference should be made to the accompanying report for commentary on the potential location of these features including coordinates if available and any further works required to locate features if required.

REVISION		BY	DATE
0	For information	AL	30/04/26
A	>>	>>	>>
B	>>	>>	>>
C	>>	>>	>>
D	>>	>>	>>

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CLIENT

Gleeson Homes Ltd

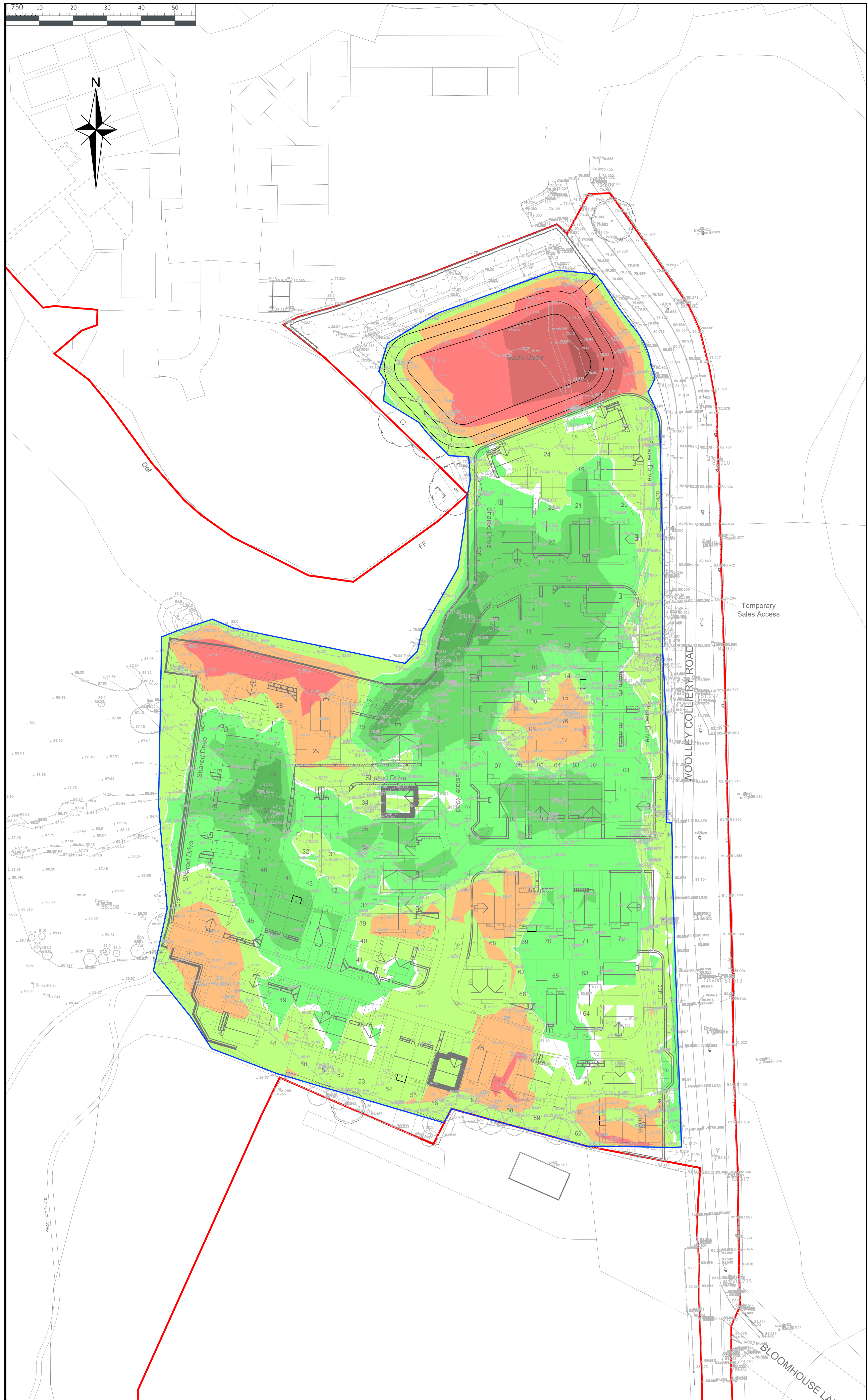
SITE

**Woolley Colliery Road,
Darton
- Northern Area**

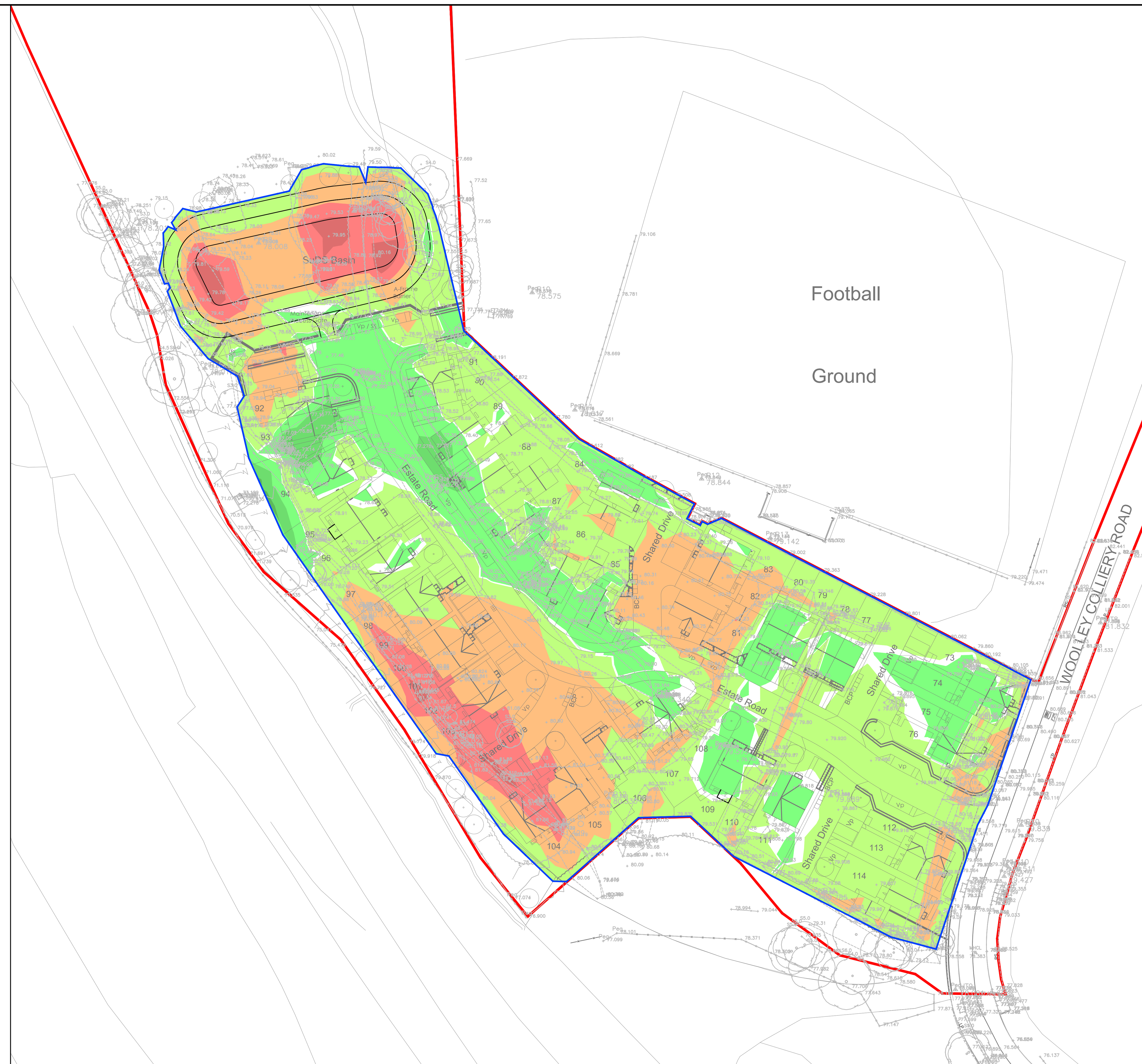
DRAWING TITLE

Indicative Foundation Areas Plan

DRAWING NO.	REVISION NO.
C10128A/N/05	0
DRAWN BY: AL	APPROVED BY: AMG
DATE: April 2026	SCALE: 1:1,000
PAPER SIZE: A3	



INSET 1 NORTH
1:750



INSET 2 SOUTH
1:750

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER HBL DRAWINGS ISSUED FOR THIS PROJECT

GENERAL NOTES:

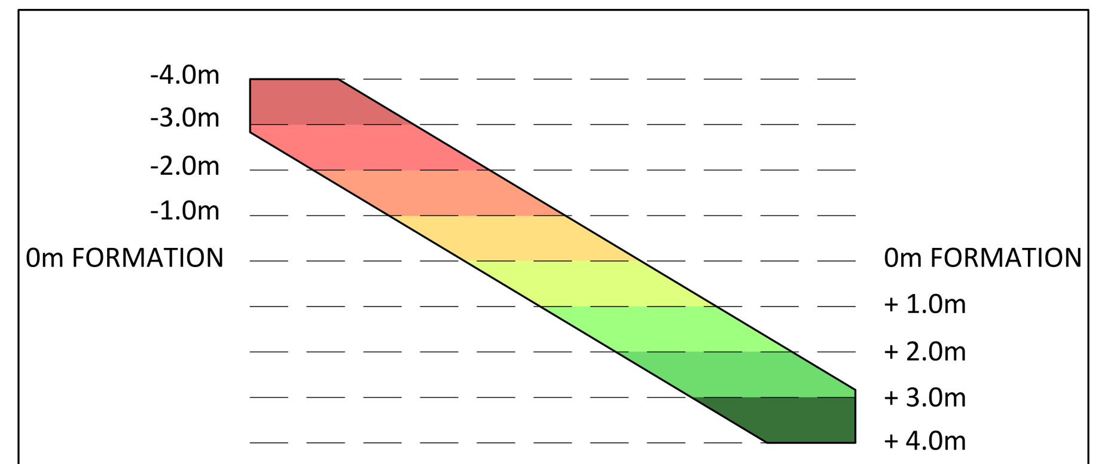
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERING AND ARCHITECT'S DETAILS.
2. THE DESIGN DETAILS PRESENTED MUST BE REVIEWED IN CONJUNCTION WITH THE WIDER SITE INFORMATION AND SITE CONSTRAINTS WHICH MAY NOT BE EVIDENT ON DRAWING AND MUST BE REQUESTED IF NOT ALREADY PROVIDED. THIS INCLUDES, BUT NOT LIMITED TO, GROUND CONDITIONS (GEOTECHNICAL AND GEO-ENVIRONMENTAL), GROUNDWATER LEVELS, BURIED SERVICES, REMNANT OBSTRUCTIONS, ECOLOGY, TREE PROTECTION AND TOPOGRAPHY.
3. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY, IN WRITING, SHOULD ANY ERRORS OR DISCREPANCIES BE FOUND PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORKS.
4. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH CURRENT BRITISH STANDARDS, BUILDING REGULATIONS AND NHBC STANDARDS.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXECUTE THE WORKS AT ALL TIMES IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE HEALTH AND SAFETY AT WORK ACT 1974, AND THE C.D.M. REGULATIONS 2015. THE CONTRACTOR WILL BE DEEMED TO HAVE ALLOWED FOR FULL COMPLIANCE, INCLUDING FULL LIAISON WITH THE CDM CO-ORDINATOR, WITHIN HIS RATES.
6. ANY EXISTING DETAILS WHICH ARE SHOWN ON THIS DRAWING ARE FOR GUIDANCE ONLY AND ARE TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY VARIATIONS ARE TO BE RECORDED AND REPORTED TO THE ENGINEER IMMEDIATELY.
7. BEFORE WORK COMMENCES CONTRACTOR SHOULD CONSULT THE ENGINEER AND THE SI REPORT REGARDING ANY CONTAMINATION ISSUES. ALL NECESSARY HEALTH AND SAFETY MEASURES TO BE TAKEN

KEY - PLAN

SITE BOUNDARY

CUTFILL BOUNDARY EXTENTS

78.50 EXISTING TOPO
S10840-3D - Woolley Colliery Road, Darton, Barnsley



GENERIC CUT AND FILL BANDING INFOGRAPHIC

SURFACE LEVEL DATA

NUMBER	MINIMUM LEVEL	MAXIMUM LEVEL	COLOUR	VOLUME
1	-5.00	-4.00		24m3
2	-4.00	-3.00		431m3
3	-3.00	-2.00		1872m3
4	-2.00	-1.00		6068m3
5	-1.00	-0.05		15439m3
6	0.05	1.00		8851m3
7	1.00	2.00		2342m3
8	2.00	3.00		134m3

EARTHWORKS ASSESSMENT NORTH

CALCULATION ASSUMPTIONS

SITE AREA 122,750m²
NORTHERN DEVELOPABLE AREA 27,500m²

EXISTING SURFACES
TOPSOIL DEPTH ASSUMPTION TAKEN FROM *C10128 GA Report - July 2024 final*
TOPSOIL AND VEGETATION CLEARANCE WILL BE REQUIRED FOR DEVELOPED LAND.
ESTIMATED TOP SOIL STRIP (27,500m²) -100mm

PROPOSED FORMATION SURFACES
PROPOSED SITE LEVELS TAKEN FROM *10701-HBL-XX-XX-DR-C-5201-5208_P01_EXTERNAL WORKS SHEET,* MODELED IN 3D TO FINISHED GROUND LEVELS, WITH SURFACES ADJUSTED TO SUIT ASSUMED CONSTRUCTION DEPTHS.

IN THIS EARTHWORKS ASSESSMENT A 600mm REDUCTION TO FORMATION LEVELS HAS BEEN TAKEN TO ACCOUNT FOR GENERAL SITE ARISING ACROSS THE FULL SITE

DEVELOPABLE AREA (27,500m²) -600mm

GENERAL ALLOWANCES

EARTHWORKS CALCULATIONS ARE NOT EXACT AND SHOULD BE USED AS GUIDANCE ONLY. FACTORS WHICH MAY IMPACT THE ACCURACY OF THE CUT AND FILL VOLUME COULD BE;

- ACCURACY OF THE SURVEY DATA
- +0.050/-0.050m BAND EXCLUDED FROM CUTFILL COLOURING AS DISCREPANCIES
- CONSTRUCTION TECHNIQUES
- MATERIAL BULKING
- MATERIAL COMPACTION
- THICKNESS OF EXISTING SURFACE OR TOPSOIL

CUT AND FILL CALCULATIONS

DEVELOPABLE AREA 27,500m²

EXISTING TOPSOIL STRIP 2,750m³
(TOPSOIL ORGANIC MATTER TO BE STOCKPILED AND TESTED FOR SUITABLE REUSE)

PROPOSED CUT 15,200m³
PROPOSED FILL 10,900m³

NET MATERIAL MOVEMENT 4,300m³ EXPORT

EARTHWORKS ASSESSMENT SOUTH

CALCULATION ASSUMPTIONS

SITE AREA 122,750m²
SOUTHERN DEVELOPABLE AREA 13,600m²

EXISTING SURFACES
TOPSOIL DEPTH ASSUMPTION TAKEN FROM *C10128 GA Report - July 2024 final*
TOPSOIL AND VEGETATION CLEARANCE WILL BE REQUIRED FOR DEVELOPED LAND.
ESTIMATED TOP SOIL STRIP (13,600m²) -100mm

PROPOSED FORMATION SURFACES
PROPOSED SITE LEVELS TAKEN FROM *10701-HBL-XX-XX-DR-C-5201-5208_P01_EXTERNAL WORKS SHEET,* MODELED IN 3D TO FINISHED GROUND LEVELS, WITH SURFACES ADJUSTED TO SUIT ASSUMED CONSTRUCTION DEPTHS.

IN THIS EARTHWORKS ASSESSMENT A 600mm REDUCTION TO FORMATION LEVELS HAS BEEN TAKEN TO ACCOUNT FOR GENERAL SITE ARISING ACROSS THE FULL SITE

DEVELOPABLE AREA (13,600m²) -600mm

GENERAL ALLOWANCES

EARTHWORKS CALCULATIONS ARE NOT EXACT AND SHOULD BE USED AS GUIDANCE ONLY. FACTORS WHICH MAY IMPACT THE ACCURACY OF THE CUT AND FILL VOLUME COULD BE;

- ACCURACY OF THE SURVEY DATA
- +0.050/-0.050m BAND EXCLUDED FROM CUTFILL COLOURING AS DISCREPANCIES
- CONSTRUCTION TECHNIQUES
- MATERIAL BULKING
- MATERIAL COMPACTION
- THICKNESS OF EXISTING SURFACE OR TOPSOIL

CUT AND FILL CALCULATIONS

DEVELOPABLE AREA 13,600m²

EXISTING TOPSOIL STRIP 1,360m³
(TOPSOIL ORGANIC MATTER TO BE STOCKPILED AND TESTED FOR SUITABLE REUSE)

PROPOSED CUT 9,900m³
PROPOSED FILL 1,200m³

NET MATERIAL MOVEMENT 8,700m³ EXPORT

REV.	DATE	DRAWN	DESCRIPTION	CHKD	APPRD
P01	04.11.25	MS	INITIAL ISSUE	MS	RJ

STATUS DESCRIPTION: FOR INFORMATION | STATUS: S3

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Consulting Civil & Structural Engineers

PROJECT: WOOLLEY COLLIERY

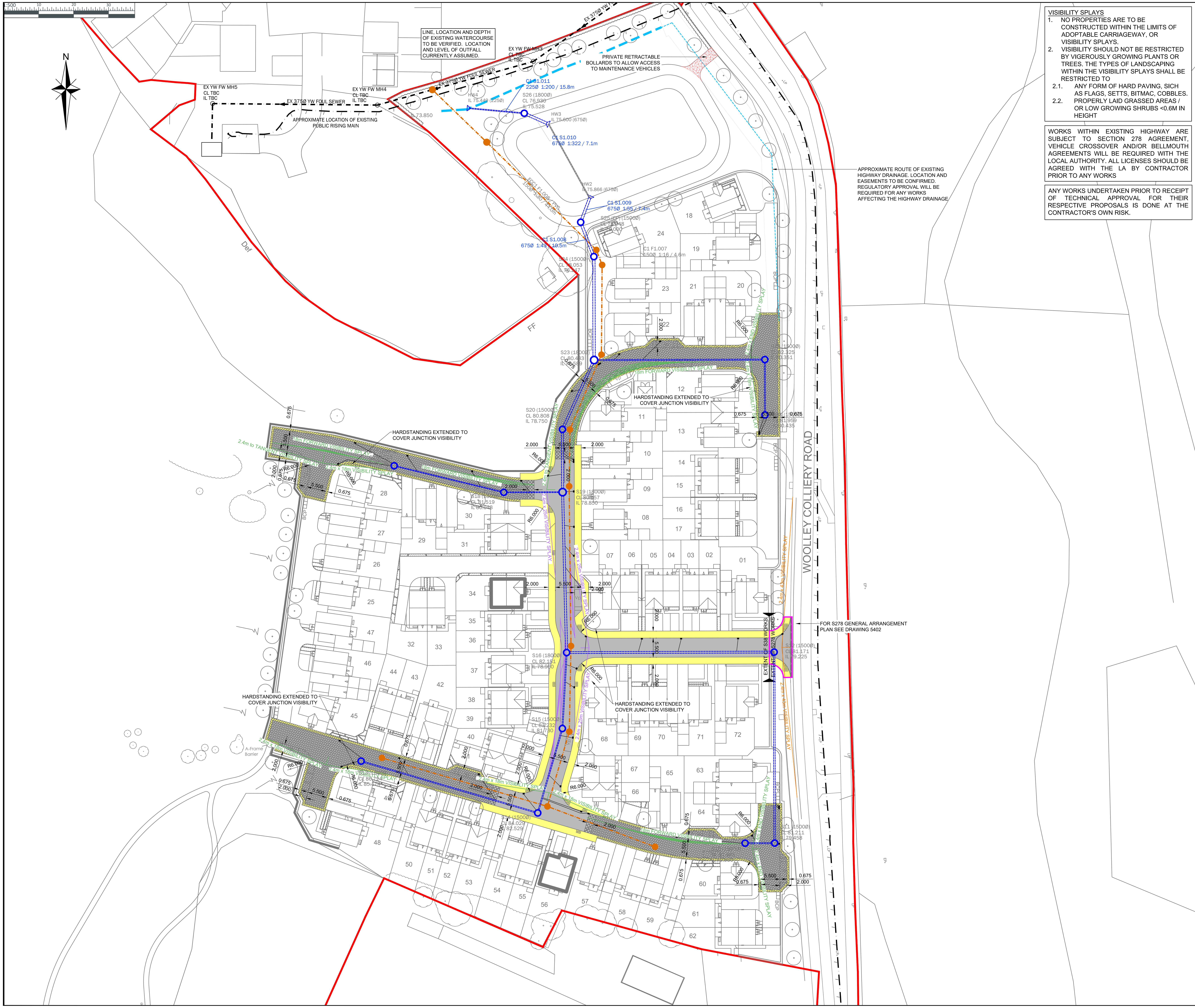
DRAWING TITLE: CUT AND FILL ASSESSMENT

CLIENT: MJ GLEESON

HBL REF.	DATE	SCALE(S)	
10701	04.11.25	1:750	A1

DRAWN	CHECKED	APPROVED
MS	MS	RJ

DRAWING No.: 10701-HBL-XX-XX-DR-C-5205 | REV.: P01



VISIBILITY SPLAYS

1. NO PROPERTIES ARE TO BE CONSTRUCTED WITHIN THE LIMITS OF ADOPTABLE CARRIAGEWAY, OR VISIBILITY SPLAYS.
2. VISIBILITY SHOULD NOT BE RESTRICTED BY VIGEROUSLY GROWING PLANTS OR TREES. THE TYPES OF LANDSCAPING WITHIN THE VISIBILITY SPLAYS SHALL BE RESTRICTED TO
   - 2.1. ANY FORM OF HARD PAVING, SICH AS FLAGS, SETTS, BITMAC, COBBLES.
   - 2.2. PROPERLY LAID GRASSED AREAS / OR LOW GROWING SHRUBS <0.6M IN HEIGHT

WORKS WITHIN EXISTING HIGHWAY ARE SUBJECT TO SECTION 278 AGREEMENT, VEHICLE CROSSOVER AND/OR BELLMOUTH AGREEMENTS WILL BE REQUIRED WITH THE LOCAL AUTHORITY. ALL LICENSES SHOULD BE AGREED WITH THE LA BY CONTRACTOR PRIOR TO ANY WORKS

ANY WORKS UNDERTAKEN PRIOR TO RECEIPT OF TECHNICAL APPROVAL FOR THEIR RESPECTIVE PROPOSALS IS DONE AT THE CONTRACTOR'S OWN RISK.

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER HBL DRAWINGS ISSUED FOR THIS PROJECT

SECTION 38 NOTES:

1. ROADS AND FOOTWAYS TO BE ADOPTED UNDER SECTION 38 OF HIGHWAYS ACT 1980 SHALL COMPLY WITH THE ADOPTING LOCAL AUTHORITY HIGHWAY DESIGN GUIDELINES FOR NEW DEVELOPMENTS AND BE IN ACCORDANCE WITH THE HIGHWAYS AGENCY DESIGN MANUAL FOR ROADS AND BRIDGES.
2. ALL WORKS WITHIN PUBLIC HIGHWAY TO COMPLY WITH CURRENT HEALTH AND SAFETY STANDARDS AND ALL SIGNING SHALL COMPLY WITH CHAPTER 8 TRAFFIC SAFETY MEASURES AND SIGNS FOR ROADWORKS AND TEMPORARY SITUATIONS OF THE TRAFFIC SIGNS MANUAL.
3. A COVENANT WILL BE PROVIDED TO THE BENEFIT OF THE LOCAL AUTHORITY ENSURING THAT NO PLANTING OR STRUCTURE GREATER THAN 600MM IN HEIGHT TO BE PERMANENTLY SITUATED WITHIN ANY PRIVATE VISIBILITY SPLAYS
4. REAR OF VISIBILITY SPLAYS TO BE DELINEATED WITH A CONTINUOUS 50 X 150 PC CONCRETE TYPE EF SQUARE EDGING SET AT A LEVEL TO ENABLE THE GRASS (IF ANY) TO BE CUT.
5. HAND LAYING OF BITUMINOUS MATERIALS IS NOT PERMITTED ON ADOPTABLE CARRIAGEWAY
6. TARMAC ROAD CONSTRUCTION TO COMPLY WITH BS.EN.130108
7. ALL SUBSTRATA STRUCTURES AND UNCONSOLIDATED MATERIAL, WITHIN THE CONSTRUCTION WIDTH OF THE HIGHWAY, ARE TO BE REMOVED.
8. WHERE TWO OR MORE WATER SERVICES BOUNDARY BOXES ARE SITUATED TOGETHER MULTI-METER BOUNDARY AS SPECIFIED BY THE SEWERAGE UNDERTAKER ARE TO BE INSTALLED
9. STOPCOCK AND METER COVERS SHALL NOT BE LOCATED WITHIN THE VEHICULAR CROSSING CONSTRUCTION
10. HINGED GULLY GRATE AND FRAME TO BS EN 124, GRADE D400, NON-ROCKING WITH CAPTIVE LEFT HAND END HINGE. MINIMUM WATERWAY AREA 900CM SQUARED. FRAME DEPTH 100MM. BLACK COATED DUCTILE IRON.
11. ALL GULLY POTS TO BS5911 OR BS 65 MINIMUM SIZE 900MM X 450MM
12. ALL TRENCHES WITHIN THE ADOPTABLE AREAS WILL BE BACKFILLED WITH TYPE 1, OR MATERIALS SPECIFIED IN CLAUSE 6.17
13. IN DRAINAGE EASEMENT AREAS NO BUILDINGS, WALLS OR OTHER PERMANENT STRUCTURES AND NO PLANTING OF TREES, OR SUBSTANTIAL SHRUBS/ HEDGES.
14. ALL EXISTING DRAINAGE LEVELS, DIAMETERS & LOCATIONS NEED TO BE CHECKED ON SITE AND ANY DISCREPANCIES NEED TO BE REPORTED BACK TO THE ENGINEER.
15. MANHOLE COVERS AND GULLY GRATES TO BE ADOPTED SHALL BE KITEMARKED AND TO BS EN124. CLASS D400, GULLY GRATES 450MM SQUARE.
16. MANHOLES LOCATED WITHIN TURNING AREAS OF JUNCTION TO HAVE COVERS TREATED WITH AN ANTI-SLIP COATING.
17. COVER LEVELS FOR MANHOLES ARE APPROXIMATE ONLY AND SHOULD BE ADJUSTED TO MATCH SURROUNDING LEVELS
18. IN BLOCK PAVED AREAS 'INFILL' TYPE COVERS SHOULD NOT BE USED, AND FRAMES MUST BE 150MM DEEP.
19. ALL GULLY AND CHANNEL GRATING IN SHARED SURFACES AND FOOTWAYS TO BE PEDESTRIAN FRIENDLY
20. ALL ADOPTABLE PIPE WORK FOR HIGHWAY DRAINS TO BE MINIMUM CONCRETE CLASS 120 TO BS5911 OR CLASS 120 CLAY OR 28KN/M CRUSHING STRENGTH IF 150MM Ø TO BSEN295-1 AND LAID ON CLASS S GRANULAR BED UNLESS SHOWN OTHERWISE.
21. WHERE HIGHWAY DRAINS HAVE LESS THAN 1.2M COVER UNDER ROADS AND 0.9M COVER UNDER DRIVES AND GARDENS THE PIPES ARE TO BE SURROUNDED WITH 150MM OF CLASS ST4/C20 CONCRETE WITH FLEXIBILITY OF JOINTS MAINTAINED AS STATED IN CLAUSE 4.2.28 OF THE WATER SERVICES ASSOCIATION GUIDE. ANY CONCRETE BED AND SURROUND TO PIPE WORK TO BE SULPHATE RESISTING CEMENT.
22. THE PROVISION OF A CCTV SURVEY OF ANY HIGHWAY DRAINAGE, AT THE DEVELOPERS EXPENSE, IS REQUIRED PRIOR TO LAYING THE WEARING COURSE.
23. ALL CONNECTIONS TO HIGHWAY DRAINS MUST BE MADE VIA FACTORY MADE JUNCTIONS.
24. ALL WORKS TO SEWERS/ MANHOLES BEING OFFERED FOR ADOPTION OR ON EXISTING PUBLIC SEWERS SHOULD BE IN ACCORDANCE WITH "DESIGN AND CONSTRUCTION GUIDANCE" AND THE SEWERAGE UNDERTAKERS RECOMMENDATIONS.

KEY - PLAN

- SITE BOUNDARY
- EXISTING HIGHWAY BOUNDARY *TO BE CONFIRMED*
- S278 EXTENTS
- TYPE 4 ASPHALT ESTATE ROAD
- TYPE 4 ASPHALT FOOTPATH
- TYPE 5B ESTATE ROAD *60mm CONC BLOCK PAVIORS (HERRINGBONE) OR CONTRASTING ASPHALT*
- TYPE 5B HARD MARGIN *60mm CONC BLOCK PAVIORS (HERRINGBONE) OR CONTRASTING ASPHALT*
- LIGHTING COLUMN DESIGN *SEE LIGHTING ENGINEERS DESIGN - TBC*
- TACTILE PAVING (BUFF) *400mm x 400mm x 65mm TACTILE FLAGS*
- 15MPH VISIBILITY SPLAY (TYPE 5B)
- 20MPH VISIBILITY SPLAY (TYPE 4)
- 30MPH VISIBILITY SPLAY (WOOLLEY COLLIERY ROAD)
- S38/S278 HIGHWAY DRAINAGE/GULLY
- PROPOSED S104 STORM DRAINAGE
- PROPOSED S104 FOUL DRAINAGE
- PROPOSED S104 COMBINED DRAINAGE

S104 DRAINAGE TO FOLLOW DESIGN AND CONSTRUCTION GUIDANCE FOR FOUL AND SURFACE WATER SEWERS OFFERED FOR ADOPTION. DETAILS PROVIDED BY WATER UK, SUBJECT TO ADOPTING AUTHORITY TECHNICAL APPROVAL.
CP = CATCHPIT
FCC = FLOW CONTROL CHAMBER

- EXISTING COMBINED SEWER
- EXISTING FOUL SEWER
- EXISTING FOUL RISING MAIN

REV.	DATE	DRAWN	DESCRIPTION	CHKD	APPRD
P03	06.03.26	RJ	REVISED FOR S38 APPROVAL	RJ	RJ
P02	16.11.25	RJ	REVISED TO 1329.05-06H PROPOSED SITE LAYOUT	RJ	RJ
P01	31.10.25	PSC	INITIAL ISSUE	RJ	RJ

STATUS DESCRIPTION: FOR TECHNICAL APPROVAL
STATUS: S4

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Consulting Civil & Structural Engineers

PROJECT: WOOLLEY COLLIERY

DRAWING TITLE: S38 GENERAL ARRANGEMENT PLAN SHEET 1

CLIENT: MJ GLEESON

HBL REF.	DATE	SCALE(S)	
10701	04.11.25	1:500	A1
DRAWN: MS	CHECKED: RJ	APPROVED: RJ	

DRAWING No.: 10701-HBL-XX-XX-DR-C-5303
REV.: P03

APPENDIX B
Fieldwork Data

TRIAL PIT RECORD

TP No. **TT401** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 07/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC | Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Grass over dark grey to black sandy clayey GRAVEL with medium cobble content. Gravel is angular to subangular fine to coarse of brick, sandstone, concrete, clinker and coal. Cobbles are angular of brick. With rare fragments of wood and metal.				
			1					
				MADE GROUND: Black sandy angular to subangular fine to coarse GRAVEL of ash, coal, mudstone and clinker. With rare pieces of timber up to 0.90 x 0.30 x 0.30m in size.	1.80	75.26		
			2	MADE GROUND: Dark grey to black sandy clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of ash, coal, mudstone and brick. Cobbles are angular of brick.	2.10	74.96		
B	3.00 - 3.50		3	MADE GROUND: Black clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of brick, ash, coal, mudstone, clinker and rare slag. Cobbles are angular of brick. With occasional fragments of wood and plastic.	3.00	74.06		
				▼				
			4	*At 4.10m bgl: With occasional ceramic tiles (< 10%).*				
D	4.30			Firm orangish brown mottled bluish grey slightly sandy gravelly CLAY. Medium plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone and mudstone.	4.20	72.86		
				End of trial pit at 4.50m	4.50	72.56		
			5					

Remarks and Groundwater Observations

1. Trial pit complete at 4.50m bgl due to instability of made ground. 2. Loose from 3.50m bgl. 3. Rapid ingress of water at 3.70m bgl. 4. Backfillled with arisings upon completion. 5. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 77.06

Easting: 431170.67

Northing: 410895.15

Fig No. TT401

TRIAL PIT RECORD

TP No. **TT401A** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 07/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC Checked By: AL

SAMPLE DETAILS | STRATA RECORD

Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Grass over dark grey to black sandy clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of brick, sandstone, concrete, clinker and coal. Cobbles are angular of brick. With rare fragments of wood and metal.				
				At 0.70m bgl: 1 No. redundant metal pipe in southern wall of trial pit - c. 12cm in diameter.				
				MADE GROUND: Black locally dark grey clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of ash, coal, brick, clinker and rare slag. Cobbles are angular of brick. With rare fragments of ceramic and wood.	0.90	75.91		
				From 2.00m bgl: With rare pockets of firm gravelly clay.				
				Firm orangish brown mottled bluish grey slightly sandy gravelly CLAY. Medium plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone and mudstone.	4.00	72.81		
				End of trial pit at 4.30m	4.30	72.51		

Remarks and Groundwater Observations

1. Trial pit complete at 4.30m bgl due to instability of made ground. 2. Loose from 3.60m bgl. 3. Rapid ingress of water at 3.40m bgl. 4. Backfillled with arisings upon completion. 5. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 76.81

Easting: 431168.21

Northing: 410893.78

Fig No. TT401A

TRIAL PIT RECORD

TP No. **TT402** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 07/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC | Checked By: AL

SAMPLE DETAILS | STRATA RECORD

Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Firm dark greyish brown slightly sandy gravelly friable CLAY. Low plasticity (field description). Gravel is angular to subangular fine to coarse of mudstone, sandstone and brick. With occasional rootlets.	0.20	77.74		
				MADE GROUND: Firm dark grey slightly sandy gravelly CLAY with low cobble content. Low plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone, mudstone and brick. Cobbles are angular of brick and sandstone. With 2 No. plastic bags.				
				MADE GROUND: Black clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of ash, brick, clinker coal and rare slag. Cobbles are angular of brick. With rare metal and ceramic.	1.60	76.34		
				At 3.20m bgl: 1 No. metal pipe - 1.10 x 0.3 x 0.12 in size.				
				Firm orangish brown mottled bluish grey slightly sandy gravelly CLAY. Medium plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone and mudstone.	4.10	73.84		
				Extremely weak orangish brown SANDSTONE. Recovered as sandy angular to subangular fine to coarse gravel.	4.60	73.34		
				End of trial pit at 5.00m	5.00	72.94		

Remarks and Groundwater Observations

1. Trial pit complete at 5.00m bgl in bedrock. 2. Remained dry and stable. 3. Backfillled with arisings upon completion. 4. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 77.94

Easting: 431190.66

Northing: 410905.24

Fig No. TT402

TRIAL PIT RECORD

TP No. **TT402A** Sheet 1 of 1

Site: Woolley Colliery Road, Darton	Contract No: C10128A
Client: Gleeson Homes Ltd	Date: 07/04/2026
Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket	Scale: 1:25
	Logged By: JC — Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Firm dark greyish brown slightly sandy gravelly friable CLAY. Low plasticity (field description). Gravel is angular to subangular fine to coarse of mudstone, sandstone and brick. With occasional rootlets.	0.30	78.01		
				MADE GROUND: Firm orangish brown mottled light grey slightly sandy gravelly CLAY with medium cobble content. Gravel is angular to subangular fine to coarse of sandstone, mudstone and brick. Cobbles are angular of sandstone and brick.				
				MADE GROUND: Black clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of ash, brick, clinker coal and rare slag. Cobbles are angular of brick. With rare metal, wood and ceramic.	1.40	76.91		
				Firm orangish brown mottled bluish grey slightly sandy gravelly CLAY. Medium plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone and mudstone.	4.00	74.31		
				End of trial pit at 4.40m	4.40	73.91		

1 2 3 4 5

Remarks and Groundwater Observations

1. Southern extension to TT402. 2. Trial pit complete at 4.40m bgl in natural strata. 3. Remained dry and stable. 4. Backfillled with arisings upon completion. 5. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 78.31
Easting: 431196.77
Northing: 410897.73

Fig No. TT402A

TRIAL PIT RECORD

TP No. **TT403** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 09/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC | Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
ES	0.20			MADE GROUND: Soft dark brown to black slightly gravelly sandy friable CLAY with low cobble and boulder content. Low plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone, mudstone, brick, clinker and occasional coal. Cobbles are angular of brick. Boulders are angular of intact brickwork up to 0.90 x 0.60 x 0.40m in size. With rare wood and glass fragments and occasional rootlets.	0.40	78.16		
D	0.90		1	MADE GROUND: Firm light greyish brown slightly sandy gravelly friable CLAY with low cobble content. Low plasticity (field description). Gravel is angular to subrounded fine to coarse of sandstone, mudstone and brick. Cobbles are angular of sandstone and brick. With rare plant remains.	1.20	77.36		
ES	1.40		2	MADE GROUND: Black clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of ash, clinker, coal, brick and rare red mudstone. Cobbles are angular of brick. With occasional pieces of wood, glass, ceramic and timber up to 1.20 x 0.30 x 0.30m in size. Timber noted to have distinct hydrocarbon odour.				
				At 2.50m bgl: 1 No. redundant cable in southern wall of trial pit.				
			3	Firm to stiff orangish brown mottled bluish grey slightly sandy gravelly CLAY. Medium plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone and mudstone.	3.00	75.56		
				Extremely weak dark grey MUDSTONE. Recovered as very clayey angular to subangular fine to coarse gravel.	3.80	74.76		
			4	Extremely weak black COAL. Recovered as angular to subangular fine to coarse gravel.	4.00	74.56		
				Very weak greyish brown SANDSTONE. Recovered as sandy angular to subangular fine to coarse gravel.	4.50	74.06		
				End of trial pit at 4.80m	4.80	73.76		
			5					

Remarks and Groundwater Observations

1. Trial pit complete at 4.80m bgl in bedrock. 2. Remained dry and stable. 3. Backfillled with arisings upon completion. 4. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 78.56

Easting: 431208.68

Northing: 410896.38

Fig No. TT403

TRIAL PIT RECORD

TP No. **TT404** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 08/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC | Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Dark grey to black very clayey GRAVEL with low cobble content and occasional pockets of firm gravelly CLAY. Gravel is angular to subangular fine to coarse of ash, brick, coal and mudstone. Cobbles are angular of brick.				
ES	0.50							
			1					
			2					
				MADE GROUND: Black clayey GRAVEL with high cobble content. Gravel is angular to subangular fine to coarse of ash, brick, mudstone, clinker and rare slag. Cobbles are angular of brick. With occasional pieces of timber up to 1.30 x 0.50 x 0.20m in size. Timber noted to have faint hydrocarbon odour. Rare metal and plastic.	2.10	77.46		
				From 2.60m bgl: With occasional possible asbestos tiles.				
ES	2.70							
D	2.80							
			3	End of trial pit at 3.00m	3.00	76.56		
			4					
			5					

Remarks and Groundwater Observations

1. Trial pit terminated at 3.00m bgl due to presence of possible asbestos containing material. 2. Noted to be loose from 2.00m bgl. 3. No groundwater encountered. 4. Backfillled with arisings upon completion. 5. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 79.57

Easting: 431224.06

Northing: 410890.49

Fig No. TT404

TRIAL PIT RECORD

TP No. **TT404A** Sheet 1 of 2

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 08/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Firm greyish brown slightly sandy gravelly CLAY. Low plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone, brick and mudstone. With many rootlets.				
				MADE GROUND: Black clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of ash, clinker, mudstone and brick. Cobbles are angular of brick.	0.30	79.97		
			1					
				MADE GROUND: Dark grey to black very clayey GRAVEL with low cobble content and occasional pockets of firm gravelly clay. Gravel is angular to subangular fine to coarse of ash, brick, coal and mudstone. Cobbles are angular of brick.	1.20	79.07		
			2					
				MADE GROUND: Black clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of ash, brick, coal, clinker and mudstone. Cobbles are angular of brick. With occasional fragments of wood and 2 No. pieces of fabric.	2.90	77.37		
			3					
				Firm to stiff yellowish brown mottled bluish grey slightly sandy slightly gravelly CLAY. Medium plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone, mudstone and occasional coal.	3.20	77.07		
				From 3.20m to 5.80m bgl: Extremely weak black COAL in northern section of trial trench.				
			4					
B	4.50 - 5.00			Extremely weak black COAL. Recovered as angular, cubic fine to coarse gravel.	4.50	75.77		
			5					

Remarks and Groundwater Observations

1. Log represents southern extent of trial trench. 2. Trial trench complete at 6.00m bgl in bedrock. 3. Remained stable. 4. Slow ingress of water at 5.80m bgl. 5. Backfillled with arisings upon completion. 6. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 80.27

Easting: 431225.83

Northing: 410882.35

Fig No. TT404A

TRIAL PIT RECORD

TP No. **TT404A** Sheet 2 of 2

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 08/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC | Checked By: AL

SAMPLE DETAILS | STRATA RECORD

Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				Extremely weak black COAL. Recovered as angular, cubic fine to coarse gravel.				
				Extremely weak light grey MUDSTONE. Recovered as stiff gravelly clay.	5.80	74.47		
				End of trial pit at 6.00m	6.00	74.27		

6 7 8 9 10

Remarks and Groundwater Observations

1. Log represents southern extent of trial trench. 2. Trial trench complete at 6.00m bgl in bedrock. 3. Remained stable. 4. Slow ingress of water at 5.80m bgl. 5. Backfillled with arisings upon completion. 6. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 80.27

Easting: 431225.83

Northing: 410882.35

Fig No. TT404A

TRIAL PIT RECORD

TP No. **TT404B** Sheet 1 of 2

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 08/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Firm greyish brown slightly sandy gravelly CLAY. Low plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone, brick and mudstone. With many rootlets.				
				MADE GROUND: Black very clayey GRAVEL with low cobble content and occasional pockets of firm gravelly clay. Gravel is angular to subangular fine to coarse of ash, brick, concrete, mudstone, clinker and coal. Cobbles are angular of brick. With rare fragments of wood, ceramic, 2 No. pieces of timber up to 1.00 x 0.30 x 0.20m in size and 1 No. piece of plastic.	0.30	79.57		
B	1.00 - 1.50		1					
			2					
			3	Stiff yellowish brown mottled bluish grey slightly sandy gravelly CLAY. Medium plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone and mudstone. *At 3.00m bgl: 1 No. redundant cable in southern wall of trial pit.*	2.90	76.97		
			4					
				Extremely weak black COAL. Recovered as angular, cubic fine to coarse gravel.	4.50	75.37		
			5		5.00	74.87		

Remarks and Groundwater Observations

1. Trial pit complete at 5.50m bgl in bedrock. 2. Remained stable. 3. Slow ingress of water at 5.00m bgl. 4. Backfillled with arisings upon completion. 5. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 79.87

Easting: 431224.39

Northing: 410894.97

Fig No. TT404B

TRIAL PIT RECORD

TP No. **TT404B**
Sheet 2 of 2

Site: Woolley Colliery Road, Darton
Contract No: C10128A
Client: Gleeson Homes Ltd
Date: 08/04/2026
Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket
Scale: 1:25
Logged By: JC
Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				Extremely weak dark grey MUDSTONE. Recovered as very clayey angular to subangular fine to coarse gravel.				
				End of trial pit at 5.50m	5.50	74.37		

6
7
8
9
10

Remarks and Groundwater Observations

1. Trial pit complete at 5.50m bgl in bedrock. 2. Remained stable. 3. Slow ingress of water at 5.00m bgl. 4. Backfillled with arisings upon completion. 5. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 79.87
Easting: 431224.39
Northing: 410894.97

Fig No.
TT404B

TRIAL PIT RECORD

TP No. **TT404C** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 10/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC | Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Dark grey to black GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of ash, brick, coal and clinker. Cobbles are angular of brick. With rare fragments of glass.				
				MADE GROUND: Soft dark grey to black locally bluish grey slightly sandy gravelly CLAY with medium cobble content. Low plasticity (field description). Gravel is angular to subangular fine to coarse of brick, clinker, concrete and coal. With rare fragments of wood and ceramic.	2.10	77.98		
				From 2.60m bgl: With frequent roots.				
D ES	3.30 3.40			MADE GROUND: Black clayey GRAVEL with medium cobble content. Gravel is angular to subangular fine to coarse of brick, ash, clinker and red mudstone. Cobbles are angular of brick. With occasional pieces of timber up to 0.80 x 0.20 x 0.20m in size. Timber noted to have faint hydrocarbon odour and occasional possible asbestos tiles (up to 10 tiles).	3.30 3.60	76.78 76.48		
				End of trial pit at 3.60m				

Remarks and Groundwater Observations

1. Trial pit terminated at 3.60m bgl due to presence of possible asbestos containing material. 2. Remained dry and stable. 3. Backfillled with arisings upon completion. 4. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 80.08

Easting: 431229.88

Northing: 410893.49

Fig No. TT404C

TRIAL PIT RECORD

TP No. **TT404D**
Sheet 1 of 2

Site: Woolley Colliery Road, Darton	Contract No: C10128A
Client: Gleeson Homes Ltd	Date: 10/04/2026
Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket	Scale: 1:25
	Logged By: JC — Checked By: AL

SAMPLE DETAILS | STRATA RECORD

Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Firm greyish brown slightly sandy gravelly CLAY with low cobble content. Low plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone, brick and mudstone. Cobbles are angular of brick. With many roots and rootlets.				
				MADE GROUND: Black very clayey GRAVEL with low cobble content and occasional pockets of firm gravelly clay. Gravel is angular to subangular fine to coarse of ash, brick, concrete, mudstone, clinker and coal. Cobbles are angular of brick. With rare fragments of wood, ceramic, 2 No. pieces of timber up to 1.00 x 0.30 x 0.20m in size and 1 No. piece of plastic.	1.80	77.52		
				Extremely weak black COAL. Recovered as angular, cubic fine to coarse gravel.	4.00	75.32		

Remarks and Groundwater Observations

1. Trial pit complete at 5.80m bgl in bedrock. 2. Remained stable. 3. Slow ingress of water at 5.10m bgl. 4. Backfillled with arisings upon completion. 5. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 79.32
Easting: 431219.30
Northing: 410889.92

Fig No. TT404D

TRIAL PIT RECORD

TP No. **TT404D** Sheet 2 of 2

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 10/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC | Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
D	5.50			Extremely weak black COAL. Recovered as angular, cubic fine to coarse gravel.	5.40	73.92		
				Extremely weak light grey MUDSTONE. Recovered as stiff gravelly clay.	5.80	73.52		
				End of trial pit at 5.80m				

6 7 8 9 10

Remarks and Groundwater Observations

1. Trial pit complete at 5.80m bgl in bedrock. 2. Remained stable. 3. Slow ingress of water at 5.10m bgl. 4. Backfillled with arisings upon completion. 5. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 79.32

Easting: 431219.30

Northing: 410889.92

Fig No. TT404D

TRIAL PIT RECORD

TP No. **TT405** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 09/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC Checked By: AL

SAMPLE DETAILS / STRATA RECORD

Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
ES	0.10			MADE GROUND: Dark brown sandy clayey angular to subangular fine to coarse GRAVEL of sandstone, brick and mudstone. With many roots and rootlets.	0.20	78.36		
ES	0.50		1	MADE GROUND: Soft to firm dark greyish brown locally orangish brown slightly sandy gravelly CLAY with low cobble content. Low plasticity (field description). Gravel is angular to subangular fine to coarse of mudstone, brick, concrete and clinker. Cobbles are angular of brick. With occasional fragments of wood, glass and rootlets.	1.10	77.46		
ES	2.00		2	MADE GROUND: Dark grey to black clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of ash, coal, clinker, brick and red mudstone. Cobbles are angular of brick. With occasional ceramic fragments and rare glass fragments.	1.90	76.66		
D	2.90		3	Firm dark greenish grey slightly gravelly sandy silty CLAY. Low plasticity (field description). Gravel is angular to subrounded fine to medium of mudstone and rare coal. With occasional plant remains and faint humic odour.	2.70	75.86		
				Firm to stiff orangish brown mottled bluish grey slightly sandy gravelly friable CLAY. Low plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone.	3.10	75.46		
			4	Very weak greyish brown SANDSTONE. Recovered as sandy angular to subangular fine to coarse gravel.	3.50	75.06		
				End of trial pit at 4.50m	4.50	74.06		
			5					

Remarks and Groundwater Observations

1. Trial pit complete at 4.50m bgl in bedrock. 2. Remained dry and stable. 3. Backfillled with arisings upon completion. 4. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 78.56

Easting: 431197.53

Northing: 410875.85

Fig No. TT405

TRIAL PIT RECORD

TP No. **TT406** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 09/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC | Checked By: AL

SAMPLE DETAILS | STRATA RECORD

Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Firm greyish brown slightly sandy gravelly CLAY. Low plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone, brick and mudstone. With many rootlets.				
				MADE GROUND: Black clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of ash, coal, brick, clinker and red mudstone. Cobbles are angular of brick. With rare fragments of wood and ceramic.	0.30	80.75		
				From 2.50m: With occasional pieces of timber up to 1.30 x 0.30 x 0.20m in size. Timber noted to have faint hydrocarbon odour.				
				At 2.80m bgl: 1 No. redundant cable in southern wall of trial pit.				
				Extremely weak black COAL. Recovered as angular, cubic fine to coarse gravel.	3.10	77.95		
				From 4.00m bgl: With frequent iron discolouring and low cobble content.				
				Extremely weak light grey MUDSTONE. Recovered as stiff gravelly clay.	4.60	76.45		
				End of trial pit at 5.00m	5.00	76.05		

1 2 3 4 5

Remarks and Groundwater Observations

1. Trial pit complete at 5.00m bgl in bedrock. 2. Remained dry and stable. 3. Backfillled with arisings upon completion. 4. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 81.05

Easting: 431230.17

Northing: 410860.58

Fig No. TT406

TRIAL PIT RECORD

TP No. **TT407** Sheet 1 of 2

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 09/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC | Checked By: AL

SAMPLE DETAILS | STRATA RECORD

Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Firm greyish brown slightly sandy gravelly CLAY. Low plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone, brick and mudstone. With many rootlets.				
				MADE GROUND: Black clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of ash, coal, brick, clinker and red mudstone. Cobbles are angular of brick. With rare fragments of wood, glass and ceramic.	0.30	80.78		
			1					
				From 1.50m: With occasional pieces of timber up to 0.90 x 0.30 x 0.20m in size. Timber noted to have faint hydrocarbon odour.				
				At 1.70m bgl: 2 No. metal sheets - 2.20 x 1.30 x 0.10m in size.				
			2					
ES	2.60							
				MADE GROUND: Light grey reinforced CONCRETE.	2.70	78.38		
			3					
				Firm light brown slightly gravelly sandy silty CLAY. Low plasticity (field description). Gravel is angular to subrounded fine to medium of mudstone and rare coal. With rare plant remains.	3.10	77.98		
			4					
				Extremely weak black COAL. Recovered as angular to subangular fine to coarse gravel.	4.00	77.08		
				Firm yellowish brown mottled bluish grey slightly sandy gravelly friable CLAY. Low plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone.	4.60	76.48		
				Very weak yellowish brown SANDSTONE. Recovered as sandy angular to subangular fine to coarse gravel.	4.90	76.18		
			5					

Remarks and Groundwater Observations

1. Concrete broken out using hydraulic breaker attachment. 2. Trial pit complete at 5.20m bgl in bedrock. 3. Remained dry and stable. 4. Backfillled with arisings upon completion. 5. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 81.08

Easting: 431230.12

Northing: 410857.06

Fig No. TT407

TRIAL PIT RECORD

TP No. **TT407**
Sheet 2 of 2

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 09/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC | Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				Very weak yellowish brown SANDSTONE. Recovered as sandy angular to subangular fine to coarse gravel.				
				End of trial pit at 5.20m	5.20	75.88		

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Remarks and Groundwater Observations

1. Concrete broken out using hydraulic breaker attachment. 2. Trial pit complete at 5.20m bgl in bedrock. 3. Remained dry and stable. 4. Backfillled with arisings upon completion. 5. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 81.08
Easting: 431230.12
Northing: 410857.06

Fig No.
TT407

TRIAL PIT RECORD

TP No. **TP408** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 10/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
B	0.50 - 1.00			MADE GROUND: Black clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of ash, coal, clinker, brick and occasional red mudstone. Cobbles are angular of brick. With rare rootlets.				
D	1.80			Firm greenish grey slightly gravelly sandy silty friable CLAY. Low plasticity (field description). Gravel is angular to subrounded fine to medium of mudstone and rare coal. With occasional plant remains and faint humic odour.	1.70	78.95		
				Extremely weak yellowish brown SANDSTONE. Recovered as sandy angular to subangular fine to coarse gravel.	1.90	78.75		
				From 3.20m bgl: With low cobble content.				
				End of trial pit at 4.00m	4.00	76.65		

Remarks and Groundwater Observations

1. Trial pit complete at 4.00m bgl in bedrock. 2. Remained dry and stable. 3. Backfillled with arisings upon completion. 4. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 80.65

Easting: 431180.98

Northing: 410746.26

Fig No. TP408

TRIAL PIT RECORD

TP No. **TP409** Sheet 1 of 1

Site: Woolley Colliery Road, Darton	Contract No: C10128A
Client: Gleeson Homes Ltd	Date: 10/04/2026
Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket	Scale: 1:25
	Logged By: JC — Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
ES	0.30			MADE GROUND: Black clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of ash, coal, clinker, brick and red mudstone. Cobbles are angular of brick. With rare rootlets.				
				From 0.90m bgl: With rare pockets of firm gravelly clay.				
				Firm greenish grey slightly gravelly sandy silty friable CLAY. Low plasticity (field description). Gravel is angular to subrounded fine to medium of mudstone and rare coal. With occasional plant remains and faint humic odour.	2.10	78.55		
				Extremely weak yellowish brown SANDSTONE. Recovered as sandy angular to subangular fine to coarse gravel.	2.20	78.45		
				From 2.50m bgl: With low cobble content.				
				End of trial pit at 3.50m	3.50	77.15		

Remarks and Groundwater Observations

1. Trial pit complete at 3.50m bgl in bedrock. 2. Remained dry and stable. 3. Backfillled with arisings upon completion. 4. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 80.65
Easting: 431165.68
Northing: 410754.62

Fig No. TP409

TRIAL PIT RECORD

TP No. **TP410** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 07/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Firm dark grey slightly sandy gravelly friable CLAY. Low plasticity (field description). Gravel is angular to subangular fine to coarse of mudstone, sandstone and siltstone. With occasional rootlets.	0.20	81.69		
ES	0.40			MADE GROUND: Firm orangish brown mottled light grey slightly sandy gravelly friable CLAY with low cobble content. Gravel is angular to subangular fine to coarse of sandstone, mudstone and siltstone. Cobbles are angular of sandstone. With rare plant remains.				
			1					
			2	MADE GROUND: Dark grey sandy clayey GRAVEL with low cobble content and occasional pockets of firm gravelly clay. Gravel is angular to subangular fine to coarse of sandstone, mudstone and rare brick. Cobbles are angular of sandstone.	1.90	79.99		
			3	MADE GROUND: Soft dark brown to black slightly gravelly sandy friable CLAY with low cobble content. Low plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone, mudstone, brick and occasional coal. Cobbles are angular of sandstone and brick. With occasional rootlets, rare fragments of glass, 2 No. plastic bags and faint humic odour.	3.00	78.89		
ES	3.30			*From 3.20m: With occasional pieces of timber up to 1.30 x 0.30 x 0.20m in size. Timber noted to have faint hydrocarbon odour.*				
				Extremely weak bluish grey locally dark grey SANDSTONE with interbedded MUDSTONE. Recovered as clayey angular to subangular fine to coarse gravel.	3.80	78.09		
			4					
				End of trial pit at 4.50m	4.50	77.39		
			5					

Remarks and Groundwater Observations

1. Trial pit complete at 4.50m bgl in bedrock. 2. Trial pit dug into existing stockpile, with depth taken from top of stockpile. Ground surface at 80.97m AOD. 3. Remained dry and stable. 4. Backfillled with arisings upon completion. 5. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 81.89

Easting: 431210.80

Northing: 410797.81

Fig No. TP410

TRIAL PIT RECORD

TP No. **TP411** Sheet 1 of 1

Site: Woolley Colliery Road, Darton	Contract No: C10128A
Client: Gleeson Homes Ltd	Date: 07/04/2026
Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket	Scale: 1:25
	Logged By: JC Checked By: AL

SAMPLE DETAILS | STRATA RECORD

Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Grass over firm orangish brown locally greyish brown slightly sandy gravelly CLAY. Low plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone, mudstone and rare brick. With occasional roots and rootlets.				
				MADE GROUND: Light grey reinforced CONCRETE.	1.45	79.74		
				End of trial pit at 1.50m	1.50	79.69		

1 2 3 4 5

Remarks and Groundwater Observations

1. Trial pit terminated at 1.50m bgl on concrete. 2. Trial pit dug into existing stockpile, with depth taken from top of stockpile. Ground level at 79.74m AOD. 3. Remained dry and stable. 4. Backfillled with arisings upon completion. 5. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 81.19
Easting: 431201.50
Northing: 410783.74

Fig No. TP411

TRIAL PIT RECORD

TP No. **TP412** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 07/04/2026

Method: 30 Tonne Tracked Excavator with 1200mm toothed bucket

Scale: 1:25

Logged By: JC | Checked By: AL

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	Vane Results (kN/m2) {}{ppm}	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Backfill
				MADE GROUND: Dark brown slightly gravelly very clayey fine to medium SAND. Gravel is angular to subangular fine to coarse of sandstone, mudstone and brick. With many rootlets.	0.20	82.28		
B	0.50 - 1.00			MADE GROUND: Soft to firm dark greyish brown locally black slightly sandy gravelly CLAY with low cobble content. Low plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone, mudstone and rare brick. Cobbles are angular of sandstone. With occasional roots and rootlets.				
			1					
			2					
				MADE GROUND: Black clayey GRAVEL with low cobble content. Gravel is angular to subangular fine to coarse of sandstone, brick, ash, mudstone and occasional coal. Cobbles are angular of sandstone and rare brick.	2.40	80.08		
			3	*From 3.00m: With rare pockets of firm gravelly clay.*				
				Stiff bluish grey mottled orangish brown slightly sandy gravelly CLAY. Medium plasticity (field description). Gravel is angular to subangular fine to coarse of sandstone and mudstone.	3.50	78.98		
D	3.70							
			4					
				Extremely weak dark grey MUDSTONE. Recovered as clayey angular to subangular fine to coarse gravel.	4.10	78.38		
				End of trial pit at 4.60m	4.60	77.88		
			5					

Remarks and Groundwater Observations

1. Trial pit complete at 4.60m bgl in bedrock. 2. Trial pit dug into existing stockpile, with depth taken from top of stockpile. Ground level at 81.71m AOD. 3. Remained dry and stable. 4. Backfillled with arisings upon completion. 5. Coordinates and elevations obtained using survey grade GPS.

GL (m AOD) 82.48

Easting: 431222.05

Northing: 410778.85

Fig No. TP412

WINDOW SAMPLING RECORD

BH No. **WS401N**
Sheet 1 of 1

Site: Woolley Colliery Road, Darton
Contract No: C10128A
Client: Gleeson Homes Ltd
Date: 09/04/2026
Method: Tracked Windowless Sampler Rig
Scale: 1:25
Logged By: CP
Checked By: AL
Driller: RP Drilling Ltd

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	SPT (N), {ppm}, Vane Result (kN/m2)	Ground-water	Description	Depth (m)	Level (m AOD)	Legend	Well
		N=4 (2,2/1,1,1,1)	1	MADE GROUND: Firm light greyish brown mottled black slightly sandy gravelly CLAY of low to medium plasticity (field assessment). Gravel is angular to subrounded fine to coarse of mudstone, sandstone and brick with rare coal.				
				MADE GROUND: Loose dark blackish grey sandy angular to subangular fine to coarse GRAVEL of mudstone, sandstone, coal, red mudstone and brick with rare ash.	1.40	82.49		
		N=8 (3,3/2,2,2,2)	2					
		N=3 (1,1/0,1,1,1)	3	*Very loose from c. 3-4m bgl.*				
		N=5 (2,1/2,1,1,1)	4					
		N=11 (3,2/2,3,3,3)	5	End of Borehole at 5.00m	5.00	78.89		

Remarks and Groundwater Observations:

1. Window sample borehole completed at 5.00m bgl. 2. No groundwater encountered. 3. Cohesive material friable and gravelly, unable to shear vane. 4. Backfilled with arisings on completion. 5. Co-ordinates and elevation surveyed on site using survey-grade GPS.

GL (m AOD)
83.89m AOD
Easting:
431136.78
Northing:
410781.86

Fig No.
WS401N

WINDOW SAMPLING RECORD

BH No. **WS402N** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 09/04/2026

Method: Tracked Windowless Sampler Rig

Scale: 1:25

Logged By: CP | Checked By: AL

Driller: RP Drilling Ltd

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	SPT (N), {ppm}, Vane Result (kN/m2)	Ground-water	Description	Depth (m)	Level (m AOD)	Legend	Well
				MADE GROUND: Light brownish grey sandy slightly clayey angular to subangular fine to coarse GRAVEL of mudstone, sandstone and brick with rare coal.				
				MADE GROUND: Medium dense dark blackish grey sandy angular to subangular fine to coarse GRAVEL of mudstone, sandstone, coal, red mudstone and brick with rare ash.	0.50	82.21		
		N=26 (12,8/10,6,5,5)	1					
		N=9 (3,3/3,2,2,2)	2	*Becoming loose from c. 2m bgl.*				
		N=9 (2,2/2,2,3,2)	3					
		N=10 (3,2/2,3,3,2)	4					
		45.0 56.0 56.0 N=23 (2,2/3,3,8,9)	5	Firm medium strength light greenish grey slightly gravelly CLAY of medium plasticity (field assessment). Gravel is subangular to subrounded fine to coarse of mudstone.	4.60	78.11		
				End of Borehole at 5.00m	5.00	77.71		

Remarks and Groundwater Observations:

1. Window sample borehole completed at 5.00m bgl. 2. No groundwater encountered. 3. Backfilled with arisings on completion. 4. Co-ordinates and elevation surveyed on site using survey-grade GPS.

GL (m AOD) 82.71m AOD

Easting: 431135.51

Northing: 410765.14

Fig No. WS402N

WINDOW SAMPLING RECORD

BH No. **WS403N** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 09/04/2026

Method: Tracked Windowless Sampler Rig

Scale: 1:25

Logged By: JC/CP Checked By: AL

Driller: RP Drilling Ltd

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	SPT (N), {ppm}, Vane Result (kN/m2)	Ground-water	Description	Depth (m)	Level (m AOD)	Legend	Well
				MADE GROUND: Firm dark brown locally light grey slightly sandy gravelly CLAY with low cobble and low boulder content. Gravel is angular to subangular fine to coarse of brick, concrete, mudstone, sandstone and occasional asphalt. Cobbles are angular of brick and concrete. Boulders are angular of concrete up to 0.80 x 0.70 x 0.30m in size. With rare wood fragments.				
				At 0.90m bgl: 1 No. metal pipe - 1.2 x 0.3 x 0.2m.				
			1					
				MADE GROUND: Light grey CONCRETE.	1.30	82.78		
				MADE GROUND: Reddish brown sandy angular to subangular fine to coarse GRAVEL of brick, concrete and red mudstone.	1.60 1.70	82.48 82.38		
		N=4 (2,1/1,1,1,1)	2	MADE GROUND: Loose dark blackish grey sandy slightly silty angular to subangular fine to coarse GRAVEL of mudstone, sandstone, coal, red mudstone and brick. With rare ash and wood fragments.				
		N=5 (1,1/1,1,1,2)	3					
		N=9 (3,2/2,2,2,3)	4					
		31.0 34.0 36.0 50 (25 for 105mm/50 for 160mm)		Soft to firm low strength light greenish grey slightly gravelly CLAY of medium to high plasticity (field assessment). Gravel is subangular to subrounded fine to coarse of mudstone.	4.40	79.68		
				Extremely weak SANDSTONE. Recovered as light brown mottled orange angular to subangular fine to coarse GRAVEL of sandstone.	4.90	79.18		
			5	End of Borehole at 5.00m	5.00	79.08		

Remarks and Groundwater Observations:

1. Window sample drilled through existing trial pit from 1.30m bgl. Description of shallow strata and concrete taken from trial pit. 2. Window sample borehole completed upon refusal at 5.00m bgl. 3. Arisings wet below 3.50m bgl. 4. Backfilled with arisings on completion. 5. Co-ordinates and elevation surveyed on site using survey-grade GPS.

GL (m AOD) 84.08m AOD

Easting: 431133.34

Northing: 410744.97

Fig No. WS403N

WINDOW SAMPLING RECORD

BH No. **WS404N** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 09/04/2026

Method: Tracked Windowless Sampler Rig

Scale: 1:25

Logged By: JC/CP Checked By: AL

Driller: RP Drilling Ltd

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	SPT (N), {ppm}, Vane Result (kN/m2)	Ground-water	Description	Depth (m)	Level (m AOD)	Legend	Well
B	0.50 - 1.00			MADE GROUND: Firm dark brown locally light grey slightly sandy gravelly CLAY with low cobble content. Gravel is angular to subangular fine to coarse of brick, concrete, mudstone, sandstone and rare asphalt. Cobbles are angular of brick and sandstone. With occasional rootlets, 4 No. plastic bags, 1 No. piece of rope and 1 No. concrete boulder - 1.30 x 0.8 x 0.2m.				
			1					
				MADE GROUND: Light grey reinforced CONCRETE.	1.80	82.32		
			2	MADE GROUND: Reddish brown sandy angular to subangular fine to coarse GRAVEL of brick, concrete and red mudstone.	2.10	82.02		
					2.20	81.92		
B	2.50 - 4.00			MADE GROUND: Very loose dark blackish grey sandy slightly clayey slightly silty angular to subangular fine to coarse GRAVEL of mudstone, sandstone, coal, red mudstone and brick. With rare ash and wood fragments.				
		N=3 (1,1/1,0,1,1)	3					
		N=14 (3,3/2,4,4,4)	4	*Becoming medium dense from c. 4m bgl.*				
				Firm medium to high strength light greyish brown mottled orange slightly gravelly CLAY of medium plasticity (field assessment). Gravel is subangular to subrounded fine to coarse of mudstone.	4.50	79.62		
D	4.70	59.0 71.0 80.0						
		N=24 (4,4/4,6,6,8)	5	End of Borehole at 5.00m	5.00	79.12		

Remarks and Groundwater Observations:

1. Window sample borehole drilled through existing trial pit from 2.20m bgl. Description of shallow strata and concrete taken from trial pit. 2. Window sample borehole completed at 5.00m bgl. 3. Arisings wet below 4.00m bgl. 4. Backfilled with arisings on completion. 5. Co-ordinates and elevation surveyed on site using survey-grade GPS.

GL (m AOD) 84.12m AOD

Easting: 431151.90

Northing: 410741.54

Fig No. WS404N

WINDOW SAMPLING RECORD

BH No. **WS405N** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 09/04/2026

Method: Tracked Windowless Sampler Rig

Scale: 1:25

Logged By: JC/CP Checked By: AL

Driller: RP Drilling Ltd

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	SPT (N), {ppm}, Vane Result (kN/m2)	Ground-water	Description	Depth (m)	Level (m AOD)	Legend	Well
				MADE GROUND: Firm dark brown locally light grey slightly sandy gravelly CLAY with low cobble content. Gravel is angular to subangular fine to coarse of brick, concrete, mudstone, sandstone and rare asphalt. Cobbles are angular of brick and sandstone. With occasional rootlets and 4 No. plastic bags,				
				From 0.80m bgl: With low boulder content. Boulders are angular of concrete up to 0.6 x 0.4 x 0.3m in size.				
			1					
				MADE GROUND: Light grey reinforced CONCRETE.	1.30	83.01		
				MADE GROUND: Reddish brown sandy angular to subangular fine to coarse GRAVEL of brick, concrete and red mudstone.	1.70 1.80	82.61 82.51		
		N=6 (1,1/1,2,2,1)	2	MADE GROUND: Loose to medium dense dark blackish grey sandy angular to subangular fine to coarse GRAVEL of mudstone, sandstone, coal, red mudstone and brick with rare ash.				
		N=12 (3,3/2,3,3,4)	3					
		70.0 71.0 74.0		Firm medium to high strength light greyish brown mottled orange slightly gravelly CLAY of medium plasticity (field assessment). Gravel is subangular to subrounded fine to coarse of mudstone.	3.40	80.91		
		N=50 (3,4/50 for 255mm)	4	End of Borehole at 4.00m	4.00	80.31		
			5					

Remarks and Groundwater Observations:

1. Window sample borehole drilled through existing trial pit from 1.80m bgl. Description of shallow strata and concrete taken from trial pit. 2. Window sample borehole completed upon refusal at 4.00m bgl. 3. Arisings wet below 3.50m bgl. 4. Backfilled with arisings on completion. 5. Co-ordinates and elevation surveyed on site using survey-grade GPS.

GL (m AOD) 84.31m AOD

Easting: 431151.92

Northing: 410727.69

Fig No. WS405N

WINDOW SAMPLING RECORD

BH No. **WS406N** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 09/04/2026

Method: Tracked Windowless Sampler Rig

Scale: 1:25

Logged By: CP Checked By: AL

Driller: RP Drilling Ltd

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	SPT (N), {ppm}, Vane Result (kN/m2)	Ground-water	Description	Depth (m)	Level (m AOD)	Legend	Well
				MADE GROUND: Firm light greyish brown mottled black slightly sandy gravelly CLAY of low to medium plasticity (field assessment). Gravel is angular to subrounded fine to coarse of mudstone, sandstone and brick with rare coal.				
		N=4 (2,1/1,1,1,1)	1	MADE GROUND: Loose dark blackish grey sandy slightly clayey angular to subangular fine to coarse GRAVEL of mudstone, sandstone, coal, red mudstone and brick with rare ash.	0.90	84.37		
				At 1.00m bgl, 1 No. piece of rubber.				
		N=15 (4,4/4,4,4,3)	2	MADE GROUND: Medium dense dark blackish grey sandy angular to subangular fine to coarse GRAVEL of mudstone, sandstone, coal, red mudstone and brick with rare ash.	1.80	83.47		
		N=4 (1,1/1,1,1,1)	3	*Very loose / loose from c. 3-4m bgl.*				
				Between 3.50 to 4.00m bgl, slightly silty.				
		N=18 (3,3/4,4,5,5)	4					
		N=16 (4,5/5,3,4,4)	5	End of Borehole at 5.00m	5.00	80.27		

Remarks and Groundwater Observations:

1. Window sample borehole completed at 5.00m bgl. 2. Arisings wet below 3.50m bgl. 3. Backfilled with arisings on completion. 4. Co-ordinates and elevation surveyed on site using survey-grade GPS.

GL (m AOD) 85.27m AOD

Easting: 431116.50

Northing: 410750.99

Fig No. WS406N

WINDOW SAMPLING RECORD

BH No. **WS407N** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 09/04/2026

Method: Tracked Windowless Sampler Rig

Scale: 1:25

Logged By: CP | Checked By: AL

Driller: RP Drilling Ltd

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	SPT (N), {ppm}, Vane Result (kN/m2)	Ground-water	Description	Depth (m)	Level (m AOD)	Legend	Well
				MADE GROUND: Soft to firm light greyish brown slightly sandy gravelly CLAY of medium plasticity (field assessment). Gravel is angular to subrounded fine to coarse of mudstone, sandstone and brick with rare coal.				
				Firm to stiff light greyish brown slightly gravelly CLAY of medium plasticity (field assessment). Gravel is subangular to subrounded fine to coarse of mudstone and sandstone.	0.50	78.45		
		50 (25 for 95mm/50 for 200mm)		End of Borehole at 1.00m	1.00	77.95		

1
2
3
4
5

Remarks and Groundwater Observations:

1. Window sample borehole completed at 5.00m bgl. 2. No groundwater encountered. 3. Cohesive material friable and gravelly, unable to shear vane. 4. Backfilled with arisings on completion. 5. Co-ordinates and elevation surveyed on site using survey-grade GPS.

GL (m AOD) 78.95m AOD

Easting: 431216.21

Northing: 410844.62

Fig No. WS407N

WINDOW SAMPLING RECORD

BH No. **WS408N** Sheet 1 of 1

Site: Woolley Colliery Road, Darton

Contract No: C10128A

Client: Gleeson Homes Ltd

Date: 09/04/2026

Method: Tracked Windowless Sampler Rig

Scale: 1:25

Logged By: CP | Checked By: AL

Driller: RP Drilling Ltd

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	SPT (N), {ppm}, Vane Result (kN/m2)	Ground-water	Description	Depth (m)	Level (m AOD)	Legend	Well
		48.0 55.0 60.0		MADE GROUND: Firm medium strength light grey mottled dark grey slightly sandy gravelly CLAY of medium plasticity (field assessment). Gravel is angular to subangular fine to coarse of mudstone, sandstone and brick with rare coal.				
				MADE GROUND: Firm light greyish brown slightly gravelly CLAY of medium plasticity (field assessment). Gravel is angular to subrounded fine to coarse of mudstone, sandstone and rare coal.	0.60	78.33		
		N=24 (3,4/5,4,6,9)	1					
		49.0 60.0 65.0 N=18 (7,7/5,3,4,6) 68.0 82.0 90.0		Stiff medium to high strength dark brown slightly gravelly CLAY of medium plasticity (field assessment). Gravel is subangular to subrounded fine to coarse of mudstone and coal.	1.50	77.43		
D	1.90	N=32 (2,3/4,10,10,8)	2	Extremely weak COAL. Recovered as slightly gravelly slightly clayey fine to coarse SAND of coal. Gravel is subangular fine to medium of coal.	1.70	77.23		
				Extremely weak SANDSTONE. Recovered as light grey angular to subangular fine to coarse GRAVEL of sandstone.	2.20	76.73		
		50 (25 for 95mm/50 for 135mm)		End of Borehole at 2.50m	2.50	76.43		
			3					
			4					
			5					

Remarks and Groundwater Observations:

1. Window sample borehole completed upon refusal at 2.50m bgl. 2. No groundwater encountered. 3. Backfilled with arisings on completion. 4. Co-ordinates and elevation surveyed on site using survey-grade GPS.

GL (m AOD) 78.93m AOD

Easting: 431216.84

Northing: 410859.91

Fig No. WS408N

BOREHOLE RECORD

BH No. **BH401N** Sheet 1 of 1

Site: Woolley Colliery Road, Darton | Contract No: C10128A

Client: Gleeson Homes Ltd | Date(s): 09/03/2026

Method: Dando 2000 Cable Percussion Rig | Scale: 1:50

Logged By: CP | Checked By: AL

Driller: RP Drilling Ltd

SAMPLE DETAILS				STRATA RECORD				
Type	Depth From - To(m)	SPT (N), {ppm}, (Cu Peak), Vane Result (kN/m2)	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
				MADE GROUND: Firm dark blackish grey slightly sandy gravelly CLAY of low to medium plasticity (field assessment). Gravel is angular to subangular fine to coarse of mudstone, sandstone, coal, red mudstone, brick and ash.				
(21) U	1.00 - 1.45		1	MADE GROUND: Loose dark blackish grey sandy angular to subangular fine to coarse GRAVEL of mudstone, sandstone, coal, red mudstone, brick and ash.	1.00	83.04		
(24) U	2.00 - 2.45		2					
		N=5 (2,2/2,1,1,1)	3					
		N=8 (2,2/1,3,2,2)	4					
(27) U	5.00 - 5.45		5					
			6					
		N=9 (3,2/2,2,2,3)	7					
					7.70	76.34		
		N=50 (3,4/50 for 295mm)	8	Firm to stiff light orangish brown mottled grey slightly gravelly CLAY of medium plasticity (field assessment). Gravel is subangular to subrounded fine to coarse of sandstone.				
				Extremely weak SANDSTONE. Recovered as light orangish brown angular to subangular fine to coarse GRAVEL of sandstone.	8.30	75.74		
				End of Borehole at 8.45m	8.45	75.59		
			9					
			10					

Remarks and Groundwater Observations:

1. Borehole drilled using 150mm casing and tools. 2. Borehole refusal at 8.45m bgl. 3. Groundwater encountered at 7.70m bgl, with no rise after 20 minutes of monitoring. 3. U100's taken at 1.00m, 2.00m and 5.00m bgl, granular material recovered. 4. Backfilled with arisings upon completion. 5. Co-ordinates and elevation surveyed on site using survey-grade GPS.

GL (mAOD) 84.04

Easting: 431114.48

Northing: 410785.75

Fig No. BH401N

BOREHOLE RECORD

BH No. **BH402N** Sheet 1 of 1

Site: Woolley Colliery Road, Darton	Contract No: C10128A
Client: Gleeson Homes Ltd	Date(s): 10/03/2026
Method: Dando 2000 Cable Percussion Rig	Scale: 1:50
	Logged By: JC Checked By: AL
	Driller: RP Drilling Ltd

SAMPLE DETAILS | STRATA RECORD

Type	Depth From - To(m)	SPT (N), {ppm}, (Cu Peak), Vane Result (kN/m2)	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
				MADE GROUND: Firm dark greyish brown slightly sandy gravelly CLAY of low plasticity (field assessment). Gravel is angular to subangular fine to coarse of mudstone, sandstone, brick and occasional coal.	0.40	85.50		
				MADE GROUND: Dark grey slightly sandy clayey angular to subangular fine to coarse GRAVEL of sandstone and mudstone.				
		N=5 (1,1/1,1,1,2)	1	MADE GROUND: Loose black slightly sandy very clayey angular to subangular fine to coarse GRAVEL of ash, coal and mudstone.	1.00	84.90		
		N=10 (1,1/2,2,3,3)	2	*Loose / medium dense from c. 2m bgl.*				
		N=6 (1,1/2,1,2,1)	3		3.30	82.60		
				MADE GROUND: Loose reddish brown sandy angular to subangular fine to coarse GRAVEL of red mudstone.				
		N=7 (3,1/1,2,2,2)	4					
				MADE GROUND: Very loose to loose dark grey to black sandy clayey angular to subangular fine to coarse GRAVEL of ash, coal and mudstone.	4.50	81.40		
		N=1 (2,2/0,0,1,0)	5					
			6					
		N=26 (25 for 115mm/9,5,5,7)		Stiff yellowish brown mottled light grey slightly sandy gravelly CLAY of low plasticity (field assessment). Gravel is angular to subrounded fine to coarse of sandstone.	6.20	79.70		
			7	Extremely weak greyish brown locally dark grey SANDSTONE with interbedded MUDSTONE. Recovered as clayey angular to subangular fine to coarse gravel.	6.80	79.10		
		N=50 (8,10/50 for 275mm)	8	Very weak yellowish brown SANDSTONE. Recovered as sandy angular to subangular fine to coarse gravel.	7.90	78.00		
				End of Borehole at 8.45m	8.45	77.45		
			9					
			10					

Remarks and Groundwater Observations:

1. Borehole drilled using 150mm casing and tools. 2. Borehole refusal at 8.45m bgl. 3. Groundwater encountered at 8m bgl, with no rise after 20 minutes of monitoring. 4. Backfilled with arisings upon completion. 5. Co-ordinates and elevation surveyed on site using survey-grade GPS.

GL (mAOD) 85.90
Easting: 431111.77
Northing: 410746.65

Fig No. BH402N

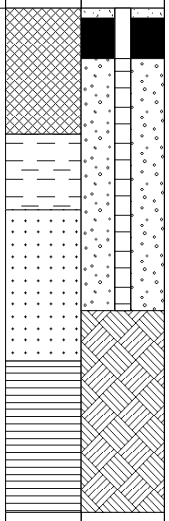
BOREHOLE RECORD

BH No. **RO401**
Sheet 1 of 1

Site: Woolley Colliery Road, Darton
Contract No: C10128A
Client: Gleeson Homes Ltd
Date(s): 10/04/2026
Method: Tracked Rotary Drilling Rig
Scale: 1:150
Logged By: CP
Checked By: AL
Driller: Sirius Drilling Ltd

SAMPLE DETAILS | STRATA RECORD

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						MADE GROUND (drillers description).				
						Orange CLAY (drillers description).	2.50	74.96		
						SANDSTONE (drillers description).	4.00	73.46		
						MUDSTONE (drillers description).	7.00	70.46		
						End of Borehole at 10.00m	10.00	67.46		



Remarks and Groundwater Observations:

1. Borehole drilled using water flush. 2. Groundwater observations not possible due to use of water flush. 3. Installed with 50mm groundwater monitoring well with geosock. 4. Co-ordinates and elevation surveyed on site using survey grade GPS.

GL (m AOD) 77.46
Eastings: 431178.26
Northings: 410894.43

Fig No. RO401

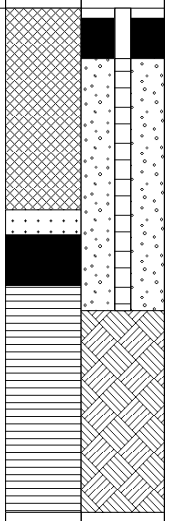
BOREHOLE RECORD

BH No. **RO402**
Sheet 1 of 1

Site: Woolley Colliery Road, Darton
Contract No: C10128A
Client: Gleeson Homes Ltd
Date(s): 10/04/2026
Method: Tracked Rotary Drilling Rig
Scale: 1:150
Logged By: CP
Checked By: AL
Driller: Sirius Drilling Ltd

SAMPLE DETAILS | STRATA RECORD

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						MADE GROUND (drillers description).				
						SANDSTONE (drillers description).	4.00	74.76		
						COAL (drillers description).	4.50	74.26		
						MUDSTONE with sandstone bands (drillers description).	5.50	73.26		
						End of Borehole at 10.00m	10.00	68.76		



Remarks and Groundwater Observations:

1. Borehole drilled using water flush. 2. Groundwater observations not possible due to use of water flush. 3. Installed with 50mm groundwater monitoring well with geosock. 4. Co-ordinates and elevation surveyed on site using survey grade GPS.

GL (m AOD) 78.76
Eastings: 431213.85
Northings: 410901.26

Fig No. RO402

BOREHOLE RECORD

BH No. **RO403**
Sheet 1 of 1

Site: Woolley Colliery Road, Darton
Contract No: C10128A
Client: Gleeson Homes Ltd
Date(s): 10/04/2026
Method: Tracked Rotary Drilling Rig
Scale: 1:150
Logged By: CP
Checked By: AL
Driller: Sirius Drilling Ltd

SAMPLE DETAILS | STRATA RECORD

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						MADE GROUND (drillers description).				
					1	CLAY (drillers description).	1.00	77.72		
						SANDSTONE (drillers description).	1.50	77.22		
					2	COAL (drillers description).	2.00	76.72		
					3	SANDSTONE (drillers description).	3.20	75.52		
					4					
					5					
					6	MUDSTONE (drillers description).	6.00	72.72		
					7					
					8					
					9					
					10	End of Borehole at 10.00m	10.00	68.72		
					11					
					12					
					13					
					14					
					15					
					16					
					17					
					18					
					19					
					20					
					21					
					22					
					23					
					24					
					25					
					26					
					27					
					28					
					29					
					30					
	TCR	SCR	RQD	FI						

Remarks and Groundwater Observations:

1. Borehole drilled using water flush. 2. Groundwater observations not possible due to use of water flush. 3. Installed with 50mm groundwater monitoring well with geosock. 4. Co-ordinates and elevation surveyed on site using survey grade GPS.

GL (m AOD) 78.72
Eastings: 431202.32
Northings: 410879.41

Fig No. RO403

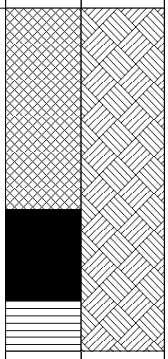
BOREHOLE RECORD

BH No. **RO404**
Sheet 1 of 1

Site: Woolley Colliery Road, Darton
Contract No: C10128A
Client: Gleeson Homes Ltd
Date(s): 10/04/2026
Method: Tracked Rotary Drilling Rig
Scale: 1:150
Logged By: CP
Checked By: AL
Driller: Sirius Drilling Ltd

SAMPLE DETAILS | STRATA RECORD

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						MADE GROUND (drillers description).				
						COAL (drillers description).	4.00	76.67		
						MUDSTONE (drillers description).	5.80	74.87		
						End of Borehole at 6.80m	6.80	73.87		



Remarks and Groundwater Observations:

1. Borehole drilled using water flush. 2. Groundwater observations not possible due to use of water flush. 3. Backfilled with arisings on completion. 4. Co-ordinates and elevation surveyed on site using survey grade GPS.

GL (m AOD) 80.67
Eastings: 431228.45
Northings: 410872.52

Fig No. RO404

BOREHOLE RECORD

BH No. **RO405**
Sheet 1 of 1

Site: Woolley Colliery Road, Darton
Contract No: C10128A
Client: Gleeson Homes Ltd
Date(s): 10/04/2026
Method: Tracked Rotary Drilling Rig
Scale: 1:150
Logged By: CP
Checked By: AL
Driller: Sirius Drilling Ltd

SAMPLE DETAILS | STRATA RECORD

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						MADE GROUND (drillers description).				
						Orange CLAY (drillers description).	3.00	77.99		
						COAL (drillers description).	3.60	77.39		
						MUDSTONE (drillers description).	5.50	75.49		
						End of Borehole at 6.50m	6.50	74.49		

Remarks and Groundwater Observations:

1. Borehole drilled using water flush. 2. Groundwater observations not possible due to use of water flush. 3. Backfilled with arisings on completion. 4. Co-ordinates and elevation surveyed on site using survey grade GPS.

GL (m AOD) 80.99
Eastings: 431232.67
Northings: 410873.52

Fig No.
RO405

BOREHOLE RECORD

BH No. **RO406**
Sheet 1 of 1

Site: Woolley Colliery Road, Darton
Contract No: C10128A
Client: Gleeson Homes Ltd
Date(s): 10/04/2026
Method: Tracked Rotary Drilling Rig
Scale: 1:150
Logged By: CP
Checked By: AL
Driller: Sirius Drilling Ltd

SAMPLE DETAILS | STRATA RECORD

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						MADE GROUND (drillers description).				
						Orange CLAY (drillers description).	3.00	78.15		
						COAL (drillers description).	6.00	75.15		
						MUDSTONE (drillers description).	7.50	73.65		
						End of Borehole at 8.50m	8.50	72.65		

Remarks and Groundwater Observations:

1. Borehole drilled using water flush. 2. Groundwater observations not possible due to use of water flush. 3. Backfilled with arisings on completion. 4. Co-ordinates and elevation surveyed on site using survey grade GPS.

GL (m AOD) 81.15
Eastings: 431236.69
Northings: 410874.47

Fig No.
RO406

APPENDIX C
Laboratory Testing Data

Certificate of Analysis

Certificate Number	26-08891	*Issued:*	17-Apr-26
Client	Sirius Geotechnical & Environmental 4245 Park Approach Thorpe Park Leeds LS15 8GB		

Our Reference	26-08891
Client Reference ~	C10128A
Order No ~	26272/C10128A/AL
Contract Title ~	Woolley Colliery Road, Darton
Description	1 Soil sample, 1 Misc sample.
Date Received	15-Apr-26
Date Started	15-Apr-26
Date Completed	17-Apr-26
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Louise Cook
Contracts Manager

2139

Summary of Asbestos Analysis
Soil Samples

Our Ref 26-08891
Client Ref ~ C10128A
Contract Title ~ Woolley Colliery Road, Darton

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2670781	TT404 2.70	SOIL	Chrysotile	Chrysotile present as fibre bundles	Pierce Booth
2670782	TT404 2.80	MISC	Chrysotile	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 26-08891
Client Ref ~ C10128A
Contract ~ Woolley Colliery Road, Darton

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Incorrect container for tests
2670781	TT404 2.70 SOIL	08/04/26	GJ 250ml, GJ 60ml, PT 500ml		
2670782	TT404 2.80 MISC	08/04/26	PT 500ml		

Key: G-Glass P-Plastic J-Jar T-Tub
Normec DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report Ver 26.03.15

Certificate of Analysis

Certificate Number	26-09162	*Issued:*	21-Apr-26

Client Sirius Geotechnical & Environmental
4245 Park Approach
Thorpe Park
Leeds
LS15 8GB

Our Reference	26-09162
Client Reference ~	C10128A
Order No ~	26272/C10128A/AL
Contract Title ~	Woolley Colliery Road, Darton
Description	1 Soil sample.
Date Received	15-Apr-26
Date Started	17-Apr-26
Date Completed	21-Apr-26
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Louise Cook
Contracts Manager

2139

Summary of Asbestos Analysis

Samples

Our Ref 26-09162
Client Ref ~ C10128A
Contract Title ~ Woolley Colliery Road, Darton

Lab No	Sample ID	Sample Location	Material Type	Result	Comment*	Analyst

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Summary of Asbestos Quantification Analysis
Soil Samples

Our Ref 26-09162
Client Ref ~ C10128A
Contract Title ~ Woolley Colliery Road, Darton

Lab No	2672301
Sample ID ~	TT404
Depth ~	2.70
Other ID ~	
Sample Type ~	
Sampling Date ~	08/04/2026
Sampling Time ~	

Test	Method	LOQ	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	< 0.001	Mass %	**0.006**
Gravimetric Quantification (a)	DETSC 1102	< 0.001	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	< 0.001	Mass %	0.006
Quantification by PCOM (c)	DETSC 1102	< 0.001	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	< 0.001	Fibres/g	na
Breakdown of Gravimetric Analysis (a)				
Mass of Sample			g	449.55
ACMs present*			type	
Mass of ACM in sample			g	
% ACM by mass			%	
% asbestos in ACM			%	
% asbestos in sample			%	
Breakdown of Detailed Gravimetric Analysis (b)				
% Amphibole bundles in sample			Mass %	na
% Chrysotile bundles in sample			Mass %	0.006
Breakdown of PCOM Analysis (c)				
% Amphibole fibres in sample			Mass %	na
% Chrysotile fibres in sample			Mass %	na
Breakdown of Potentially Respirable Fibre Analysis (d)				
Amphibole fibres			Fibres/g	na
Chrysotile fibres			Fibres/g	na

* Denotes test or material description outside of UKAS accreditation.
% asbestos in Asbestos Containing Materials (ACMs) is determined by
by reference to HSG 264.
Recommended sample size for quantification is approximately 1kg
# denotes deviating sample
The results are based on dry weight.

Information in Support of the Analytical Results

Our Ref 26-09162
Client Ref ~ C10128A
Contract ~ Woolley Colliery Road, Darton

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Incorrect container for tests
2672301	TT404 2.70 SOIL	08/04/26	GJ 250ml, GJ 60ml, PT 500ml		

Key: G-Glass P-Plastic J-Jar T-Tub

Normec DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report Ver 26.03.15