



4245 Park Approach
Thorpe Park, Leeds
LS15 8GB

t: 0113 264 9960

f: 0113 264 9962

e: info@thesiriusgroup.com

Mr T Hanrey
Lidl GB Ltd
Iport Unit 4
Ontario Drive
Doncaster
DN11 0BF

28th March 2022

Ref: C8781/AW/9824

Dear Tom,

RE: Supplementary Coal Mining Investigation for Land at Centre 27, off Bankwood Way, Birstall, Batley (Planning Application Ref: 2021/62/92528/E)

1.0 Introduction

Sirius Geotechnical Ltd (Sirius) was commissioned by Lidl GB Ltd (Lidl) to undertake a supplementary coal mining investigation for land at Centre 27, off Bankwood Way, Birstall, Batley. This investigation is intended to supplement previous Phase 1 and 2 Ground Investigation reports for the site, to address concerns raised by the Coal Authority (CA) and recommendations made within a subsequent Detailed Coal Mining Risk Assessment undertaken by Sirius (letter report ref. C8781/GH/9715/Rev B, dated 28th October 2021).

The site is currently undergoing planning for a proposed retail development, with associated parking, servicing areas and soft landscaping (in accordance with planning application ref. 2021/62/92528/E), as detailed within SMR Architect's Proposed Site Plan (drawing ref. 7404-SMR-00-ZZ-DR-A-2003-S3-P2, last dated April 2021). A copy of the proposed development plan is included within Attachment A. The site boundary and location of the site are shown on SMR Architect's drawing refs. 7404-SMR-00-ZZ-DR-A-2001 & 2002-S3-P2, last dated April 2021, included within Attachment A.

Previous ground investigation and geotechnical assessment reports undertaken for the site, and provided to Sirius for review, are detailed below. It is understood that the following information has been assigned to Lidl and can be relied upon:

- Geo-environmental Assessment, Centre 27, Birstall, completed by Delta Simons Environmental Consultants Limited (Delta Simons) on behalf of AEW UK, report ref. 14-0672.03, dated July 2018.

www.thesiriusgroup.com



- Combined Phase 1 & Phase 2 Ground Investigation Report, Bankwood Way, Birstall, completed by Curtins on behalf of Lidl GB Ltd, report ref. 076893-CUR-00-XX-RP-GE-002-V01, dated October 2020.
- Geotechnical Assessment of Proposed Ground Improvement Works, Proposed Lidl Store, Bankwood Way, Birstall, West Yorkshire, completed by GB Card and Partners Ltd (GB Card), on behalf of Beam Consulting, ref. GB/661, dated December 2020.
- Detailed Coal Mining Risk Assessment for Land at Centre 27, off Bankwood Way, Birstall, Batley completed by Sirius Geotechnical Ltd. Ref C8781/GH/9715/Rev B dated 28th October 2021.

Whilst this letter report discusses pertinent findings of the previous investigations, it must be read in conjunction with the aforementioned reports, which presents in detail the site setting and the perceived risk to surface stability from shallow mine workings and mine entries.

The objectives of this supplementary mining investigation report were to assess the presence, depth, width and any backfilling of a Coal Authority recorded adit underlying the northeastern site area in order to inform future treatment and stabilisation works. This has been completed by means of rotary probing by transects along the conjectured length of the adit (located within the site area, where safe access permitted), supplemented by trial trenching as necessary. Current development proposals indicate the conjectured adit will be situated within an area of car parking.

There may be conditions prevailing on the site which have not been disclosed by this investigation and which have not been taken into account by this report. Responsibility cannot be accepted for conditions not revealed by the investigation.

This report has been prepared for the sole use of Lidl GB Ltd. No other third party may rely upon or reproduce the contents of this report without the written approval of Sirius Geotechnical Ltd. If any unauthorised third party comes into possession of this report, they rely on it entirely at their own risk and the authors do not owe them any Duty of Care or Skill.



2.0 Background

2.1 Site Location and Description

Table 1. Site Location and Description

Location and Description	<p>The site is located off Bankwood Way, Birstall, Batley, approximately 9km southwest of Leeds City Centre.</p> <p>The site currently comprises open disused land with stockpiles of demolition rubble. Until recently the site comprised seven office units. It is understood that the office units and external hardstand suffered damage/distortion associated with the settlement of the underlying made ground, more specifically within the southern site area (assumed to be associated with landfill waste underlying this part of the site, as discussed below).</p> <p>The site can be accessed via an un-named road off Bankwood Way.</p> <p>The site topography falls gently from c.152m above ordnance datum (AOD) in the northwest to 148m AOD in the southeast. The north-western site area is raised by approximately 1m above the remainder of the site.</p>
National Grid Reference	423694, 427432.
Approximate Site Area	1.5 hectares.
Adjacent Land Uses	The site is located within an existing commercial and retail park, with undeveloped land to the east. The site is located approximately 500m southwest of Junction 27 of the M62 motorway.

2.2 Site History

Review of historical Ordnance Survey (OS) mapping indicate that from at least 1852 (the earliest available mapping) the site was generally undeveloped. From 1893 / 1894, an area of earthworks is shown crossing the site; this is no longer evident by the 1907 OS map. Further earthworks are shown from 1956 within the north and northeast of the site, indicating sloped ground. Surface water features including a ditch, and an area of 'issues' and 'spreads' are indicated centrally within the site. Significant areas of earthworks and refuse heaps are shown to the east and south of the site.

Environmental records indicate landfilling operations (Nab Lane Refuse Disposal Tip) commenced in 1970 at the site, accepting inert, industrial, commercial, liquid and household waste. A further record lists the site as a registered landfill from 1982. Neither record indicates when operations ceased.

From 1992 the site is shown to have been developed with a new commercial / office development with a subsequent phase of demolition and clearance of the site evident in 2018 from online aerial images.

Drawing No. C8781/01 (included within Attachment A) summarises coal mining and pertinent historical features within the site, as taken from relevant British Geological Survey (BGS) records and historical OS maps.



2.3 Published Geological Information

British Geological Survey (BGS) maps show the site to be underlain by made ground. No superficial deposits are shown to be present on-site.

The site is recorded to be underlain by solid strata comprising undifferentiated mudstone, siltstone, sandstone, coal seams, ironstone beds, seatearth beds and marine bands of the Pennine Lower Coal Measures Formation (PLCMF). The western and northern site areas are shown to be underlain by Emley Rock of the PLCMF, described by the BGS as a fine-grained flaggy sandstone with mudstone partings.

The Flockton Thin (or Black Bed Coal) is conjectured to outcrop within the site, trending approximately south to north from the southern corner of the site, before turning abruptly in an approximately easterly direction, crossing the site boundary in the area of the eastern corner. The thickness of the Flockton Thin coal seam is recorded to range between 0.3m and 0.8m.

The Flockton Thin is shown to be stratigraphically underlain by the First, Second and Third Brown Metal Coals (at recorded thicknesses of 0.0-0.8m, 0.4-0.8m and 0.0-0.5m, respectively), the Middleton Little Coal (0.3m to 0.9m in thickness) and the Middleton Main Coal (0.7m to 1.4m in thickness). The underlying coals are inferred at depths of 24m, 31m, 40m, 55m and 75m below the Flockton Thin, respectively.

The seams have various references within published geological records, BGS memoirs and CA records, as detailed below, referenced in stratigraphical order:

- Flockton Thin or Black Bed Coal
- First Brown Metal or Top Fenton (locally Two Yard)
- Second Brown Metal or Old Hards
- Third Brown Metal or Stone Coal
- Middleton Little or Green Lane
- Middleton Main or New Hards

2.4 Recorded Coal Mining

A previously obtained CA Mining Report (Reference 51002302567002, dated 30th September 2020, included within the Curtins Combined Phase 1 & Phase 2 Ground Investigation Report), states that a number of seams are recorded to have been mined below the site, as detailed below:

- Flockton Thin is recorded to have been mined at a depth of 10m bgl, with an extraction thickness of 0.91m (last worked in 1877).
- The Top Fenton (or First Brown Metal) is recorded to have been mined at a depth of 30m bgl with an extraction thickness of 0.60m (last worked in 1911).
- The Middleton Main is recorded to have been mined at a depth of 74m bgl with an extraction thickness of 1.22m (last worked in 1875).



- The Top Beeston, Whinmoor and Black Bed coals are recorded to have been mined at depths of between 165m and 242m bgl.

The site falls within the CA defined Development High Risk Area.

Mine Entries

An adit is recorded to be located within the northeast of the site (CA ref. 423427-054), with a recorded bearing of 24°. The CA hold no details of any past treatment of the adit.

The CA records five mine entries off-site, the closest located 50m to the west.

Abandonment Plans

Three coal mine abandonment plans were obtained from the CA. The abandonment plans relate to the three shallowest recorded seams to have been mined, as detailed further below. The abandonment plans for the Flockton Thin and Top Fenton / First Brown Metal seams are shown in relation to the site on Drawing No's C8781/03A and C8781/03B, included within Attachment A.

- *Mine abandonment plan ref. 913, Flockton Thin*

The Flockton Thin coal is shown to have been worked within the northwestern and western extents of the site, referenced on the plan as '10 yds Black Bed 3'-0"'. An adit is shown off site to the northwest. The area within the southeast of the site is referenced as 'output of coal', located to the east of the conjectured outcrop. A section of the coal indicates it to be typically 2' 8" [0.8m] thick, underlain by spavin (likely a seatearth) at a thickness of 1' 0" [0.3m].

The plan is dated from 1878.

- *Mine abandonment plan ref. 6019, Top Fenton or First Brown Metal*

The Top Fenton / First Brown Metal abandonment plan shows recorded workings within the First and Second Brown Metal Coal to the east and north of the site. The site is located to the south of an area with a reference to 'old workings'. A drift (assumed to be related to the recorded mine adit ref. 423427-054) is shown within the northeastern extent of the site, heading in a north easterly direction off-site.

An area of the plan to the north of the site indicates that the '*approximate depth from surface to Brown Metal Coal foot 40 yards*' [12m].

A section of the First and Second Brown Metal coal indicates bands of coal and dirt at up to 1 ft 11 inches [0.58m] and 3 ft 11 inches [1.2m] thick, respectively, separated by a 2 ft 1 inch [0.6m] thick band of 'dirt'.

The plan is dated from 1913.

- *Mine abandonment plan ref. 81, Middleton Main*

The Middleton Main seam does not include any relevant details on areas recorded to have been subject to mining.



2.5 Proven Ground Conditions

Two phases of previous investigation have been undertaken at the site, initially by Delta Simons in 2018, subsequently followed by Curtins in 2020 with exploratory hole positions shown in Drawing No. C8781/02 included in Attachment A.

Made ground soils, of variable thickness, were encountered in the majority of exploratory holes ranging between 0.3m and 14m thick, and was generally noted to become thicker towards the east. The made ground generally comprised mixed cohesive fill (firm and stiff gravelly clay) and occasionally mixed granular fill (sandy gravel). Within the south eastern part of the site landfill waste (including plastic bags, metal, brick, cloth, tyres etc) was encountered up to a maximum depth of 12.5m bgl.

Natural strata comprising weathered and competent PLCM mudstone and sandstone was recorded underlying the made ground soils. Coal seams and / or evidence of associated mine workings were identified within a number of rotary boreholes and selected trial pits.

The previous ground investigation works identified a 0.2m to 0.6m thick, intact coal seam in the western, northern and north-eastern parts of the site at depths of between 2.8m and 8.4m bgl. This coal seam is considered to be representative of the Flockton Thin coal seam. Evidence of shallow mine workings (i.e. zones of soft ground/fill) was identified at corresponding depths in the south western and north eastern parts of the site. The identified workings correlate with that shown on the CA mining abandonment plans for the Flockton Thin (ref. 913).

A large void was encountered between 1.5mbgl and >3.0mbgl in the northern face of a trial pit excavated as part of the Curtins investigation (TT204) within the western part of the site. The base of the void was not proven due to collapse and rapid water ingress. The nature, size and structure (i.e., overlying sandstone strata providing support as a roof) suggested potential bell pitting coal mining techniques may be present within the west of the site.

The Flockton Thin coal seam was found to be absent within the southern, western and central parts of the site and is assumed to have been removed as part of historic excavations at the site.

The Delta-Simons investigation in 2018 encountered coal considered to be associated with the First (and Second) Brown Metal coal seams at depths ranging from 37.3m and 38.7m bgl. Given the recorded thicknesses (and recorded extraction thickness of 0.6m) and depths identified during the Delta-Simons site investigation, these coal seams were not considered by Curtins to pose a risk to surface stability.

As part of the Delta-Simons investigation rotary probe holes RT101 to RT103 were advanced to investigate the recorded presence of the adit in the northeast corner of the site. Probe holes RT102 and RT103 were positioned to target the recorded (albeit approximate) location of the mine adit. These probe holes identified >10m of reworked natural clay fill in this locality, suggesting that the adit entrance may have historically been excavated. However, probe hole RT101 identified a zone of



loose fill, considered representative of possible collapsed workings, at depths of between 3.80m and 5.70m bgl. This feature was considered to potentially represent the adit roadway.

Further probe holes (RH201 to RH203) were drilled within close proximity of the anticipated location of the mine adit located in the northeast corner of the site as part of the Curtins investigation. The probe holes did not encounter any evidence suggestive of a mine adit.

Curtins trial trench TT201E, located within the northeast of the site, identified loose gravel of coal, considered to represent potential coal mine tails / collapsed workings at a depth of between 2.5m and 5.0m bgl.

3.0 Summary of Sirius Coal Mining Risk Assessment (2021)

Based on the results of the Curtins and Delta Simmons ground investigation works, recorded mine workings within the Flockton Thin coal seam were recorded at depths of between 3.5m and 8.0m bgl. Where intact, the Flockton Thin coal seam was encountered at a thickness of up to 0.60m. Where encountered, suspected workings were identified due to/as 'loss of flush', 'loose fill: collapsed workings', 'possible voids', 'possible void / soft ground' and 'possible broken ground', at thicknesses of between 0.60m and 2.80m. All boreholes where evidence of mine workings were encountered within the Flockton Thin seam were found with insufficient cover assuming 10 times the height of extraction (recorded as 0.91m in thickness by the CA).

Sufficient competent cover was identified above the deeper Top Fenton / First Brown Metal seam (with a recorded extraction thickness of 0.60m), to mitigate any risk from surface stability within any mine workings present below the site.

It was recommended that areas of the site underlain by the Flockton Thin and / or associated coal / seatearth workings be stabilised by drilling and pressure grouting to mitigate the risk of surface instability.

A CA recorded adit (CA ref. 423427-054) is located within the northeast of the site (as shown on Drawing No. C8781/04 included within Attachment A). The adit has a recorded angle of 24° and a departure of 8m from a recorded location of 423770 427440, with an assumed diameter of 2m. Evidence of a 'drift' (assumed to relate to the recorded adit) is indicated on the abandonment plans for the Top Fenton / First Brown Metal seam. Previous site investigations undertaken have not identified the adit, albeit its conjectured location was targeted. Further investigation of the feature was recommended to determine the presence/absence of the feature and its dimensions, depth and locality if encountered.



4.0 Sirius Supplementary Intrusive Investigation Works

Supplementary fieldworks were supervised by a Sirius Geoenvironmental Engineer between 16th and 21st February 2022, and comprised the following:

- Drilling of forty rotary probe holes (PH301 - PH315, PH321 - PH332, PH340 - PH350, PH355 and PH356) along three perpendicular transects of the recorded adit drilled to a maximum depth of 25.0m bgl. Probe hole locations were predetermined prior to the investigations and subsequently numbered and marked out before drilling. Drilling was undertaken in a manner subject to ongoing findings and therefore location ID's do not always conform to numerical orders.
- Excavation of three trial pits / trenches (TP301 to TP303) to a maximum depth of 5.5m bgl to determine the nature of the underlying coal seam / associated mine workings.
- Drilling of five rotary probe holes (RO301 to RO305) and two cable percussion boreholes (CP301 and CP302) for the specific purpose of installing gas and groundwater monitoring wells. These will be detailed further within a subsequent updated ground gas risk assessment letter report to be issued under separate cover and won't be considered further as part of this supplementary coal mining investigation.

Intrusive investigation works were partly restricted and constrained by the presence of metal hoarding panels, fencing off peripheral dense vegetation and an active highway within the northeast of the site. Site investigation works were also restricted by the presence of existing stockpiles of demolition materials and buried services.

On completion of the exploratory holes all locations were surveyed to National Grid Co-ordinates and the ground level at each location determined to Ordnance Datum, using GPS survey equipment. The positions of the exploratory holes are shown on Drawing No. C8781/04 included within Attachment A.

Records of the exploratory holes undertaken as part of this supplementary phase of investigation are presented within Attachment B of this report.

The rotary probe holes were backfilled with gravel and sealed with bentonite upon completion. During programmed drill and grout works it should be ensured that any open boreholes are fully grouted to the surface. The appointed contractor should include in their method statement details of how creation of potential gas migration pathways will be mitigated.

5.0 Proven Ground Conditions

A total of forty probe holes were drilled within the northeastern site area, the majority of which were located across three northwest-southeast orientated transects. The probe holes were drilled to depths of between 6m and 25m to intercept the conjectured adit location, as highlighted on Drawing No. C8781/04 included within Attachment A. The probe holes were drilled along a maximum c. 20m length transect, allowing for an up to 8m departure for the conjectured adit entrance location.

The two northeastern most transects were positioned to the north of a former area of earthworks (dated from 1956 on historical OS maps), inferred to represent a quarry high wall (as highlighted on Drawing No. C8781/04). The probe holes were intended to prove / disprove the presence of the Flockton Thin Coal seam to the north of the inferred quarry, and the possibility that the adit could follow the dip of this seam. Intact coal was identified within probe holes PH302, PH306, PH308, PH311 to PH315, PH321 to PH323, and PH326 to PH329 at thicknesses of between 0.3m and 1.5m



(although typically 1.0m to 1.4m), and depths of between 3.5m and 5.1m bgl (143.84m to 145.51m AOD).

PH307 refused on a metal obstruction at a depth of 2.0m bgl, considered to represent a former pile foundation.

Coal was not identified within rotary probe holes PH301 and PH303 to PH305; instead, a band of soft ground was identified between depths of 3.0m and 5.0m bgl underlying competent mudstone. Deep made ground / overburden was identified within rotary probe holes PH309, PH310, PH324 and PH325 to depths of between 4.0m and 5.0m bgl, below the anticipated base of the Flockton Thin coal seam. The deep made ground / overburden identified within these probe holes is anticipated to represent an area of historic earthworks resulting in the extraction of the Flockton Thin coal seam.

A 10m long trial trench (ref. TP302) was mechanically excavated parallel to the two most northern transects to expose the Flockton Thin coal seam, and to allow confirmation of the presence (or absence) of the conjectured adit or any associated mining features within the area of identified 'soft ground'. The excavation encountered made ground to a depth of 3.0m underlain by cohesive residual sandstone to 3.7m bgl. Intact coal inferred to represent the Flockton Thin seam was identified to a depth of 4.8m bgl along the full length of the trial trench. The coal was described as extremely weak, in turn underlain by similarly extremely weak mudstone. The presence of extremely weak (albeit intact) coal may be attributable to the occurrence of 'soft ground' or 'soft push' within rotary probe holes PH301 and PH303 to PH305, where limited / no return of flush occurred to corroborate the ground conditions.

A cross-section sketch of trial trench TP302 is presented within Drawing No. C8781/TP302 in Attachment B.

A third transect of probe holes (PH340 to PH350, PH355 and PH356) was drilled within / directly south of the locality of the conjectured highwall to depths of between 21m and 25m bgl. The rotary probe holes identified 'soft backfill' / overburden to a depth of 5.0m bgl, underlain by solid mudstone to a maximum depth of 25m bgl. The 'soft backfill' / overburden is also anticipated to represent an area of historic earthworks resulting in the extraction of the Flockton Thin coal seam, similar to rotary probe holes PH309, PH310, PH324 and PH325.

No evidence of the adit was encountered within any of the rotary probe holes to a maximum depth of 25.0m bgl.

Two probe holes (PH331 and PH332) were drilled to the north of the transects to confirm ground conditions, whilst one additional probe hole (PH330) was drilled directly north / northwest of trial trench TP302. Rotary probe holes PH330 and PH331 recorded soft ground to 4.8m and 3.5m bgl, underlain by 'soft push' to 5m bgl within PH331, possibly indicative of a combination of historic earthworks and weak coal. Solid strata (with no recovery) was proven to 6.0m bgl within both probe holes. Intact coal was encountered between 3.6m and 5.0m bgl within PH332.

Trial pit ref. TP303 was mechanically excavated to investigate the identified 'soft push' at a depth of between 3.5m and 5.0m bgl within PH331, in addition to the potential recorded workings previously identified in RT101 drilled as part of the Delta Simons investigation. The trial pit recorded made ground to 1.0m in turn underlain by cohesive residual sandstone, grading into competent sandstone and mudstone to 4.0m bgl. A band of intact coal (described as 'extremely weak') was recorded between 4.0m and 5.1m bgl, in turn underlain by mudstone.

Trial pit ref. TP301 was excavated to visually assess the presence of 'soft push' identified within rotary probe holes PH303 to PH305. Made ground was recorded to a maximum depth of 5.0m bgl,



indicative of the presence of historic earthworks. No evidence of coal or associated mining features was noted.

A summary of the strata profile encountered within the rotary probe holes drilled as part of this phase of investigation is provided below in Table 2.

Table 2 – Summary of Rotary Probe hole Findings

Rotary Probehole Ref.	Overburden / Soft Ground		Solid Coal		Soft Ground / Soft Push		Solid / Mudstone / Sandstone	
	Depth Range m (bgl)	Thickness (m)	Depth Range m (bgl)	Thickness (m)	Depth Range m (bgl)	Thickness (m)	Depth Range m (bgl)	Depth Encountered (m AOD)
301	0.0 - 1.0	1.0	-	-	3.0 - 5.0	2.0	5.0 - 10.0	143.93
302	0.0 - 1.0	1.0	3.8 - 5.1	1.3	-	-	5.1 - 10.0	143.84
303	0.0 - 1.0	1.0	-	-	3.0 - 5.0	2.0	5.0 - 15.0	143.95
304	0.0 - 1.0	1.0	-	-	3.0 - 5.0	2.0	5.0 - 10.0	143.96
305	0.0 - 1.0	1.0	-	-	3.0 - 5.0	2.0	5.0 - 10.0	143.93
306	0.0 - 1.0	1.0	3.7 - 5.0	1.3	-	-	5.0 - 15.0	143.92
307	0.0 - 2.0	>2.0	-	-	-	-	-	-
308	0.0 - 3.0	3.0	3.8 - 4.8	1.0	-	-	4.8 - 10.0	144.11
309	0.0 - 2.0	2.0	-	-	2.0 - 4.0	2.0	4.0 - 10.0	144.92
310	0.0 - 4.0	4.0	-	-	-	-	4.0 - 15.0	144.92
311	0.0 - 4.0	4.0	4.0 - 4.8	0.8	-	-	4.8 - 10.0	144.19
312	0.0 - 4.0	4.0	4.0 - 4.8	0.8	-	-	4.8 - 10.0	144.19
313	0.0 - 3.5	3.5	3.5 - 4.8	1.3	-	-	4.8 - 10.0	144.18
314	0.0 - 2.0	2.0	3.5 - 4.8	1.3	-	-	4.8 - 15.0	144.21
315	0.0 - 3.5	3.5	3.5 - 4.8	1.3	-	-	4.8 - 10.0	144.15
321	0.0 - 1.5	1.5	3.5 - 5.0	1.5	-	-	5.0 - 10.0	143.88
322	0.0 - 3.0	3.0	3.5 - 5.0	1.5	-	-	5.0 - 10.0	143.90
323	0.0 - 4.7	4.7	4.7 - 5.0	0.3	-	-	5.0 - 10.0	143.88
324	0.0 - 3.0	3.0	-	-	3.0 - 5.0	2.0	5.0 - 10.0	143.91
325	0.0 - 2.0	2.0	-	-	2.0 - 5.0	3.0	5.0 - 10.0	143.85
326	0.0 - 4.5	4.5	4.5 - 5.0	0.5	-	-	5.0 - 10.0	143.90
327	0.0 - 3.5	3.5	3.5 - 4.9	1.4	-	-	4.9 - 10.0	144.00
328	0.0 - 3.7	3.7	3.7 - 4.8	1.1	-	-	4.8 - 10.0	144.08
329	0.0 - 3.8	3.8	3.8 - 4.7	0.9	-	-	4.7 - 6.0	144.21
330	0.0 - 3.0	3.0	-	-	3.0 - 4.8	1.8	4.8 - 6.0	144.15
331	0.0 - 3.5	3.5	-	-	3.5 - 5.0	1.5	5.0 - 6.0	144.04
332	0.0 - 1.5	1.5	3.6 - 5.0	1.4	-	-	5.0 - 6.0	144.04
340	0.0 - 5.0	5.0	-	-	-	-	5.0 - 21.0	143.91
341	0.0 - 5.0	5.0	-	-	-	-	5.0 - 25.0	143.96
342	0.0 - 5.0	5.0	-	-	-	-	5.0 - 25.0	144.01
343	0.0 - 5.0	5.0	-	-	-	-	5.0 - 25.0	143.96
344	0.0 - 5.0	5.0	-	-	-	-	5.0 - 25.0	144.00
345	0.0 - 5.0	5.0	-	-	-	-	5.0 - 25.0	144.00
346	0.0 - 5.0	5.0	-	-	-	-	5.0 - 25.0	143.96



Rotary Probehole Ref.	Overburden / Soft Ground		Solid Coal		Soft Ground / Soft Push		Solid / Mudstone / Sandstone	
	Depth Range m (bgl)	Thickness (m)	Depth Range m (bgl)	Thickness (m)	Depth Range m (bgl)	Thickness (m)	Depth Range m (bgl)	Depth Encountered (m AOD)
347	0.0 - 5.0	5.0	-	-	-	-	5.0 – 25.0	144.03
348	0.0 - 5.0	5.0	-	-	-	-	5.0 – 25.0	144.01
349	0.0 - 5.0	5.0	-	-	-	-	5.0 – 25.0	143.99
350	0.0 - 5.0	5.0	-	-	-	-	5.0 – 25.0	144.06
355	0.0 - 5.0	5.0	-	-	-	-	5.0 – 25.0	143.88
356	0.0 - 5.0	5.0	-	-	-	-	5.0 – 25.0	143.90

6.0 Conclusions and Recommendations

Based on the findings of this supplementary phase of investigation, no evidence of the adit has been identified to a maximum depth of 25m bgl, along its conjectured length (allowing for an up to 8m departure from its recorded location).

Abandonment plans obtained for the site indicate the conjectured adit to be present leading to off-site workings within the First Brown Metal coal, at a recorded depth of c.12m. On this basis, it is anticipated that the adit, if currently present, is anticipated to have been present at a depth of less than c.10m bgl within the site area, and likely to have been intersected by the rotary transects. The adit may have been removed as part of historical earthworks within the northeastern site area and on this basis is considered to pose a low risk to surface stability.

Although considered an unlikely possibility, should the adit exist at a depth greater than 25m bgl within the site area, sufficient competent cover is considered to exist within the eastern part of the site to mitigate any risk from surface stability of the adit which has a conjectured height of 2m.

Evidence of soft ground was identified within several rotary probe holes, with confirmatory trial pitting / trenching subsequently undertaken to visually identify the nature of the soft ground. Trial pit / trenches TP302 and TP303 identified an extremely weak, highly weathered intact coal seam at depths of 3.7m and 4.0m bgl respectively (with a thickness of 1.1m) indicating that the Flockton Thin Coal seam does not appear to have been subject to pillar and stall workings within this area. The presence of deep made ground associated with historic earthworks has resulted in the local extraction of the coal, evidently by opencast methods.

Based on the finding of the investigations it is considered the risk from pillar and stall workings within the eastern part of the site is **low**, therefore removing the requirement for remedial works in the form of drill and pressure grouting within the northeastern area of the site.

However, a risk to surface stability does exist within the northern and western parts of the site (as detailed within the Sirius Coal Mining Risk Assessment, Ref C8781/GH/9715/Rev B dated 28th October 2021). It is therefore recommended that northern and western areas of the site, which are underlain by the Flockton Thin and / or associated coal / seatearth workings, are stabilised by drilling and pressure grouting to mitigate the risk of surface instability. Confirmatory probe holes should be drilled within the areas of the former opencast (to the south of the conjectured Flockton Thin outcrop) to prove the absence of the coal seam.

The possibility of encountering unrecorded mine entries/bell pits on site cannot be discounted. Excavations should be inspected for any disturbed ground, associated with possible historic bell



pits/mine entries/ crop workings of the shallow coal. It is recommended that areas beneath proposed buildings have overlying made ground removed (where feasible, and in particular where within the conjectured sub-crop of the underlying Flockton Thin coal seam), in order to expose the natural ground.

If any disturbed ground is suspected, advice regarding treatment should be sought from a suitably qualified engineer.

A detailed drilling and grouting specification for the site should be agreed with the regulators (CA and local authority) prior to commencement.

We trust that the letter is satisfactory for your present needs. However, should you have any queries, please do not hesitate to contact the undersigned.

Yours sincerely,

Redacted

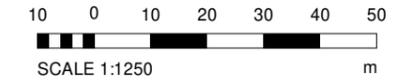
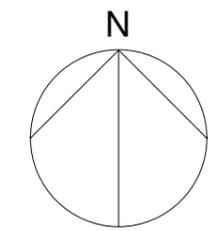
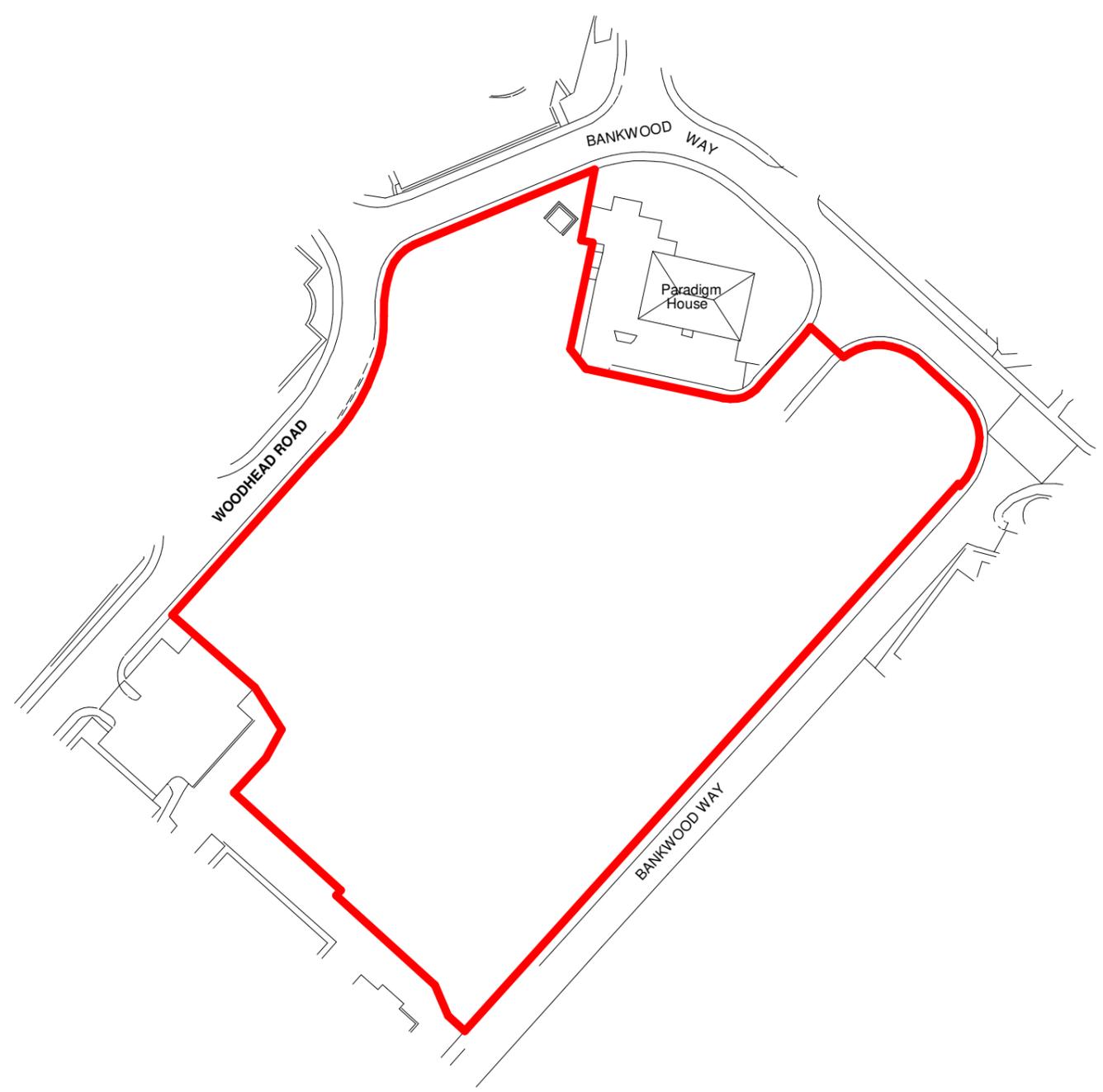
Andrew Western
Senior Engineer

For and on behalf of Sirius Geotechnical Ltd

Enc: Attachment A: Drawings
Attachment B: Exploratory Hole Logs



ATTACHMENT A
DRAWINGS



SCALE 1:1250

Do not scale this drawing.
 Architects are to be notified of any discrepancies.
 Contractors must check all dimensions on site.
 This drawing is subject to copyright laws and is for use on this project only.
 This drawing is to be used solely for the information as titled only.
 For other information refer to the latest revision of any cross referenced drawings.
 To be read in conjunction with relevant design standards/protocols

This is a colour drawing. In order to ensure any subsequent reproduction is viewed correctly it should be printed in full colour.

SITE AREA EXTG			
		ACRES	HECTARES
—	OVERALL SITE BOUNDARY (ASSUMED)	3.78	1.53

P2	DRAFT PLANNING ISSUE	16.04.21	MN	JM
P1	DRAFT PLANNING ISSUE	18.12.20	GL	JM

Rev	Description	Date	Drn	Ckd
-----	-------------	------	-----	-----

Status

PLANNING



SMALLEY MARSEY RISPIN

ARCHITECTS

Floor 2 The Exchange Station Parade Harrogate HG1 1TS
 01423 707 757 admin@smrarchitects.co.uk

Project

LIDL BIRSTALL, BANKWOOD WAY

Client

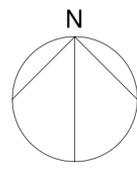


Drawing Title

LOCATION PLAN

Proj Ref	Origin	ZoneLevel	Type	Role	Num	Status	Rev
- - - 7404 - SMR - 00 - ZZ - DR - A - 2001 - S3 - P2							

SMR Job Ref	Sheet	Scale	Drawn
7404-00-2001	A3	1 : 1250	GL

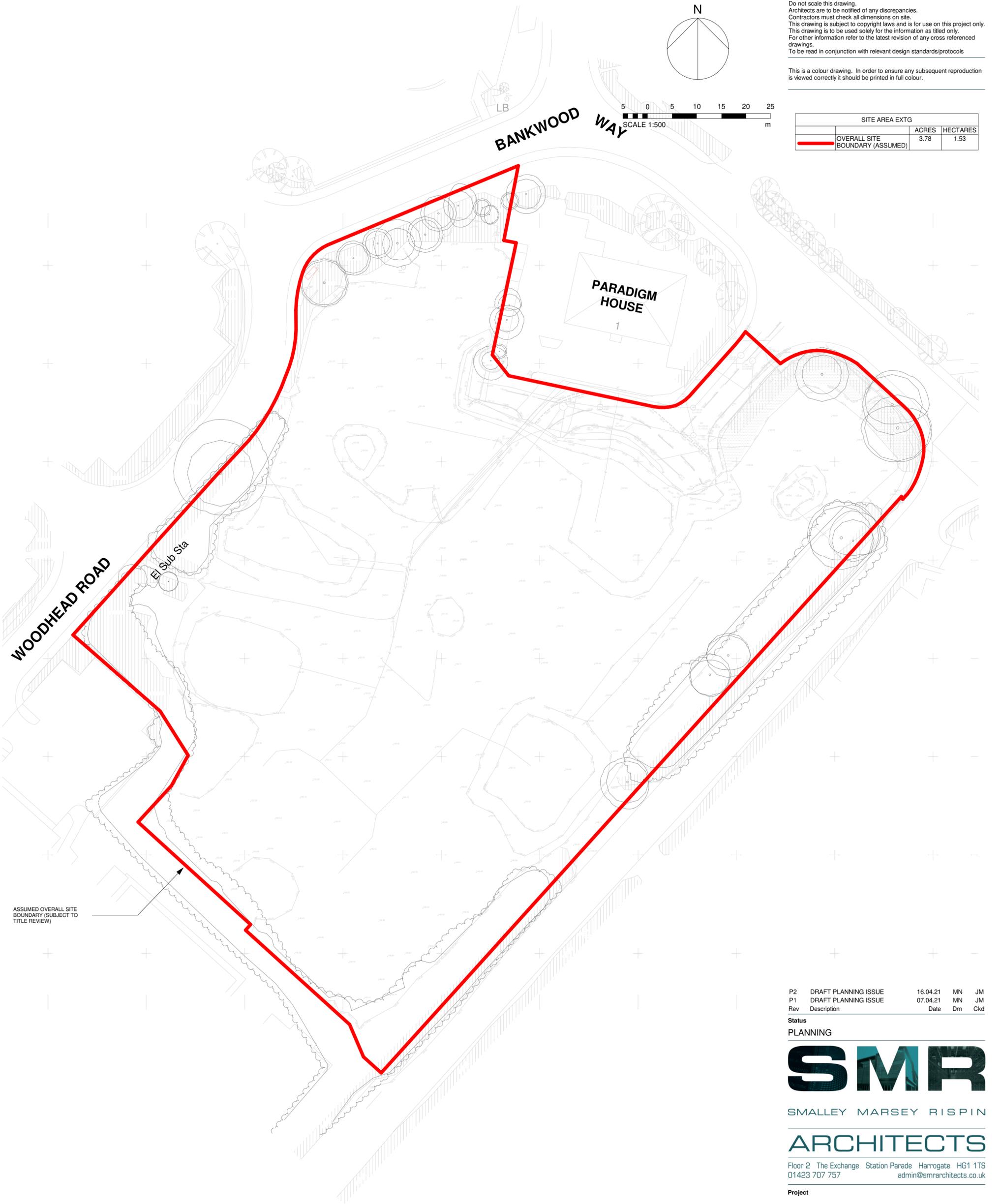


Do not scale this drawing.
 Architects are to be notified of any discrepancies.
 Contractors must check all dimensions on site.
 This drawing is subject to copyright laws and is for use on this project only.
 This drawing is to be used solely for the information as titled only.
 For other information refer to the latest revision of any cross referenced drawings.
 To be read in conjunction with relevant design standards/protocols

This is a colour drawing. In order to ensure any subsequent reproduction is viewed correctly it should be printed in full colour.



SITE AREA EXTG			
	ACRES	HECTARES	
 OVERALL SITE BOUNDARY (ASSUMED)	3.78	1.53	



ASSUMED OVERALL SITE BOUNDARY (SUBJECT TO TITLE REVIEW)

P2	DRAFT PLANNING ISSUE	16.04.21	MN	JM
P1	DRAFT PLANNING ISSUE	07.04.21	MN	JM
Rev	Description	Date	Drn	Ckd

Status
 PLANNING

SMR
 SMALLLEY MARSEY RISPIN
ARCHITECTS

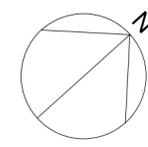
Floor 2 The Exchange Station Parade Harrogate HG1 1TS
 01423 707 757 admin@smrarchitects.co.uk

Project
 LIDL BIRSTALL, BANKWOOD WAY



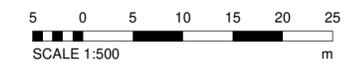
Drawing Title
 EXISTING SITE PLAN

Proj Ref	Origin	Zone Level	Type	Role	Num	Status	Rev
---	7404	- SMR	- 00	- ZZ	- DR	- A	- 2002 - S3 - P2
SMR Job Ref	Sheet	Scale	Drawn				
7404-00-2002	A2	1 : 500	GL				



Do not scale this drawing.
 Architects are to be notified of any discrepancies.
 Contractors must check all dimensions on site.
 This drawing is subject to copyright laws and is for use on this project only.
 This drawing is to be used solely for the information as titled only.
 For other information refer to the latest revision of any cross referenced drawings.
 To be read in conjunction with relevant design standards/protocols

This is a colour drawing. In order to ensure any subsequent reproduction is viewed correctly it should be printed in full colour.



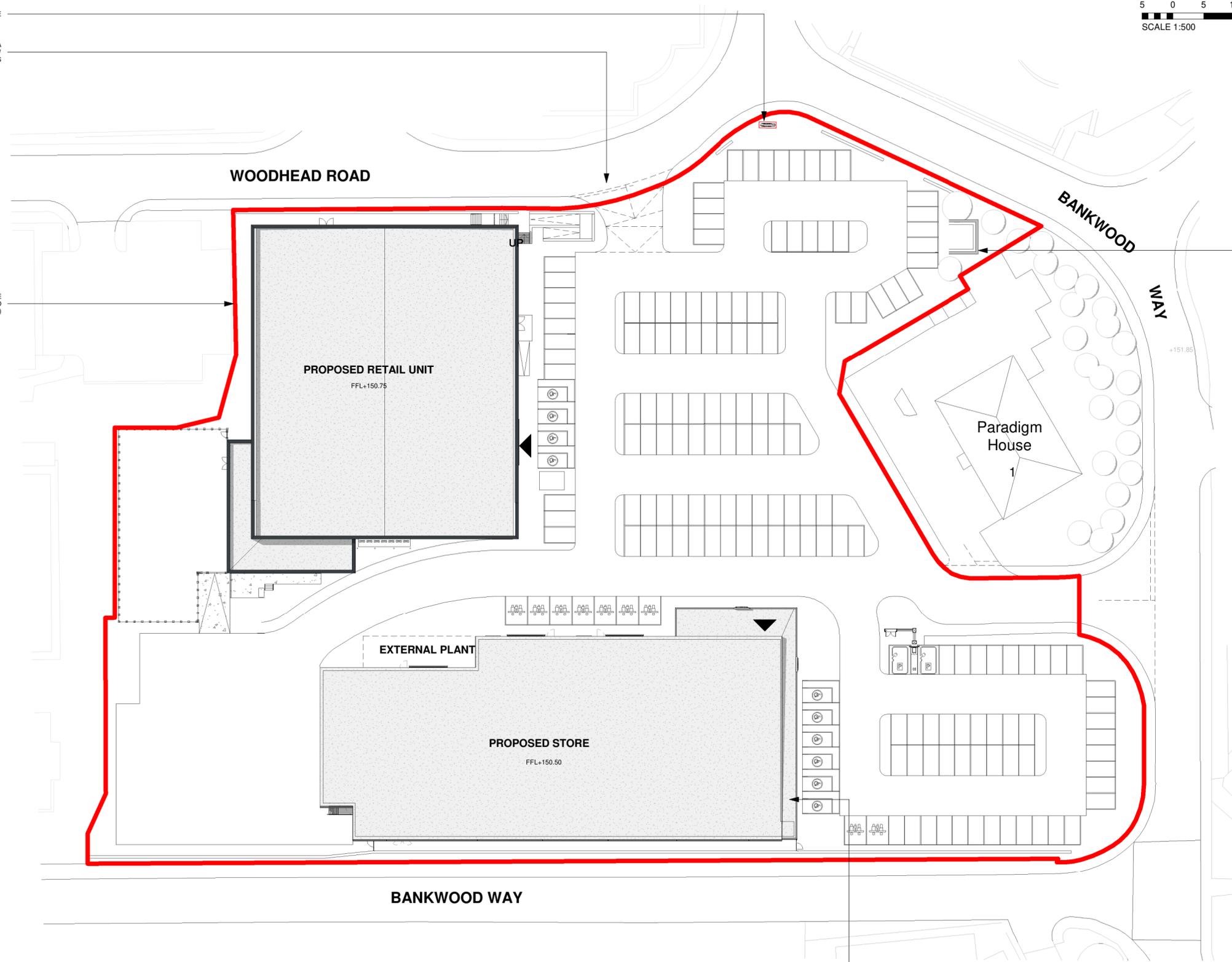
SITE AREA EXTG			
	ACRES	HECTARES	
— OVERALL SITE BOUNDARY (ASSUMED)	3.78	1.53	

PROPOSED LIDL SIGNAGE

PROPOSED ACCESS TO LIDL & LPA APPROVAL, AND FURTHER REVIEW BY HIGHWAY ENGINEERS

ASSUMED OVERALL SITE BOUNDARY (SUBJECT TO TITLE REVIEW)

PROPOSED SUBSTATION LOCATION WITH LOCAL RETAINING PARKING SPACE HATCHED OUT FOR MAINTENANCE AND SERVICING WHEN REQUIRED



PROPOSED CYCLE PARKING PROVISION SUBJECT TO LPA INPUT/APPROVAL

P2	DRAFT PLANNING ISSUE	16.04.21	MN	JM
P1	DRAFT PLANNING ISSUE	18.12.20	GL	JM
Rev	Description	Date	Drn	Ckd

Status
 PLANNING



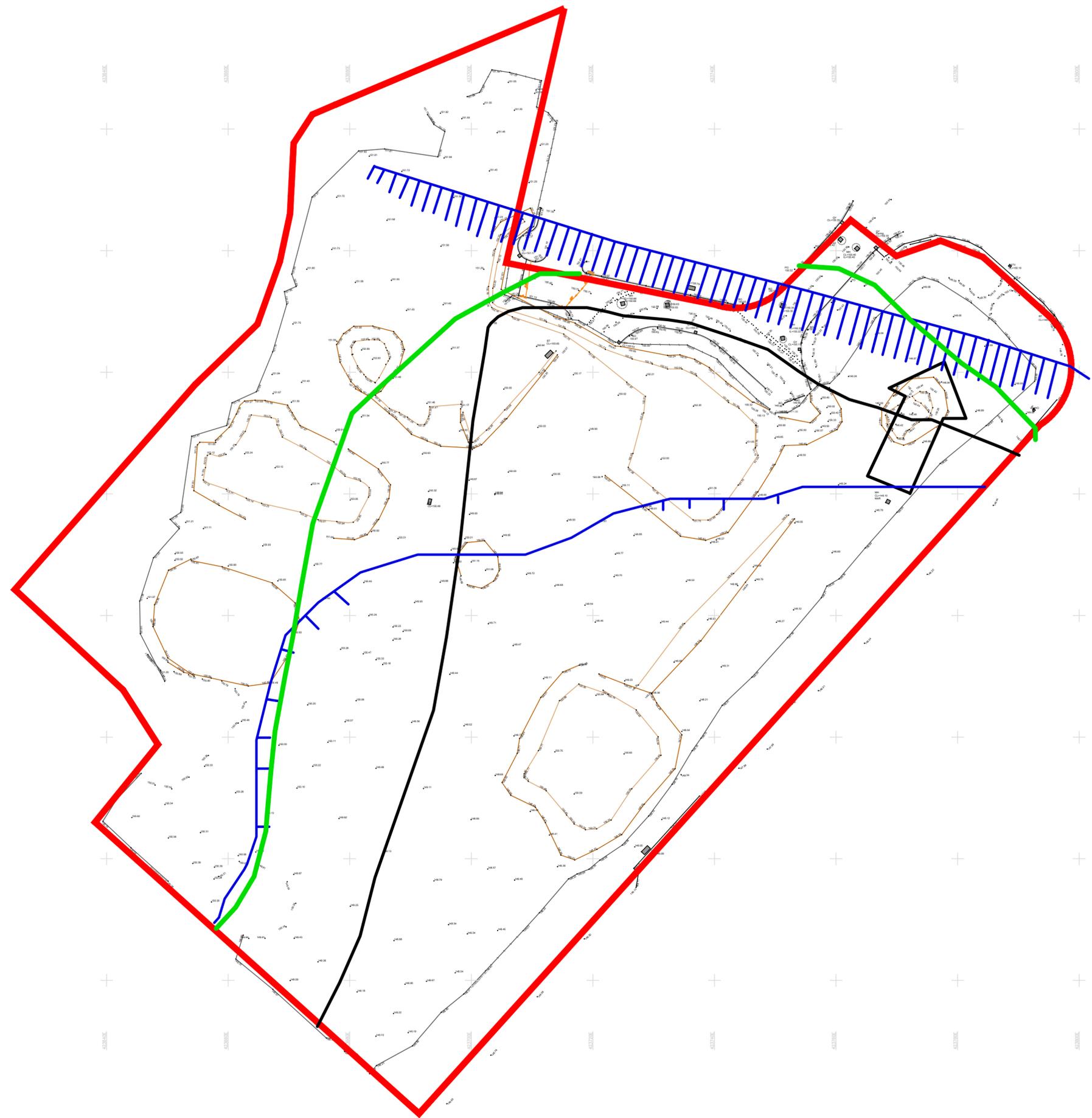
Floor 2 The Exchange Station Parade Harrogate HG1 1TS
 01423 707 757 admin@smrarchitects.co.uk

Project
 LIDL BIRSTALL, BANKWOOD WAY



Drawing Title
 PROPOSED SITE PLAN

Proj Ref	Origin	Zone	Level	Type	Role	Num	Status	Rev
---	7404	- SMR	- 00	- ZZ	- DR	- A	- 2003	- S3 - P2
SMR Job Ref	Sheet	Scale	Drawn					
7404-00-2003	A2	1 : 500	MN					



NOTES

- Site boundary
- Conjectured coal outcrop and adit (taken from Curtins Coal Authority mining report)
- ▤ Approximate extent of former earthworks, as taken from 1893 and 1974 historic OS maps.
- Approximate line of conjectured high wall of former opencast and landfill operations.
- Approximate location and orientation of adit ref. 423427-054 based on information provided by the Coal Authority.

REVISION		BY	DATE
0	For Information	MF	21/10/21
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

Lidl GB Limited

SITE

**Centre 27
 Birstall**

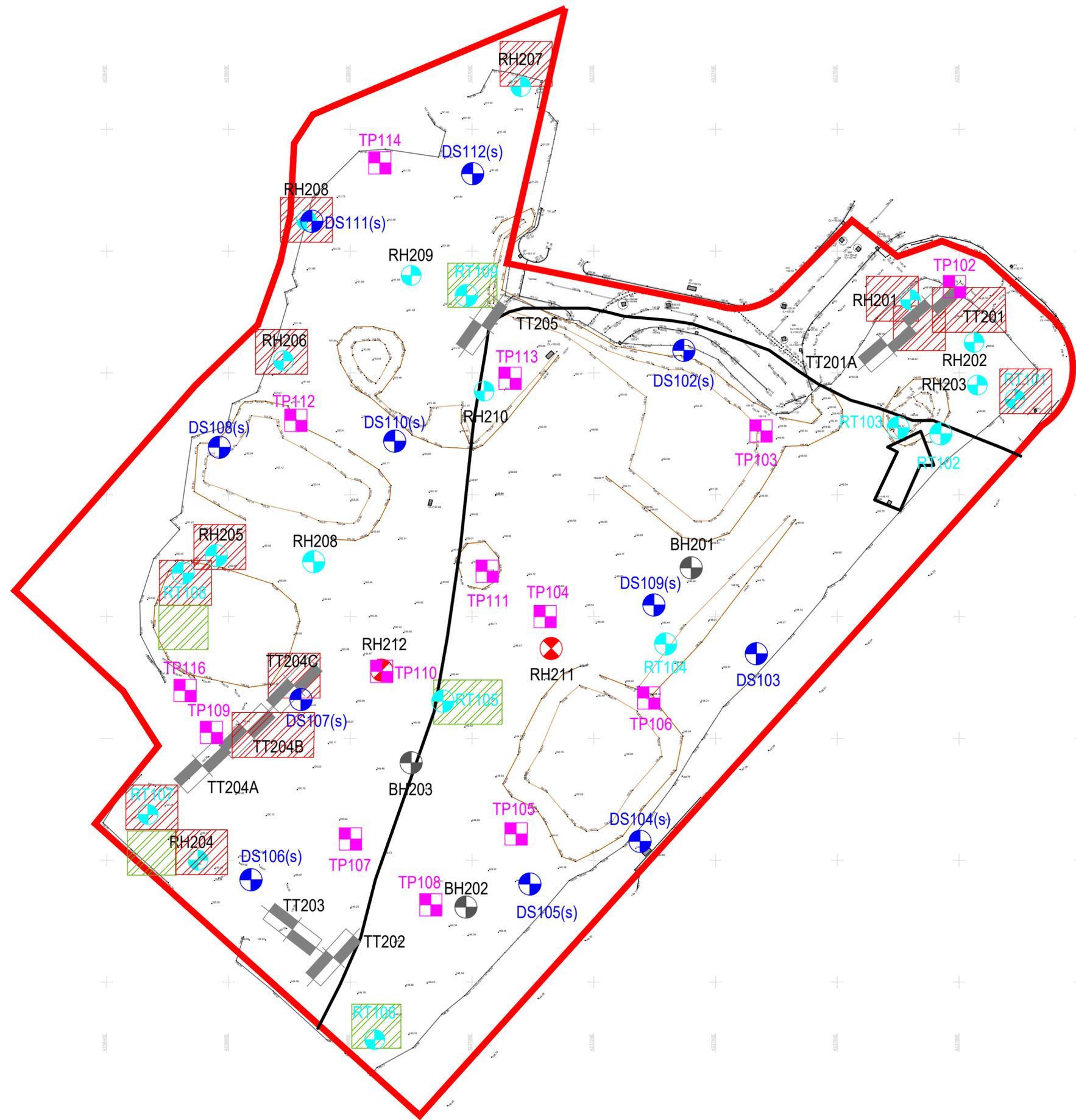
DRAWING TITLE

**Coal Mining and
 Historical Features Plan**

DRAWING NO. C8781/01	REVISION NO. 0
-------------------------	-------------------

DRAWN BY MF	APPROVED BY GH
----------------	-------------------

DATE March 2022	SCALE 1:500	PAPER SIZE A2
--------------------	----------------	------------------



NOTES

- Site Boundary
- Delta-Simons Site Investigation, 2018
 - Dynamic Sampler Borehole DS100
 - Rotary Borehole RT100
 - Trial Pit TP100
- Curtins Site Investigation, 2020
 - Rotary Probe Borehole RH200
 - Cable Percussive Borehole BH200
 - Rotary Probe Borehole with Cored Follow On RH210
 - Trial Trench TT200
- Evidence of Flockton Thin coal seam and / or evidence of mine workings.
- Evidence of Top Fenton / 1BM coal seam at depth (>30m bgl).
- Conjectured outcrop of Flockton Thin coal seam and adit (as taken from the Coal Authority mining report, included within the Curtins Ground Investigation Report).

REVISION	BY	DATE
0	For Information	MF 20/10/21
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



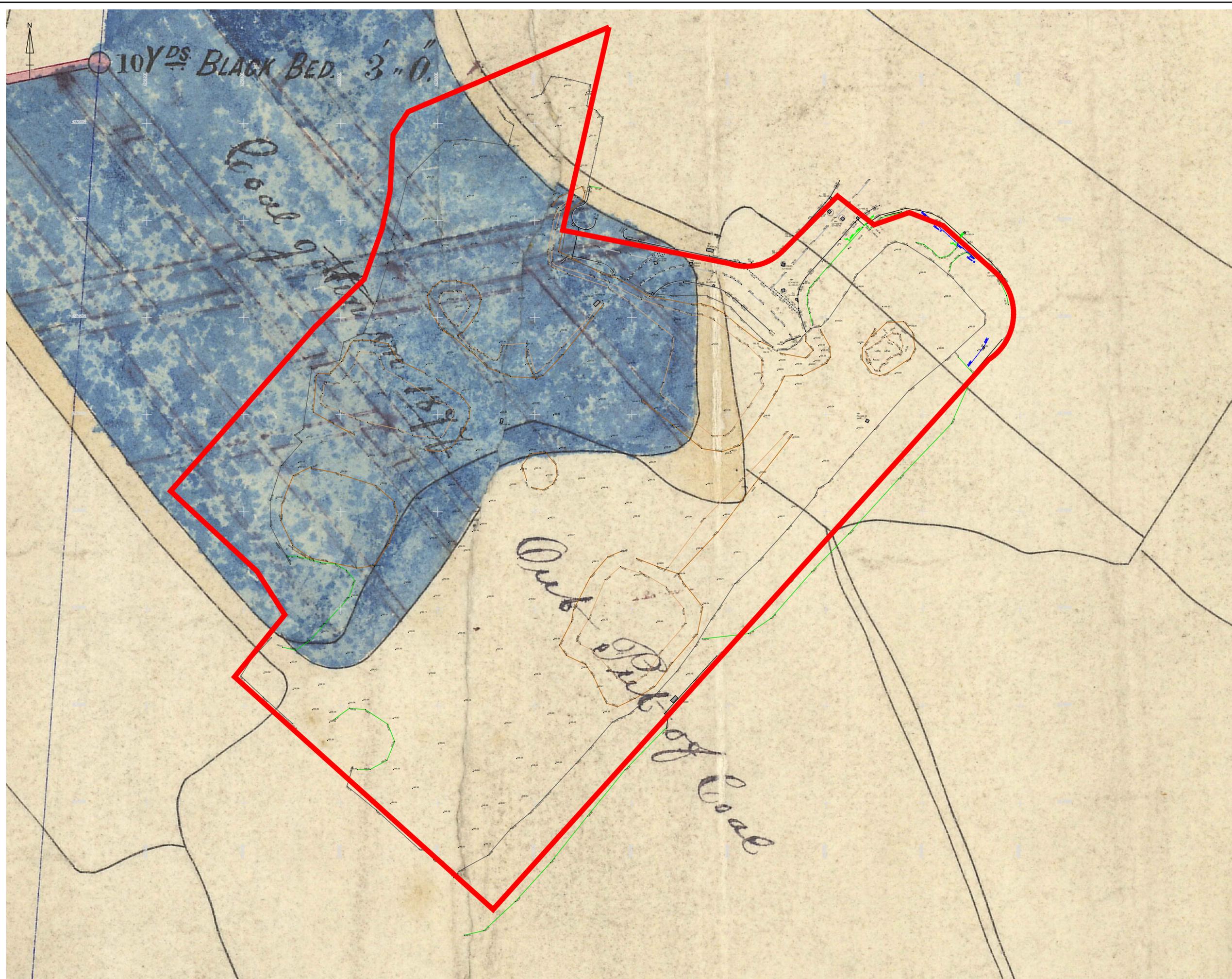
CLIENT

Lidl GB Limited

SITE
**Centre 27
Birstall**

DRAWING TITLE
**Previous Exploratory
Hole Location Plan**

DRAWING NO. C8781/02	REVISION NO. 0
DRAWN BY MF	APPROVED BY GH
DATE March 2022	SCALE 1:500
	PAPER SIZE A2



NOTES

Extract taken from Coal Authority Mine Abandonment Plan Ref. 913, Flockton Thin

REVISION	BY	DATE
0 >>	>>	>>
A >>	>>	>>
B >>	>>	>>
C >>	>>	>>
D >>	>>	>>

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



CLIENT

Lidl GB Limited

SITE
**Centre 27
 Birstall**

DRAWING TITLE
**Coal Mine
 Abandonment Plan
 - Flockton Thin**

DRAWING NO. C8781/03A	REVISION NO. 0
--------------------------	-------------------

DRAWN BY MF	APPROVED BY GH
----------------	-------------------

DATE March 2022	SCALE 1:500	PAPER SIZE A2
--------------------	----------------	------------------



NOTES

Extract taken from Coal Authority Mine Abandonment Plan ref. 6019, Top Fenton or First Brown Metal

REVISION	BY	DATE
0 >>	>>	>>
A >>	>>	>>
B >>	>>	>>
C >>	>>	>>
D >>	>>	>>

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



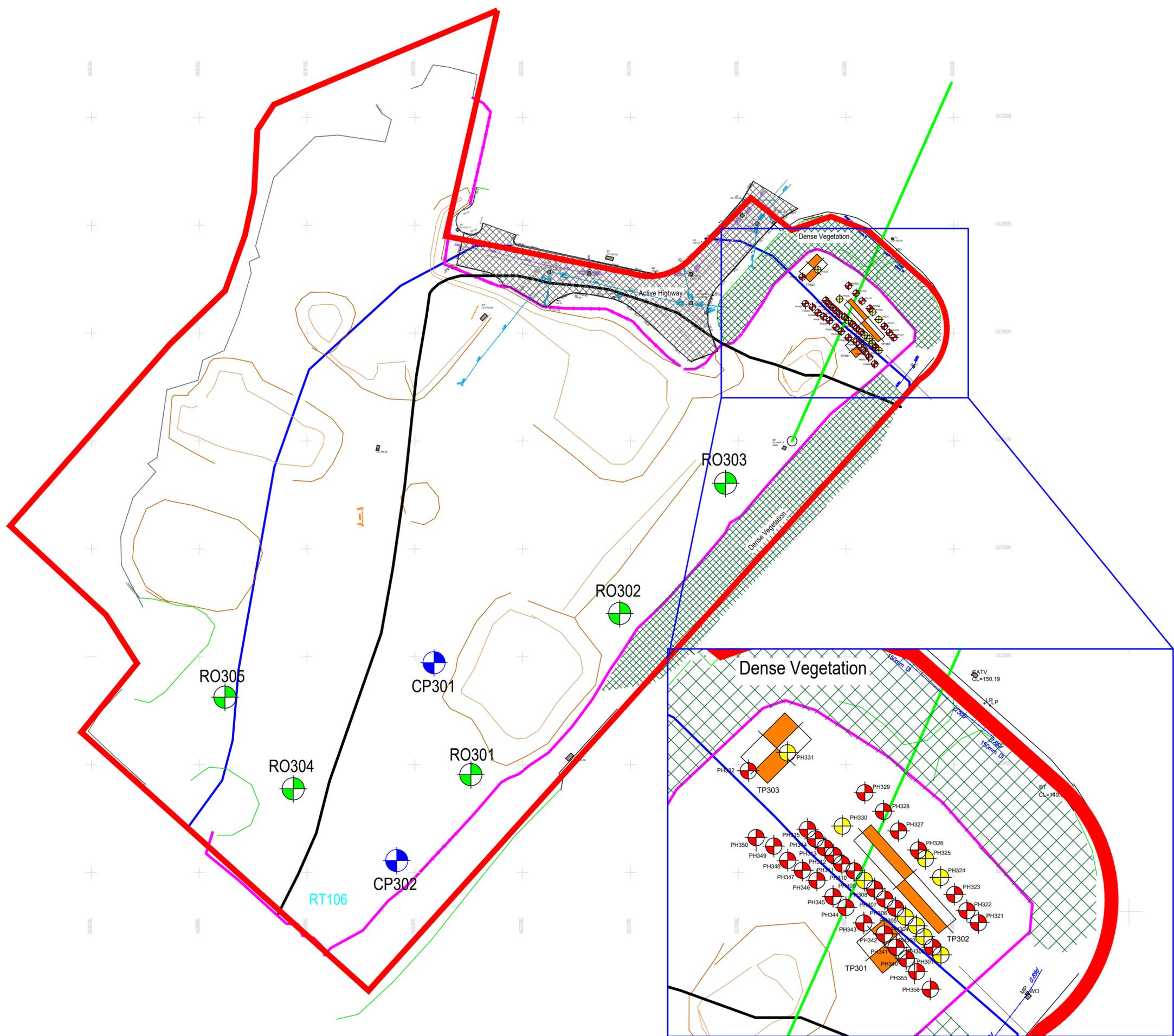
CLIENT

Lidl GB Limited

SITE
**Centre 27
 Birstall**

DRAWING TITLE
**Coal Mine Abandonment Plan -
 Top Fenton / First Brown Metal**

DRAWING NO. C8781/03B	REVISION NO. 0	
DRAWN BY MF	APPROVED BY GH	
DATE March 2022	SCALE 1:500	PAPER SIZE A2



Adit work area - Scale 1.200

- NOTES**
- Site Boundary
 - Site Hoarding
 - Indicative location of adit based on coordinates and orientation provided by CA
 - Indicative location of historic quarry highwall
 - Conjectured coal outcrop
- Sirius Borehole Locations 2022**
- Cable Percussive Borehole with Gas / Groundwater Monitoring Well
 - Rotary Borehole with Gas / Groundwater Monitoring Well
 - Rotary probehole whereby solid coal was encountered
 - Rotary probehole whereby soft ground / no coal was encountered
 - Indicative Trial / Trench Location

REVISION	BY	DATE
0	For Information	MF 20/10/21
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

Lidl GB Limited

SITE

**Centre 27
 Birstall**

DRAWING TITLE

**Exploratory Hole
 Location Plan**

DRAWING NO. C8781/04

REVISION NO. 0

DRAWN BY AW

APPROVED BY GH

DATE March 2022

SCALE 1:500

PAPER SIZE A2



ATTACHMENT B

EXPLORATORY HOLE
RECORDS



BOREHOLE RECORD

BH No. **PH301**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
16/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						OVERBURDEN (Drillers description)				
					1	MUDSTONE (Drillers description)	1.00	147.93		
					2					
					3	SOFT GROUND - No Recovery (Drillers description)	3.00	145.93		
					4					
					5	SOLID - No Recovery (Drillers description)	5.00	143.93		
					6					
					7					
					8					
					9					
					10	End of Borehole at 10.00m	10.00	138.93		
					11					
					12					
					13					
					14					
					15					
					16					
					17					
					18					
					19					
					20					
					21					
					22					
					23					
					24					
					25					
					26					
					27					
					28					
					29					
					30					

Remarks and Groundwater Observations:

- Borehole completed at 10m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.93
Eastings:
423786.12
Northings:
427456.80

Fig No.

PH301



BOREHOLE RECORD

BH No. **PH302**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
16/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						OVERBURDEN (Drillers description)				
					1	MUDSTONE (Drillers description)	1.00	147.94		
					2					
					3					
					4	COAL (Drillers description)	3.80	145.14		
					5	MUDSTONE/SANDSTONE (Drillers description)	5.10	143.84		
					6					
					7					
					8					
					9					
					10	End of Borehole at 10.00m	10.00	138.94		
					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:

- Borehole completed at 10m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.94
Eastings:
423785.49
Northings:
427457.38

Fig No.

PH302



BOREHOLE RECORD

BH No. **PH303**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
16/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						OVERBURDEN (Drillers description)				
					1	MUDSTONE (Drillers description)	1.00	147.95		
					2					
					3	SOFT GROUND (Drillers description)	3.00	145.95		
					4					
					5	MUDSTONE/SANDSTONE (Drillers description)	5.00	143.95		
					6					
					7					
					8					
					9					
					10					
					11					
					12					
					13					
					14					
					15	End of Borehole at 15.00m	15.00	133.95		
					16					
					17					
					18					
					19					
					20					
					21					
					22					
					23					
					24					
					25					
					26					
					27					
					28					
					29					
					30					
	TCR	SCR	RQD	FI						

Remarks and Groundwater Observations:

- Borehole completed at 15m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.95

Eastings:
423784.95

Northings:
427458.16

Fig No.

PH303



BOREHOLE RECORD

BH No. **PH304**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
16/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						OVERBURDEN (Drillers description)				
					1	MUDSTONE (Drillers description)	1.00	147.96		
					2					
					3	SOFT GROUND (Drillers description)	3.00	145.96		
					4					
					5	MUDSTONE/SANDSTONE (Drillers description)	5.00	143.96		
					6					
					7					
					8					
					9					
					10	End of Borehole at 10.00m	10.00	138.96		
					11					
					12					
					13					
					14					
					15					
					16					
					17					
					18					
					19					
					20					
					21					
					22					
					23					
					24					
					25					
					26					
					27					
					28					
					29					
					30					

Remarks and Groundwater Observations:

- Borehole completed at 10m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.96
Eastings:
423784.28
Northings:
427458.96

Fig No.
PH304



BOREHOLE RECORD

BH No. **PH305**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
16/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						OVERBURDEN (Drillers description)				
					1	MUDSTONE (Drillers description)	1.00	147.93		
					2					
					3	SOFT GROUND (Drillers description)	3.00	145.93		
					4					
					5	MUDSTONE/SANDSTONE (Drillers description)	5.00	143.93		
					6					
					7					
					8					
					9					
					10	End of Borehole at 10.00m	10.00	138.93		
					11					
					12					
					13					
					14					
					15					
					16					
					17					
					18					
					19					
					20					
					21					
					22					
					23					
					24					
					25					
					26					
					27					
					28					
					29					
					30					

Remarks and Groundwater Observations:

- Borehole completed at 10m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)

148.93

Eastings:

423783.47

Northings:

427459.63

Fig No.

PH305



BOREHOLE RECORD

BH No. **PH306**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
16/02/2022

Method: Casagrande C6-2 utilising water flush
Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						OVERBURDEN (Drillers description)				
					1	MUDSTONE (Drillers description)	1.00	147.92		
					2					
					3					
					4	COAL (Drillers description)	3.70	145.22		
					5	MUDSTONE/SANDSTONE (Drillers description)	5.00	143.92		
					6					
					7					
					8					
					9					
					10					
					11					
					12					
					13					
					14					
					15	End of Borehole at 15.00m	15.00	133.92		
					16					
					17					
					18					
					19					
					20					
					21					
					22					
					23					
					24					
					25					
					26					
					27					
					28					
					29					
					30					

Remarks and Groundwater Observations:

- Borehole completed at 15m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.92
Eastings:
423782.74
Northings:
427460.24

Fig No.
PH306



BOREHOLE RECORD

BH No. **PH308**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
16/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						OVERBURDEN (Drillers description)				
							3.00	145.91		
						MUDSTONE (Drillers description)				
						COAL (Drillers description)	3.80	145.11		
						MUDSTONE/SANDSTONE (Drillers description)	4.80	144.11		
						End of Borehole at 10.00m	10.00	138.91		

Remarks and Groundwater Observations:

- Borehole completed at 10m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.91

Eastings:
423781.19

Northings:
427461.67

Fig No.

PH308



BOREHOLE RECORD

BH No. **PH310**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
16/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT GROUND - No Recovery (Drillers description)				
							4.00	144.92		
						SOLID - No Recovery (Drillers description)				
							15.00	133.92		
						End of Borehole at 15.00m				

Remarks and Groundwater Observations:

- Borehole completed at 15m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.92
Eastings:
423779.69
Northings:
427463.01

Fig No.

PH310



BOREHOLE RECORD

BH No. **PH315**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
17/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT GROUND (Drillers description)			▲▲▲▲▲	
							1			
							2			
							3			
							4			
						COAL (Drillers description)	3.50	145.45	■	
							5			
						MUDSTONE/SANDSTONE (Drillers description)	4.80	144.15	▬▬▬▬▬	
							6			
							7			
							8			
							9			
							10			
						End of Borehole at 10.00m	10.00	138.95	▬▬▬▬▬	
							11			
							12			
							13			
							14			
							15			
							16			
							17			
							18			
							19			
							20			
							21			
							22			
							23			
							24			
							25			
							26			
							27			
							28			
							29			
							30			

Remarks and Groundwater Observations:

- Borehole completed at 10m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.95
Eastings:
423776.30
Northings:
427466.08

Fig No.

PH315



BOREHOLE RECORD

BH No. **PH323**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
17/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT GROUND (Drillers description)				
						COAL (Drillers description)	4.70	144.18		
						MUDSTONE/SANDSTONE (Drillers description)	5.00	143.88		
						End of Borehole at 10.00m	10.00	138.88		

Remarks and Groundwater Observations:

- Borehole completed at 10m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)

148.89

Eastings:

423787.12

Northings:

427461.24

Fig No.

PH323



BOREHOLE RECORD

BH No. **PH324**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
17/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT GROUND (Drillers description)				
							1			
							2			
						SOFT GROUND - No Recovery (Drillers description)	3.00	145.91		
							4			
						SOLID - No Recovery (Drillers description)	5.00	143.91		
							6			
							7			
							8			
							9			
						End of Borehole at 10.00m	10.00	138.91		
							11			
							12			
							13			
							14			
							15			
							16			
							17			
							18			
							19			
							20			
							21			
							22			
							23			
							24			
							25			
							26			
							27			
							28			
							29			
							30			

Remarks and Groundwater Observations:

1. Borehole completed at 10m bgl.
2. Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.91
Eastings:
423786.12
Northings:
427462.47

Fig No.

PH324



BOREHOLE RECORD

BH No. **PH327**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
17/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT GROUND (Drillers description)				
							1			
							2			
							3			
						COAL (Drillers description)	3.50	145.40		
							4			
						MUDSTONE/SANDSTONE (Drillers description)	4.90	144.00		
							5			
							6			
							7			
							8			
							9			
						End of Borehole at 10.00m	10.00	138.90		
							11			
							12			
							13			
							14			
							15			
							16			
							17			
							18			
							19			
							20			
							21			
							22			
							23			
							24			
							25			
							26			
							27			
							28			
							29			
							30			

Remarks and Groundwater Observations:

- Borehole completed at 10m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.90
Eastings:
423783.04
Northings:
427466.07

Fig No.
PH327



BOREHOLE RECORD

BH No. **PH330**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
17/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT GROUND (Drillers description)				
							1			
							2			
						SOFT GROUND - No Recovery (Drillers description)	3.00	145.95		
							4			
						SOLID - No Recovery (Drillers description)	4.80	144.15		
							5			
						End of Borehole at 6.00m	6.00	142.95		
							6			
							7			
							8			
							9			
							10			
							11			
							12			
							13			
							14			
							15			
							16			
							17			
							18			
							19			
							20			
							21			
							22			
							23			
							24			
							25			
							26			
							27			
							28			
							29			
							30			

Remarks and Groundwater Observations:

- Borehole completed at 6.0m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.95
Eastings:
423778.85
Northings:
427466.33

Fig No.

PH330



BOREHOLE RECORD

BH No. **PH331**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
17/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT GROUND (Drillers description)				
							1			
							2			
							3			
						SOFT PUSH - No Recovery (Drillers description)	3.50	145.54		
							4			
						SOLID - No Recovery (Drillers description)	5.00	144.04		
							5			
						End of Borehole at 6.00m	6.00	143.04		
							6			
							7			
							8			
							9			
							10			
							11			
							12			
							13			
							14			
							15			
							16			
							17			
							18			
							19			
							20			
							21			
							22			
							23			
							24			
							25			
							26			
							27			
							28			
							29			
							30			

Remarks and Groundwater Observations:

- Borehole completed at 6.0m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
149.04
Eastings:
423774.69
Northings:
427471.69

Fig No.
PH331



BOREHOLE RECORD

BH No. **PH340**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
18/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT BACKFILL (Drillers description)				
						MUDSTONE/SANDSTONE (Drillers description)	5.00	143.91		
						End of Borehole at 21.00m	21.00	127.91		

Remarks and Groundwater Observations:

- Borehole completed at 21m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.91
Eastings:
423783.51
Northings:
427456.56

Fig No.
PH340



BOREHOLE RECORD

BH No. **PH341**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
18/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT BACKFILL (Drillers description)				
						MUDSTONE/SANDSTONE (Drillers description)	5.00	143.96		
						End of Borehole at 25.00m	25.00	123.96		

Remarks and Groundwater Observations:

- Borehole completed at 25m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.96
Eastings:
423782.65
Northings:
427457.46

Fig No.

PH341



BOREHOLE RECORD

BH No. **PH342**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
18/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						OVERBURDEN (Drillers description)				
						MUDSTONE/SANDSTONE (Drillers description)	5.00	144.01		
						End of Borehole at 25.00m	25.00	124.01		

Remarks and Groundwater Observations:

- Borehole completed at 25m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
149.01

Eastings:
423781.90

Northings:
427458.36

Fig No.

PH342



BOREHOLE RECORD

BH No. **PH343**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
18/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						OVERBURDEN (Drillers description)				
						MUDSTONE/SANDSTONE (Drillers description)	5.00	143.96		
						End of Borehole at 25.00m	25.00	123.96		

Remarks and Groundwater Observations:

- Borehole completed at 25m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.96
Eastings:
423780.40
Northings:
427459.17

Fig No.
PH343



BOREHOLE RECORD

BH No. **PH344**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
21/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT BACKFILL (Drillers description)				
					1					
					2					
					3					
					4					
					5	MUDSTONE/SANDSTONE (Drillers description)	5.00	144.00		
					6					
					7					
					8					
					9					
					10					
					11					
					12					
					13					
					14					
					15					
					16					
					17					
					18					
					19					
					20					
					21					
					22					
					23					
					24					
					25	End of Borehole at 25.00m	25.00	124.00		
					26					
					27					
					28					
					29					
					30					
	TCR	SCR	RQD	FI						

Remarks and Groundwater Observations:

1. Borehole completed at 25m bgl.
2. Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
149.00
Eastings:
423779.10
Northings:
427460.27

Fig No.

PH344



BOREHOLE RECORD

BH No. **PH345**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
21/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT BACKFILL (Drillers description)				
					1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30					
						MUDSTONE/SANDSTONE (Drillers description)	5.00	144.00		
						End of Borehole at 25.00m	25.00	124.00		
	TCR	SCR	RQD	FI						

Remarks and Groundwater Observations:

1. Borehole completed at 25m bgl.
2. Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
149.00
Eastings:
423778.16
Northings:
427461.11

Fig No.

PH345



BOREHOLE RECORD

BH No. **PH346**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
21/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT BACKFILL (Drillers description)				
						MUDSTONE/SANDSTONE (Drillers description)	5.00	143.96		
						End of Borehole at 25.00m	25.00	123.96		

Remarks and Groundwater Observations:

- Borehole completed at 25m bgl.
- Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.96
Eastings:
423777.01
Northings:
427462.36

Fig No.

PH346



BOREHOLE RECORD

BH No. **PH347**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
21/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT BACKFILL (Drillers description)				
					1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30					
						MUDSTONE/SANDSTONE (Drillers description)	5.00	144.03		
						End of Borehole at 25.00m	25.00	124.03		
	TCR	SCR	RQD	FI						

Remarks and Groundwater Observations:

1. Borehole completed at 25m bgl.
2. Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
149.03
Eastings:
423775.81
Northings:
427463.09

Fig No.

PH347



BOREHOLE RECORD

BH No. **PH349**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date(s):
21/02/2022

Method: Casagrande C6-2 utilising water flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: Driller Checked By: AW

Driller: Sirius Drilling Ltd

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
						SOFT BACKFILL (Drillers description)				
					1					
					2					
					3					
					4					
					5	MUDSTONE/SANDSTONE (Drillers description)	5.00	143.99		
					6					
					7					
					8					
					9					
					10					
					11					
					12					
					13					
					14					
					15					
					16					
					17					
					18					
					19					
					20					
					21					
					22					
					23					
					24					
					25	End of Borehole at 25.00m	25.00	123.99		
					26					
					27					
					28					
					29					
					30					
	TCR	SCR	RQD	FI						

Remarks and Groundwater Observations:

1. Borehole completed at 25m bgl.
2. Borehole backfilled and sealed with bentonite upon completion of borehole.1. Borehole completed at 25m bgl.
2. Borehole backfilled and sealed with bentonite upon completion of borehole.

GL (m AOD)
148.99
Eastings:
423773.74
Northings:
427464.60

Fig No.

PH349



TRIAL PIT RECORD

TP No. **TP301**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date:
16/02/2022

Method: 21 ton tracked excavator utilising 1200m toothed bucket

Scale: 1:30

SAMPLE DETAILS

STRATA RECORD

Logged By: AW Checked By: AW

Type	Depth From - To(m)	Vane Results kN/m ² (PID)	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
			1	MADE GROUND - Grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, concrete, brick and rebar.				
			2	MADE GROUND - Firm dark grey sandy gravelly CLAY. Low plasticity (field description). Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone, mudstone and coal (Colliery Spoil). <i>At 2.0m - Vertical reinforced concrete pile encountered.</i>	2.00			
			3					
			4					
			5	End of trial pit at 5.00m	5.00			

Remarks and Groundwater Observations

1. Trial pit completed at 5.0m bgl.
2. Groundwater encountered at 1.0m bgl (likely attributed to drilling flush).
3. Trial pit backfilled with arisings upon completion.

GL (m AOD)

Eastings:

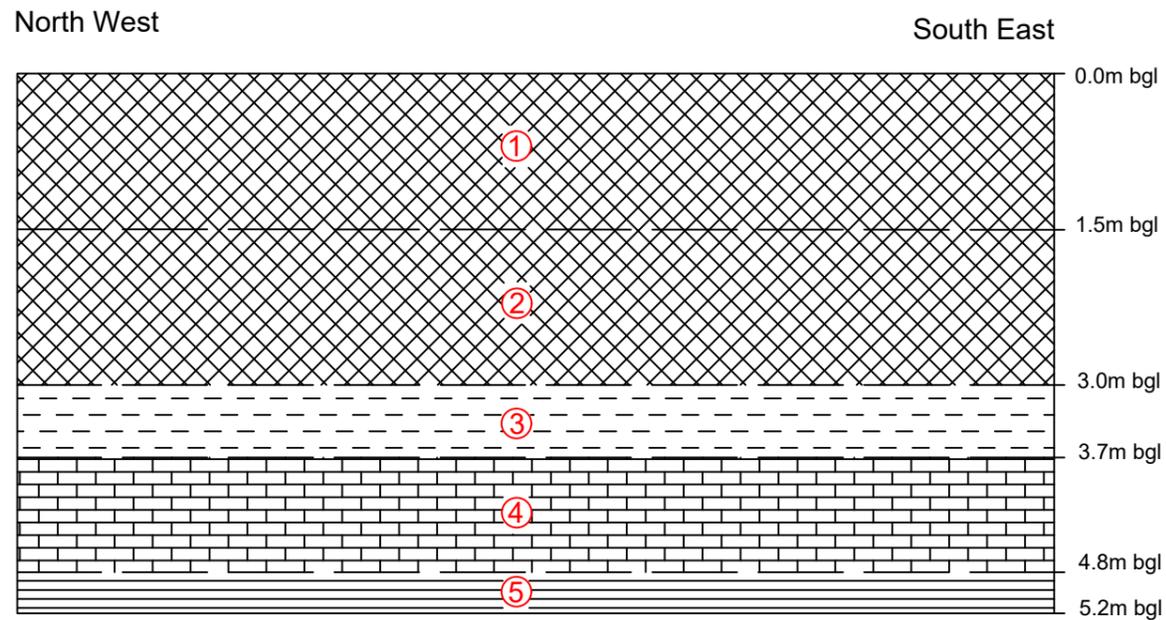
Northing:

Fig No.

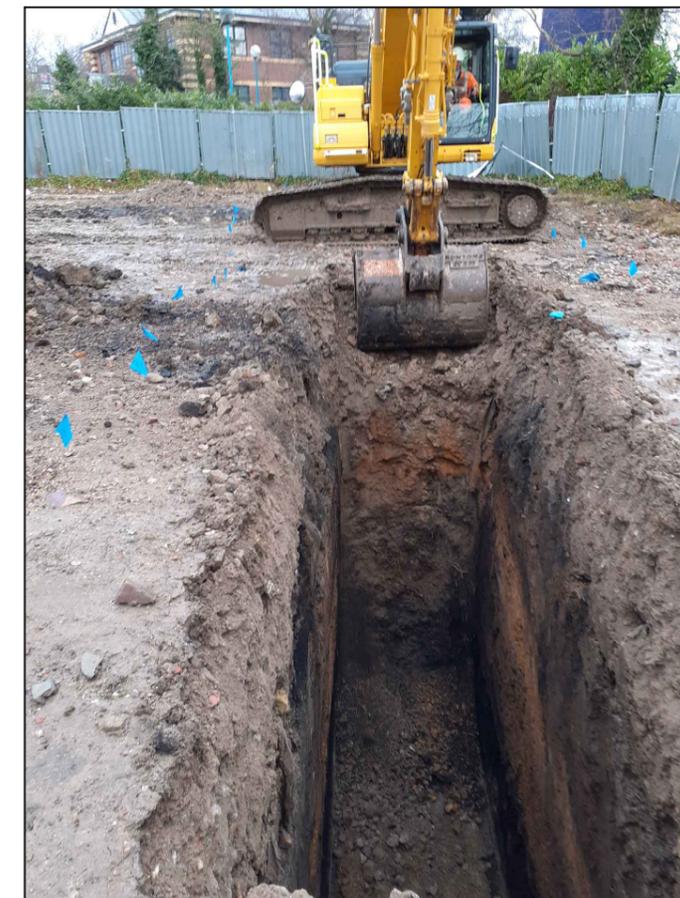
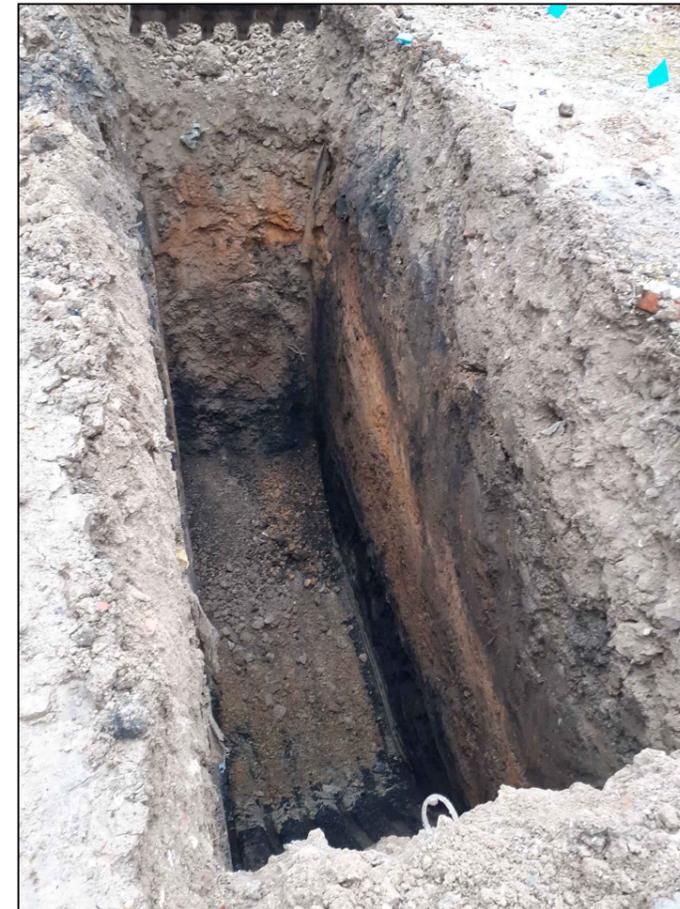
TP301



TP302 - Cross section



1. Made Ground - Grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, concrete, brick and rebar.
2. MADE GROUND - Firm dark grey sandy gravelly CLAY. Low plasticity (field description). Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone, mudstone and coal (Colliery Spoil).
3. Light brown / orangish brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular fine to coarse of sandstone (Residual Sandstone).
4. Extremely weak black COAL. Recovered as sandy gravel of coal.
5. Extremely weak light grey MUDSTONE. Recovered as sandy gravel of mudstone.



NOTES

REVISION	BY	DATE
0	>>	>>
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

Lidl GB Ltd

SITE

**Centre 27
 Birstall**

DRAWING TITLE

TP302 - Cross section

DRAWING NO. C8781/TP302	REVISION NO. 0
DRAWN BY AW	APPROVED BY GH
DATE March 2022	SCALE NTS
	PAPER SIZE A3



TRIAL PIT RECORD

TP No. **TP302**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date:
17/02/2022

Method: 21 ton tracked excavator utilising 1200m toothed bucket

Scale: 1:30

SAMPLE DETAILS

STRATA RECORD

Logged By: AW Checked By: AW

Type	Depth From - To(m)	Vane Results kN/m ² (PID)	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
				MADE GROUND - Grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, concrete, brick and rebar.				
				MADE GROUND - Firm dark grey sandy gravelly CLAY. Low plasticity (field description). Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone, mudstone and coal (Colliery Spoil).	1.50			
				Light brown / orangish brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub- angular fine to coarse oof sandstone. (Residual Sandstone)	3.00			
				Extremely weak black COAL. Recovered as sandy gravel of coal.	3.70			
				Extremely weak light grey MUDSTONE. Recovered as sandy gravel of mudstone.	4.80			
				End of trial pit at 5.20m	5.20			

Remarks and Groundwater Observations

1. Trial pit / trench completed at 5.2m bgl.
2. Walls of the trial pit / trench were unstable.
3. Trial pit / trench backfilled with arisings upon completion.

GL (m AOD)

Easting:

Northing:

Fig No.

TP302



TRIAL PIT RECORD

TP No. **TP303**
Sheet 1 of 1

Site: Centre 27, Birstall

Contract No: C8781

Client: Lidl GB Ltd

Date:
17/02/2022

Method: 21 ton tracked excavator utilising 1200m toothed bucket

Scale: 1:30

SAMPLE DETAILS

STRATA RECORD

Logged By: AW Checked By: AW

Type	Depth From - To(m)	Vane Results kN/m ² (PID)	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
				MADE GROUND - Grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, concrete, brick and rebar.				
			1	Light brown / orangish brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub- angular fine to coarse of sandstone. (Residual Sandstone)	1.00			
			2	Extremely weak orangish brown SANDSTONE. Recovered as sandy gravel of sandstone.	1.90			
			3	Extremely weak light grey MUDSTONE. Recovered as sandy gravel of mudstone.	2.40			
			4	Extremely weak black COAL. Recovered as sandy gravel of coal.	4.00			
			5	Extremely weak light grey MUDSTONE. Recovered as sandy gravel of mudstone.	5.10			
				End of trial pit at 5.50m	5.50			

Remarks and Groundwater Observations

1. Trial pit completed at 5.5m bgl.
2. No groundwater encountered.
3. Trial pit backfilled with arisings upon completion.

GL (m AOD)

Easting:

Northing:

Fig No.

TP303