



**REPORT NO: ZZ25061-2**  
**REVISION A**  
**DATE: AUGUST 2025**

**KIRKBY VALLEY GOLF CLUB**  
**INGOE LANE, LIVERPOOL**

**DESIGN STATEMENT**  
**& VERIFICATION PLAN**

**PREPARED FOR**  
**GREEN CIRCLE VENTURES LTD**

**PROJECT DETAILS**

|              |                                                                                        |                                                                                                  |
|--------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| SITE/PROJECT | KIRKBY VALLEY GOLF CLUB, INGOE LANE, LIVERPOOL<br>DESIGN STATEMENT & VERIFICATION PLAN |                                                                                                  |
| CLIENT       | GREEN CIRCLE VENTURES LTD                                                              |                                                                                                  |
| JOB NO       | ZZ25061                                                                                |                                                                                                  |
| REPORT NO    | ZZ25061-2 REVISION A                                                                   |                                                                                                  |
| STATUS       | FINAL                                                                                  |                                                                                                  |
| ISSUE DATE   | 6 AUGUST 2025                                                                          |                                                                                                  |
| WRITTEN BY   | MARTIN LOVELOCK<br>BENG (HONS)<br>CGEOL FGS MCIWM                                      | SIGNATURE<br> |
| CHECKED BY   | DAVID KILLICK<br>BSc (HONS)                                                            | SIGNATURE<br><i>DKillick</i>                                                                     |
| APPROVED BY  | MARTIN LOVELOCK<br>BENG (HONS)<br>CGEOL FGS MCIWM                                      | SIGNATURE<br> |

**REVISION HISTORY**

| REVISION REF | DATE   | NATURE OF REVISION                                                              |
|--------------|--------|---------------------------------------------------------------------------------|
| A            | AUGUST | REPORT UPDATED FOLLOWING COMMENTS FROM<br>KNOWSLEY COUNCIL & MEAS DATED 31/7/25 |
|              |        |                                                                                 |
|              |        |                                                                                 |

**DISCLAIMER**

THIS REPORT HAS BEEN PREPARED BY ZIG ZAG ENVIRONMENTAL LIMITED (ZZE) WHO HAVE EXERCISED SUCH PROFESSIONAL SKILL, CARE AND DILIGENCE AS MAY REASONABLY BE EXPECTED OF A PROPERLY QUALIFIED AND COMPETENT CONSULTANT, EXPERIENCED IN PREPARING REPORTS OF A SIMILAR NATURE. HOWEVER, TO THE EXTENT THAT THE REPORT IS BASED OR RELIES UPON INFORMATION CONTAINED IN RECORDS, REPORTS OR OTHER MATERIALS PROVIDED TO ZZE, WHICH HAVE NOT BEEN INDEPENDENTLY PRODUCED OR VERIFIED, ZZE GIVES NO WARRANTY, REPRESENTATION OR ASSURANCE AS TO THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION.

THIS REPORT IS PREPARED SOLELY FOR THE BENEFIT OF THE CLIENT. IT MAY NOT BE RELIED UPON BY, OR SUBMITTED TO, A THIRD PARTY FOR THEIR RELIANCE FOR THE PURPOSES OF VALUATION, MORTGAGE, INSURANCE AND REGULATORY APPROVAL, UNTIL ALL INVOICES HAVE BEEN SETTLED IN FULL.

THOSE USING THIS INFORMATION IN SUBSEQUENT ASSESSMENTS OR EVALUATIONS DO SO AT THEIR OWN RISK

## TABLE OF CONTENTS

|                                               |    |
|-----------------------------------------------|----|
| 1. INTRODUCTION .....                         | 1  |
| 2. SITE DESCRIPTION .....                     | 1  |
| 3. BACKGROUND.....                            | 2  |
| 4. DEFINITION OF WASTE CODE OF PRACTICE ..... | 6  |
| 5. MATERIAL SPECIFICATION.....                | 6  |
| 6. VERIFICATION PLAN .....                    | 7  |
| 6.1 SOURCE EVALUATION .....                   | 7  |
| 6.2 SITE CHECKS.....                          | 8  |
| 6.3 VERIFICATION SAMPLING & TESTING.....      | 8  |
| 6.4 ASSESSMENT OF RESULTS.....                | 9  |
| 6.5 CONTINGENCY ACTION PLAN .....             | 10 |
| 6.6 RECORD KEEPING .....                      | 10 |
| 7. VERIFICATION REPORT.....                   | 11 |

## LIST OF APPENDICES

APPENDIX A - CONTAMINANT ASSESSMENT CRITERIA  
APPENDIX B - BACKGROUND SOIL CHEMISTRY  
APPENDIX C - DRAWINGS

## LIST OF TABLES

TABLE 1 – CUT & FILL VOLUMES

## LIST OF FIGURES

FIGURE 1 – DEVELOPMENT LAYOUT  
FIGURE 2 – CONSTRUCTION PHASING

## LIST OF DRAWINGS

INTERNATIONAL DESIGN GROUP  
DRAWING NO G935 000 LOCATION PLAN REV A  
DRAWING NO G935 001 EXISTING SITE PLAN REV A  
DRAWING NO G935 242 ISOPACHYTES REV A

## 1. INTRODUCTION

Zig Zag Environmental Ltd (ZZE) has been instructed by Green Circle Ventures Ltd to produce a report that will satisfy both the local authority and CL:AIRE, for the importation of soils to the above site required for the redevelopment of the existing golf club.

Knowsley Council granted planning permission on 12 February 2025, for the complete redevelopment of Kirkby Valley Golf Club, including *'importation of up to 475,000 cubic metres of inert soils, sands and aggregate (to be governed by CL:AIRE DOWCOP procedures / protocols), to remodel the existing golf course and create a new 9 hole par 3 golf course on 52 acres of disused land adjacent'* (Application No 21/00744/FUL).

The site is located some 9.1 km to the north-north-east of Liverpool city centre and occupies around 80 Ha.

As clearly stated in the description of the development the approved earthworks will use suitable soils generated on other development sites and the transfer of these soils shall be controlled via a Materials Management Plan (MMP) produced in accordance with the CL:AIRE Definition of Waste Code of Practise (DoWCoP).

Some of the construction materials are products eg sand, topsoil, root zone mix, Class 1A & 6F2 secondary aggregates. These materials fall outside the MMP process but will still be controlled & managed as part of the overall development process.

Condition No 5 of the planning permission requires the submission of a Detailed Phasing Plan for each phase of works identified on the Global Phasing Plan, to include *'details of how the applicant will maintain a record of the material brought onto site for that specific phase (to include amount, source and associated testing results / certification)'*.

This planning requirement is also a fundamental requirement of the MMP as detailed within the DoWCoP.

This design statement and verification plan has been written to meet the requirements of the CL:AIRE DoWCoP and also to satisfy the planning condition requirements.

Any conclusions and recommendations presented in this report are the result of our professional interpretation of the information obtained. ZZE reserves the right to amend the report if further information becomes available.

## 2. SITE DESCRIPTION

Kirkby Valley Golf Club is located off Valley Road, Kirkby, some 9.1 km to the north-north-east of Liverpool city centre. It occupies 80.3 hectares.

The approximate National Grid Reference for the site is 339420, 398120.

The site location and existing site layout are illustrated on the following International Design Group drawings, presented in Appendix C.

- Drawing No G935 000 Location Plan Rev A
- Drawing No G935 001 Existing Site Plan Rev A

The golf course is currently accessed off Valley Road in the south-eastern corner of the site. The clubhouse and a large car park are also located in this area.

The site is bounded by the M57 to the north-east, Ingoe Lane to the south-east, Valley Road to the south and Aintree Lane to the south-west. The northern site boundary is defined by a railway line. The River Alt bisects the site flowing in a south-easterly direction through the centre of the site.

The existing site comprises the existing 1-18 Holes of Kirkby Valley Golf Course and a vacant disused open space which abuts the main golf course, the A506 Valley Road and Aintree Lane. The project area is split by the river Alt.

The site is well screened due to a large quantity of trees along the perimeter boundaries.

The northern and eastern areas of the wider golf course are dominated by amenity grassland with stands of scattered trees, plantation woodland and occasional rough grassland, scrub, ponds and ditches.

The south-western part of the development area comprises three fields of unmanaged rough grassland with scattered trees, tall ruderal vegetation, wet grassland and hedgerows along the field boundaries.

### **3. BACKGROUND**

The course was constructed in 1928 and as a consequence the course would be considered dated and somewhat dangerous by modern safety standards.

The club currently comprises an 18-hole par 72 (6449 yard) public parkland golf course. The existing golf course is of basic layout but is a popular leisure attraction. The course is set within mature trees and is bisected by the River Alt with the two sections of the course connected over the river by footbridges.

The course was managed for many years by Liverpool City Council, hence has lacked investment and has represented a poor quality leisure facility. Since taking over the management of the course in 2014, Green Circle has much improved the facility.

The approved development represents a major reinvestment. It includes the redesign of the 18-hole course with substantial earthworks to provide a modern playing surface of greater complexity. In addition, the provision of new build facilities, a new club house, a driving range and building, a practice 9-hole course and an adventure golf course, which shall attract a wider demographic range of visitors.

The redevelopment of the site is illustrated at Figure 1.



Figure 1 – Development Layout

Approximately 475,000 m<sup>3</sup> of suitable soil fill and other construction materials (eg sand & aggregates) are required to complete the approved works. Most of the general soil fill will be imported under the MMP. Other materials eg topsoil, sand, Class 1A & 6F2 aggregates & root zone mix will be imported as product.

It is proposed that the construction works be undertaken in a series of phases, as illustrated in Figure 2.



Figure 2 – Construction Phasing

The phases are described as follows:

- Phase & 1b Road junction & traffic lights
- Phase 2a Existing golf course – winter works
- Phase 2b Par 3 academy golf course & driving range outfield
- Phase 2c New pedestrian bridge
- Phase 3 Maintenance area, driving range building & adventure golf
- Phase 4 Car park & associated landscaping

Phase 5      Clubhouse

Phase 6      Academy building

The vast majority of the fill material is required for Phase 2b, although some material will be required for other areas also.

The total volume of engineering fill required for the approved works is approximately 475,000 m<sup>3</sup>. A breakdown of the cut & fill volumes for each phase of works is presented at Table 1.

| Phase     | Cut (m <sup>3</sup> ) | Fill (m <sup>3</sup> ) | Nett (m <sup>3</sup> ) |
|-----------|-----------------------|------------------------|------------------------|
| 1a        | 20                    | 220                    | 200                    |
| 1b        | 100                   | 400                    | 300                    |
| 2a        | 200                   | 700                    | 500                    |
| 2b        | 2000                  | 472,000                | 470,000                |
| 2c        | 0                     | 0                      | 0                      |
| 3         | 450                   | 1250                   | 800                    |
| 4         | 250                   | 2750                   | 2500                   |
| 5         | 100                   | 500                    | 400                    |
| 6         | 0                     | 300                    | 300                    |
| Subtotals | 3120                  | 478,120                | 475,000                |

**Table 1 – Cut & Fill Volumes**

Note: As stated previously these volumes include general soil fill which will be imported under the MMP but also products such as sand, topsoil, root zone mix and Class 1A & 6F2 aggregates.

In the Construction Method Statement it states that:

*‘The existing topsoil and subsoil on-site will be stripped and stored in bunds in a designated stockpile area(s) at the site, ready for replacement over the imported soil. No existing topsoil or subsoil will be removed from the site. The operator will compact the existing underlying clay in all improvement/construction areas to provide a stable platform for placement of the imported soils. On completion of the placement of the imported soil and the existing subsoil the prepared surface will be ripped as required to a suitable depth prior to the replacement of the recovered topsoil, ready for cultivation followed by seeding planting and after care.*

*Following the initial build-up of the new landforms, the final layer of the profile will consist of a subsoil covered with a minimum depth of topsoil as required for the particular end use as a golf course.’*

## 4. DEFINITION OF WASTE CODE OF PRACTICE

It is proposed to utilise the CL:AIRE Definition of Waste Code of Practice (DoWCoP) to manage and validate the importation of suitable engineering fill for the construction works. Some construction materials will be imported as product and will be managed independently of the MMP.

The DoWCoP describes an auditable system to demonstrate that this CoP has been adhered to which should be ideally suited to the 'audit trail' requirements specified in the planning condition.

The DoWCoP includes specific restrictions on the nature of the material that can be used, particularly in relation to the direct transfer route. These form an important element of the Material Specification outlined at Section 5 below.

## 5. MATERIAL SPECIFICATION

The specification for the general bulk fill material to be imported under the MMP is, in part, based upon the planning and DoWCoP restrictions, ie the material shall be:

- inert, and
- clean, naturally occurring soil and mineral material

In the DoWCoP, CL:AIRE states that *'clean, naturally occurring soil and mineral material includes:*

- Soil, both topsoil and subsoil
- Parent material
- Clays, silts, sands, and gravels
- Underlying geology, and
- Made ground consisting of the above materials only'

CL:AIRE also notes that *'clean for the purpose of this document (the DoWCoP) is defined as 'devoid of anthropogenic contamination to a degree or level that is considered harmful to living organisms'.*

In terms of potential contaminant concentrations, the DEFRA C4SL's and other appropriately derived assessment criteria for public open space (parks) (Phases 2a & 2b) and commercial land use (Phases 1a, 1b, 3, 4, 5 & 6) are the most appropriate for the various phases. Accepted contaminant concentrations for these land uses are presented at Appendix A, where concentrations of greater than 0.1% are acceptable for human health assessment these have been reduced to 999 mg/kg for the proposed soil imports.

Notwithstanding the above, it would not be acceptable to introduce contamination through the use of wastes which aren't already present at the site, as detailed within the DoWCoP. Therefore, it is critical that potential donor sites are thoroughly assessed prior to any importation to ensure the suitability of the engineering fill. Further details regarding the pre-assessment process are outlined in Section 6.1.

Some initial investigation has been undertaken at Phase 2b, with samples of waste/made ground from the former landfill and samples of the natural Sherdley Hill Sand stratum recovered for laboratory testing. Currently no topsoil samples have been tested but this is proposed. A summary of the test results obtained to date are presented at Appendix B.

## **6. VERIFICATION PLAN**

A Verification Plan is required by the DoWCoP in order to identify how the placement of the materials is to be recorded and the quantity of material to be used.

In addition, planning condition No 5 requires that the developer provide '*details of how the applicant will maintain a record of the material brought onto site for that specific phase (to include amount, source and associated testing results / certification)*'.

This Verification Plan contains the information required to satisfy both DoWCoP and planning requirements.

### **6.1 SOURCE EVALUATION**

Under the MMP potential donor sites will be identified by the developer and any appointed sub-contractors.

The developer and any appointed earthworks contractor shall review information pertaining to the proposed general fill prior to its addition to the MMP and ultimately importation to site. This could include a Phase 1 Preliminary Risk Assessment or Desk Study and any site investigation records, including chemical test results.

Condition No 9 of the planning permission requires '*no soil or other aggregates is to be imported to the site until it has been tested for contamination and assessed for its suitability for the proposed development*', which is more than is required by the DoWCoP. Consequently, the developer will only accept material for importation if there is accompanying site investigation records and analysis.

As part of the DoWCoP process an MMP will be produced and updated if additional donor sites are to be added. The MMP is reviewed and assessed by a Qualified Person for each donor site and a formal Declaration will be submitted to CL:AIRE before any material can be imported from a particular donor site.

Source information relating to soil & aggregate products will also be reviewed prior to importation but these materials will not be added to the MMP.

## **6.2 SITE CHECKS**

A Banksman, Earthworks Supervisor or other representative of the developer/earthworks contractor shall inspect the material imported to the site (both general fill & products) to ensure it meets the material specifications and that there is no visual or olfactory evidence of contamination.

The site and imported material shall also be inspected by an independent consultant/engineer to ensure compliance with the MMP and this Design Statement & Verification Plan. These inspections shall be at least equivalent to 1 visit/inspection every two weeks or every 2000 m<sup>3</sup> of soil imported whichever is the greater.

The independent consultant/engineer shall also be available to respond to any issues or concerns raised by the developer and/or site staff.

Any unsuitable material shall be rejected and will be removed from site, in accordance with planning permission conditions and the contingency action plan set out at Section 6.5.

The developer and/or consultant/engineer can suspend imports from any individual donor site in the event that the material does not meet MMP and/or Design Statement & Verification Plan requirements, pending further investigation and assessment.

## **6.3 VERIFICATION SAMPLING & TESTING**

Samples of soil imported under the MMP shall be collected for verification testing. It is not proposed to sample or analyse soil and aggregate products.

Soil samples shall be collected at a frequency of 1 per 1000 m<sup>3</sup> of imported soil fill. Sampling will be undertaken by an independent consultant/engineer to ensure an even distribution of samples throughout the project. The sampler shall provide a description of the material and make a record of when and where the sample was taken from.

The sampling frequency can be increased at the discretion of the developer and/or independent consultant/engineer if they have any concerns over the quality of the soils being imported or if any samples exceed the specified limits.

The samples should be collected in amber glass sample vessels or other appropriate containers and will be stored in cool boxes, as specified by the selected laboratory.

Samples will be transported to the laboratory at the earliest opportunity and in any event within the specific sample holding times specified by the laboratory.

Samples shall be analysed for the following parameters:

- pH
- Total metal concentrations (including arsenic, cadmium, chromium (total & vi), copper, lead, mercury, nickel, selenium & zinc)
- Cyanide
- Sulphate
- Soil Organic Matter
- Speciated Polycyclic Aromatic Hydrocarbons

All chemical testing should be carried out at an appropriate independent laboratory using MCERTS accredited test methods where available.

Other testing may be specified based on source data and/or visual/olfactory observations.

For example, if asbestos was identified at a particular donor site, albeit in material that would not be transferred under the DoWCoP or if significant amounts of anthropogenic materials (bricks, concrete etc) are mixed in with the natural soil fill, then verification samples shall also be tested for asbestos.

#### **6.4 ASSESSMENT OF RESULTS**

Laboratory test results will be assessed against human health assessment criteria for public open space or commercial land use, as amended (see Appendix A) and background soil chemistry.

If any validation test results exceed the human health assessment criteria or background soil chemistry the exceedance shall be investigated & assessed by the independent consultant/engineer.

The investigation should consider the nature of the contaminant with the exceeding concentration, the donor site, other verification results, the human health assessment criteria depending on the contaminant.

It may be necessary to suspend soil importation, whilst the investigation is carried out.

The investigation may require trial pits and/or further sampling and analysis and could result in the re-excavation and removal of unsuitable soils.

## 6.5 CONTINGENCY ACTION PLAN

Condition No 5 of the planning permission for the site (Ref 21/00744/FUL) requires that *'in the event that any unauthorised material is identified by the LPA on any part of the site, it shall be removed in entirety within 21 days and proof of such removal shall be provided to the LPA. If such proof of removal is not provided within that 21-day period, all further importation of materials shall immediately cease until the correct proof of removal has been provided to the LPA.'*

If suspected contaminated material is imported to the site, or if the material is deemed unsuitable it will not be accepted.

If contamination or unsuitable material is identified after off-loading it will be reloaded for removal by the haulier, or if this is not possible it will be segregated for removal at the earliest opportunity, subject to any further investigation and/or assessment considered necessary.

The haulier and the donor site which is the source of any unsuitable material shall be notified to ensure no repetition.

If any validation test results exceed the assessment criteria the exceedance shall be investigated and could result in its removal as detailed at Section 6.4 above. The site is relatively large and therefore it may be possible to establish a quarantine area to allow both the investigation and assessment of suspect material and continued import and placement of acceptable material.

Records shall be maintained by the earthworks contractor and/or Green Circle Ventures Ltd for submission to the local authority in accordance with planning condition requirements and also for inclusion in the MMP Verification Reports uploaded to CL:AIRE.

## 6.6 RECORD KEEPING

The Banksman or Earthworks Supervisor shall maintain records of all imported material and where the soil is placed. This should use the MMP tracking system.

The developer/earthworks contractor shall also maintain copies of all validation sampling and testing.

The developer/earthworks contractor and the independent engineer/consultant shall keep a photographic record of the soil importation and associated construction works.

These records shall be retained for inclusion in the Verification Reports (Section 7).

Condition No 9 of the planning permission also requires that *'a log of the amount of material that has been brought onto site and the details that have been recorded and results of any testing shall be submitted to the local planning authority on a quarterly basis and shall cover the preceding quarter of the year.'*

## **7. VERIFICATION REPORT**

Verification Report(s) shall be produced in accordance with the requirements of the DoWCoP.

Due to the likely long duration of the required earthworks, it is proposed to upload Verification Reports to the CL:AIRE website six-monthly and also to meet any deadlines specified in the Materials Management Plan and subsequent revisions.

Copies of the Verification Reports shall also be supplied to the Local Authority.



# **APPENDIX A**

## **ASSESSMENT CRITERIA**

---

## CONTAMINANT ASSESSMENT CRITERIA

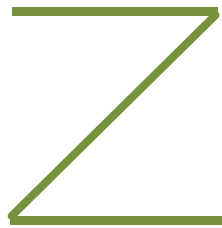
| Parameter                    | Units | Assessment Criteria <sup>N1, N2</sup> |                   |
|------------------------------|-------|---------------------------------------|-------------------|
|                              |       | POS                                   | Commercial        |
| Arsenic <sup>N1</sup>        | mg/kg | 170                                   | 640               |
| Cadmium <sup>N1</sup>        | mg/kg | 880                                   | 410               |
| Chromium                     | mg/kg | 999 <sup>N3</sup>                     | 999 <sup>N3</sup> |
| Chromium (vi) <sup>N1</sup>  | mg/kg | 250                                   | 49                |
| Copper                       | mg/kg | 999 <sup>N3</sup>                     | 999 <sup>N3</sup> |
| Lead <sup>N1</sup>           | mg/kg | 999 <sup>N3</sup>                     | 999 <sup>N3</sup> |
| Mercury                      | mg/kg | 68                                    | 320               |
| Nickel                       | mg/kg | 999 <sup>N3</sup>                     | 980               |
| Selenium                     | mg/kg | 999 <sup>N3</sup>                     | 999 <sup>N3</sup> |
| Zinc                         | mg/kg | 999 <sup>N3</sup>                     | 999 <sup>N3</sup> |
| Acenaphthene                 | mg/kg | 999 <sup>N3</sup>                     | 999 <sup>N3</sup> |
| Acenaphthylene               | mg/kg | 999 <sup>N3</sup>                     | 999 <sup>N3</sup> |
| Anthracene                   | mg/kg | 999 <sup>N3</sup>                     | 999 <sup>N3</sup> |
| Benzo(a)anthracene           | mg/kg | 49                                    | 170               |
| Benzo(a)pyrene <sup>N1</sup> | mg/kg | 21                                    | 77                |
| Benzo(b)fluoranthene         | mg/kg | 13                                    | 44                |
| Benzo(ghi)perylene           | mg/kg | 999 <sup>N3</sup>                     | 999 <sup>N3</sup> |
| Benzo(k)fluoranthene         | mg/kg | 370                                   | 999 <sup>N3</sup> |
| Chrysene                     | mg/kg | 93                                    | 350               |
| Dibenzo(ah)anthracene        | mg/kg | 1.1                                   | 3.5               |
| Fluoranthene                 | mg/kg | 999 <sup>N3</sup>                     | 999 <sup>N3</sup> |
| Fluorene                     | mg/kg | 999 <sup>N3</sup>                     | 999 <sup>N3</sup> |
| Indeno(123-cd)pyrene         | mg/kg | 150                                   | 500               |
| Naphthalene                  | mg/kg | 999 <sup>N3</sup>                     | 190               |
| Phenanthrene                 | mg/kg | 999 <sup>N3</sup>                     | 999 <sup>N3</sup> |
| Pyrene                       | mg/kg | 999 <sup>N3</sup>                     | 999 <sup>N3</sup> |

### Notes

N1 - C4SLs for public open space (parks), all other assessment criteria S4ULs, published by LQM/CIEH for the same land use.

N2 - Assessment criteria values are quoted 1% soil organic matter as worst case.

N3 - Concentrations reduced to <0.1%/999 mg/kg



# **APPENDIX B**

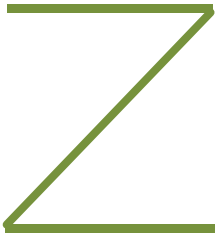
## **BACKGROUND SOIL CHEMISTRY**

| Analyte          | Units | Range of Results |           |               |
|------------------|-------|------------------|-----------|---------------|
|                  |       | Made Ground      | Topsoil   | Sand          |
| pH               | -     | 7.87 – 8.28      |           | 5.87 – 6.21   |
| Arsenic          | mg/kg | 4 – 16           |           | <1 – 9        |
| Boron            | mg/kg | <1.0             |           | <1.0          |
| Cadmium          | mg/kg | <1.0             |           | <1.0          |
| Copper           | mg/kg | <1 – 76          |           | <1 – 54       |
| Chromium         | mg/kg | 3 – 12           | To        | <1 – 11       |
| Chromium (vi)    | mg/kg | <1               |           | <1            |
| Lead             | mg/kg | <1 – 224         | Be        | <1 – 116      |
| Mercury          | mg/kg | <0.17 – 0.38     |           | <0.017 – 0.22 |
| Nickel           | mg/kg | 3 – 13           | Confirmed | <1 – 14       |
| Selenium         | mg/kg | <1               |           | <1            |
| Zinc             | mg/kg | 3 – 106          |           | <1 – 152      |
| Sulphate (Total) | mg/kg | 560 – 730        |           | <200          |
| Sulphate (2:1)   | g/l   | 0.02 – 0.06      |           | <0.01         |
| Cyanide          | mg/kg | <1               |           | <1            |

**Table B1 – Inorganic Soil Chemistry**

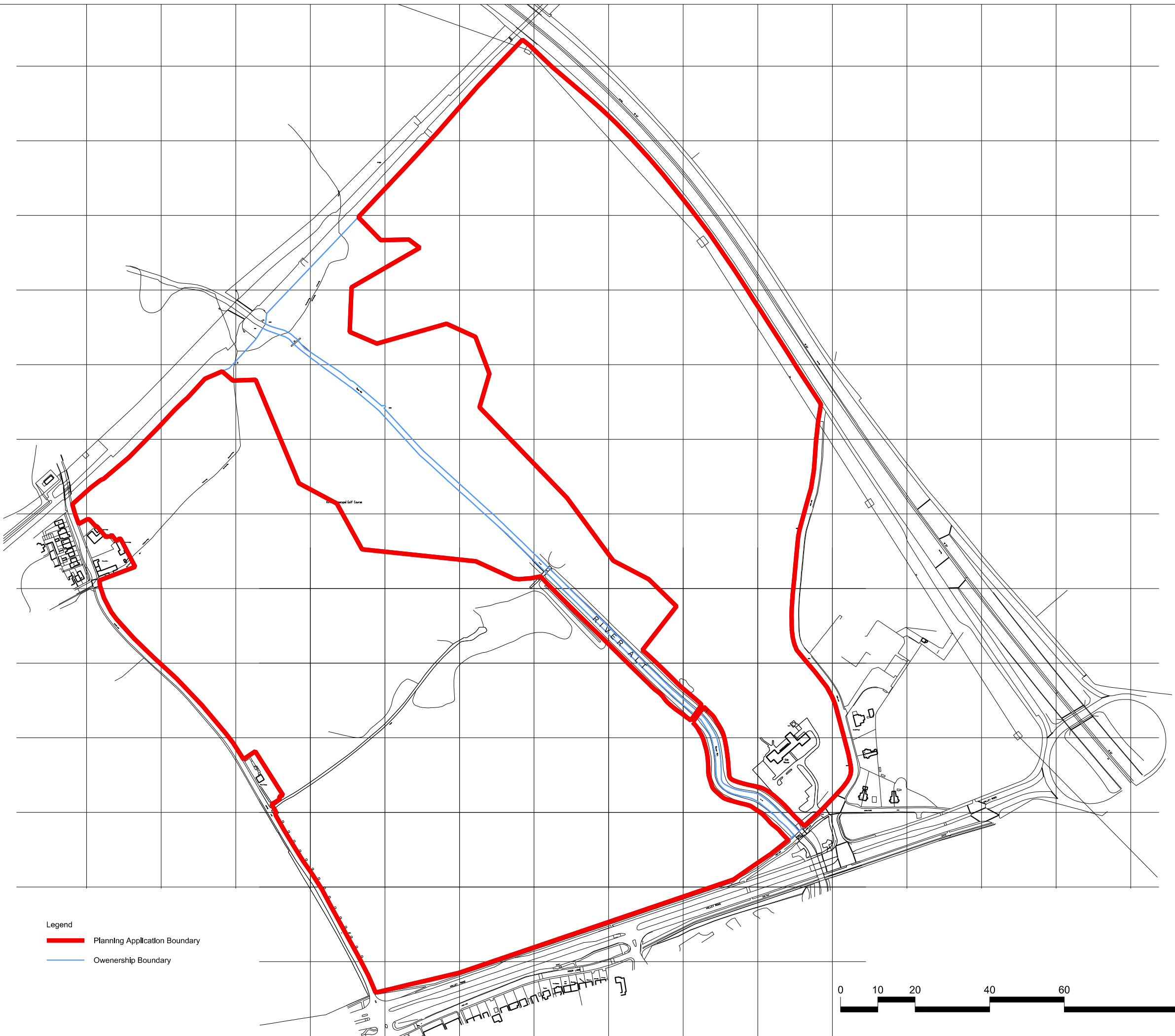
| Analyte               | Units | Range of Results |           |              |
|-----------------------|-------|------------------|-----------|--------------|
|                       |       | Made Ground      | Topsoil   | Sand         |
| Phenol                | mg/kg | <0.2             |           | <0.2         |
| TPH Total             | mg/kg | 348 – 1080       |           | <10 – 26     |
| Organic Matter        | %     | 4.32 – 5.44      |           | <0.14 – 1.88 |
| Acenaphthene          | mg/kg | 0.13 – 0.93      |           | <0.01        |
| Acenaphthylene        | mg/kg | 0.01 – 0.06      |           | <0.01        |
| Anthracene            | mg/kg | 0.14 – 0.61      |           | <0.02        |
| Benzo(a)anthracene    | mg/kg | 0.53 – 2.23      |           | <0.04        |
| Benzo(a)pyrene        | mg/kg | 0.50 – 2.07      | To        | <0.04        |
| Benzo(b)fluoranthene  | mg/kg | 0.56 – 2.23      |           | <0.05        |
| Benzo(ghi)perylene    | mg/kg | 0.33 – 1.18      | Be        | <0.05        |
| Benzo(k)fluoranthene  | mg/kg | 0.18 – 0.78      |           | <0.07        |
| Chrysene              | mg/kg | 0.67 – 2.62      | Confirmed | <0.06        |
| Dibenzo(ah)anthracene | mg/kg | 0.06 – 0.32      |           | <0.04        |
| Fluoranthene          | mg/kg | 1.19 – 4.39      |           | <0.08        |
| Fluorene              | mg/kg | 0.07 – 0.48      |           | <0.01        |
| Indeno(123-cd)pyrene  | mg/kg | 0.35 – 1.46      |           | <0.03        |
| Naphthalene           | mg/kg | <0.03 – 1.47     |           | <0.03        |
| Phenanthrene          | mg/kg | 0.82 – 3.66      |           | <0.03 – 0.07 |
| Pyrene                | mg/kg | 1.17 – 4.33      |           | <0.07        |
| Total PAH             | mg/kg | 6.75 – 28.2      |           | <0.08        |

**Table B2 - Organic Soil Chemistry**



# **APPENDIX C**

## **DRAWINGS**



- Legend
- Planning Application Boundary
  - Ownership Boundary

GENERAL NOTES

- 01.
- 02.
- 03.
- 04.
- 05.

REVISIONS

| REV | DATE     | DESCRIPTION                                      | REV BY | CHK BY |
|-----|----------|--------------------------------------------------|--------|--------|
| A   | 10.11.23 | Boundary line brought 10m back from top of river | ATC    | ATC    |

KEY PLAN

CONSULTANT



LEAD CONSULTANT

CLIENT

ISSUED FOR

Planning Application  
100% submittal

PROJECT

Kirkby Valley Golf Club

DRAWING TITLE

000 Location Plan

|             |                        |            |    |          |        |
|-------------|------------------------|------------|----|----------|--------|
| Drawn       | PA                     | Checked    | JH | Approved | AC     |
| Date        | 13.02.23               | Sheet Size | A3 | Scale    | 1:5000 |
| Drawing No. | G935 000 LOCATION PLAN |            |    |          | Rev. A |

CAD File No. G935 000  
Consultant Project No.  
This drawing, the designs and details shown are the copyright of International Design Group and shall not be copied or reproduced in any form without their written consent.  
© INTERNATIONAL DESIGN GROUP



Scorecard - 9 Hole Course Academy

| Hole      | Meters | Yards | Par |
|-----------|--------|-------|-----|
| 1         | 167    | 183   | 3   |
| 2         | 165    | 181   | 3   |
| 3         | 154    | 168   | 3   |
| 4         | 172    | 188   | 3   |
| 5         | 165    | 181   | 3   |
| 6         | 180    | 197   | 3   |
| 7         | 134    | 147   | 3   |
| 8         | 134    | 147   | 3   |
| 9         | 170    | 186   | 3   |
| Total out | 1441   | 1576  | 27  |

GENERAL NOTES

01.  
02.  
03.  
04.  
05.

REVISIONS

| REV | DATE     | DESCRIPTION                 | REV BY | CHK BY |
|-----|----------|-----------------------------|--------|--------|
| A   | 09/03/20 | Amendments to Driving Range | PA     | AC     |

KEY PLAN

CONSULTANT



LEAD CONSULTANT

CLIENT

ISSUED FOR

Planning Application  
(90% submittal)

PROJECT

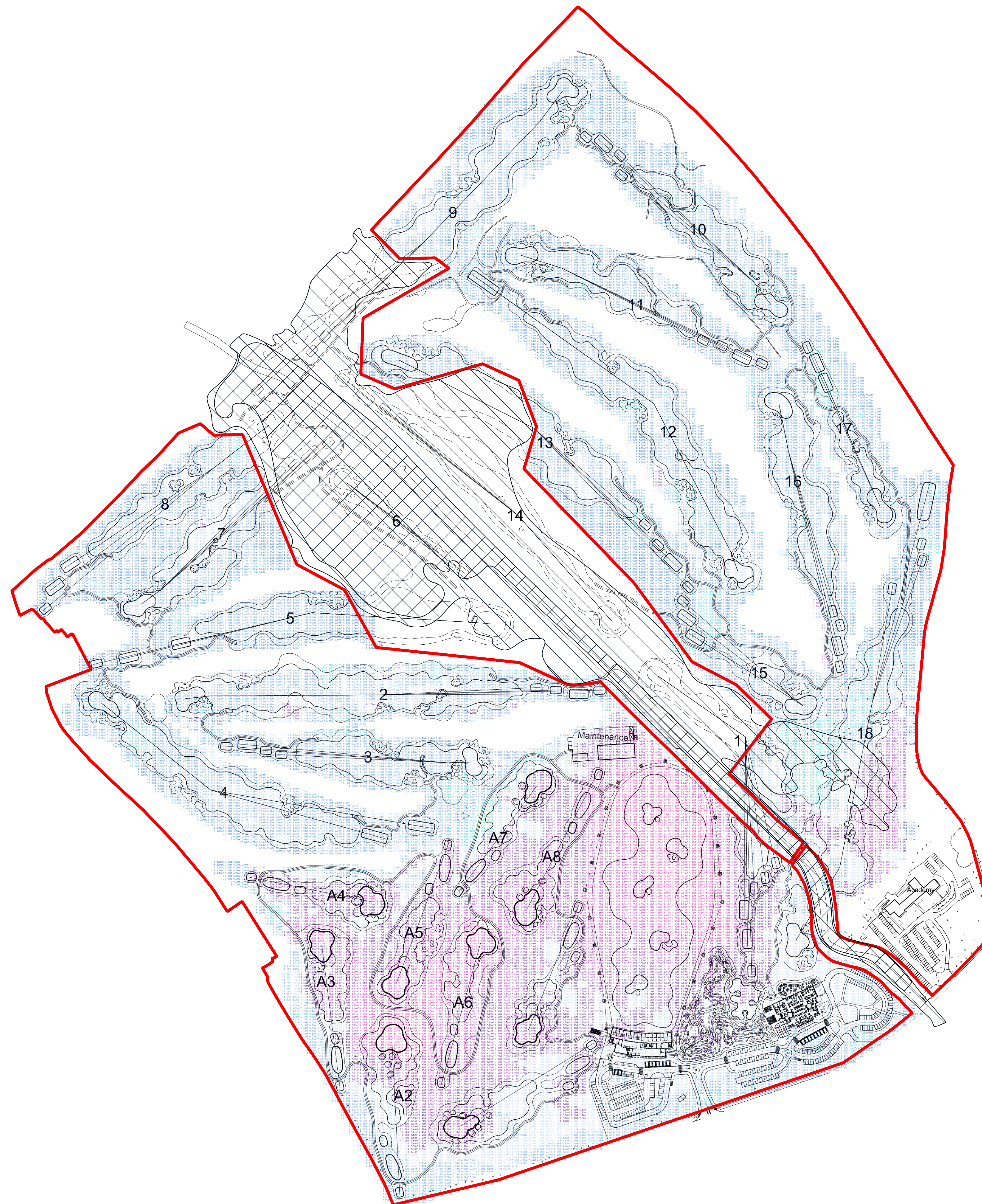
Kirkby Valley Golf Club

DRAWING TITLE

003 Proposed Masterplan - Colour

|                                                      |          |            |                        |          |        |
|------------------------------------------------------|----------|------------|------------------------|----------|--------|
| Drawn                                                | ATC      | Checked    | ATC                    | Approved | ATC    |
| Date                                                 | 29.08.19 | Sheet Size | A1                     | Scale    | 1:1250 |
| Drawing No.<br>G935 003 PROPOSED MASTERPLAN - COLOUR |          |            |                        | Rev.     | A      |
| CAD File No.                                         |          |            | Consultant Project No. |          |        |

This drawing, the designs and details shown are the copyright of International Design Group and shall not be copied or reproduced in any form without their written consent.



## Cut and Fill

|         |   |      |      |
|---------|---|------|------|
| C 1.32m | = | Cut  | 1-2m |
| C 0.34m | = | Cut  | 0-1m |
| C 0.00m | = | Cut  | 0m   |
| F 0.04m | = | Fill | 0-1m |
| F 1.97m | = | Fill | 1-2m |
| F 2.07m | = | Fill | 2-3m |
| F 3.50m | = | Fill | 3-4m |
| F 4.00m | = | Fill | 4-5m |
| F 5.00m | = | Fill | 5-6m |

### GENERAL NOTES

01.

02.

03.

04.

05.

## REVISIONS

| REV | DATE     | DESCRIPTION                                         | REV BY | CHK BY |
|-----|----------|-----------------------------------------------------|--------|--------|
| A   | 10.11.23 | Boundary line brought<br>10m back from top of river | ATC    | ATC    |

KEY PLAN

## CONSULTANT



|                 |
|-----------------|
| LEAD CONSULTANT |
|-----------------|

CLIENT

## Green Circle Estates

## ISSUED FOR

### Planning Application

|         |  |
|---------|--|
| PROJECT |  |
|---------|--|

Kirkby Valley Golf Club

|               |
|---------------|
| DRAWING TITLE |
|---------------|

242 Cut and Fill Isopach

|                       |          |                        |    |          |        |
|-----------------------|----------|------------------------|----|----------|--------|
| Drawn                 | PA       | Checked                | JH | Approved | AC     |
| Date                  | 13.02.23 | Sheet Size             | A1 | Scale    | 1:2500 |
| Drawing No.           |          |                        |    | Rev.     |        |
| G935 242 ISOPACH PLAN |          |                        |    | A        |        |
| CAD File No.          |          | Consultant Project No. |    |          |        |
| G935 242              |          |                        |    |          |        |

This drawing, the designs and details shown are the copyright of International Design Group and shall not be copied or reproduced in any form without their written consent.