GBR1 Cambois

Earthworks Strategy – Enabling Works Phase B & C

QTS

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1.0

Introduction

1.0 Introduction

1.1 Site Location

The proposed Cambois Data Centre Campus site is situated approximately 3km north of Blyth town centre in Cambois, Northumberland. The approximate centre of the site is National Grid Reference (NGR) NZ 29820 84164. The proposed development includes the construction of a data centre campus on a site immediately north of the former Blyth Power Station.

This report relates only to the second phase of Enabling Works area of the wider Data Centre Campus site.
The 'Enabling Works - Phase B Site Layout and Boundaries' drawing (GBR1-ENA2-CDL-STE-XX-DR-C-1006) shows the site ownership boundary and Phase B boundary.

1.2 Context and Purpose

Cundall has been appointed by the Client (QTS) to complete an Earthworks Strategy to inform the proposed enabling works of this phase on their site.

The earthworks strategy will set out the approach for delivering the enabling works to redevelop the existing brownfield site and enable it to be developed into the proposed data centre campus. The proposed enabling works will include for elements such as the construction of new ponds, diversion of existing surface watercourses, construction of car parks and landscape mounds, but this strategy is specific to the earthworks requirements and will include for the following key elements:

- Breaking out and / or excavation of hard surface material, stockpiles and below ground features and obstructions
- Re-engineering of site won suitable material, including the removal, relocation, placement and compaction of two large stockpiles of pulverised fuel ash (PFA) in the east.
- Formation of a suitable working platform for the proposed data centre buildings DC03 and DC04 and associated ground improvement / piling activities.
- Formation of a suitable development platform level for the proposed DC05 to DC10 buildings.
- Creation of temporary works areas including compound areas, temporary car parking and laydown areas.

This document does not include design of any required temporary works (including temporary haul roads, temporary boundary supports etc) that may be required. The earthworks include for a material layer to form a working platform. However, this will need to be verified by users of the working platform once the rig loadings are confirmed.

This strategy does not include any detailed requirements relating to site remediation or verification. All such information is provided within the Cundall Detailed Remediation Strategy document (Ref. 11, Section 1.4) which should be read alongside this document.

The Landscape Strategy and Landscape Specification is not included within this document and will be reported under separate cover.

1.3 Development Proposals

A proposed development layout for the wider site has not yet been fully developed, but the most recent site layout is shown on Proposed Site Plan produced by Corgan (GBR1-DCZZ-COR-STE-XX-DR-A-1001).

The current proposals within the Phase B Enabling Works boundary include for the construction of DC03 and DC04 buildings and associated below-ground infrastructure, landscaping and external pavements and roads.

Within DC03 and DC04, the proposed development includes for a piled superstructure and a ground floor slab supported on improved ground (vibro stone columns).

1.4 Sources of Information

1. Rolton Group Limited, 07 April 2021. Phase 1 Geo-environmental Desk Study for Former Coal Stocking Yards, Cambois. Report reference: PHX-RGL-XX-XX-RP-G-000005 Rev S2-P05.
2. Rolton Group Limited, 14 May 2021. Geotechnical and Geo-Environmental Report for Former Coal Stocking Yards, Cambois. Report reference: PHX-RGL-XX-XX-RP-G-000010 Rev S2-P01.
3. Rolton Group Limited, 2022 Rail Head Investigation (PHX-RGL-XXXX-XX-RP-G-000014)
4. Rolton Group Limited, 2022 Burnt Shale Trial Pit Investigations (PHX-RGL-XXXX-XX-RP-G-000014A)
5. Arcadis, November 2024, Cambois Data Centre Campus, Phase 2 Geoenvironmental Assessment; 30226657-AUK-XX-XX-RP-ZZ-0012-01
6. Arcadis, November 2024, Cambois Data Centre Campus, Outline Remediation Strategy; 30226657-AUK-XX-XX-RP-ZZ-0016-01.
7. MK Surveys, October 2024, Topographical Survey received from Arcadis on November 8th.
8. Arcadis, January 2025, Cambois Data Centre Campus Ground Investigation Report. Report reference: 30226657-AUK-XX-XX-RP-ZZ-0017-01 Rev 01.
9. Arcadis, January 2025, Ground Investigation Factual Report – Stage 1 Project Wind, Blyth. Report reference: 30226657-AUK-XX-XX-RP-ZZ-0015-01 Rev 03.
10. Arcadis, January 2025, Ground Investigation Factual Report – Stage 2 Project Wind, Blyth. Report reference: 30226657-AUK-XX-XX-RP-ZZ-0015-01 Rev 03.
11. Cundall, August 2025, Detailed Remediation Strategy, GBR1-RMAP1-CDL STE-XX-RP-0003 P01.
12. Keller, December 2025, Phase 1 Working Platform Design, reference: 100-2500474.02 C01.
13. Rolton Group Limited, April 2026, Pulverised Fuel Ash (PFA) Geotechnical Design Report & Outline Earthworks Specification, 250137-ROL-ZZ-XX-RP-G-0002 D2-P01.
14. MGL Earthworks, May 2026, 'Invasive Species Identified' Drawing Reference GBR1-DCZZ-MGL-XXX-XX-DR-V-0001.
15. Arcadis, May 2026, Cambois Data Centre Campus – Soil Resources Survey Report. NO REPORT REF
16. Arcadis, May 2026, Cambois Data Centre Campus – Enabling Works Phase B, Invasive Non-Native Species Method Statement, Document Reference 7.7 Revision 01.
17. Arcadis, May 2026, Cambois Data Centre Campus – Enabling Works Phase C, Invasive Non-Native Species Method Statement, Document Reference 7.7 Revision 01.
18. Arcadis, May 2026, Cambois Data Centre Campus – Enabling Works Phase B, Dust Management Plan, Document Reference 7.6 Revision 01.
19. Arcadis, May 2026, Cambois Data Centre Campus – Enabling Works Phase C, Dust Management Plan, Document Reference 7.6 Revision 01.
20. Arcadis, May 2026, Cambois Data Centre Campus – Enabling Works Phase B, Construction Noise and Vibration Assessment Revision 01.
21. Arcadis, May 2026, Cambois Data Centre Campus – Enabling Works Phase C, Construction Noise and Vibration Assessment Revision 01.
22. Arcadis, July 2026, Outline Landscape Specification – Enabling Works Phase B & C, Document Reference GBR1-ENA2-ARC-STE-XX-SP-L-0002.
23. Cundall, July 2026, Ground Conditions Summary Report, Enabling Works Phase B & C, GBR1-ENA2-CDL-STE-XX-RP-B-1002 V01.
24. Cundall, July 2026, Desk-Based Historical Summary, Enabling Works Phase B & C, GBR1-ENA2-CDL-STE-XX-RP-B-1003 V01.
25. Cundall, July 2026, Earthworks Specification, Enabling Works Phase B & C, GBR1-ENA2-CDL-STE-XX-SP-B-0001 V01.

1.5 Limitations

This document is based on the information referenced in Section 1.4. This information is assumed to be accurate and Cundall take no responsibility for the quality of this information. Cundall cannot be held liable for elements of the works that others have retained responsibility for.

If, during construction, ground conditions vary from those revealed by the previous information provided for the site or the proposed development layout is revised, Cundall reserves the right to carry out further assessments and revise their recommendations in line with the revised scheme details.

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2.0

Site Setting

2.0 Site Setting

2.1 Site Details

Site details of the Phase B & C Enabling Works area are included within Cundall's Ground Conditions Summary Report (Ref. 23, Section 1.4).

This report shall be read in conjunction with the ground conditions summary report as this provides detail on the anticipated ground conditions, hydrology, hydrogeology, coal mining risk and other pertinent items relating to the Phase B Enabling Works area.

3.0

Earthworks Strategy

3.0 Earthworks Strategy

3.1 General

This strategy applies to Phase B Enabling Works Boundary only. The objective of this document is to present a robust earthworks strategy to regenerate the site and to minimise the risk to future construction of the data centres. This will be achieved by adopting best practice guidance and to focus on minimising the requirement for offsite disposal and maximising the reuse potential of material on site. This strategy is being developed in advance of the detailed design of the scheme and therefore further earthworks will likely be required following detailed design for future data centres (predominantly DC05 to DC10).

As part of this strategy, preliminary material volumes have been calculated to provide guidance to the Contractor and to understand approximate earthwork volumes for pricing purposes. Material volumes calculated as part of this strategy do not include any allowance for material likely to be generated during the future construction phase activities (post enabling works).

The ecological requirements associated with the excavation, relocation and placement of site won soils has not been considered within this strategy and should be captured and detailed by the Site Ecologist.

The sequencing of the earthworks will need to be assessed by the Contractor, and they should be cognisant of the volume requirements across the site.

This strategy should be read in conjunction with all the contract documents associated with Phase B&C RIBA Stage 4 Enabling Works, but particular attention should be drawn to the drawings listed below.

- Enabling Works Phase B & C - Combined Exploratory Hole Location Plan GBR1-ENA2-CDL-STE-XX-DR-B-1001
- Surface Cover Materials, Enabling Works Phase B & C – GBR1-ENA2-CDL-STE-XX-DR-B-1002
- Approximate Location and Thickness of Burnt Shale, Enabling Works Phase B & C GBR1-ENA2-CDL-STE-XX-DR-B-1004
- Approximate Location and Thickness of Granular Subgrade, Enabling Works Phase B & C GBR1-ENA2-CDL-STE-XX-DR-B-1005
- Approximate Location and Thickness of Pulverised Fuel Ash, Enabling Works Phase B & C GBR1-ENA2-CDL-STE-XX-DR-B-1006
- Enabling Works Proposals, Enabling Works Phase B & C – GBR1-ENA2-CDL-STE-XX-DR-B-1008
- Below Ground Features Plan, Enabling Works Phase B & C – GBR1-ENA2-CDL-STE-XX-DR-B-1009
- Exploratory Holes Locations Encountering Obstructions, Enabling Works Phase B & C – GBR1-ENA2-CDL-STE-XX-DR-B-1010
- Enabling Works Phase B & C - Existing Services GBR1-ENA2-CDL-STE-XX-DR-C-1101
- Enabling Works Phase B & C - Existing Constraints Plan GBR1-ENA2-CDL-STE-XX-DR-C-1102
- Enabling Works Phase B & C - Existing Levels GBR1-ENA2-CDL-STE-XX-DR-C-1103
- Enabling Works Phase B & C - Existing Site Drainage and Survey Schedule GBR1-ENA2-CDL-STE-XX-DR-C-1104
- Enabling Works Phase B & C - Proposed Site Layout and Boundaries GBR1-ENA2-CDL-STE-XX-DR-C-1201
- Enabling Works Phase B & C – Proposed Enabled Ground Level GBR1-ENA2-CDL-STE-XX-DR-C-1301.
- Enabling Works Phase B & C - Existing Mound Removal GBR1-ENA2-CDL-STE-XX-DR-C-1302
- Enabling Works Phase B & C - Existing Mound Removal to Site Strip GBR1-ENA2-CDL-STE-XX-DR-C-1303
- Enabling Works Phase B & C - Site Strip to Proposed Formation Level GBR1-ENA2-CDL-STE-XX-DR-C-1304
- Enabling Works Phase B & C - Proposed Formation Level to Proposed Enabled Ground Level GBR1-ENA2-CDL-STE-XX-DR-C-1305

3.1.1 Environmental Monitoring

Northumberland County Council has granted outline planning permission for the development (Ref. 24/04112/OUTES, dated 08 May 2025), subject to several environmental monitoring conditions. The Contractor must review the referenced Arcadis and Cundall documents and propose a monitoring programme proportionate to the earthworks and compliant with environmental and statutory requirements.

- Condition 43: Although not mandated by the Council, the Cundall Detailed Remediation Strategy (Ref. 11, Section 1.4) recommends additional ground gas monitoring after enabling works to confirm the very low-risk classification.
- Conditions 46 and 47: Arcadis has produced the required Construction Noise and Vibration Assessments (Ref. 20 and 21 in Section 1.4)
- Condition 48: A Dust Management Plan is required and has already been completed by Arcadis (Ref. 18 and 19 in Section 1.4)

3.1.2 Zero Carbon Design

Bulk earthworks generate significant quantities of embodied carbon through direct and indirect emissions. By planning and optimising the resources available on site, the embodied carbon generated as part of an earthworks scheme can be significantly reduced. As Cundall's commitment to achieving net zero carbon on all our designs by 2030, this earthworks strategy has been developed to reduce the embodied carbon as far as reasonably practicable, predominantly by optimising material reuse and limiting offsite disposal.

3.2 Earthworks Design Philosophy

Based on the development proposals, the size of the site and the desire of the Client to develop the wider site in future phases, the principles of the earthworks vary over the Phase B Enabling Works.

The earthworks have been separated into key development areas (Zone G to Zone M) based on the anticipated works, rather than the spatial distribution of ground conditions. Cundall has produced a Zoning Plan which presents the areas forming part of this earthworks strategy (Drawing GBR1-ENA2-CDL-STE-XX-DR-B-1008). A summary of the earthworks proposed in each of these areas is provided in Section 3.2 and schematics of each zone provided in Cundall's Enabling Works Proposals, Phase B Enabling (drawing number included within Section 3.1).

Further information regarding specific earthwork requirements either across the site or applicable to individual zones is included in Section 3.3.

3.2.1 Key Design Assumptions

The strategy is based on a number of key assumptions which are detailed below. Additional assumptions are highlighted and discussed throughout the document.

- Earthworks below DC03 and DC04 will be designed to accommodate a ground floor slab supported on vibro stone columns, with the superstructure supported on piled foundations.
- Temporary drainage will be installed across DC03, DC04 and DC05 to DC10.
- No design is included for ancillary buildings such as the guard house or sprinkler tanks.
- The thickness of the working platform across DC03 and DC04 has been based on rig loadings for the Soilmec CFA SR-95 rig as provided within the Keller Working Platform Design Report (Ref. 12, Section 1.4). The working platform design is preliminary and shall require confirmation by the Contractor.
  - The proposed data centre buildings shall be constructed at a higher level than the generator yards. As such, the working platform shall be constructed at two different levels for DC03 and DC04 and the generator yards, connected by a suitably graded connecting platform.
- The working platform boundary has been developed from an initial development of structural layout for DC03 and DC04 and includes a minimum 2m surround beyond the outermost pile location.

- A working platform (or similar) across the proposed footprint of DC05 to DC10 is not included within the scope of the Phase B enabling works. The footprint of DC05 to DC10 and the substation will be constructed to a finished formation and include a suitable weather protection layer only.
- Construction of DC05 to DC10 shall not commence within 12 months of the removal of PFA.
- Construction of the platform in the eastern part of the site (Zone I) will involve the placement of significant fill in the southern area and substantial excavation in the northern area. The resulting changes in stress conditions will lead to both loading and unloading of the underlying soils, which may give rise to differential settlement across the zone. This potential behaviour should be assessed as part of the detailed design.
- The reuse of PFA across the site shall be developed by Rolton Group Limited (Rolton). Rolton have produced a Geotechnical Design Report and Outline Earthworks Specification for the reuse of PFA on the site. This report is included as Reference 13 in Section 1.4.
- A 150mm cover system has been assumed to be sufficient to be placed as fill across the footprint of DC05 to DC10. Where there is sufficient material available for this to comprise a granular aggregate this shall form the base of a future working platform that will be required to facilitate construction of DC05 to DC10 and is unlikely to be impacted by weather. Where the protection layer is formed of a cohesive material it is likely this will be impacted by weather and will need to removed from site prior to development of these areas.
- Two laydown areas for the General Contractor (GC) have been included as part of the current strategy. At the time of writing, no design requirements such as loadings or dimensions were provided by Cundall to base the design thickness and areas on and so an assumption of a 300mm granular platform, as per the design brief, has been assumed.
- Temporary haul roads are not included within this strategy and shall be the responsibility of the appointed temporary works contractor.
- Treatment of invasive species impacted soils across the Phase B shall be dealt with by others.
- Any permit applications and the associated documentation that goes along with achieving the permit to undertake the works is not included within this strategy and will be the responsibility of the Contractor.
- On completion of Phase B enabling works, soils which are classed as unsuitable (either due to surplus requirements or geotechnical / environmental classification) will be assumed to be disposed off site.
- Materials generated as surplus during the Phase A enabling works along with the pile arisings have been assumed to be suitable for reuse and considered within the design calculations. A plan of the materials was not made available in advance of the design issue date and so the information is based on an assumption and shall be verified by the Contractor in advance of the works. The drawing doesn't fully confirm the status of the materials and their suitability for reuse, so for the purposes of this assessment, it has been assumed that approximately 50,000m³ of general site won material is surplus in Phase A and available for reuse in Phase B & C.

3.2.2 Proposed Enabling Works Finished Levels

The proposed enabling works finished levels for each zone are listed below.

- Zone G: 10.9m AOD (top of platform level for DC03 and DC04) and 10.4m AOD (top of platform level for generator yards).
- Zone H: Varies
- Zone I: Around 10.0m AOD
- Zone J: Around 10.0m AOD
- Zone K: Varies (0.6m below proposed)
- Zone L: Varies
- Zone M: 4.5m AOD (base of pond)

The proposed finished enabling works levels are shown on Proposed Enabled Ground Level drawing GBR1-ENA2-CDL-STE-XX-DR-C-1301 and the individual zones are presented on Drawing GBR1-ENA2-CDL-STE-XX-DR-B-1008.

3.2.3 Zone G

The primary objective of earthworks in Zone G is to break out or excavate all surface material (hard and soft) and excavate to a depth to accommodate a granular working platform (base of platform proposed to be between 9.5m AOD and 10.0m AOD).

A preliminary working platform calculation has been undertaken using an assumed rig load and this indicates a platform thickness of 840mm of granular material will be required to be installed below the proposed enabling works level. The working platform across DC03 and DC04 buildings shall be a higher level than the platform across the generator yards. As such, a minimum of two localised slopes is required to facilitate the movement of the rig between the top of the working platform to the bottom of the platform. The slopes must be at a slope no greater than 1V:10H. Reference should be made to Drawing GBR1-ENA2-CDL-STE-XX-DR-C-1301.

Obstructions will be required to be removed in their entirety, including those identified on the Below Ground Features Plan and Existing Constraints Plan (drawing references provided in Section 3.1) along with any identified during earthworks. Where the existing ground level is lower than the proposed base of the working platform, an extra over dig of 0.75m should be carried out to identify any potential below ground obstructions.

Backfilling will comprise the placement of engineered granular fill to achieve the enabling works finished ground level. Where existing levels are lower than the base of the working platform, the backfill shall comprise general fill.

Subsequent to the piling operation on DC03 and DC04, part of the upper working platform will be required to be excavated back to allow the piling rigs / ground improvement rigs to install the piles and the vibro stone columns on the lower platform level (generator yard). Further detail on the excavation works required to form this part of the mat is included in Drawing GBR1-ENA2-CDL-STE-XX-DR-C-1301.

3.2.4 Zone H

Zone H includes external areas to the proposed data centre buildings. Service corridors are anticipated to be required across Zone H to facilitate the wider development.

Earthworks will comprise a minimum of 0.75m excavation below existing levels. Where obstructions are encountered within this excavation, these shall be excavated and fully removed or cropped to an elevation of 7.5m AOD where they extend below this level.

An existing area of standing water is present across part of Zone H, its location is shown on Cundall's 'Surface Cover Materials' drawing (GBR1-ENA2-CDL-STE-XX-DR-B-1002) This area will require dewatering with all soft material fully excavated and filled to the required level.

Backfilling will comprise suitable general fill to achieve proposed levels and will include an upper 150mm layer of general granular material as a protective surface.

3.2.5 Zone I

Zone I includes the area currently proposed for the construction of DC05 to DC10 and outside the two large PFA stockpiles.

All known obstructions are required to be removed in their entirety beneath proposed building footprints (including the culvert identified during Phase A works). Possible mitigation options for the culvert have been summarised in a Cundall Design Note 'Culvert Mitigation Options' (GBR1-DCZZ-CDL-STE-XX-RP-B-0019) and this may result in an alternative solution for treating the tunnel, which could be designed out with this enabling works package.

Beyond the removal of known obstructions, earthworks comprise an excavation to the lower of 0.75m below existing ground level or proposed ground level.

Backfilling shall comprise suitable general fill to achieve proposed levels and will include an upper 150mm layer of ideally granular general fill material as a protective surface. However, it is expected that insufficient granular material will be present on site. Where material is not available, other materials will be used. Non granular material is unlikely to be

suitable for laydown areas during construction or as part of a working platform during plot development. This material is likely to require removal from site when future plots are developed.

3.2.6 Zone J

Zone J includes the area currently proposed for the construction of DC05 to DC10 beneath the PFA stockpiles.

Earthworks proposals comprise the partial removal of the existing PFA stockpiles down to an elevation of approximately 10m AOD. Where obstructions are identified during the earthworks, these shall be excavated in full. Excavations shall refer to the Cundall Existing Mound Removal to Site Strip drawing (GBR1-ENA2-CDL-STE-XX-DR-C-1303). Material excavated should be used in the earthworks on the remainder of the site and in accordance with the Rolton Geotechnical Design Report and Outline Earthworks Specification document (Ref. 13, Section 1.4).

General backfilling is anticipated to only be required if obstructions are identified. In this case, backfilling shall comprise the re-engineering of suitable general material to achieve a graded site level and will include an upper 150mm of ideally granular material as a protective surface. However, it is expected that insufficient granular material will be present on site. Where material is not available, other materials will be used. Not granular material is unlikely to be suitable for laydown areas during construction or as part of a working platform during plot development. This material is likely to require removal from site when future plots are developed.

3.2.7 Zone K

Zone K includes the temporary carpark which shall be used during the construction phase of the works.

Earthworks will comprise excavation to 0.60m below proposed pavement level. Where obstructions are encountered within this depth of excavation, these shall be excavated and fully removed or cropped to an elevation of 7.5m AOD where they extend below this level. Former test piles are known to be present in Zone K and shall require cropping to 7.5m AOD (locations provided on the Below Ground Features plan).

The area of existing standing water as discussed as being present in Zone H also encroaches across Zone K. Similar to requirements for Zone H, This area will require dewatering with all soft material fully excavated and filled to the required level as shown on Cundall's 'Existing Ground Level to Enabling Finished Ground Level' (drawing number included within Section 3.1).

3.2.8 Zone L

Zone L includes General Contractor (GC) laydown areas.

Earthworks will comprise excavation to the lower of 0.75m below existing ground level or proposed ground level followed by placement of general fill and then 0.3m of suitable Class 6 material underlain by a geotextile membrane to achieve finished levels.

3.2.9 Zone M

Two attenuation ponds will be constructed within Zone M and this is predominantly in an area of excavation. The proposed pond build up is shown on Cundall 'Enabling Works Phase C – Drainage Details Sheet 3' drawing (GBR1-ENA2-CDL-STE-XX-DR-C-5412).

Earthworks will comprise excavation to a minimum depth of 0.30m below finished levels to accommodate and suitable fill material, as detailed in Drawing GBR1-RMAPC-CDL-STE-XX-DR-C-1019 and within Arcadis Landscape Specification.

Obstructions will be required to be removed to a maximum depth of 0.50m below the invert level of any drainage pipework or 0.50m below the pond levels.

3.2.10 Zone N

Zone N runs around the north and north eastern boundary of the site and will be landscaped in accordance with the Arcadis Landscape Specification and associated drawings. Any earthworks undertaken in this part of the site must consider any easement associated with the adjacent Network Rail land.

The earthworks will comprise the breaking out and removal of obstructions and removal of surface material, followed by the placement of a clean cover system (comprising geotextile separation layer and a minimum 300mm of clean soils).

3.3 Earthworks Requirements

3.3.1 General

The detailed earthworks requirements are defined within the Cundall Earthworks Specification (Ref. 25, Section 1.4). The following sections detail specific requirements or construction activities that are likely to be required during the earthworks and should be considered by the Contractor as part of development of this strategy.

This section should be read in conjunction with the drawing list provided in Section 3.1.

3.3.2 Permitting

Acquiring relevant permits will be the responsibility of the Enabling Works Contractor and this may comprise a Material Management Plan, relevant Quality Protocols or an environmental permit, or both. Permits will be required for the reuse of PFA and Burnt Shale as a minimum and further information is listed below.

- PFA may be reused in accordance with the Waste and Resources Action Plan (WRAP) Quality Protocol for PFA. This is out with the scope of Cundall and shall be covered by Rolton.
- Reuse of Burnt Shale material is likely to require a deposit for recovery Environmental Permit from the Environment Agency.

Additional permits may be required. These may include, but are not limited to:

- Network Rail for any works in the vicinity of the Cambois Branch freight railway line in the northeast part of the site.
- Environmental permit from the Environment Agency with respect to reuse of invasive species impacted soils. Relocation of

3.3.3 Decommissioning of Boreholes

Historic wells and boreholes, where present, should be backfilled in accordance with the Environment Agency guidance; Good Practice for Decommissioning Redundant Boreholes and Wells. Backfill proposals and specifications should be agreed prior to operations.

3.3.4 Surface Excavation

The material encountered across the surface varies across the site. The anticipated material and approximate thicknesses are indicated on the ‘Earthworks Strategy - Surface Cover Materials, Phase B Enabling’ Drawing (drawing number included within Section 3.1).

Surface materials that is likely to be excavated as part of the earthworks are likely to include the following:

- General vegetation / soft strip to include removal of trees and vegetation across the site (particularly in Zone I and Zone J) along with general debris. Where tree removal is required, this must be completed in accordance with the requirements of the project ecologist and project environmental constraints.
- Invasive species impacted soils are present across the site. Arcadis have produced a ‘Invasive Non-Native Species Method Statement’ (Ref. 16 and 17, Section 1.4).
- Excavation of topsoil, or made ground topsoil, which may be suitable for future reuse in other development phases and should be handled and stockpiled (if required) in accordance with DEFRA Construction Code of Practice for the

Sustainable Use of Soils on Construction Sites) or the Arcadis Landscape Specification (Ref. 22, Section 1.4). If the material is unsuitable, it will likely be required to be disposed offsite.

- Excavation and relocation of several above ground stockpiles. The excavated material will be subject to further testing to determine its most appropriate end use. The materials within the stockpiles are discussed in the Cundall Ground Conditions Summary report (Ref. 23, Section 1.4).
- Breaking out, segregating (or mixing), processing and crushing of hard surface material (predominately asphalt and concrete) for future reuse across site.
  - Asbestos containing materials (ACMs) were identified within stockpiles of brick demolition material during the Cundall site walkover in the north-east part of the site. The approximate location is shown on the Contaminants of Concern drawing (GBR1-ENA2-CDL-STE-XX-DR-B-1011). Reference should be made to the Remediation Strategy.
- Pond / wetland area in Zone H and Zone K will likely require dewatering, vegetation strip and excavation of soft / unsuitable organic soils. Ground conditions in this part of the site are currently unknown and may be comprise soft and compressible soils which may be unsuitable for reuse.
- The Surface Cover Material drawing indicates a 'Surface Cover' material which is mainly present across Zone H to an estimated depth of around 0.3m. This material is highly variable and comprises fragments of brick, coal, organic material etc. It is currently considered to be unsuitable for reuse without further processing.

3.3.5 Obstructions and Bulk Excavation

Known below ground obstructions across the site are outlined within the Ground Conditions Summary report and the desk-based historical assessment (Reference 24, Section 1.4). The anticipated below ground obstructions are presented on the Below Ground Features drawing (drawing number included within Section 3.1) and where exploratory holes were scheduled but terminated at shallow depth due to an obstruction in the ground, these are presented on the Exploratory Holes Locations Encountering Obstructions drawing (drawing number included within Section 3.1) which should be referred to in conjunction with this report.

Relic test piles used as part of a previous development are present across the Phase B area. The locations of test piles have been surveyed and are shown on the Below Ground Features drawing. Any piles identified as part of the bulk excavation works will require cropping below building footprints and in service corridors; further details are provided within the Cundall Earthworks Specification (Ref. 25, Section 1.4).

The culvert identified in Phase A extends into the Phase B area, across Zone H and Zone I. The full extent of the culvert is currently unknown. Cundall have produced a Culvert Mitigation Options Design Note (GBR1-DCZZ-CDL-STE-XX-RP-B-0019) which should be read in conjunction with this strategy. The final solution for managing the culvert structure and any associated ancillary structures, including the filler pit which is understood to be located immediately north of the west-east culvert line, is yet to be determined. Further details with respect to the culvert structure are provided within the Cundall Desk Based Historical Summary and Ground Conditions Summary reports.

Existing services associated with the previous development are present across the site. Where redundant services are encountered during the enabling works (including existing site drainage), these should be removed by the Contractor (following confirmation from the Contractor that these have been abandoned / not live). Existing services (where known) and those requiring removal / diversion are presented on the drawings listed below. The existing services and drainage which are to be retained are also presented.

- Phase B Existing Services – GBR1-ENA2-CDL-STE-XX-DR-C-1001
- Phase B Existing Site Drainage and Survey Schedule – GBR1-ENA2-CDL-STE-XX-DR-C-1004
- Phase B Drainage Layout – GBR1-ENA2-CDL-STE-XX-DR-C-1011

All zones shall require breaking out of some below ground obstructions or historical features. The depth and extent of the removal of obstructions will vary in each zone. At this stage, the following strategy has been adopted for removal of below ground obstructions.

Where obstructions remain in situ, these shall be recorded by survey to National Grid Co-ordinates and shall be available for review on an as built drawing upon completion of earthworks.

Bulk excavations may be required as part of this earthworks strategy. Where necessary, the base of excavation should be levelled to form a gradient no steeper than 1V:20H. If gradients steeper than 1V:20H are required, appropriate benching shall be implemented. The base of excavation shall be surveyed to National Grid Co-ordinates.

Where soft spots are identified during these works (i.e. where the sub grade demonstrates an undrained shear strength less than 50kN/m^2) then these areas shall be excavated and replaced with granular material.

3.3.6 Boundaries and Exclusion Zones

Earthworks undertaken adjacent to fixed boundaries should consider the temporary stability of the boundary and adjacent features.

- Pylons and overhead cables trend north to south in the west part of the site. All excavations within the vicinity of these power lines shall be discussed and agreed by the Contractor with the relevant regulator.
- An external cabling route exclusion zone, managed by SSER, is present across the southeast, south and southwest part of the site. It is assumed that earthworks in this area shall be limited.
- An existing bridge is located in the east part of the site, within the SSER exclusion zone. Earthworks in this part of the site are expected to be limited.

3.3.7 General Filling and Compaction

Placement and compaction of site won or imported fill shall be undertaken in line with the earthworks specification.

3.3.8 Compaction Trials

Based on the substantial volume of material that is likely to be re-engineered and compacted, a compaction trial will be required on each material type (see list below). The compaction trials will be required to be undertaken on representative samples of material on a trial area at least 10m x 15m and comprise at least three layers of fill. Testing will include for density testing, stiffness testing and settlement testing via plate load testing. Refer to the Earthworks Specification for further information. Compaction trials required for:

- Granular Subgrade
- Railway Ballast
- Pulverised Fuel Ash
- Asphalt
- Burnt Shale
- General Fill material

A significant volume of PFA excavated from stockpiles on site (Zone J) will be reused. The PFA will require stabilisation with cement to facilitate its use as engineered fill. Compaction trials incorporating varying cement contents should be undertaken to determine the optimum level of cement required to achieve the specified performance criteria.

3.4 Material re-use

The suitability for the re-use of each material class is based on a detailed review of the findings obtained during the Rolton and Arcadis ground investigations. Where anticipated material classifications are likely to be produced, they are referred to in this strategy in accordance with the Specification for Highways Series 600 definitions. The following section discusses the source and origin of the material and also discusses how this should be reused in the earthworks.

The anticipated engineering use of each material type is included within Sections 3.4.1 to Section 3.4.4. Material should be reused in accordance with the material reuse hierarchy detailed in Section 3.4.1.

The anticipated ground conditions, based on the findings of the aforementioned reports, are summarised in full in the Ground Conditions Summary report (Ref. 7 in Section 1.4).

Volumes for the anticipated material 'types' are outlined in Section 3.5.

Prior to reuse, all material must comply with requirements set out in the Cundall Detailed Remediation Strategy (Ref. 11, Section 1.4).

3.4.1 Engineered Fill (Class 6 Granular Fill)

The sources of material detailed in Sections 3.4.1.1 through 3.4.1.3 have been identified as potentially suitable for reuse as a Class 6 Fill, subject to appropriate processing and/or conditioning, as granular material.

Given that the Class 6 material is considered to be a premium resource and has a high value reuse potential, it is recommended that the Contractor prioritises its end use in accordance with the reuse hierarchy below:

- Working platform material below DC03 and DC04.
- Phase B Enabling Works Laydown Area.
- Temporary carpark capping material.
- General Contractor Laydown Area
- Surface protection layer in external areas and in DC05 to DC10
- Stockpile for future reuse
- Use as general fill if earthworks shortfall is encountered.

Material shall not be allocated to lower priority uses until the requirements for higher priority applications have been satisfied, unless otherwise agreed with the Engineer.

It may be suitable as general fill to achieve finished levels if surplus Class 6 material remains following the completion of the priority construction items, although this would only be recommended if there is a significant shortfall in general fill and will be subject to acceptance from the Client.

Class 6 material is likely to be generated from the following materials.

3.4.1.1 Hard Surfacing (Concrete)

Hard surfacing is anticipated to comprise concrete only. Hard surfacing (concrete) is mainly present in the northwest and central parts of the site. Reference should be made to the Surface Cover Materials drawing (drawing number in Section 3.1).

Significant obstructions comprising relic foundations, floor slabs and historical service runs are also likely to be present across the site. Known obstructions are presented on the drawing GBR1-ENA2-CDL-STE-XX-DR-B-1009 . Information shown on the plan has been derived as part of a substantial historical review of the site and further information is included within the Desk Based Historical Summary (Ref. 24, Section 1.4).

Subject to geoenvironmental testing, it is likely that hard surfacing material can be broken out, stockpiled and then processed (via a crushing and screening operation) to create a suitable well graded granular material. Similarly, obstructions that are encountered during works are also considered to be suitable for reuse following processing.

Some concrete may contain rebar or be mixed with anthropogenic material such as plastic, wood, timber, ceramics and these should be removed as part of the screening process and recycled appropriately. Further geotechnical classification testing will be required on the material following processing to demonstrate it is suitable for reuse across the site.

3.4.1.2 Granular Subgrade

Granular subgrade was recorded predominately below hard surfacing. The identified locations and depths of granular subgrade is shown on the drawing GBR1-ENA2-CDL-STE-XX-DR-B-1005.

Descriptions and particle size distribution (PSDs) of this material suggest it is likely to comprise a well graded sandy gravel. Occasionally, PSD test results indicate the material to be a uniformly graded fill. Some descriptions indicate the

presence of other soils such as ash or clay, which may require screening before it can be reused as a Class 6 granular fill.

3.4.1.3 Railway Ballast

Railway ballast is present from surface to depths of around 0.35m.

Limited testing has been carried out on samples of railway ballast. However, PSDs suggest railway ballast is generally a well graded material and may meet the criteria or a Class 1A or Class 1B fill. With further processing and screening and potentially mixing with other hard material, this material will likely be suitable as a Class 6 granular fill.

Description of this material is generally given as compact to moderately compact dark grey / black sandy gravel. Gravel is medium to coarse sub-angular basalt and granite. Some descriptions indicate the presence of other material such as coal fines, coal ash and clinker, which may require screening before it can be reused as a suitable engineered structural fill.

3.4.2 General Fill (Class 1 / Class 2 / Class 7G / Class 9C)

General fill has been defined as the material that is present on site that is likely to be suitable for general reuse (subject to processing and / or conditioning) to achieve the relevant formation level. It is likely to comprise the materials detailed in the following sections.

Where such material complies with the requirements of Class 1 granular fill (in accordance Cundall Earthworks Specification), it may be reused for a surface protection layer in external areas and across DC05 to DC10 if a shortfall of Class 6 material is recognised.

3.4.2.1 Asphalt

Asphalt surfacing is present across the site and geotechnical testing results obtained as part of the Phase A Enabling works indicate that the asphalt may not be hard enough to produce a Class 6 aggregate.

It is instead likely to be suitable for use as a general fill (Class 1) if chemically suitable and may be suitable to form a surface running layer or weather protection layer. Alternatively, it could be stockpiled for reuse within the pavement and highway construction for the wider campus.

It may be possible for asphalt on site to be reused to form proposed roads. Asphalt planings could be reused directly on site as a cold recycled bound material (CBRM) where bitumen is added in a foamed form to bind the material. This would require designing in accordance with Clause 947 of the Specification for Highways (SHW). Alternatively, asphalt could be taken off site for processing to create a reclaimed asphalt pavement (RAP) which would be designed in accordance with Clause 902 of the SHW.

Coal tar testing has been carried out on two samples of asphalt which indicate the presence of coal tar to be below hazardous thresholds. Further coal tar testing of the asphalt surfacing should be undertaken to determine the suitability of its reuse.

Given the shortfall of aggregate across the site and the benefit in providing a weather protection surface in areas across the site, this material shall be used in the following order:

- As a Class 1 aggregate for use as a weather protection layer.
- For use as general fill to achieve finished levels.

If there is a value engineering option to reuse the asphalt planings as a reclaimed asphalt pavement, this should be confirmed prior to bulk earthworks.

3.4.2.2 Pulverised Fuel Ash (PFA)

The majority of PFA is present within the two large stockpiles in the east part of the site (Zone J). Details pertaining to the reuse of PFA from Zone J, under a WRAP Quality Protocol (QP), is being covered by Rolton and is discussed within the Rolton Geotechnical Design Report and Outline Earthworks Specification for the reuse of PFA (Ref. 13, Section 1.4).

PFA is present in other parts of the site in stockpiles and below ground and reference should be made to drawing GBR1-ENA2-CDL-STE-XX-DR-B-1006. The reuse of the above ground stockpiled material shall meet the criteria of a Class 7G (selected conditioned PFA cohesive material) and be stabilised to produce a Class 9C (cement stabilised conditioned PFA cohesive material) in order to comply with the WRAP QP.

Moisture content tests carried out on samples of PFA suggest that it is slightly wet of optimum within the two large stockpiles in the east and so may require conditioning such as through the addition of lime. Modifying the moisture content of PFA should be carefully by the Contractor as PFA is highly sensitive to changes in moisture content.

Elevated concentrations of total potential sulphate have been recorded in samples of PFA. This may result in swelling which could cause cracking of sensitive structures when cement or lime is added. However, soaked CBR swelling tests and accelerated swell tests carried out on PFA samples typically demonstrate swelling of less than 5mm, with a maximum of 6.4mm after 7 days. As part of any earthworks specification, if PFA is to be placed below sensitive structures, a limit value of 5mm as an average swell value with a maximum value of 10mm will likely be applied and this is in general accordance with HA 74/95.

No thermal conductivity or electrical resistivity testing has been carried out on samples of PFA to date. Testing should be reviewed once received to establish if these properties require it to be placed outside cable corridors. PFA may also be susceptible to frost heave so it should not be placed within the upper 450mm below finished development levels.

Elevated concentrations of total hydrocarbons within BH707 at depth 6mbgl and the presence of asbestos fibres (BH707 at 4mbgl) were recorded in a small number of samples of PFA. Prior to reuse of any material on site, it must comply with requirements as detailed within the Detailed Remediation Strategy. The location of all potential contaminated soil is shown on the Contaminants of Concern drawing (GBR1-ENA2-CDL-STE-XX-DR-B-1013).

Ground aggressivity results for PFA suggest any concrete placed in contact with it shall be designed to at least DS-4 and AC-4 classification (if no further testing is carried out).

Based on anecdotal evidence of using PFA, it is generally a difficult material to manage on site as its properties and behaviour change significantly based on the weather conditions. Given it is a lightweight material and consists of fine particles size (predominantly silt sized fractions), it becomes airborne during excavation and loading and can result in dust migration. PFA is extremely sensitive to moisture and during wet weather conditions, it quickly becomes unsuitable for reuse and requires extended dry periods to reach a moisture content that is suitable for compaction.

Where PFA is placed as a Class 2E fill material, a starter layer is required to be placed before the placement of PFA and should comply with a Class 6D material.

3.4.2.3 Burnt Shale

Burnt shale is present across the northwest, central and northeast part of the site, reference should be made to drawing GBR1-ENA2-CDL-STE-XX-DR-B-1004.

Moisture contents recorded on samples of burnt shale indicate the material is close to, or slightly wet of optimum. If material is excavated and handled during periods of dry weather, it is likely that the material will be close to optimum moisture content and will not need significant conditioning. Where Burnt Shale is recorded as being wet of optimum, it may require conditioning / stabilising by the addition of lime cement. However, if this is to be undertaken, the Contractor should undertake further testing to consider whether the elevated total potential sulphates will result in potential adverse issues such as swelling.

Ground aggressivity results for burnt shale suggest any concrete placed in contact with it shall be designed to at least DS-4 and AC-4 classification (if no further testing is carried out).

Elevated concentrations of total hydrocarbons (within TP302, TP107, CBR158 and RBH03 between 0.9m and 2.8mbgl) and the presence of asbestos fibres (within TP03, CBR168 and TP101 between 0.5m and 1.7mbgl) were recorded. In addition, Asbestos containing cement was identified in TP4 at 0.8mbgl. Prior to reuse of any material on site, it must comply with requirements as detailed within the Detailed Remediation Strategy. The location of all potential contaminated soil is shown on drawing GBR1-ENA2-CDL-STE-XX-DR-B-1013.

PSDs suggest burnt shale is generally a well graded material and may meet the criteria or a Class 1A but is more likely to be a Class 2C fill, although an element of screening may be required occasionally when anthropogenic materials are encountered.

CBR swelling tests have been carried out on samples of burnt shale. All swelling tests indicate less than 5mm of swell (on average around 1mm was recorded) and so the swelling potential of burnt shale is generally not considered to be an issue at this site.

3.4.2.4 General Fill (Intermixed)

The remaining general fill predominately consists of reworked clay and granular general made ground which is present across all zones.

Reworked clay was found to have frequent anthropogenic materials including wood, ceramic, glass, brick etc, which will require screening and / or sorting before it can be used as a general fill (Class 2). Bituminous material, slag and organic odours were recorded in some locations.

Based on the spatial and lateral distribution of the general fill, it is likely that the fill is recovered as a mixed material and therefore compaction testing results available during the ground investigation may not be representative of the material.

Testing carried out on samples of reworked clay indicate it to be generally wet of optimum, particularly within the upper 1.5m. This material may require conditioning before it is suitable for use as a general fill, likely through air drying or through the addition of lime or cement. Similarly testing carried out on granular general made ground was found to be generally wet of optimum, however, there was a wide range of optimum moisture contents and so may require the material being segregated into individual material classifications depending on compaction properties.

Elevated concentrations of total hydrocarbons and metals were recorded in around fourteen samples of granular general made ground and reworked clay. In addition, asbestos fibres were detected in a small number of samples of reworked clay. Prior to reuse of any material on site, it must comply with requirements as detailed within the Detailed Remediation Strategy. The location of all potential contaminated soil is shown on drawing GBR1-ENA2-CDL-STE-XX-DR-B-1013.

Coal was recorded in granular general made ground within a large number of exploratory hole locations (around 140), generally between ground level and depths of around 0.2mbgl. This may present a combustion risk, particularly if this material is reused in heat generating service corridors.

Given the likely variability of the material in terms of anthropogenic material content and elevated concentrations of metals and total hydrocarbons, and potential combustibility, it is reasonable to assume that some unsuitable material (chemical or geotechnically unsuitable) will be generated as part of any bulk excavations. Some screening, or sorting, of the general fill will be required to remove deleterious material such as timber, wood, plastics, metals etc.

It is considered prudent to assume that some of the material may require modification or stabilisation with the addition of lime or cement to ensure it can be compacted appropriately.

3.4.3 Landscape Fill (Class 4 / Class 5)

3.4.3.1 Organic Made Ground

Organic made ground is mostly present across the north and central parts of the site with approximate thicknesses of around 0.5m.

It is considered to be a mixture of relic topsoil and reworked clay with ‘organic inclusions’ and ‘organic odour’ and is typically described as sandy clay with frequent organic inclusions and occasionally includes deleterious material including wood, brick and tile fragments.

Testing undertaken on the organic made ground indicates that the material is typically wet of optimum. However, this is based on only two test results.

Given the elevated moisture content and the organic context on the material, it is unlikely that this material is suitable for engineered general fill and has subsequently been considered as Class 4 Landscape Fill, in accordance with SHW

Series 600. This material could be used in bunds around the site or as fill in the base of the pond, subject to acceptability by the Landscape Architect. Reference should be made to the Arcadis Landscape Specification (Ref. 22, Section 1.4).

3.4.3.2 Topsoil

Topsoil is typically present across the PFA stockpiles in the east part of the site.

Seven samples of topsoil were subject to testing in accordance with BS 3882:2015 Specification for Topsoil. All samples failed to comply with the standards required. Further testing has been undertaken by Arcadis during the Phase A Enabling Works on potential sources of topsoil across the site and this is summarised in Arcadis Soil Resources Survey Report (Reference 14, Section 1.4). Supplementary testing of topsoil may be required to be carried across a representative sample set and the Arcadis project ecologist / soil specialist will be required to be consulted in advance of the works to confirm. .

In addition, asbestos fibres were detected in three samples of topsoil across the site (all samples had <0.001% w/w). In accordance with the Detailed Remediation Strategy produced by Cundall (Reference 11, Section 1.4) no material can be placed within the upper 300mm of soft landscaping areas where asbestos fibres have been detected.

There may be areas where proposed soft landscaping is thicker than 300mm and it may be suitable to place topsoil containing asbestos fibres (<0.01%) in these areas, below a 300mm clean cover system, providing it additionally meets the landscape architect's requirements.

To prevent cross contamination of site-won topsoil with and without asbestos fibres, it is proposed to undertake a characterisation exercise on a grid basis prior to the stockpiling of topsoil to ensure there is separation of site won materials to be reused within and below the clean cover system. In accordance with the Cundall Detailed Remediation Strategy (Ref 11, Section 1.4), site won materials require testing on a 1 in 100m^3 basis; based on an assumed topsoil thickness of 300mm this would be equivalent to obtaining pre-characterisation samples on an approximate 15m grid.

The topsoil generated as part of the enabling works may be stored on site (if chemically and texturally suitable) for future reuse in phases of the vertical build, subject to any permitting or MMP requirements, which will be confirmed by the Contractor. Further testing should be carried out to allow a more detailed assessment of whether topsoil is fully compliant for reuse in accordance with the detailed remediation strategy, the Arcadis Landscape Specification and the Soil Resources Survey Report.

The topsoil may be required to be subject to screening in parts of the site where deleterious material such as glass, brick or concrete may be present and this will be identified during the bulk earthworks. It is also likely that given the extent of semi mature and mature trees and vegetation present across the site, a screening operation will be required to segregate the soil from tree roots and vegetation and this material should be considered for reuse if suitable.

Green waste should be disposed off site by the Contractor unless a viable solution is proposed to reuse the material on site within the organic material.

3.4.4 Potentially Unsuitable Soils

It is likely that the unsuitable material generated as part of any earthworks could be reduced significantly by careful management and handling of soils, implementing screening and conditioning processes relevant to the materials generated and by utilising material for specific end uses, such as landscape fill. By adopting an appropriate soil management strategy, there is potential that some 'unsuitable' soils can be reused to form site levels. However, if the current site requirements do not require the material volumes to achieve the finished material, an alternative use should be sought off site, whether this be recycling, repurposing of material or for disposal.

3.4.4.1 Surface Strip Material

Unsuitable U1A/U1B material is likely to be generated from a 'surface excavation scrape' prior to bulk earthworks and this may contain wet / waterlogged soils, organic soils (including roots, vegetation and brash) and soils containing significant coal fines or other organic / unsuitable material.

3.4.4.2 Invasive Species

Arcadis have produced an Invasive Non-Native Species (INNS) method statement (Ref. 16 and 17, Section 1.4). The reports state that the following INNS have been identified across the Phase B area; Japanese Knotweed, Japanese Rose, Buddlea, Pirri Pirri and Seabuckthorn. Additional species are understood to have been identified out with the Phase B working area.

MGL earthworks has supplied a sketch that indicates the extent of identified INNS on drawing 'Invasive Species Identified' (Drawing GBR1-DCZZ-MGL-XXX-XX-DR-V-0001). It is understood that this is a preliminary drawing and will be updated by the Project Ecologist.

When carrying out enabling works, all control measures specified within the Arcadis method statements should be followed.

3.4.4.3 Potentially Contaminated Soils

Site won materials proposed for on site reuse are subject to relevant testing in line with the thresholds detailed in Cundall's Detailed Remediation Strategy (Ref 11, Section 1.4).

Where concentrations of contaminants are recorded above the relevant thresholds, these could be subject to further treatment prior to placement (i.e. for hydrocarbons this could include aeration and turnover to attenuate contaminants).

Notably, bulk asbestos containing materials (ACMs) have been recorded in a number of locations and manual handpicking of materials prior to reuse would align with the project aims to retain as much material on site as possible to reduce unnecessary waste.

Elevated metal concentrations are unlikely to be treatable. However, these are localised and not representative of widespread contamination.

Reference should be made to the drawing GBR1-ENA2-CDL-STE-XX-DR-B-1011, which identifies exploratory hole locations across the site where elevated concentrations of hydrocarbons or metals were identified, or where bulk asbestos / asbestos fibres in soils were recorded. Particular care and attention during the earthworks operations shall be adhered to around these locations and where contaminated soils are identified, these shall be segregated and remediated, if possible, or exported off site for further treatment or disposal. Note that this volume has not been calculated as it is sporadic with chemical exceedances and hydrocarbon odours representing no visible trend, but instead it is prominent to a large are in the north east.

3.5 Earthworks Material Volumes

Earthworks volumes have been determined based on findings from intrusive ground investigations at the site, as detailed within the Ground Conditions Summary report (Ref. 23, Section 1.4).

To facilitate the estimation of material volumes, the spatial distribution and encountered depths of materials anticipated across Phase B have been interpreted and presented on the drawings listed below. Note, granular general made ground and reworked clay have been excluded from these drawings, despite their widespread presence across the site. This is due to the extent and intermixing of these materials making an estimation of the volumes using the same methodology impractical.

Instead, the volume of these materials has been estimated using the 2024 Topographical Survey, proposed formation (base of dig) levels, and by deducting the volumes of the materials identified and quantified separately.

The drawings produced for the key materials are as follows:

- Approximate Location and Thickness of Burnt Shale, Enabling Works Phase B & C: GBR1-ENA2-CDL-STE-XX-DR-B-1004
- Approximate Location and Thickness of Granular Subgrade, Enabling Works Phase B & C: GBR1-ENA2-CDL-STE-XX-DR-B-1005
- Approximate Location and Thickness of Pulverised Fuel Ash, Enabling Works Phase B & C: GBR1-ENA2-CDL-STE-XX-DR-B-1006

3.5.1 Exclusions and Assumptions

Volume estimation is based on the following exclusions and assumptions.

- The estimated volumes do not include the future construction phase arisings (post Phase B&C enabling works), such as pile arisings or service arisings (with the exception of DC01 and DC02), but these should be considered as part of the wider ground break and enabling package for pricing purposes. The intention of the enabling works will be to reuse arisings to form finished levels as the scheme progresses.
- Concrete (or other hard material) and any unsuitable material that may be generated from the removal of below ground obstructions have not been considered when calculating approximate earthworks volumes. Reference should be made to the Below Ground Features plan and Exploratory Holes Locations Encountering Obstructions drawings (drawing numbers included within Section 3.1)
- Excavations / filling in areas within the SSER boundary have not been considered as part of this assessment.
- The volume of the soils impacted by the spread of invasive species has not been included within the earthworks estimates below and consultation with the scheme ecologist / invasive species specialist should be sought for further guidance. The treatment and retention of these impacted soils on site would be the desirable outcome, but this material may need to be disposed off site and the appropriate waste disposal stream will be determined by the Contractor. Any works undertaken on invasive species impacted soils shall be undertaken in accordance with an Ecologist's method statement for the works, which should consider measures to prevent cross contamination of soils.
- General earthworks considerations (such as battering excavations, temporary access roads and forming of stable excavations with benching) have not been considered within the earthwork volumes.
- No allowance has been made for bulking factors.
- It has been assumed that unsuitable material (predominantly due to low level concentrations of contamination, or high moisture content, oversize and deleterious material content, etc) can be stockpiled for treatment for reuse during the Phase B & C earthworks, as opposed to being disposed off site. The treatment of this material may vary from air drying, sorting and screening, stockpiling (and turning) to adding cement or lime, but this is entirely dependent on the proposed end use. A cost for 'processing' and treating the material for reuse as part of the earthworks should be allowed for during the tender stage. Note that it is not the intention of this earthworks strategy to leave stockpiles of unsuitable material on site in temporary stockpiles and they should be treated / disposed appropriately.
- Soft spots / weak material may be encountered and require excavating during the earthworks, but excavations of these areas to accommodate for the removal of soft spots have not been accounted for.
- Large expanses of the site are covered with semi mature and mature trees and are heavily vegetated. No topographical survey is available for review in parts of site and so estimates of materials and material volumes have been interpolated based on known data points.

3.5.2 Bulk Excavation Volumes

The bulk excavation is likely to comprise the excavation of materials described in Sections 3.4.1 to 3.4.2

Estimated volumes are presented in Table 3-1 and have been rounded to the nearest 250m^3.

Surface / Sub-surface	Material Source	Volume (m^3)
Class 6 fill		
Surface	Concrete	9,000
	Railway Ballast	18,000
Sub-surface	Granular Subgrade	18,500
Approximate total		**45,500**
General Fill		

Surface / Sub-surface	Material Source	Volume (m^3)
Surface	Asphalt	12,000
Sub-surface	PFA	427,500 (approximately 386,500 will be generated from the pfa stockpiles in the east)
	Burnt Shale	51,250
	Intermixed General Fill	257,000
Approximate total		**747,750**
Potentially Unsuitable		
Surface	Surface Cover	38,500
	Topsoil	NA
	Waterlogged soils	2,500
Potentially Suitable for Landscaping		
Surface	Topsoil	57,500

Table 3-1: Summary of Material Volumes

Invasive species impacted soils is not included within the volumes above and the project ecologist shall be consulted for further advice. It should be noted that if the invasive species cannot be treated, it is likely to be considered unsuitable for reuse on site.

3.6 Material Requirements

Table 3-2 provides a summary of the finished surface material volumes that is required to achieve the finished enabling levels for Phase B&C. The table is set out in an order of priority for reuse and this should not be deviated from, unless instructed otherwise from the Project team.

Material End Use		Material Description	
	Class 6 Granular Fill	**Landscape Fill**	**General Fill**
Working Platform (DC03 / DC04)	42,750	NA	NA
Contractors Working Areas	12,000	NA	NA
Weather Protection Layer	0	NA	55,000
Car Park Construction Phase	17,000	NA	NA
Access Roads and cycleway	4,250	NA	NA
General Fill (Site wide)	NA	NA	742,000
Topsoil / Landscape Fill	NA	24,000	NA
Total	76,000	24,000	797,000

Table 3-2: Summary of Finished Surface Material Volumes

A summary of the estimated material balances is included in Table 3-3.

	Total On Site (m^3)	Total Required (m^3)	Balance (m^3)
Class 6 Fill	45,500	76,000	-30,500

	Total On Site (m^3)	Total Required (m^3)	Balance (m^3)
General Fill (including 12,000m^3 of asphalt)	747,750	797,000	-49,250
Landscape Fill	57,500	24,000	33,500
Potentially Unsuitable	41,000	0	41,000
Phase A Surplus Arisings (assumed to be acceptable as general fill)	50,000	NA	50,000

Table 3-3: Summary of Material Types

Using Class 6 Fill to build up to the finished levels, there is likely to be a shortfall on site of approximately 30,500m^3 of material.

Based on the hierarchy of use detailed in Section 3.4, the current strategy would enable the pile mat (42,750m^3) to be constructed using site won aggregate and part of the Contractors working area (2,750m^3 of 12,000m^3). The remaining areas (Contractors working area, car park and the access roads and cycleways) may be required to be constructed using imported aggregate, or concrete that is won and processed following the removal of below ground obstructions.

For the weather protection layer, 12,000m^3 could be constructed using the site won asphalt planings, as it is unlikely to require any specific structural performance, but this will still leave a shortfall from the anticipated requirement.

The resulting shortfall of weather protection layer will leave an approximate area of 285,000m^2 of general fill, comprising intermixed site won materials, Burnt Shale or PFA, exposed at surface. Depending on the proposed end use of the surfaces without a weather protection layer, it may be feasible to reuse and place the surplus unsuitable material or landscaping fill (subject to receipt of acceptable chemical testing) to provide protection. Alternatively, the shortfall of weather protection layer could be completed by importing aggregate, which will subsequently form the base layer of any future working platforms.

Depending on the outcome of chemical and landscaping specific testing, there is likely to be sufficient volume of landscape fill to meet the Phase B requirements. Surplus landscape fill (if not used in weather protection layer) could be stockpiled for future site reuse in Phase 1 or Phase 2.

Around 41,000m^3 of material is likely to be generated from the surface of the site and given the quality and its anticipated engineering properties, this material is unlikely to be suitable for any specific engineering end use. It is therefore considered unsuitable. Around 2,500m^3 of this material is likely to be present below the pond (low spot) that has formed in the far north of the site. This material should be disposed off site at either a suitable recycling facility or a waste disposal facility. However, if the material has a material value to be used as landscape fill and can be incorporated into the wider scheme, this opportunity should be explored with the project ecologist.

The general fill requirements for the scheme are not fully balanced. A total of 747,750m^3 is available for reuse to achieve the finished enabling levels, which require a total of approximately 797,000m^3 of fill. The shortfall of around 50,000m^3 includes for the weather protection layer. The shortall of material may be supplemented by reusing some of the Phase A arisings from the piling operation and the surplus from the earthworks, depending on its condition.

It is recommended that the final end use of the material available is discussed with the Contractor and the Client to ensure that the most economic, sustainable and practical reuse scenario is achieved.

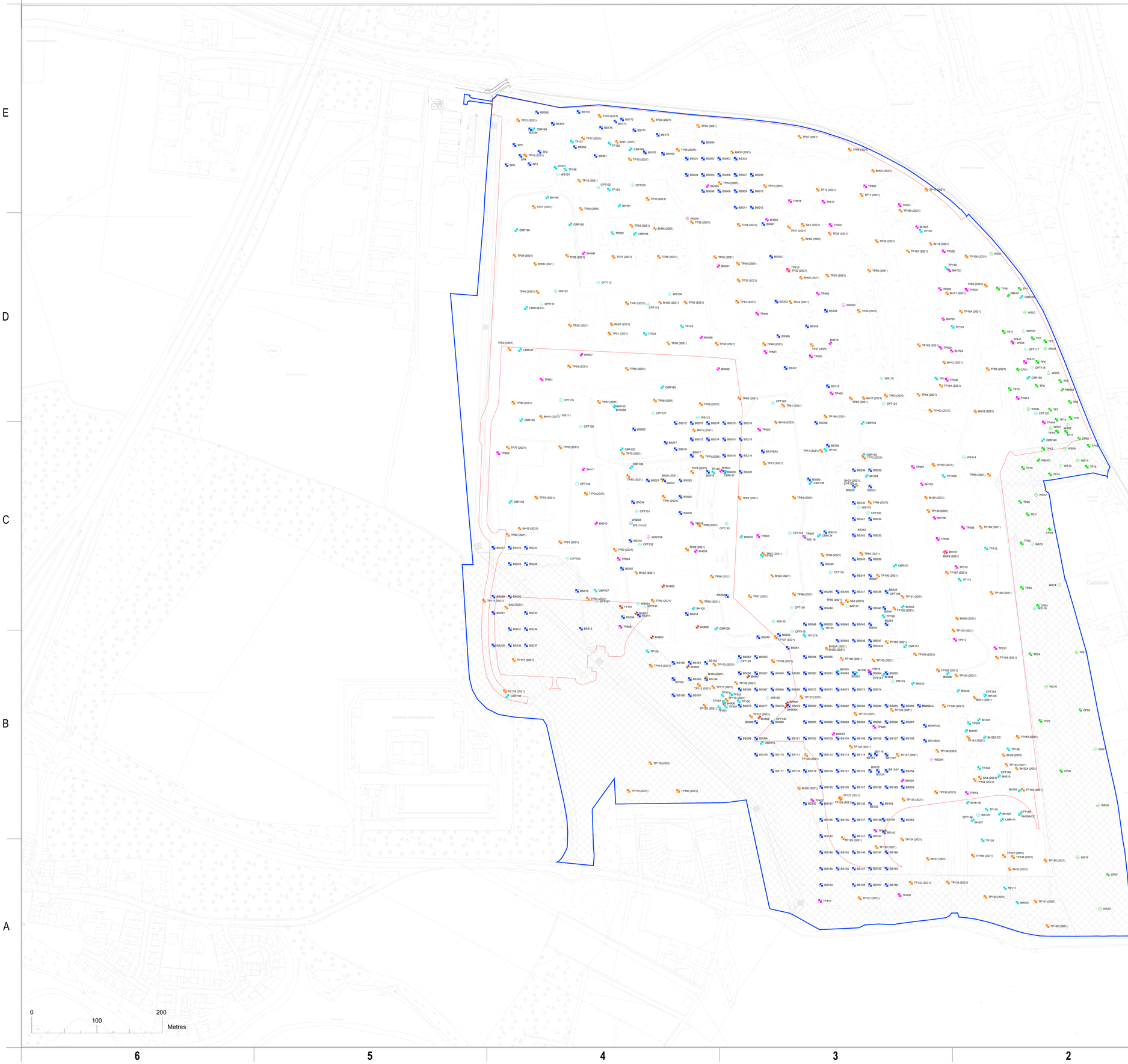
3.7 Alternative Ground Engineering Solutions

A Ground Improvement Options Appraisal report (Reference GBR1-ENA2-CDL-STE-XX-RP-B-1007) has been produced that details potential alternative ground improvement options. Some of these technically feasible alternative ground improvement options are still considered to offer a value engineered approach to executing the enabling earthworks.

Appendices

Appendices

Appendix A Drawings



A0

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4. ALL DIMENSIONS STATED IN mm UNLESS OTHERWISE NOTED

REFERENCES

1. Arcadis (January 2025) Ground Investigation Factual Report - Stage 2. Report reference: 30226657-AUK-XX-XX-RP-ZZ-0015-01.
2. Arcadis (October 2024) Ground Investigation Factual Report - Stage 1. Report reference: 30226657-AUK-XX-XX-RP-ZZ-0007-01.
3. 1st Horizon (21st October 2024). Blyth Topographical & Utility Survey Sheet Overview. Drawing reference: A-B11243-01.
4. Rolton Group Limited (11th August 2022). Burnt Shale Trial Pit Investigations for Former Coal Stocking Yards, Cambois. Report reference: PHX-RGL-XX-XX-RP-G-000014A Rev S2-P03.
5. Rolton Group Limited (1st April 2022). Phase 1 & Preliminary Geo-Environmental Summary for Rail Head Land, Cambois. Report reference: PHX-RGL-XX-XX-RP-G-000014 Rev S2-P02.
6. Rolton Group Limited (14th May 2021). Geotechnical and Geo-Environmental Report for Former Coal Stocking Yards, Cambois. Report reference: PHX-RGL-XX-XX-RP-G-000010 Rev S2-P01.
7. The ground investigations undertaken by Dunelm during the Phase A Enabling Works are not included in this drawing.

Rev	Description	Date	Ch'd	Apr'd
V01	ENABLING WORKS - RIBA STAGE 4	03/07/26		

DRAWING ISSUES

KEY PLAN



PROJECT

GBR1 Cambois

Former Blyth Power Station
Coal Stocking Yard, Cambois,
Northumberland

DWG. TITLE

Combined Exploratory Hole Location Plan,
Enabling Works Phase B & C

PROJECT NO:

1043152

DWG. NO:

GBR1-ENA2-CDL-STE-XX-DR-B-1001

STATUS:	SCALE @ A0:	REV
ISSUED FOR REVIEW	1:2000	V01



FORMER RAILWAY LINES REMAIN IN SITU



EXISTING STANDING WATER AND LIKELY SOFT SPOT



PIPE NOTED AT SURFACE WITH WATER FLOW



CONCRETE HEADWALL AND WATERLOGGED SOILS



LOOSELY STOCKPILED BRICK, CONCRETE AND POTENTIALLY ACM's

No surface cover material has been assigned to these areas as these are understood to have been excavated during Phase A Enabling Works



POSSIBLE EXPOSED OVERHEAD CONVEYOR FOUNDATION



CONCRETE STRUCTURE / HEADWALL

0 100 200 Metres

True North

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- Site Boundary
- Phase B Boundary
- Watercourses / Drains
- Asphalt
- Concrete
- Railway Ballast
- Surface Cover
- Topsoil
- Pulverised Fuel Ash
- Waterlogged Ground
- Areas of Dense Vegetation (Based on topographical data only).
- Outline of Stockpiles
- SSER Corridor

Notes:

1. This drawing should be read in conjunction with the following Cundall documents:
   - GBR1-ENA2-CDL-STE-XX-RP-B-1002
   - GBR1-ENA2-CDL-STE-XX-RP-B-1005
2. Images presented on the plan were taken during site visits by Cundall Engineers in January and May 2026.
3. Material classifications are discussed within the Cundall Earthworks Strategy document.
4. The surface cover materials identified in this drawing is based on an interpretation of topographical survey data and ground investigation information. The materials present on site are likely to vary substantially over short distances given the history of the site and recent earthworks by British Volt. Therefore ground conditions may be present across the surface that are not captured on this drawing.
5. The suitability of materials are based on a review of the available ground investigation information.
6. This drawing is based on the Arcadis Blyth Topographic & Utility Survey Sheet Overview carried out by 1st Horizon Surveying and Engineering Ltd (No. A-B11243-01).

Rev	Description	Date	Chk'd	Apr'd
V01	ENABLING WORKS - RIBA STAGE 4	03/07/26	[Chk'd]	[Apr'd]

DRAWING ISSUES

KEY PLAN



PROJECT

GBR1 Cambois

Former Blyth Power Station
Coal Stocking Yard, Cambois,
Northumberland

DWG. TITLE

Surface Cover Materials,
Enabling Works Phase B & C

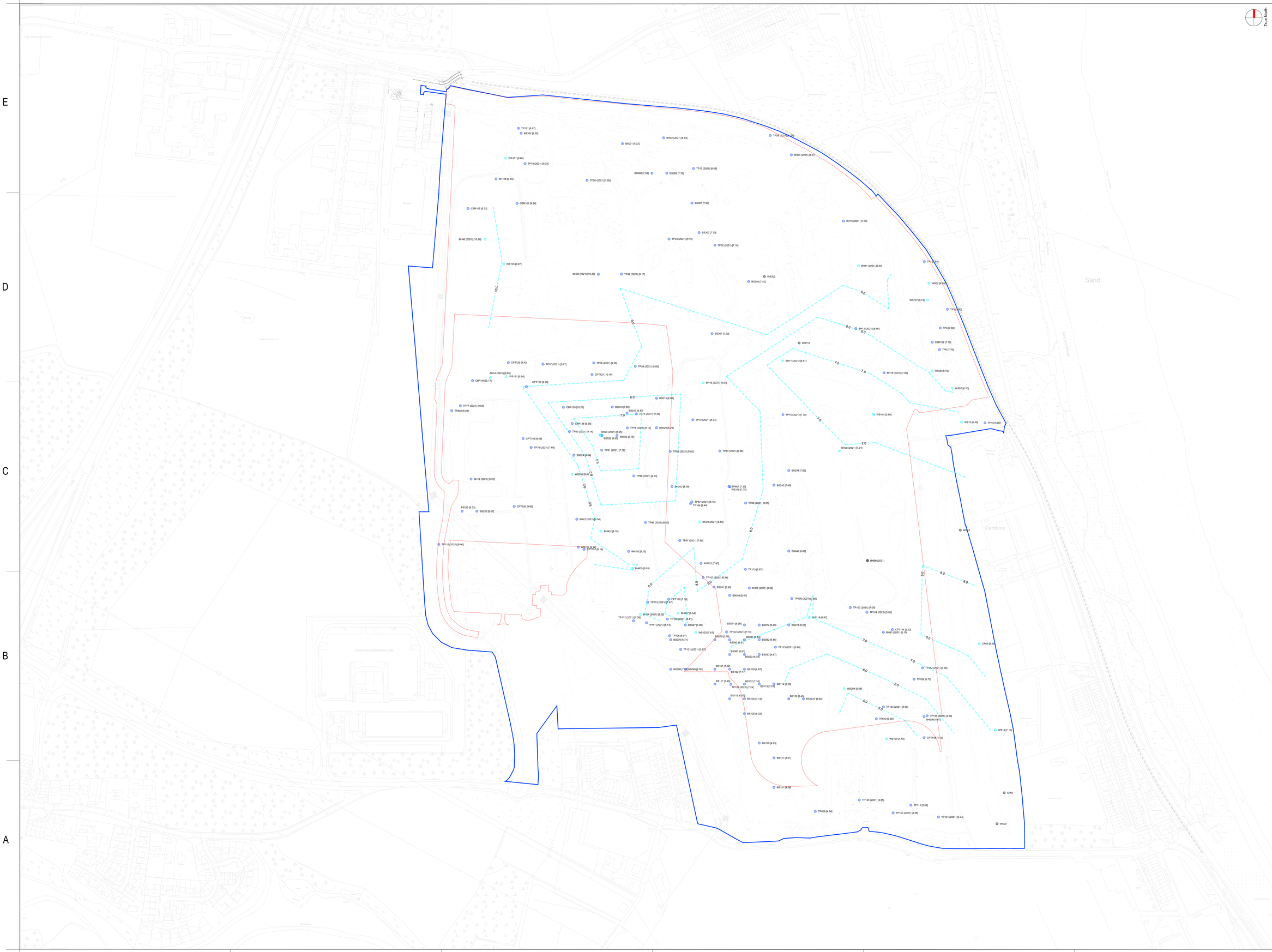
PROJECT NO:

1043152

DWG. NO:

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Legend

- Phase B Working Boundary
- Wider Site Application Boundary
- Contour Plan - Water Level in mAOD
- Monitored Water Position [m AOD]
- Water Strike Position [m AOD]
- Monitoring well recorded as dry

NOTES

Water levels shown on this drawing are based on the following data:

- Data from water monitoring installations (where the response zones were within Made Ground or within Made Ground / Till deposits). This plan shows the shallowest monitored level.
- Water strikes have been considered to be the shallowest water level (after rise).
- BH29 and BH30 have been discounted due to water being within PFA stockpiles.

Water data is discussed within the Cundall Ground Conditions Summary Report (GBR1-ENA2-CDL-STE-XX-RP-B-1002) which also details the ground investigations which have been used to determine water levels.

Rev	Description	Date	Chk'd	Ap'd
V01	ENABLING WORKS - RIBA STAGE 4	03/07/26	IC Checked	W Verified

DRAWING ISSUES

KEY PLAN



PROJECT

GBR1 Cambois

Former Blyth Power Station
Coal Stocking Yard, Cambois,
Northumberland

DWG. TITLE

Water Level Contour Plan,
Enabling Works Phase B & C

PROJECT NO:

1043152

DWG. NO:

GBR1-ENA2-CDL-STE-XX-DR-B-1003

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Phase B Enabling Works Boundary

Wider Site Application Boundary

SSER Corridor

0.00 [0.00m] Burnt Shale Found - Position Terminated in Made Ground - m AOD [Thickness]

0.00 [0.00m] Burnt Shale Found - Position Terminated in Natural Ground - m AOD [Thickness]

No Burnt Shale Found - Position Terminated in Made Ground

No Burnt Shale Found - Position Terminated in Natural Ground

NOTES:

1. Ground conditions are based on findings from the intrusive ground investigations as discussed within the Cundall Ground Conditions Summary report (GBR1-ENA2-CDL-STE-XX-RP-B-1002) which should be read in conjunction with this drawing.

2. The level shown on this drawing indicates the top level of the material that was encountered. The level identified in [ ] indicated the thickness of the material.

Rev	Description	Date	Chk'd	Apr'd
V01	ENABLING WORKS - RIBA STAGE 4	03/07/26	Checked	Verified

DRAWING ISSUES

KEY PLAN

S01 S02 S03 S04
S05 S06 S07 S08
S09 S10 S11 S12
S13 S14 S15 S16
S17 S18 S19 S20
S21 S22 S23 S24
S25 S26 S27 S28

PROJECT

GBR1 Cambois

Former Blyth Power Station
Coal Stocking Yard, Cambois,
Northumberland

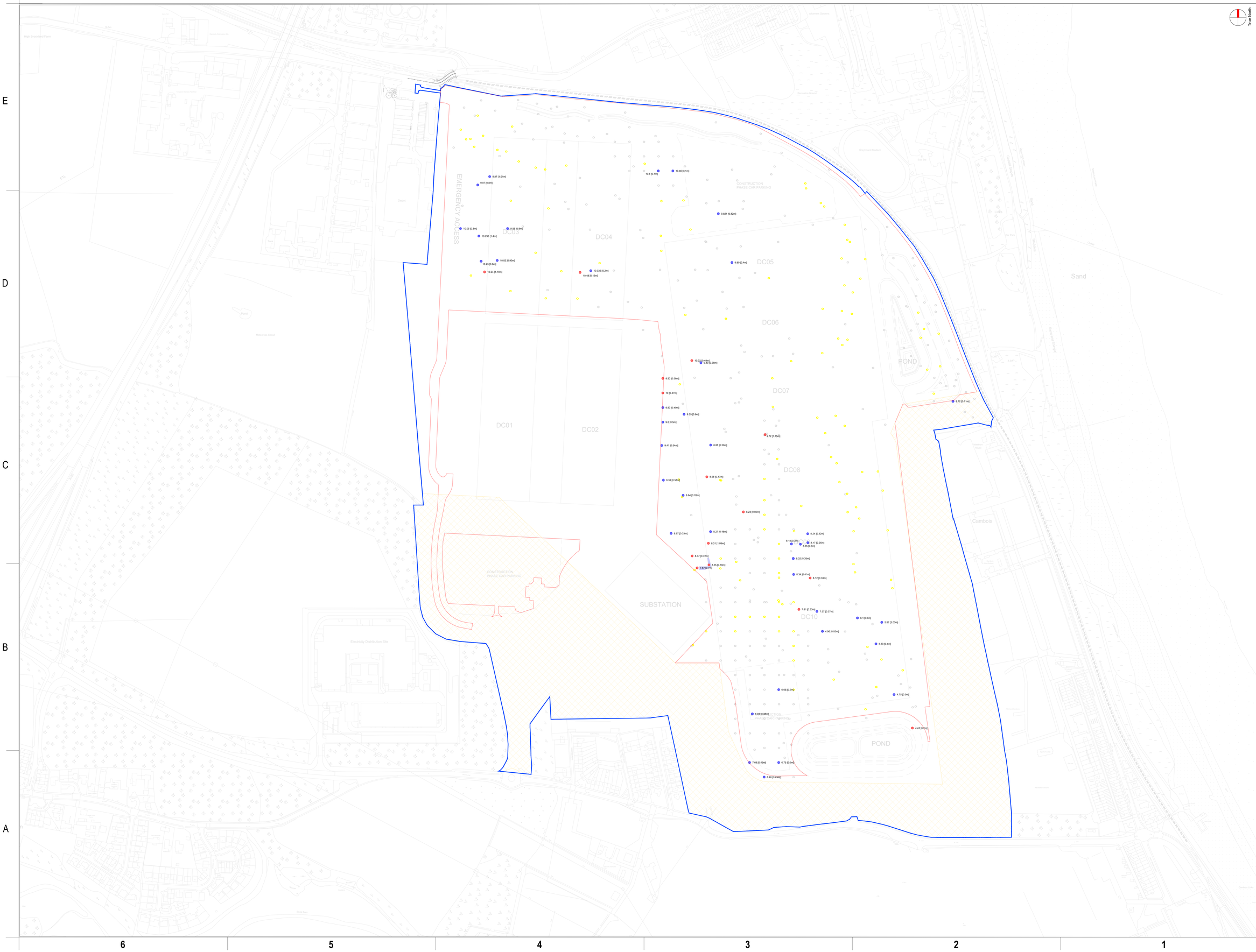
DWG. TITLE

Approximate Location and Thickness of
Burnt Shale,
Enabling Works Phase B & C

PROJECT NO:
1043152

DWG. NO:
GBR1-ENA2-CDL-STE-XX-DR-B-1004

STATUS:	SCALE @ A0:	REV
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Phase B Enabling Works Boundary

Wider Site Application Boundary

SSER Corridor

0.00 [0.00m] Granular Subgrade - Position Terminated in Made Ground - Top m AOD [Thickness]

0.00 [0.00m] Granular Subgrade - Position Terminated in Natural Ground - Top m AOD [Thickness]

No Granular Subgrade Found - Position Terminated in Made Ground

No Granular Subgrade Found - Position Terminated in Natural Ground

NOTES:

1. Ground conditions are based on findings from the intrusive ground investigations as discussed within the Cundall Ground Conditions Summary report (GBR1-ENA2-CDL-STE-XX-RP-B-1002) which should be read in conjunction with this drawing.
2. The level shown on this drawing indicates the top level of the material that was encountered. The level identified in [ ] indicates the thickness of the material.

Rev	Description	Date	Chk'd	Apr'd
V01	ENABLING WORKS - RIBA STAGE 4	03/07/26		

DRAWING ISSUES

KEY PLAN



PROJECT

GBR1 Cambois

Former Blyth Power Station
Coal Stocking Yard, Cambois,
Northumberland

DWG. TITLE

Approximate Location and Thickness of Granular Subgrade, Enabling Works Phase B & C

PROJECT NO: 1043152

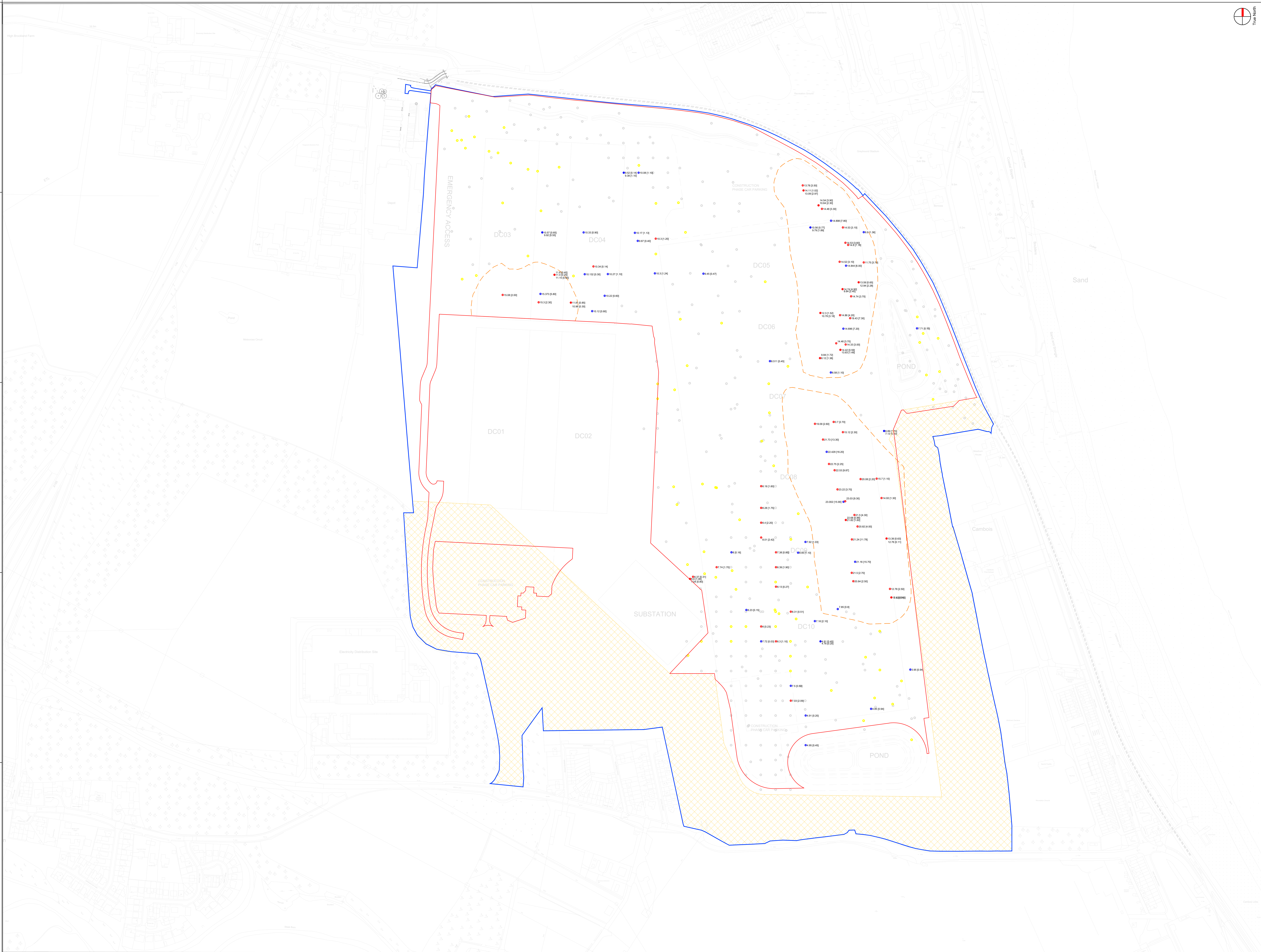
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- Phase B Enabling Works Boundary
- Wider Site Application Boundary
- Outline of PFA Stockpiles
- SSER Corridor
- 0.00 [0.00m] PFA Found - Position Terminated in Made Ground - Top m AOD [Thickness]
- 0.00 [0.00m] PFA Found - Position Terminated in Natural Ground - Top m AOD [Thickness]
- PFA Not Found - Position Terminated in Made Ground
- PFA Not Found - Position Terminated in Natural Ground

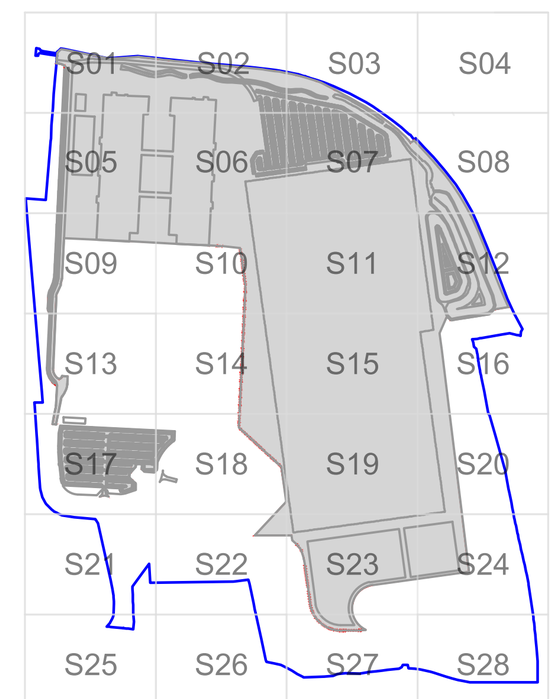
NOTES:

1. Ground conditions are based on findings from the intrusive ground investigations as discussed within the Cundall Ground Conditions Summary report (GBR1-ENA2-CDL-STE-XX-RP-B-1002) which should be read in conjunction with this drawing.
2. The level shown on this drawing indicates the top level the material was encountered. The level identified in [ ] indicates the thickness of the material.

Rev	Description	Date	Chk'd	Apr'd
V01	ENABLING WORKS - RIBA STAGE 4	03/07/26	Checked	Verified

DRAWING ISSUES

KEY PLAN



PROJECT

GBR1 Cambois

Former Blyth Power Station
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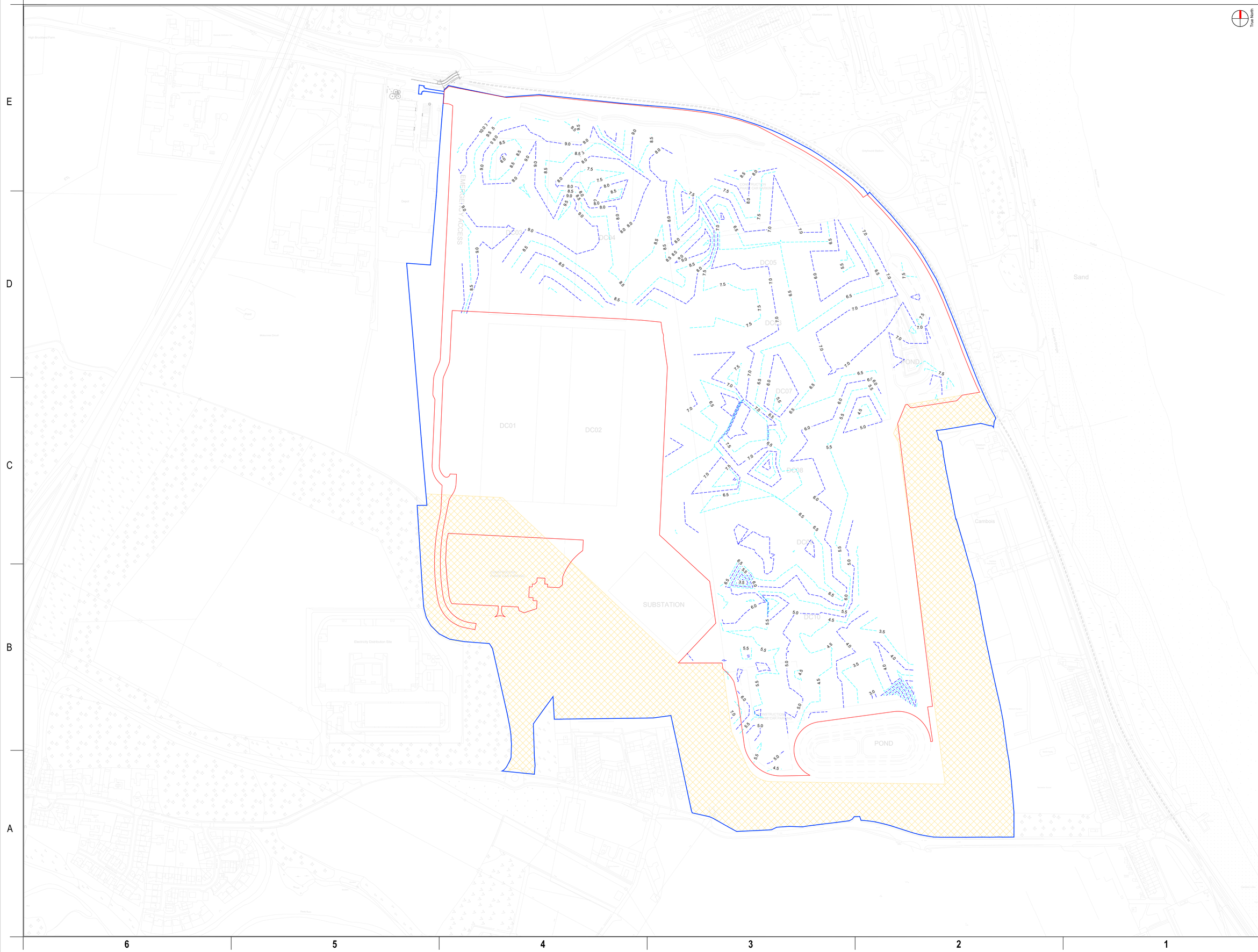
DWG. TITLE

Approximate Location and Thickness of
Pulverised Fuel Ash,
Enabling Works Phase B & C

PROJECT NO:
1043152

DWG. NO:
GBR1-ENA2-CDL-STE-XX-DR-B-1006

STATUS:	SCALE @ A0:	REV
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Legend

- Phase B Enabling Works Boundary
- Wider Site Application Boundary
- SSER Corridor
- Contour Plan - Till Level in mAOD

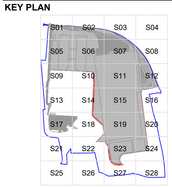
NOTES:

1. Ground conditions are based on findings from the intrusive ground investigations as discussed within the Cundall Ground Conditions Summary report (GBR1-ENA2-CDL-STE-XX-RP-B-1002) which should be read in conjunction with this drawing.
2. The contour plan shown is based on top of Till elevations only, it does not include the top elevation of Alluvial deposits.
3. Where levels have been identified that terminate in made ground and Alluvium, these are not considered in the creation of the contours of the natural surface.

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DRAWING ISSUES

KEY PLAN



PROJECT

GBR1 Cambois

Former Blyth Power Station
Coal Stocking Yard, Cambois,
Northumberland

DWG. TITLE

Natural Ground Elevation,
Enabling Works Phase B & C

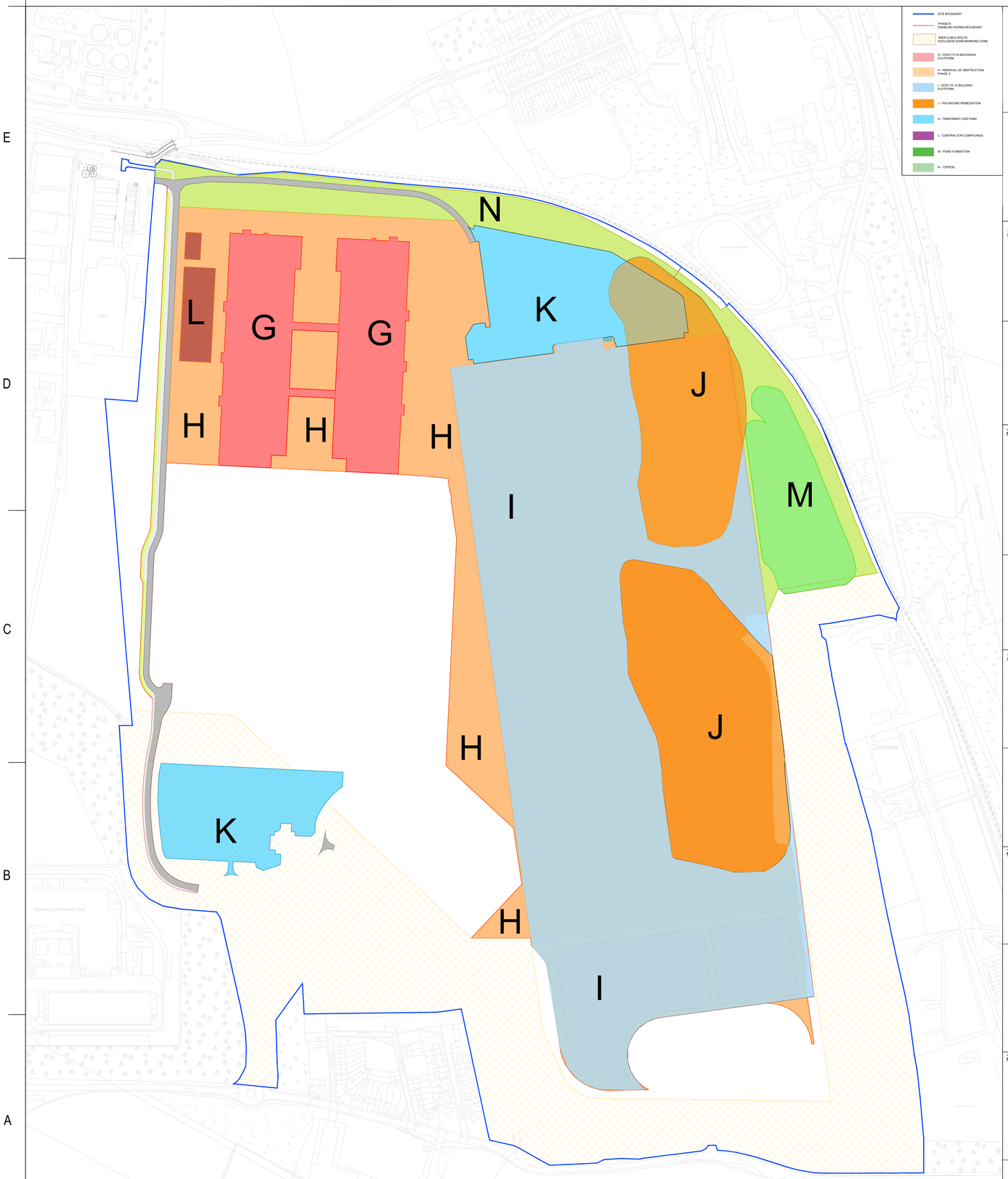
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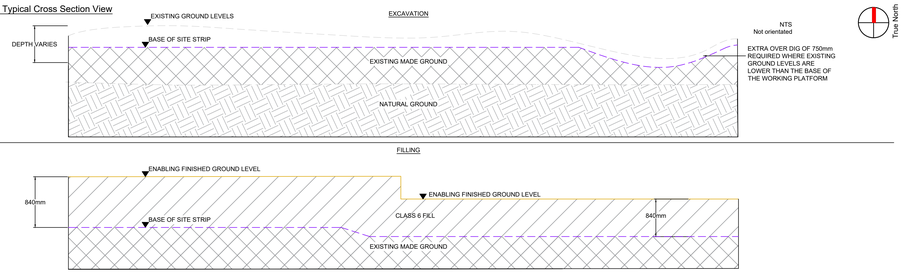
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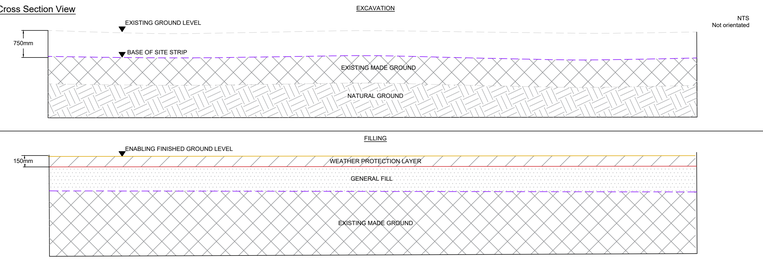
STATUS:	SCALE @ A0:	REV
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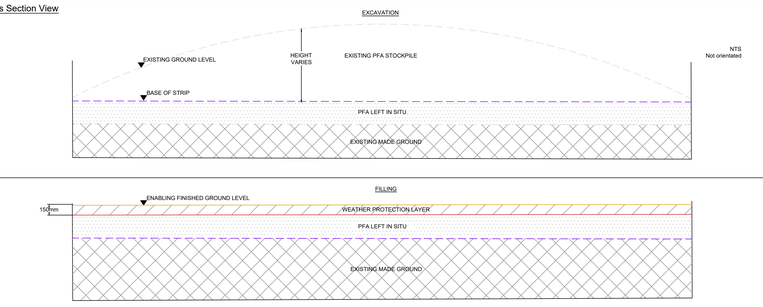
Zone G - Typical Cross Section View



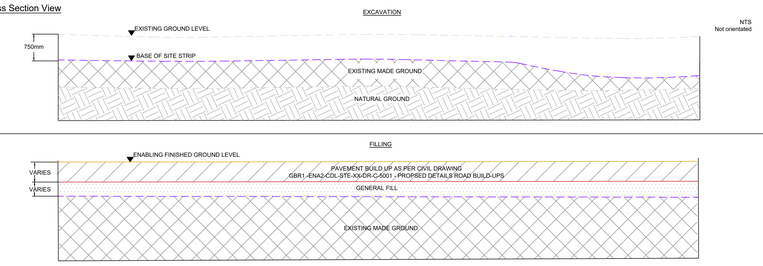
Zone H & I - Typical Cross Section View



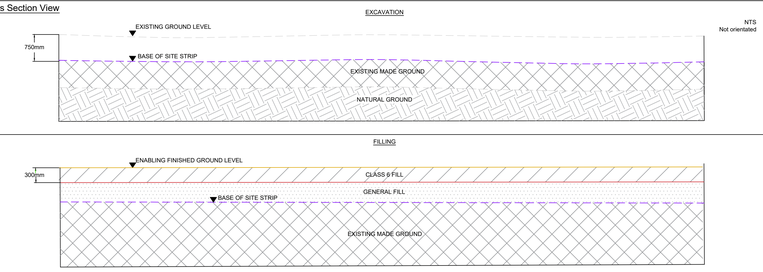
Zone J - Typical Cross Section View



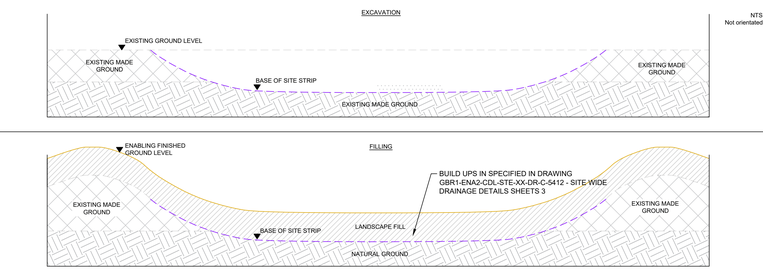
Zone K - Typical Cross Section View



Zone L - Typical Cross Section View



Zone M - Typical Cross Section View



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NOTES

This drawing must be read in conjunction with the following Cundall Reports:

- Ground Conditions Summary Report: GBR1-ENA2-CDL-STE-XX-RP-B-1003
- Earthworks Strategy: GBR1-ENA2-CDL-STE-XX-RP-B-1006

This drawing shall be read in conjunction with the following Cundall Drawings:

- GBR1-ENA2-CDL-STE-XX-DR-B-1002
- GBR1-ENA2-CDL-STE-XX-DR-C-1102
- GBR1-ENA2-CDL-STE-XX-DR-C-1103
- GBR1-ENA2-CDL-STE-XX-DR-C-1104
- GBR1-ENA2-CDL-STE-XX-DR-C-1005
- GBR1-ENA2-CDL-STE-XX-DR-C-1301
- GBR1-ENA2-CDL-STE-XX-DR-C-1302
- GBR1-ENA2-CDL-STE-XX-DR-C-1303
- GBR1-ENA2-CDL-STE-XX-DR-C-1304
- GBR1-ENA2-CDL-STE-XX-DR-C-1305

Rev	Description	Date	Chk'd	Apr'd
V01	ENABLING WORKS - RIBA STAGE 4	03/07/26		

DRAWING ISSUES

KEY PLAN



PROJECT

GBR1 Cambois

Former Blyth Power Station
Coal Stocking Yard, Cambois,
Northumberland

DWG. TITLE

Enabling Works Proposals,
Enabling Works Phase B & C

PROJECT NO: 1043152

DWG. NO: GBR1-ENA2-CDL-STE-XX-DR-B-1008

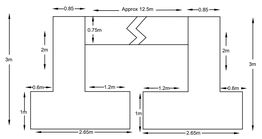
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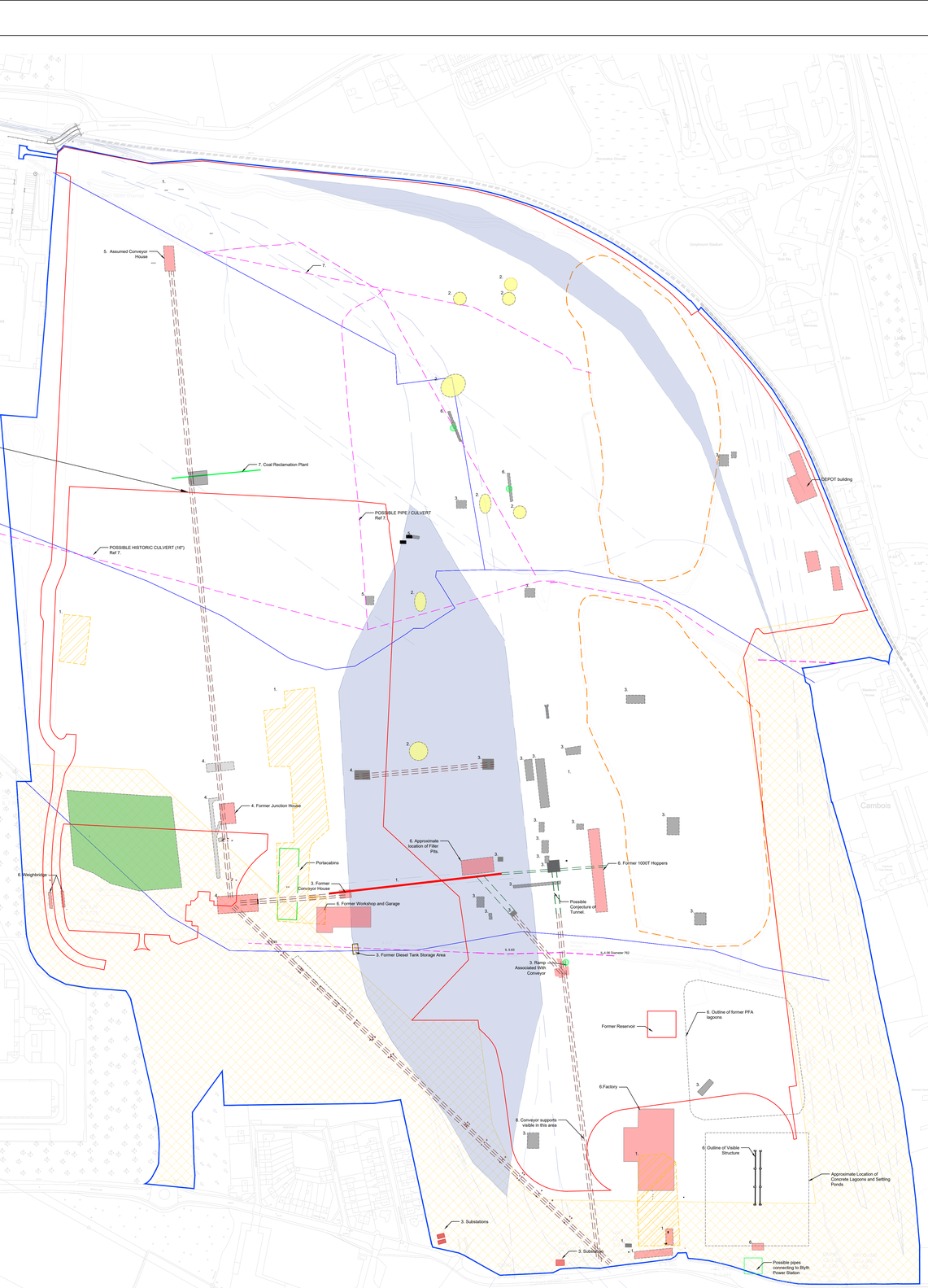
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CROSS-SECTION THROUGH IDENTIFIED STRUCTURE ALONG ROUTE OF FORMER CONVEYOR



Obstruction identified during Enabling Works Phase A along length of the overhead conveyor highlighted in blue. Note that is indicative only and based on Contractors initial findings during the works (Drawing MGL-70114-EA-0006). The extent and presence of this structure beyond the Phase A Enabling Works is unknown. It is understood that this structure may trend further north.



0 100 200 Metres

LEGEND

True North

- Phase B Enabling Works Boundary
- Wider Site Application Boundary
- SSER Corridor
- Historical Building Footprint - Building use not identified on source drawing
- Historical Building Footprint - Building use indicated on source drawing
- Possible 'Tunnel' - not identified on site. Location interpreted from historical maps - refer to Ground Conditions Report (GBR1-ENA2-CDL-STE-XX-RP-B-1003) for further information.
- Possible 'Tunnel' - identified during Phase A Enabling Works. Full extent unknown.
- Conveyor Supports - No information is available on the foundations of these structures.
- Exploratory hole positions terminated due to obstruction - refer to Cundall drawing GBR2-ENA2-CDL-STE-XX-DR-B-1012 for further detail
- Former Conveyor with concrete base and below ground structure as identified during enabling works detail of below ground structures included in MGL-70114-EA-006
- Location of invasive species impacted soils - See Note 4.
- Location of test piles - See Note 5.
- Possible Drainage Britvolt (No evidence has been observed during ground break and this understood to be a misinterpretation of above ground features from Google Earth Mapping
- Historical Overhead Conveyor.
- Cabins
- Possible Culverted Watercourses
- Possible opening - identified on Historic Google Imagery (2002).
- Coal Reclamation Plant
- Former Railway Lines
- Former Railway Lines - where several lines present
- Former Watercourse Routes (1865 map)
- Possible Culvert/ Tunnel Identified during Phase A and Phase B Ground Investigation (refer to GBR1-DCZZ-CDL-STE-XX-RP-B-0019 for further information)

Ref	Source
1	Arcadis Constraints Plan (Dwg no. 30226657 dated 12/11/2024)
2	Arcadis Ground Investigation Report (Arcadis (January 2025). Cambois Data Centre Campus Ground Investigation Report. Report reference: 30226657-AUK-XX-XX-RP-ZZ-0017-01 Rev 01).
3	OS 1:1250 Published 1988-1992
4	OS 1:2500 and 1:1250 Published 1988
5	OS 1:1250 Published 1993
6	GHD Site Layout and Constraints (Drawing No. 401-12510874-DWG-C-00(1-4), Rev 0, dated 12/09/19)
7	Advance Northumberland (12th September 2019). Site Layout and Constraints Drawings: • Sheet 1 of 4. Drawings number: 401-12510874-DWG-C-001 Rev 0. • Sheet 2 of 4. Drawings number: 401-12510874-DWG-C-002 Rev 0. • Sheet 3 of 4. Drawings number: 401-12510874-DWG-C-003 Rev 0. • Sheet 4 of 4. Drawings number: 401-12510874-DWG-C-004 Rev 0.

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SHEET NOTES

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS, ARCHITECTS AND OTHER CONSULTANTS DOCUMENTION.
2. SOME DRAWINGS MAY NEED TO BE PRINTED IN COLOUR TO PRESERVE INFORMATION INDICATED IN COLOUR ON THE DRAWINGS.
3. DO NOT SCALE. WORK TO FIGURED DIMENSIONS ONLY.
4. ALL DIMENSIONS STATED IN mm UNLESS OTHERWISE NOTED

NOTES

1. Obstructions within the enabling works boundary will be removed in accordance with the Earthworks Strategy (GBR1-ENA2-CDL-STE-XX-RP-B-1005) and the Earthworks Specification (GBR1-ENA2-CDL-STE-XX-SP-B-0001).
2. Both documents should be read in conjunction with this drawing.
3. Targeted intrusive ground investigations have recently been carried out to better understand obstructions which remain in situ below ground across the site.
   Findings from these investigations are discussed within the Cundall Ground Conditions Summary Report (GBR1-ENA2-CDL-STE-XX-RP-B-1002) and are presented on the Enabling Works Phase B & C - Earthworks Strategy - Exploratory Holes Locations Encountering Obstructions drawing (GBR1-ENA2-CDL-STE-XX-DR-B-1010).
4. Reference should also be made to the Cundall Desk Based Historical Summary report (GBR1-ENA2-CDL-STE-XX-RP-B-1003) which discusses features presented on this map.
5. Features shown on this plan are not exhaustive and are based on the references listed on this drawing.
6. The locations of features shown on this plan are approximate.
7. Relict foundations and floor slabs are anticipated to be present associated with former building / structure footprints.
8. Co-ordinates of as-built test piles can be found within the Arcadis Ground Investigation Report (Arcadis (January 2025). Cambois Data Centre Campus Ground Investigation Report. Report reference: 30226657-AUK-XX-XX-RP-ZZ-0017-01 Rev 01).
9. Further targeted ground investigation is being undertaken during enabling works to understand the extent of some of the potential obstructions and this will be reported upon in a verification report.

   In addition to the documents listed above, this drawing should be read in conjunction with the following Cundall drawings:

   - GBR1-ENA2-CDL-STE-XX-DR-B-1002
   - GBR1-ENA2-CDL-STE-XX-DR-C-1101
   - GBR1-ENA2-CDL-STE-XX-DR-C-1102
   - GBR1-ENA2-CDL-STE-XX-DR-C-1104

   Upon completion of the enabling works, a verification report will be provided by the enabling works contractor that will confirm the works that were undertaken and completed as part of the scope of works. Any deviation from the Cundall Earthworks Specification will be included within that report.

Rev	Description	Date	Chk'd	Apr'd
V01	ENABLING WORKS - RIBA STAGE 4	03/07/26		

DRAWING ISSUES

KEY PLAN



PROJECT

GBR1 Cambois

Former Blyth Power Station
Coal Stocking Yard, Cambois,
Northumberland

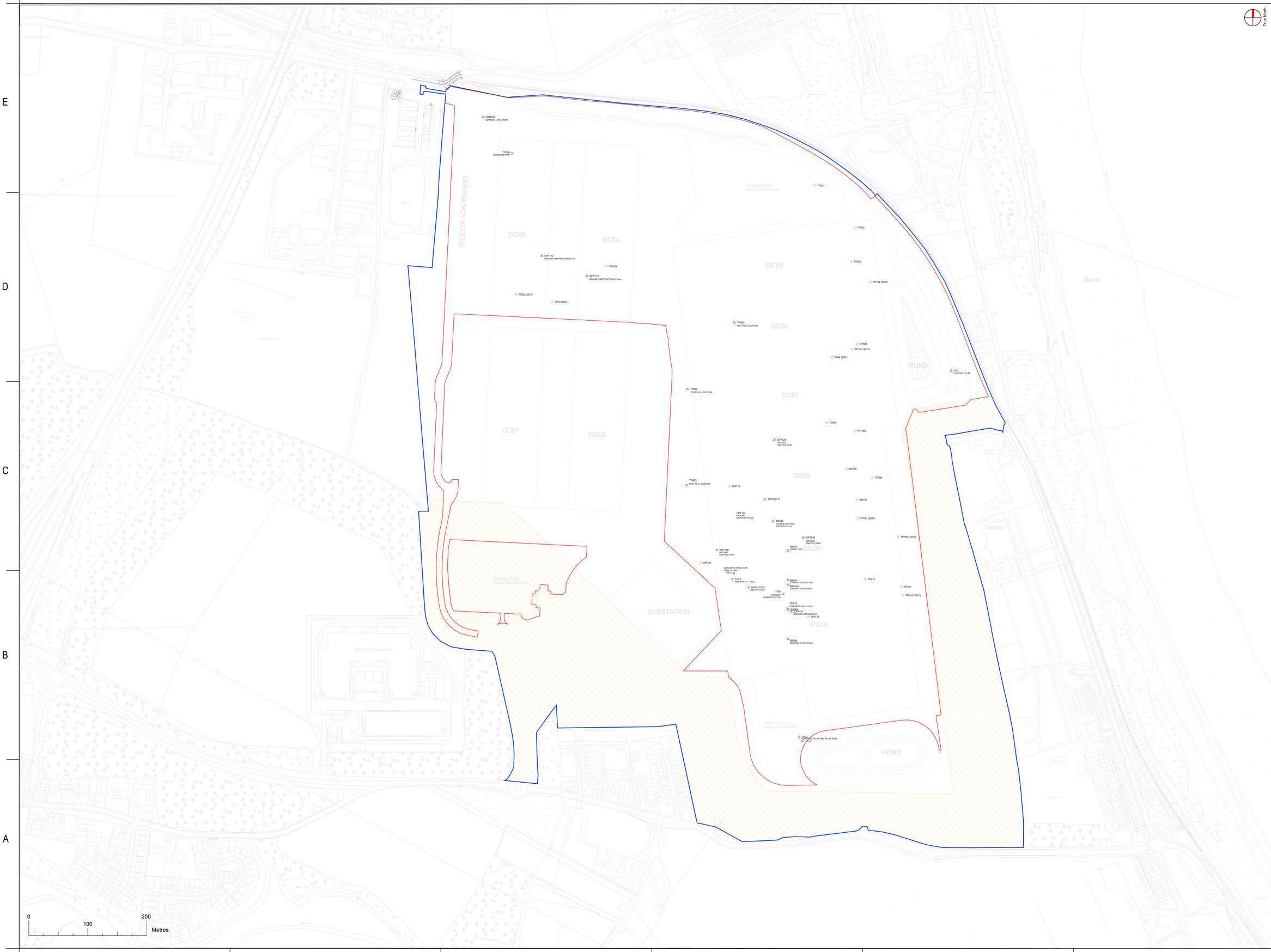
DWG. TITLE

Below Ground Features Plan,
Enabling Works Phase B & C

PROJECT NO: 1043152

DWG. NO: GBR1-ENA2-CDL-STE-XX-DR-B-1009

STATUS:	SCALE @ A0:	REV
ISSUED FOR REVIEW	1:2000	V01



True North

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- Phase B Enabling Works Boundary
- Wider Site Application Boundary
- SSER Corridor
- Position terminated early due to hard ground
- Position terminated early due to obstruction

NOTES

1. This drawing shows where obstructions have been identified across all phases of ground investigations (as detailed within the Cundall Ground Conditions Summary report (GBR1-ENA2-CDL-STE-XX-RP-B-1002).
2. This drawing should be read in conjunction with the Ground Conditions Summary report as referenced above and the following drawings:

- GBR1-ENA2-CDL-STE-XX-DR-B-1001
- GBR1-ENA2-CDL-STE-XX-DR-B-1009
- GBR1-ENA2-CDL-STE-XX-RP-B-1003

3. Where depths are shown, these are all in metres below existing ground level.
4. The obstructions shown on this plan is not an exhaustive representation of all obstructions across the site but instead shows only where an obstruction has been identified during a ground investigation.

Rev	Description	Date	Chk'd	Apr'd
V01	ENABLING WORKS - RIBA STAGE 4	03/07/26		

DRAWING ISSUES

KEY PLAN



PROJECT

GBR1 Cambois

Former Blyth Power Station
Coal Stocking Yard, Cambois,
Northumberland

DWG. TITLE

Exploratory Hole Locations Encountering Obstructions,
Enabling Works Phase B & C

PROJECT NO: 1043152

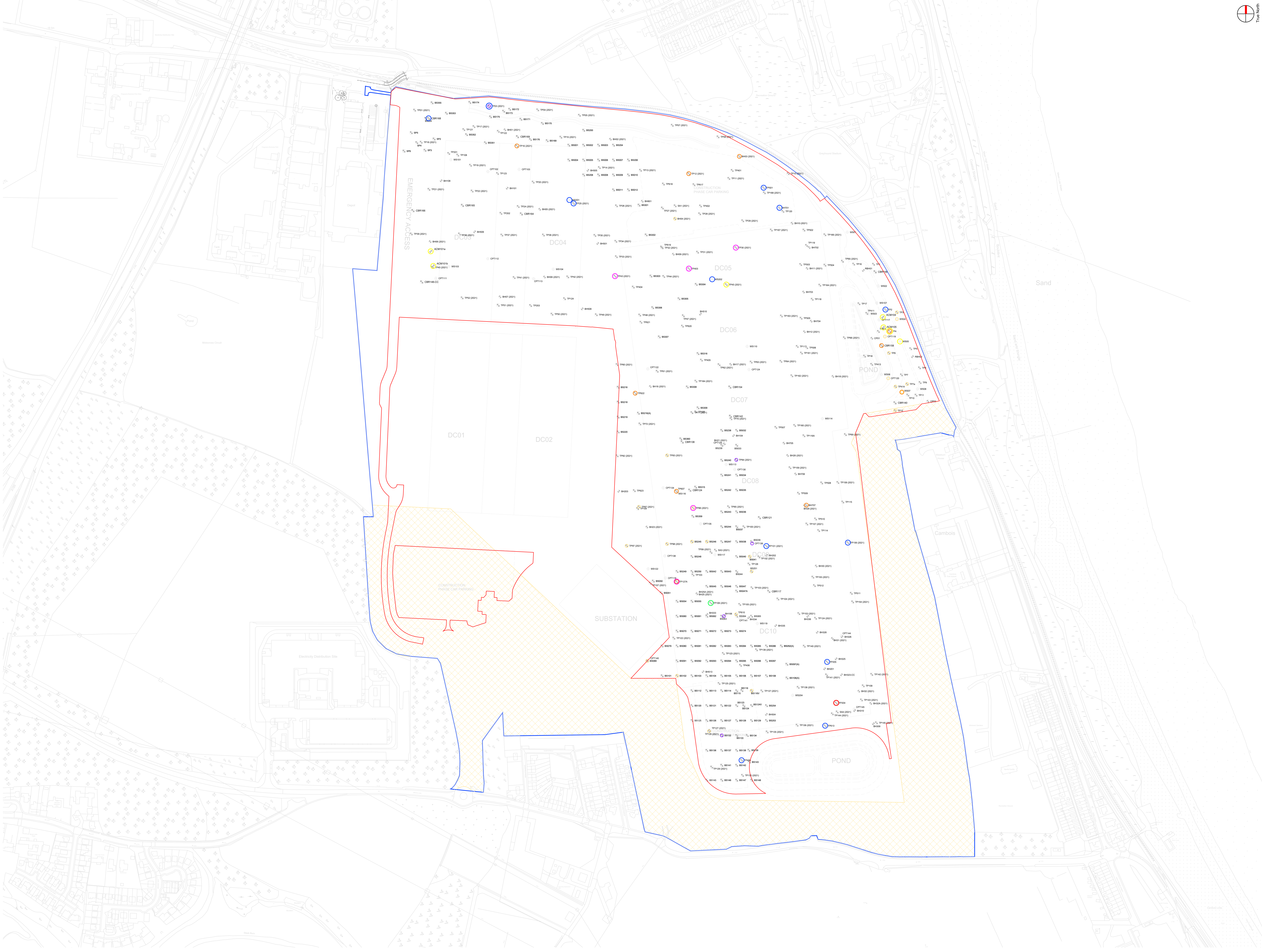
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STATUS:	SCALE @ A0:	REV
ISSUED FOR REVIEW	1:2000	V01

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Phase B Enabling Works Boundary
Wider Site Application Boundary
SSER Corridor

Exploratory hole locations are presented in grey - refer to the Combined Exploratory Hole Location Plan (GBR1-ENA2-CDL-STE-XX-DR-B-1001) for further detail

Contaminants of Concern (Note size of symbol may vary depending if multiple Contaminants of Concern were detetected in one position):

- Asbestos containing material
- Hydrocarbon odour
- Bitumous or sulphurous odour
- Asbestos fibres more than 0.001% v/v
- Asbestos fibres less than 0.001% v/v

Exceeded concentrations:

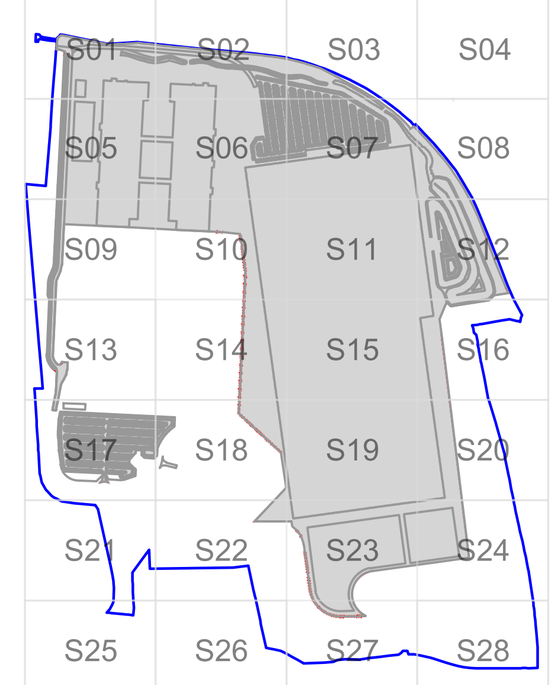
- TPH
- Lead
- Arsenic

1. This drawing should be read in accordance with the Cundall Detailed Remediation Strategy (GBR1-RMAP1-CDL-STE-XX-RP-B-0003).

Rev	Description	Date	Chk'd	Apr'd
V01	ENABLING WORKS - RIBA STAGE 4	03/07/26	Checked	Verified

DRAWING ISSUES

KEY PLAN



PROJECT

GBR1 Cambois

Former Blyth Power Station
Coal Stocking Yard, Cambois,
Northumberland

DWG. TITLE

Contaminants of Concern,
Enabling Works Phase B & C

PROJECT NO:
1043152

DWG. NO:
GBR1-ENA2-CDL-STE-XX-DR-B-1011

STATUS: ISSUED FOR REVIEW
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REV: V01

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