KEADBY
NEXT GENERATION
POWER STATION
Hydrogen-enabled flexible power

A collaboration between SSE Thermal and Equinor

The Keadby Next Generation Power Station Project

Document Ref: 5.10

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The Keadby Next Generation Power Station Order 2025

Land at, and in the vicinity of, the existing Keadby Power Station (Trentside, Keadby, Scunthorpe DN17 3EF)

Outline Landscaping and Biodiversity Management and Enhancement Plan Report

The Planning Act 2008

The Infrastructure Planning (Environmental Information Assessment) Regulations 2017

Applicant: Keadby Next Generation Limited

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Glossary

Abbreviation	Description
BNG	Biodiversity Net Gain
CCS	Carbon Capture and Storage
CCGT	Combined Cycle Gas Turbine
CEMP	Construction Environmental Management Plan
CoW	Clerk of Works
DCO	Development Consent Order
ES	Environmental Statement
INNS	Invasive Non-Native Species
ISMP	Invasive Species Management Plan
LBMEP	Landscape and Biodiversity Management and Enhancement Plan
NERC	Natural Environment and Rural Communities Act 2006
NLC	North Lincolnshire Council
NPPF	National Planning Policy Framework
NPS	National Planning Policy Statement
NSIP	Nationally Significant Infrastructure Project
OMH	Open Mosaic Habitats on Previously Developed Land
WCA	Wildlife and Countryside Act 1981

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Executive Summary

1. This Outline Landscaping and Biodiversity Management and Enhancement Plan (LBMEP) Report has been prepared on behalf of Keadby Next Generation Limited (the Applicant) and forms part of the application for development consent for a new combined cycle gas turbine (CCGT) electricity generating station with a capacity of up to 910MW electrical output. The CCGT electricity generating station will be designed to run on 100% hydrogen and able to run on 100% natural gas or a blend of natural gas and hydrogen and will be located on land to the west of Keadby 1 and Keadby 2 power stations. The Proposed Development includes connections for cooling water, electricity, hydrogen, natural gas, construction laydown areas and other associated development.
2. The Proposed Development is an alternative to the consented Keadby CCS Power Station and would be located on the same plot of land. This Outline LBMEP Report has been prepared to maintain consistency with this previous consented development, albeit with some changes to reflect any relevant changes in layout or design assumptions.
3. The purpose of this document is to set out the measures proposed to mitigate the potential impacts and effects of the Proposed Development on landscape and biodiversity features, and to enhance the biodiversity, landscape and green infrastructure value of the Site. The final LBMEP will be agreed as a Requirement of the draft Development Consent Order (DCO) (**Application Document Ref. 3.1**).
4. The Proposed Development has been designed, as far as is practicable, to avoid or reduce effects on landscape and biodiversity features through careful siting, development design and impact avoidance. These include measures to avoid impacts on protected species to comply with legislation (see **ES Volume I Chapter 11**: Biodiversity and Nature Conservation (**Application Document Ref. 6.2**)).
5. The ecological impact assessment (**ES Volume I Chapter 11**: Biodiversity and Nature Conservation (**Application Document Ref. 6.2**)) identifies that the careful siting of the Proposed Development to avoid sensitive habitats has minimised potential for sensitive habitats and species to be adversely affected. However, the assessment still identifies a need for proportionate embedded ecological mitigation for purposes of good practice and legislative compliance. Habitat re-instatement and enhancement is also required in order to demonstrate no net loss and a net gain of biodiversity in accordance with the requirements of national and local planning policy. Currently there is no legal requirement to deliver biodiversity net gain for nationally significant infrastructure projects (NSIPs), and the Government has indicated that this will not be a statutory requirement for DCO applications before May 2026.
6. The landscape and visual impact assessment (**ES Volume I Chapter 14**: Landscape and Visual Amenity (**Application Document Ref. 6.2**) concludes that the Proposed

Development will result in significant adverse effects on visual amenity during construction and operation from three of the assessed viewpoints as a result of the close distance to the Site and lack of intervening vegetation: Viewpoint 1 (Chapel Lane West, Keadby), Viewpoint 2 (Gate Keepers Residence, Vazon Bridge, Keadby); and Viewpoint 4 (PRoW (KEAD9, KEAD10) north of Keadby).

7. However, the opportunity for mitigation of the visual effects of the Proposed Development is limited due to the size and scale of the Proposed Development. As shown in the landscape and visual impact assessment, the effects on visual amenity largely relate to the height of the tallest structures and as such it is considered that the addition of landscape features such as trees and woodland would not be effective in reducing the effects on visual amenity. However, there remains a need for enhancements to the landscape character and improvements to the green infrastructure network, to meet requirements of local and national planning policy.
8. This document outlines the landscape and biodiversity impact avoidance measures that will be implemented prior to and during construction of the Proposed Development, as well as the habitat reinstatement, enhancement, management and monitoring measures to be implemented at the end of construction and continuing once the Proposed Development is operational. This would be controlled and implemented through the final Construction Environmental Management Plan (CEMP) that will be developed by the contractor. An Outline CEMP is provided as **Application Document Ref. 7.4**.
9. The proposed landscape and biodiversity enhancement measures are summarised below. The proposals have been designed to be delivered within the existing land ownership of the Applicant and focus on enhancing the value of existing habitats within the vicinity of the Proposed Development to include:

    - enhancement and creation of flower-rich native grassland;
    - new species-rich native hedgerow plantings;
    - new scrub and woodland plantings comprising a diverse mix of native woody species;
    - enhancement of field drains with associated benefits for aquatic biodiversity, including water voles;
    - enhancement of the riparian habitats of the Hatfield Waste Drain and the South Soak Drain with associated benefits for aquatic and/or riparian biodiversity; and
    - installation of nest boxes for barn owl and other birds, habitat creation for willow tit, and installation of roosting boxes for bats.

10. The proposed locations for flower-rich native grassland, scrub and woodland includes areas directly connected to, and therefore enhancing, two habitat corridors associated with Local Wildlife Sites (LWS), namely Stainforth and Keadby Canal Corridor LWS and Hatfield Waste Drain LWS. The former habitat corridor directly connects to and therefore complements the undesignated former Keadby Ash Tip,

another site of biodiversity importance. Further, it also takes account of the wider green infrastructure network that includes other watercourses and habitats.

1. Introduction

1.1. Overview

1.1.1. This Outline Landscaping and Biodiversity Management and Enhancement Plan (LBMEP) Report (**Application Document Ref. 5.10**) has been prepared by AECOM on behalf of Keadby Next Generation Limited ('the Applicant') which is a subsidiary of SSE plc. It forms part of the application for a Development Consent Order (DCO) ('the Application'), that has been submitted to the Secretary of State for Energy Security and Net Zero under Section 37 of 'The Planning Act 2008'.

1.1.2. The Applicant is seeking development consent for the construction, operation (including maintenance) and eventual decommissioning of a high-efficiency combined cycle gas turbine (CCGT) electricity generating station with a capacity of up to 910MW electrical output to be located on land at, and in the vicinity of the existing Keadby Power Stations (Keadby 1 and Keadby 2) near Scunthorpe in North Lincolnshire ('the Site'). It is described in full in **Environmental Statement (ES) Volume I Chapter 4**: The Proposed Development (**Application Document Ref. 6.2**).

1.1.3. The Proposed Development falls within the definition of a 'Nationally Significant Infrastructure Project' under Section 14(1)(a) and Sections 15(1) and (2) of the 2008 Act, as it is an onshore generating station in England that would have a generating capacity greater than 50MW electrical output (50MWe). As such, a DCO application is required to authorise the Proposed Development in accordance with Section 31 of the 2008 Act.

1.1.4. The DCO, if made by the SoS, would be known as 'The Keadby Next Generation Power Station Order' ('the Order').

1.1.5. The Proposed Development is an alternative to the consented Keadby CCS Power Station and would be located on the same plot of land. This Outline LBMEP Report has been prepared to maintain consistency with this previous consented development, albeit with some changes to reflect any relevant changes in layout or design assumptions.

1.2. The Applicant

1.2.1. The Applicant is a subsidiary of the FTSE-listed SSE plc, one of the UK's largest and broadest-based energy companies, and the country's leading developer of renewable energy. Over the last 20 years, the SSE Group has invested over £20bn to deliver industry-leading offshore wind, onshore wind, CCGT, energy from-waste, biomass, battery-storage, energy networks and

gas storage projects. Related SSE companies own and operate the adjacent Keadby 1 and 2 Power Stations and have the benefit of the DCO for Keadby 3 CCS Power Station (herein referred to as the 'Keadby CCS Power Station')

1.2.2. The Proposed Development is being developed with Equinor, one of the country's leading energy providers, supplying natural gas, oil and electricity. Equinor is developing multiple low-carbon hydrogen and carbon capture projects in the Humber, working towards transforming the UK's most carbon intensive industrial cluster into a net zero region.

1.2.3. SSE Renewables Limited operates Keadby Windfarm, which lies to the north and south of the Site and generates renewable electricity from 34 turbines, with a total installed generation capacity of 68MW.

1.2.4. SSE plc has produced a 'Greenprint' document (SSE, 2020) that sets out a clear commitment to investment in low carbon power infrastructure, working with government and other stakeholders to create a Net Zero power system by 2040. This includes investment in flexible sources of electricity generation and storage for times of low renewable output which will complement other renewable generating sources, either using low-carbon fuels and/ or capturing and storing carbon emissions.

1.2.5. The design of the Proposed Development demonstrates the commitment outlined within the Greenprint. The Proposed Development will be built with a clear route to decarbonisation, consistent with SSE's Net Zero Acceleration Plan which committed to the development and progression of new low-carbon flexible power including hydrogen-fuelled generation.

1.3. The Proposed Development

1.3.1. The Proposed Development includes the following elements (note references to Work Nos. relate to the **Works Plans** (**Application Document Ref. 2.3**)):

- a new-build CCGT electricity generating station fuelled by hydrogen and/or natural gas with a power output of up to 910MW (**Work No. 1**) including:
  - a CCGT plant;
  - cooling infrastructure;
  - natural gas and hydrogen blending equipment;
  - supporting facilities including administration and control buildings, workshops, storage buildings, effluent treatment facilities, fire water storage tank(s), demineralised water treatment plant including storage tank(s), and permanent laydown areas for operation and maintenance activities;

- a hydrogen supply pipeline, including a gas compound for the hydrogen supplier's apparatus and a hydrogen gas compound for the Applicant's apparatus (**Work No. 2**);
- a natural gas supply pipeline including a compound for the natural gas supplier's apparatus and a natural gas compound for the Applicant's apparatus (**Work No. 3**);
- electrical connection works for the export and import of electricity to and from the generating station to the existing 400kV National Grid Electricity Transmission (NGET) substation located adjacent to the Keadby Power Station site, including works within the substation (which would be undertaken by NGET) (**Work No. 4**);
- water supply connection works to provide cooling and make-up water to the generating station, including intake structures and an underground and/or overground water supply pipeline running between the generating station and the Stainforth and Keadby Canal (**Work No. 5**);
- connections to and use of an existing outfall and associated pipework for the discharge of used cooling water, surface water and treated effluent to the River Trent (**Work No. 6**);
- public water connection pipeline from a new connection on Chapel Lane to provide potable water to the generating station (**Work No. 7**);
- new permanent access to the generating station **(Work No. 8**), comprising:

  - maintenance and improvement of an existing private access road from the A18, including replacement of a private bridge (Mabey Bridge) (**Work No. 8A**);

  - installation of layby and gatehouse with barriers, enclosures, drainage and lighting north of the A18 junction (**Work No. 8B**) and associated utilities connections (**Work No. 8C**); and

  - emergency access route comprising the maintenance and improvement of an existing private track running between the generating station and Chapel Lane and including new private bridge crossing over Glew Drain (**Work No. 8D**);

- temporary construction and laydown areas (**Work No. 9A**);
- maintenance and improvement of the existing access routes running between the A18 and construction laydown areas (**Work No. 9B**); and the track between Skew Bridge adjacent to the A18 and a temporary construction laydown area associated with Mabey Bridge replacement (**Work No. 9C**);
- retention, maintenance and improvement and subsequent removal of existing temporary haulage route from the Waterborne Transport Offloading Facility (**Work No. 9D**) and the inspection and repair if necessary of the existing wharf, and temporary placement of mobile cranes including the temporary oversailing of crane arms (**Work No. 9E**); and
- landscaping and biodiversity enhancement measures (**Work No. 10**);

- an allocation of land to meet the requirements of the Carbon Capture Readiness (Electricity Generating Stations) Regulations 2013 (**Work No. 11**).

1.3.2. The Applicant will be responsible for the construction, operation (including maintenance) and eventual decommissioning of the Proposed Development including the on-site connections to electricity, cooling water, natural gas and hydrogen supplies.

1.3.3. The Proposed Development will be capable of operating 24 hours per day, 7 days per week with programmed offline periods for maintenance.

1.3.4. The route for the hydrogen supply pipeline to the Proposed Development has not yet been confirmed. The supply pipeline is not included in the Proposed Development and will be progressed by a third party under a separate consent. In line with Government policy, it is recognised that developments such as the Proposed Development are needed to stimulate investment in the development of hydrogen production and supply infrastructure.

1.3.5. Further detail on the components of the Proposed Development are provided in **ES Volume I Chapter 4:** The Proposed Development (**Application Document Ref. 6.2**). The areas within which each numbered Work (component) of the Proposed Development are to be built are defined by the coloured and hatched areas on the **Works Plans** (**Application Document Ref 2.3**).

1.4. The Proposed Development Site

1.4.1. The Site is located within and near to the existing Keadby Power Station site near Scunthorpe, Lincolnshire and lies within the administrative boundary of North Lincolnshire Council (NLC). The majority of land is within the ownership or control of the Applicant (or SSE associated companies) and is centred on national grid reference 482351, 411796.

1.4.2. The existing Keadby Power Station site currently encompasses the operational Keadby 1 and Keadby 2 Power Station sites, including the Keadby 2 Power Station Carbon Capture and Readiness reserve space.

1.4.3. The Site encompasses an area of approximately 77.1 hectares (ha), of which approximately 26.7ha of land is proposed for construction laydown.

1.4.4. Multiple land uses together make up the Site, with the different areas described in turn below and shown on **ES Volume III Figure 3.3:** Indicative Parts of the

Site Plan (**Application Document Ref. 6.4**). These terms have been used to describe land use zones within the Site.

1.4.5. The Site is divided into the following areas of permanent and temporary land use (the proposed use is described in more detail in **ES Volume I Chapter 3**: Site and Surrounding Area (**Application Document Ref. 6.2**)):

- Main Site;
- Ancillary Facilities;
- Water Connections (comprising the Water Abstraction, the Public Water Connection and the Water Discharge Corridor);
- Electricity Connections;
- Waterborne Transport Off-loading Area;
- Construction Laydown Areas;
- Access routes (comprising the Access Road, Skew Construction Access Route, Emergency Access Route and Construction Access Haul Route);
- A18 Gatehouse Utility Connections;
- Connections to Keadby 1 and Keadby 2 power stations; and
- Potential Biodiversity Mitigation and Enhancement Area.

1.5. The DCO Process

1.5.1. The Proposed Development falls within the definition of a 'nationally significant infrastructure project' (NSIP) under Section 14(1)(a) and 15(2) of the 2008 Act as a 'generating station exceeding 50 MW'.

1.5.2. As a NSIP project, the Applicant is required to seek a DCO to construct and operate the generating station, under Section 31 of the 2008 Act. Section 37 of the 2008 Act also governs the form, content and accompanying documents that are required as part of a DCO application. The requirements are implemented through the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended) ('APFP Regulations') which state that an application must be accompanied by an ES, where a development is considered to be 'EIA development' under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) (as amended).

1.5.3. An application for development consent for the Proposed Development has been submitted to PINS acting on behalf of the Secretary of State. Subject to the Application being accepted, PINS will then examine it and make a recommendation to the Secretary of State, who will then decide whether to grant a DCO. The acceptance, examination, recommendation and decision

stages are subject to fixed timescales and the decision is therefore anticipated to fall in 2026.

1.5.4. A DCO, if granted, has the effect of providing deemed planning permission for a development, in addition to a number of other consents and authorisations where specified within the Order.

1.6. The Purpose and Structure of this Document

1.6.1. The purpose of the Outline LBMEP Report is to set out the measures proposed to mitigate the effects of the Proposed Development on landscape and biodiversity features, to provide a net gain for biodiversity, and to enhance landscape and green infrastructure value of the Site, to secure compliance with relevant national and local planning policies. The Outline LBMEP Report also sets out the measures proposed to replant, where practicable and certain at this time (pending the detailed design which will be produced post-consent), any areas of the Site which are temporarily impacted during construction, e.g., the cable corridors and temporary site accesses or laydown.

1.6.2. This Outline LBMEP Report therefore complements, and provides the outline specifications for realising the Biodiversity Net Gain (BNG) assessment presented for the Proposed Development in **Appendix D**. The BNG assessment presents one solution for achieving BNG based on the worst-case habitat losses and impacts of the Proposed Development. The solution remains under review up until confirmation of the detailed design (as, for example, habitat losses might be reduced later or more soft landscaping may be possible adjacent to the Main Site and Ancillary Facilities), which will be produced post-consent during the discharge of DCO Requirements.

1.6.3. In order to avoid potential conflicts in approach to impact avoidance and enhancement, this document identifies the measures required for both landscape and biodiversity together, to demonstrate a cohesive strategy.

1.6.4. The document is structured as follows:

- Section 2 summarises relevant legislation and planning policy;
- Section 3 and **Appendix E** (trees) describes the existing landscape and biodiversity features (the baseline habitats are shown on **Figure 1**) and the potential impacts and effects of the Proposed Development;
- Section 4 outlines the requirements for impact avoidance, both during advance works and during the construction phase;
- Section 5 describes the proposals for landscape and biodiversity enhancement and the measures required for their effective management and maintenance. The areas of the Site to which the different proposals will be applied are illustrated in **Figure 2**, which is a duplicate of the Indicative Landscape and Biodiversity Plan (**Application Document Ref. 2.18)**;

- Section 6 describes the high-level approach to monitoring of the success of the proposed landscape and biodiversity habitat interventions; and
- Section 7 describes the roles and responsibilities of all parties involved in the delivery of the management and enhancement proposals.

2. Legislation and Policy

2.1. Overview

2.1.1. The legislation and planning policy relevant to construction of the Proposed Development and the specification of landscape and biodiversity mitigation and enhancement is listed in this section. This legislation and planning policy has been considered when formulating this Outline LBMEP Report. **ES Volume II Appendix 11A**: Biodiversity – Legislation and Planning Policy (**Application Document Ref. 6.3**) provides more details on the relevant legislation and planning policy for biodiversity. **ES Volume I Chapter 14**: Landscape and Visual Amenity (**Application Document Ref. 6.2**) provides the the relevant legislation and planning policy for landscape.

2.2. Legislation

2.2.1. The following legislation, as summarised in more detail in **ES Volume II Appendix 11A:** Biodiversity – Legislation and Planning Policy (**Application Document Ref. 6.3**) has been considered in the preparation of this Plan:

- The Conservation of Habitats and Species Regulations 2017 (as amended);
- Wildlife and Countryside Act (WCA) 1981 (as amended);
- Environment Act 2021 (as amended);
- Natural Environment and Rural Communities (NERC) Act 2006;
- Protection of Badgers Act 1992;
- Wild Mammals (Protection) Act 1996;
- Animal Welfare Act 2006;
- Environmental Protection Act 1990; and
- Invasive Alien Species (Enforcement and Permitting) Order 2019.

2.2.2. The Proposed Development, as an NSIP, is not subject to the statutory BNG regime under the Environment Act 2021 (as amended). The Government has indicated that this will not be a statutory requirement for DCO applications before May 2026.

2.3. Planning Policy

2.3.1. The following planning policy has been considered in the preparation of this Outline LBMEP Report:

- Overarching National Policy Statement (NPS) for Energy (EN-1) (Department of Energy Security and Net Zero (DESNZ), 2024a);
- NPS for Fossil Fuel Electricity Generating Infrastructure (EN-2) (DESNZ, 2024b);

- National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government (MHCLG), 2025); and
- European Landscape Convention (Natural England, 2009).

2.3.2. The local planning policies that are relevant to the Proposed Development are set out in the following documents:

- North Lincolnshire Council Local Development Framework Core Strategy adopted 2011 (NLC, 2011). The relevant policies are –
  - Policy CS5: Delivering Quality Design in North Lincolnshire,
  - Policy CS16: North Lincolnshire's Landscape, Greenspace and Waterscape, and
  - Policy CS17: Biodiversity; and
- North Lincolnshire Local Plan (NLC, 2003a). The following saved policies have relevance –
  - Saved Policy LC5: Species Protection,
  - Saved Policy LC6: Habitat Creation,
  - Policy LC7: Landscape Protection, and
  - Saved Policy LC12: Protection of Trees, Woodland and Hedgerows.

2.4. Other Guidance

2.4.1. Additional guidance of potential relevance to the Proposed Development and/ or for interpretation of the above planning policy is given in the following documents:

- Planning Practice Guidance on biodiversity (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2018 to 2021), 2024) and biodiversity net gain (BNG) (Department for Levelling Up, Housing and Communities, 2024);
- National Pollinator Strategy (Defra, 2014);
- North Lincolnshire Supplementary Planning Guidance (SPG) 3: Design in the Countryside, which sets out additional considerations in relation to landscape plantings and biodiversity protection and enhancement (North Lincolnshire Council (2003b);
- Lincolnshire Biodiversity Action Plan (Lincolnshire Biodiversity Partnership, 2011);
- Standing Advice (Natural England and Defra, 2023);
- National Character Area Profile 39 Humberhead Levels (Natural England, 2025);
- North Lincolnshire Landscape Character Assessment and Guidelines (Trent Levels Landscape Character Area and Flat Drained Farmland Landscape Character Type) (NLC, 1999); and

- North Lincolnshire Landscape Character Assessment (NLC, 2021).

3. Existing Landscape and Biodiversity Features and Development Impacts

3.1. Habitats

3.1.1. The baseline habitats of relevance to this Outline LBMEP Report are described in **ES Volume II Appendix 11C**: Preliminary Ecological Appraisal Report (**Application Document Ref. 6.3**). They are shown on **Figure 1** of this Outline LBMEP Report.

3.1.2. The permanent and temporary habitat impacts associated with the Proposed Development have been quantified for the purposes of BNG assessment (see **Appendix D**). These are the habitat impacts of relevance to this document and are addressed by the habitat specifications detailed herein. The main or noteworthy habitats that would be affected by permanent or temporary land-take comprise:

- 'modified grasslands' encompassing species-poor improved and semi-improved neutral grasslands (located at the Main Site and Ancillary Facilities, adjacent to Mabey Bridge, within temporary construction laydown areas, and on the route of the Electrical Connection Area to National Grid 400kV Substation and other utility connections);
- dense scrub comprising stands of mixed scrub, hawthorn scrub and willow scrub (located on the boundaries of the Main Site with the former Keadby Ash Tip);
- ephemeral/ short perennial vegetation contributing to open mosaic habitats (OMH) (located on the south-west corner of the Main Site where there is a minor overlap with the margin of the former Keadby Ash Tip);
- secondary willow woodland at the Canal Water Abstraction;
- semi-mature plantation woodland by Chapel Lane in an area to be subject to ground raising for flood mitigation for the proposed administration and control and storage buildings ;
- intensively managed arable farmland (located within areas proposed for temporary construction laydown);
- three minor field ditches (Drains 2, 4 and A) located within the Main Site and the area to the south of the Main Site;
- watercourses comprising the Glew Drain (Drain 1, which would be crossed by the emergency access road), Hatfield Waste Drain (which is crossed by the existing Mabey Bridge which is to be replaced), and the Stainforth and Keadby Canal (within which the Canal Water Abstraction would be constructed); and
- existing area of hardstanding and other sealed surfaces (located predominantly within the area south of the Main Site).

3.1.3. Additional areas of land selected solely to provide land for purposes of landscape and biodiversity enhancement are shown on **Figure 2** of this Outline LBMEP Report which duplicates the indicative LBMEP (**Application**

Document Ref. 7.13). The existing habitats within these landscape and biodiversity enhancement areas (as mapped on **Figure 1** and described in **Appendix 11C**, ES Volume II - **Application Document Ref. 6.3**) are:

- 'modified grasslands' of species-poor improved types (located on road verges or in small fields adjacent to the permanent access road off the A18, verges by Trent Road, and two fields south of Trent Road);
- existing tarmac car park (sealed surface) proposed to be broken out and replaced (located adjacent to the permanent access road off the A18); and
- minor field drains (located on the boundaries of the Main Site).

3.2. Protected and Notable Species

3.2.1. Given the limited impacts on habitats, the construction and operation of the Proposed Development also has limited potential in the absence of mitigation, to adversely affect protected and notable species through direct impacts (killing/ injury), disturbance and habitat loss.

3.2.2. The protected species of relevance to this Outline LBMEP Report, because of their presence in the potential zone of influence of construction activities, are:

- badger;
- water vole;
- otter (not recorded during baseline surveys but with low potential to establish before construction);
- reptiles;
- nesting birds (including ground nesting species); and
- fish.

3.2.3. In addition, drains and the Stainforth and Keadby Canal associated with the Site support the following invasive non-native species (INNS) of flora and fauna:

- zebra mussel;
- demon shrimp;
- Nuttall's waterweed;
- curly waterweed; and
- floating pennywort.

3.2.4. Wall cotoneaster may also be a relevant terrestrial INNS if it establishes within the Site prior to construction from bushes located nearby within the former Keadby Ash Tip.

4. Impact Avoidance Requirements

4.1. Overview

4.1.1. The care that has been taken when configuring the layout of the Proposed Development maintains the functionality of existing green infrastructure networks, wildlife networks and habitat linkages, and avoids significant adverse effects on habitats and species. Further information in relation to this is provided in **Appendix D**. The Proposed Development therefore broadly complies with the related requirements of planning policy, especially once the additional proposed habitat reinstatement and enhancement measures are also considered (see Section 5).

4.1.2. The impact avoidance measures outlined below (Section 4.2 onwards) will be implemented, as relevant and appropriate, prior to and during the construction phase, the purpose being to minimise the impact of works on landscape and biodiversity features.

4.1.3. These measures will be applied in order to meet legislative and planning policy requirements for protected species, or as part of standard construction environmental best practice.

4.1.4. The commitment to provide these measures has been considered when assessing the likely impacts and effects of the Proposed Development on landscape and biodiversity features in **ES Volume I Chapter 11**: Biodiversity and Nature Conservation and **Chapter 14**: Landscape and Visual Amenity (**Application Document Ref. 6.2**).

4.1.5. Avoidance and mitigation of potential impacts on the environment through, for example, noise, vibration or emissions to air or water associated with the operational Proposed Development are not covered within this Plan. While such impacts could affect biodiversity, these effects have been appropriately controlled and mitigated through the design and impact avoidance measures (including watercourse stand-offs) presented in **ES Volume I Chapter 8**: Air Quality, **Chapter 9**: Noise and Vibration and **Chapter 12**: Water Environment and Flood Risk (**Application Document Ref. 6.2**). In addition, there are other permitting, good practice, legislative, policy and regulatory mechanisms that necessitate the control and prevention of such impacts. The relevant measures are therefore prescribed in relevant chapters of the ES and do not need to be included within this Outline LBMEP Report.

4.2. Protected and Invasive Species Update Surveys

4.2.1. Appropriately experienced ecologists will complete site walkovers in advance of mobilisation or other potential advance works to re-confirm the ecological baseline conditions and identify any new ecological risks. Updated species

surveys will also be undertaken to determine the status of protected species and INNS identified as present or potentially present at the Site to inform mitigation requirements and support protected species licence applications. These updated surveys will be completed sufficiently far in advance of construction works to account for seasonality constraints and to allow time for the implementation of any necessary mitigation prior to construction. This is secured by a Requirement in the draft DCO (**Application Document Ref. 3.1**).

4.2.2. Existing or potential landscape and biodiversity constraints that will be reassessed during update surveys are as follows:

- bats – update roost surveys of trees adjacent to the Site;
- breeding birds – nest checks of vegetation to be cleared, where necessary;
- otter – updated survey for signs of presence;
- water vole – updated survey to determine current distribution and population size;
- badger – updated survey to determine current distribution and activity of badger setts; and
- INNS – updated survey to re-confirm the locations of species that may be disturbed during construction.

4.2.3. Should any new protected or invasive species constraints be identified as a result of the updated surveys, the final LBMEP Report would be updated to address these constraints. Any requirement for additional impact avoidance or mitigation will be discussed and agreed with NLC and/ or the relevant statutory consultees, except where this will otherwise be addressed through the process for obtaining any necessary protected species licences.

4.2.4. Any additional surveys will be instructed during the advance works, site clearance and construction phases as identified as necessary by the ecologist, or otherwise as identified and requested by the Applicant or their contractor(s) when implementing the final approved Construction Environmental Management Plan (CEMP) and other relevant approved plans and permits. These may be required, for example, based on the construction programme, working requirements or following identification of specific issues and constraints not covered by previous advice.

4.3. Protected Species Licences

4.3.1. All necessary protected species licences will be applied for and obtained prior to undertaking any works likely to affect the conservation status of these species, as required by the relevant legislation. Based on the findings of **ES Volume I Chapter 11**: Biodiversity and Nature Conservation (**ES Volume I - Application Document Ref. 6.2**) and pending the findings of the proposed

updated protected species surveys, the following protected species licences may be required:

- badger licence - if direct and indirect disturbance impacts on badger setts are likely and unavoidable (although currently this is not anticipated as likely so it is not expected that a licence will be required); and
- water vole licence – if water voles are still present at the time of construction and need to be displaced or relocated from construction working areas.

4.3.2. Habitat compensation/ restoration and enhancement will also be required if a protected species licence is needed. It is currently anticipated that if new habitat is subsequently needed for water voles this will already have been addressed prior to construction through the proposed habitat enhancement works to address losses of ditch habitat under the BNG strategy (**Appendix D**). It is not necessary at present to consider similar measures for badger. Instead, it is noted that the Applicant has sufficient land within their control to meet any future requirements for badger mitigation, including land within the former Keadby Ash Tip.

4.3.3. Should licences be required, it is recognised that this could (a) impose restrictions on the timing of construction activities and (b) dictate lead-in times for agreement and completion of pre-construction mitigation. This will therefore be addressed in the final construction programme based on the findings of the updated surveys.

4.4. Clerk of Works

4.4.1. The Applicant will agree when a Clerk of Works (CoW) should be present during construction in consultation with the ecologist and landscape architect based on relevant environmental commitments, the findings of the updated surveys, the requirements of protected species, and with reference to the relevant project programmes.

4.4.2. Immediately prior to site clearance and the start of construction in each relevant part of the Site, further site walkover surveys will be undertaken by an appropriately experienced CoW to confirm that the risks associated with the Site remain as previously assessed and/ or to confirm the correct implementation of impact avoidance measures (e.g. tree protection fencing, protected species stand-offs and other protection measures).

4.4.3. The scope of the required walkover surveys will be defined on a case by case basis, in consultation with the project team, and NLC or other statutory consultees as necessary, based on the specific risks associated with each relevant part of the Site and the findings of any preceding updated surveys as detailed above in Section 4.2. This will be controlled and implemented through

the final CEMP that will be developed by the contractor. An Outline CEMP is provided as **Application Document Ref 7.4**.

4.4.4. Relevant site staff will receive toolbox talks as part of Site inductions, and from the CoW as necessary on the relevant ecological risks present, legal requirements, working requirements necessary to comply with this legislation, and the final approved landscaping and biodiversity management and enhancement measures. Toolbox talks will be repeated as necessary over the duration of the construction works.

4.5. Tree Works

4.5.1. An arboricultural survey of the Site, in line with BS5837:2012, has been undertaken to identify where any trees are likely to be affected by the construction works and to inform the development of the detailed design and specification of tree root protection zones. This is provided as **Appendix E**.

4.5.2. Where works in close proximity to retained trees cannot be practicably avoided, these works will be undertaken in accordance with current best practice. At the time of issue of this Outline LBMEP Report, current best practice is defined in:

- British Standard (BS) 5837: 2012 Trees in relation to design, demolition and construction – Recommendations (British Standards Institute, 2012); and
- National Joint Utilities Group (NJUG) Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (NJUG, 2007).

4.5.3. Necessary protective fencing will be installed as required and prior to the commencement of site clearance or construction works in proximity to trees, as will be set out in the Arboricultural Method Statement to be produced following the detailed pre-construction tree surveys and to be detailed as part of the Arboricultural Report (**Appendix E**).

4.6. Retention of Felled Timber

4.6.1. Any large timber (15cm or greater stem diameter) resulting from tree felling for the Canal Water Abstraction will be retained and deposited within the adjacent retained canal side woodland to provide a supply of deadwood for wildlife.

4.6.2. The large timber will be sectioned into manageable lengths no shorter than 1m. Dependent on the volume of material it will either be deposited at intervals within the adjacent woodland or it will be stacked as piles of dead wood.

4.6.3. All smaller material and brash will be removed for off-site disposal. No arisings are to be chipped and deposited within areas of retained woodland or within other habitats.

4.7. Built Structures

4.7.1. The following impact avoidance measures in relation to built structures are highlighted as part of the landscape and visual amenity assessment (**Chapter 10**: Landscape and Visual Amenity (**ES Volume I - Application Document Ref 6.2**) and will be taken into consideration as part of the detailed design of the Proposed Development::

- suitable materials will be used, where reasonably practicable, in the construction of structures to reduce reflections and to assist with breaking up the massing of the buildings and structures. The approval of materials is secured by a Requirement of the draft DCO (**Application Document Ref. 3.1**);
- the selection of finishes for the buildings and other infrastructure will be informed by the finishes of the adjacent developments (including Keadby 1 Power Station), in order to reduce the visual impact of the Proposed Development. The approval of finishes is secured by a Requirement of the draft DCO (**Application Document Ref. 3.1**);
- lighting required during the construction and operation stages of the Proposed Development will be designed to reduce unnecessary light spill outside of the Site boundary, in accordance with the Outline Lighting Strategy (Application Document Ref. 5.11). The approval of external lighting is secured by a Requirement of the draft DCO (**Application Document Ref. 3.1**); and
- where existing vegetation is present along the Site boundary, this will be retained, as far as reasonably practicable, and managed to support its continued presence to aid the screening of low level views into the Site.

4.8. Precautionary Working Methods

4.8.1. The following precautionary working methods will be employed to minimise potential adverse effects on protected/ notable species prior to and during construction. Precautionary working method statements will be produced as

necessary to specify working requirements and other necessary impact avoidance measures. These measures would be controlled and implemented through the final CEMP) that will be developed by the contractor. The final CEMP is secured by a Requirement of the draft DCO (**Application Document Ref. 3.1**). An Outline CEMP is provided as (**Application Document Ref 7.4)**.

4.8.2. The measures set out below for individual species will be implemented in a manner that avoids conflicts with requirements for other relevant species that may occupy the same habitats. As an example, nesting bird mitigation will be implemented in a manner that is consistent with the mitigation required for water vole.

4.8.3. An appropriately qualified CoW will review and advise on the requirements for precautionary working methods to be implemented within each part of the Site and will supervise implementation of the required measures.

Water Vole

4.8.4. An appropriate Water Vole Impact Avoidance Strategy will be prepared with reference to updated survey data and agreed with relevant stakeholders. It will set out all of the measures and supervision required to deliver legislative compliance during construction of the Main Site and watercourse crossings. Prior submission and approval of the Water Vole Impact Avoidance Strategy is a commitment of the Outline CEMP provided as (**Application Document Ref 7.4)**.

4.8.5. The Water Vole Impact Avoidance Strategy will address (as relevant at that time):

- loss of the sub-optimal habitat associated with the Drains 4 and A and part of Drain 2 on Keadby Common, where evidence consistent with the presence of two water vole territories was identified based on surveys in August 2024;
- minor works on Drain 1 (Glew Drain) at the location of the proposed bridge crossing for the Emergency Vehicle Access Road, where a high density of water voles was found in August 2024; and
- replacement of Mabey Bridge at the site access off the A18 (no evidence of water vole found during baseline surveys).

4.8.6. The Water Vole Impact Avoidance Strategy will include:

- the latest updated survey data for relevant field drains;
- requirements for ongoing further surveys, ongoing monitoring and attendance by an appropriately experienced CoW;
- appropriate construction stand-offs from watercourses that will be maintained at all times (retained watercourses) or, in the case of watercourse crossings, until such time that the CoW advises that the relevant construction works can proceed;

- options for micro-siting to avoid water vole and its burrows;
- appropriate timings to minimise potential for disturbance impacts on water vole;
- the strategy for habitat mitigation and enhancement to accommodate any water voles displaced as a result of land take for the Proposed Development;
- requirements (if relevant) for displacement, trapping, exclusion and relocation of water voles from relevant construction areas (although based on current data confirming only a very small and localised water vole presence on relevant drains, the adjacent retained and enhanced areas of drain habitat are anticipated to be sufficient to accommodate any water voles displaced);
- site inductions and toolbox talks as appropriate; and
- any protected species licence needed to permit the relevant construction works to proceed. If a licence is required, then enhancement proposals for water vole are likely to be needed to secure this licence. Proposals that will incidentally benefit water vole (and other freshwater biodiversity) are already allowed for and outlined within this Outline LBMEP Report.

Nesting Birds

4.8.7. The following approach would be taken to deliver legislative compliance in relation to nesting birds:

- relevant grassland areas will be mown short (<5cm) prior to commencement of the breeding season (typically March-August inclusive for most species) and then mown weekly to maintain this short sward height until vegetation clearance. By so doing, ground nesting birds are unlikely to attempt to nest within construction areas;
- all clearance of other suitable vegetation will be undertaken outside the breeding season (typically March-August inclusive for most species), where possible;
- where there will be a gap in activity between site clearance/ soil stripping and the start of construction, then all cleared ground will be maintained in a disturbed state (e.g. through regular harrowing to minimise the risk of ground nesting birds establishing in the lead into construction;
- site inductions and toolbox talks will be provided as appropriate;
- in situations where the above breeding bird mitigation is not possible, an appropriately experienced CoW will check the working area for nests before works commence. If active nests are discovered through this process, then the CoW will advise on appropriate mitigation to ensure that these are not impacted by construction activities. All relevant works will be completed in accordance with this advice and under the supervision of the CoW; and
- consistent with the above, should WCA Schedule 1 bird species be present at the time of construction (to be determined through the committed pre-commencement update surveys) the CoW will advise on species-specific requirements to achieve legislative compliance.

Fish

4.8.8. A Fish Management Plan will specify the measures and supervision required to deliver legislative compliance during installation and drawdown of any cofferdam for construction of the Canal Water Abstraction.

4.8.9. As all construction works within watercourses are subject to regulation and permitting regimes, the Fish Management Plan will be prepared and agreed with the relevant regulator (Environment Agency).

4.8.10. The Fish Management Plan will include details of:

- soft start measures to protect fish during installation of any cofferdam;
- provision for screening of pump intakes to prevent fish being drawn into the pipe/ pump;
- supervision of dewatering of any cofferdam by an appropriately experienced CoW to oversee fish welfare and to support the relocation of any stranded fish or associated wildlife back to the main channel of the relevant watercourse outside the working area;
- measures to control the introduction or spread of aquatic INNS during these works; and
- if appropriate, e.g. to meet additional requirements of the relevant regulators, other specialist techniques to support the capture and relocation of fish to the main channel of the relevant watercourse outside the working area prior to drawdown.

Invasive Non-native Species

4.8.11. An updated terrestrial plant INNS survey will be completed prior to site clearance to determine the current location and extent of terrestrial plant INNS within the Site (noting that none were present at the time of the baseline survey.

4.8.12. It will be assumed that aquatic plant and invertebrate INNS are present in all watercourses affected by construction, regardless of the scale of the proposed construction works.

4.8.13. An Invasive Species Management Plan (ISMP) will be prepared to address all relevant INNS to accompany the final CEMP and will be agreed with relevant stakeholders. The ISMP will specify the control/ eradication (as reasonable and practicable), biosecurity measures (such as check, clean, dry or other suitable treatments) and supervision necessary during construction to prevent the spread of plant and animal INNS to new locations. Prior submission and

approval of the ISMP is a commitment of the Outline CEMP provided as (**Application Document Ref 7.4)**.

4.8.14. Biosecurity requirements will address all potential pathways for interaction with and dispersal of INNS, including movements of vehicles, machinery and staff:

- into the Site from third party locations, e.g. during construction mobilisation;
- between different parts of the Site, most especially between different watercourses; and
- from the Site for redeployment elsewhere.

4.9. Animal Welfare Requirements

4.9.1. Mammal/ badger gates will be installed in boundary fences as appropriate to maintain access for nocturnal wildlife into and through the habitat corridor associated with the existing overhead electricity transmission lines connected to the existing National Grid 400kV Substation. Further details will be provided once the locations and alignment of boundary fences has been specified further and confirmed, and these details will be submitted in the final LBMEP Report to be agreed as a Requirement of the **Draft DCO** (**Application Document Ref. 3.1**).

4.9.2. Vegetation clearance and construction excavations have potential to result in offences under animal welfare legislation. A CoW will be employed to supervise all relevant works to provide guidance on the measures required day-to-day to deliver legislative compliance.

4.9.3. Ditches will only be infilled after a process of gradual vegetation removal supervised by the CoW, so that wildlife such as small mammals, reptiles and amphibians can be displaced or relocated prior to infilling taking place. This is in addition to any other specific measures required for species such as water vole and birds.

4.9.4. All excavations will be covered overnight, or where this is not practicable, a means of escape will be fitted e.g. battered soil slope or scaffold plank, to provide an escape route should any animals (e.g. grass snake, badger, brown hare, hedgehog) stray into the construction area and fall into an excavation.

4.10. Lighting

4.10.1. Construction temporary lighting will be arranged so that glare is minimised outside the Site as far as reasonably practicable. Measures to minimise the

impact of lighting are detailed in the Outline Lighting Strategy (**Application Document Ref. 5.11**) and Outline CEMP (**Application Document Ref 7.4**).

4.11. Habitat Reinstatement

4.11.1. Terrestrial habitats that may experience temporary (less than two years until returned to their baseline state) access and disturbance during construction, mainly comprising small areas of species-poor road verge, other species-poor grassland and arable farmland, will be reinstated following the completion of construction activities within these areas. This includes third party land affected by the Mabey Bridge works, land that may be used as short duration construction laydown for the emergency access route, land that will be disturbed for installation of electrical and water connections for the A18 gatehouse and also works in relation to the Electrical Connection. As this land is not in the permanent control of the Applicant, no ecological enhancement measures are proposed within these areas

4.11.2. Some habitats disturbed to provide areas for temporary construction laydown will also be reinstated (again within two years of the original impact) to an elevated biodiversity condition where land will remain within the permanent control of the Applicant and they will be managed with the aim of increasing (relative to the existing baseline). This includes land adjacent to Mabey Bridge and the existing road access off the A18 where the existing species-poor improved grassland is proposed to be replaced with a mixed scrub planting and a new grassland to be established from a locally appropriate native wildflower meadow mixture at restoration and appropriately managed thereafter. Such measures are included within the habitat creation and enhancement proposals detailed in Section 5.

4.11.3. The following areas of permanent (greater than two years until reinstatement) habitat loss will be reinstated to the original baseline conditions.

Arable Fields Used for Construction Laydown

4.11.4. The arable fields used for construction laydown will be reinstated back to arable farmland in accordance with the requirements of the landowner.

Land Occupied by the Existing Temporary Haul Road

4.11.5. The vegetation in this area was originally cleared for the haul road for construction of Keadby 2 Power Station, so there is no new habitat loss in connection with the Proposed Development. The planning permission for the haul road for Keadby 2 Power Station includes conditions relating to the removal of the haul road and reinstatement (planning permission PA/2019/1595 as varied by planning permission PA/2021/188). The Keadby 3 CCS DCO had the effect of extending the lifetime of the temporary haul road permission. Under the draft DCO for the Proposed Development, it is proposed

that the permissions will effectively be extended, and the matters controlled by condition will be secured by equivalently worded Requirements in Schedule 2 of the **Draft DCO** (**Application Document Ref. 3.1**).

4.11.6. Given the existing requirements, restoration of the land affected by the existing temporary haul route cannot contribute to BNG for the Proposed Development as it does not represent additionality. Therefore, the existing haul road has been treated as no change within the BNG assessment.

4.11.7. The original baseline conditions (prior to establishment of the existing temporary haul route) present in this area were agricultural land, two species-poor native hedgerows on the eastern and western boundaries of the field, and below each of these hedgerows (where temporary bridges are currently located) were small field drains supporting emergent plant species.

4.11.8. During reinstatement:

- the two drain crossings will be removed and (if required) the banks profiled consistent with adjacent unaffected sections of drain;
- the short sections of drain bank exposed by the above works will be sown with a low maintenance grass seed mixture to provide bank stabilisation and minimise potential for erosion while other vegetation present in adjacent areas re-colonises;
- re-establishment of aquatic vegetation within the drains will be left to natural processes, as suitable plant species are present nearby in unaffected sections of drain (which is to be enhanced);
- the assumption is that the field will be returned, as minimum, to agricultural grassland using a basic agricultural grass seed mixture. This starting position does not preclude reinstatement with a more diverse grassland seed mixture if the landowner (which is SSE) subsequently determines this as appropriate. The latter may apply at detailed design if the wider associated field is required for biodiversity enhancement, as is currently allowed for as an option within Section 4; and
- the access points through the two existing boundary hedgerows will be planted with a species-rich (i.e. a minimum of five species) mixture of native shrubs planted as a double staggered row.

4.11.9. The planting mixture for the species-rich hedgerows will comprise native flower and fruit-bearing species suitable to the location as listed below:

- hawthorn (Crataegus monogyna);
- blackthorn (*Prunus spinosa*);
- field maple (*Acer campestre*);
- dogwood (Cornus sanguinea subsp. sanguinea);
- guelder rose (*Viburnum opulus*); and
- dog rose (*Rosa canina* agg.).

4.11.10. At least 50% of the planting stock will comprise hawthorn, with all other species contributing no more than 50% in aggregate.

4.11.11. The hedgerow planting method will be as follows:

- plants will be two-year-old transplants at least 450 millimetres (mm) to 600mm high;
- species will be planted so that no one species makes up more than 70% of the total;
- planted in a staggered double row 350mm apart with a minimum of seven plants per metre;
- plantings will be kept clear of weeds until they are established; and
- plantings will be fitted with an appropriate timber stake and a plastic-free biodegradable shrub shelter (all fitted as per manufacturer's recommendations).

4.11.12. The hedgerow will be subject to the draft aftercare maintenance regimes described in **Appendix C**, in which any plants found to be dead or dying within the initial five-year aftercare period will be replaced within the first available planting season.

4.11.13. The newly planted sections of hedgerow will be trimmed in at least the first two aftercare years to encourage bushy growth, allowing the hedge to become taller and wider at each cut until they are consistent with the height and width of the adjacent existing sections of hedgerow.

4.11.14. After the aftercare period, the landowner or agricultural tenant will become responsible for the long-term management and aftercare of all habitats in this area. Where the landowner remains the Applicant, then the hedgerow enhancement management regimes specified in Section 5 will be extended to cover this area. This will be reviewed and clarified in the final LBMEP.

5. Landscape and Biodiversity Enhancement

5.1. Approach

5.1.1. The landscape and visual amenity assessment presented in **ES Volume I Chapter 14**: Landscape and Visual Amenity (**Application Document Ref. 6.2**) will result in significant adverse effects on visual amenity from Viewpoint 1 (Chapel Lane West, Keadby), Viewpoint 2 (Gate Keepers Residence, Vazon Bridge, Keadby), Viewpoint 4 (PRoW (KEAD9, KEAD10) north of Keadby) and Viewpoint 14 (Stainforth and Keadby Canal Towpath). However, the opportunity for mitigation of the visual effects of the Proposed Development is limited due to the size and scale of the Proposed Development. As shown in the assessment, the effects on visual amenity largely relate to the height of the tallest structures; as such it is considered that the addition of landscape features such as trees and woodland would not be effective in reducing the effects of the tall structures on visual amenity. However, there remains a need for appropriate restoration of the landscape following construction, and enhancements to the landscape character and improvements to the green infrastructure network to meet requirements of local and national planning policy. Existing vegetation provides screening and softening of views of lower structures from non-industrial viewpoints.

5.1.2. The ecological impact assessment presented in **ES Volume I Chapter 11**: Biodiversity and Nature Conservation (**Application Document Ref. 6.2**) identified no potentially significant adverse effects as a result of the temporary and permanent loss of habitat during construction. Habitat restoration and enhancement is proposed to maintain and improve habitats for biodiversity. This includes benefits for two Local Wildlife Sites (LWS).

5.1.3. Proposals for landscape and biodiversity enhancement have been developed to achieve the following outcomes:

- no net loss of biodiversity and a quantifiable gain for biodiversity as a result of the Proposed Development;
- create and enhance field drain habitats to compensate for temporary and permanent losses of drain habitat to the Proposed Development, and to incidentally benefit aquatic biodiversity including water vole;
- enhance the riparian zone of the Hatfield Waste Drain and South Soak Drain for aquatic wildlife, birds, pollinators and other species;
- enhance grassland habitats for the benefits of pollinators and other invertebrates, birds, badger, brown hare and other species;
- provide nesting and roosting features for birds and bats to address a general lack of natural features in the local area to meet this need; and
- enhance the habitat and green infrastructure network adjacent to and through the Site, including provisions of habitats connected to Stainforth and Keadby Canal Corridor LWS and Hatfield Waste Drain LWS. With the improvement of the former LWS habitat corridor directly connecting to and

also complementing the undesignated former Keadby Ash Tip, another site of biodiversity importance.

5.2. Proposed Habitat Creation and Enhancement

5.2.1. Measures are proposed to enhance the biodiversity and green infrastructure value of the Site through establishment of new habitats and improvement of existing habitats. The areas that are proposed to be secured for habitat creation and enhancement works are shown on **Figure 2** and the indicative LBMEP (**Application Document Ref. 7.13**). A description of these areas is provided below. The aim is to demonstrate the Applicant has sufficient land within their control and the broad intent for the delivery of new habitats of biodiversity benefit and as one solution for achieving BNG (**Appendix D**).

5.2.2. The Applicant will undertake further review and may re-configure the locations of habitat works when developing the final LBMEP for agreement with NLC to account for any reduction in land take or new opportunities arising when developing the detailed design for the Proposed Development. The detailed design will be produced post-consent during the discharge of Requirements. Any amendments will respect the terms of reference and general principles established within this Outline LBMEP Report and supporting indicative LBMEP (**Application Document Ref. 7.13**).

5.2.3. Once implemented the new habitats will be appropriately maintained (as described below) for a minimum period of 25 years (the design life of the Proposed Development). There is no legal basis to require 30 years of maintenance given that NSIPs are not subject to statutory BNG. 25 years still represents a substantive period of time.

Habitat Creation Principles Supporting Delivery of Biodiversity Enhancement

5.2.4. Where new native habitats are to be created, or new native planting undertaken, the following principles will apply:

- all seed mixes and planting stock will be ordered as early as reasonably practicable following a decision to commence the Proposed Development to allow supply to be met without risk of substitution;
- all seed mixes and planting stock will be sourced from a specialist producer of British grown native plants and/ or seed who can source-identify all stock (i.e. not a non-specialist nursery that buys in stock or an agricultural/ general merchant that buys stock from diverse sources, including non-British sources); and
- terms of supply will include a condition that no part of the order shall be substituted with stock of alternative species or origin and that any change must be mutually agreed.

5.2.5. The above requirements will be incorporated into contractor specifications and contracts, as appropriate, to deliver genuinely native plantings in accordance with the biodiversity objectives of this Outline LBMEP Report.

Land by the Existing Access Road off A18 – Grassland Creation

5.2.6. These areas (labelled C9 and C10 on **Figure 2**) are proposed to be sown with a site-appropriate native neutral wildflower grassland ("other neutral grassland" for purposes of the BNG assessment). An indicative seed mixture suitable for this purpose is the Emorsgate EM4 Meadow Mixture for Clay Soils. The composition of this grassland is detailed in **Appendix A**.

5.2.7. The regular mowing and removal of arisings from the existing grassland appears to have depleted nutrient levels in the former arable soils sufficiently for the successful establishment of wildflower grassland. Consequently, soil testing is not considered necessary Where there is no requirement for construction disturbance within C10, sward enhancement would take place as follows (based on Natural England, 2009a,b):

- hay cut or mowing management would continue through construction period (prior to sowing at the end of construction) with removal of all arisings (this may be a commercial hay cut or some other form of management);
- prior to sowing, any pernicious weeds such as thistles would be herbicide treated (the baseline surveys did not identify any existing weed issues);
- grassland would be mown short and all arisings removed immediately prior to sowing;
- 40-50% bare ground would be created using mechanical disturbance such as a power harrow or set of discs. This level of disturbance would allow effective establishment from the seed mixture, whilst retaining existing plant species and the existing soil structure and biodiversity intact.

5.2.8. The former car park at C9 would also be broken out and the exposed subsoil suitably prepared for sowing. This is also considered habitat enhancement as there is no baseline habitat loss.

5.2.9. Where the grassland within C10 coincides with previous construction laydown, the removal and storage of soils during construction allows control over what substrates are returned post-construction. Given this, topsoil would not be reinstated in areas where grassland would be created through seeding. Ground would be suitably prepared in advance of seeding.

5.2.10. Sowing would be timed for the late summer/early autumn period, provided that there is some residual soil moisture. The sowing rate would be 5-10 kg/ha of a wildflower and grass seed mix (with at least 10% wildflower seed). Spring

sowing may be undertaken if this timing cannot be met, with additional aftercare allowed to address any risk of failure due to summer drought stress.

5.2.11. Management, in the first year (potentially extending into Year 2, depending on the time of sowing and rate of establishment), would accord with the aftercare regime recommended by the seed producer. This would involve:

- periodic mowing in the first year after sowing to maintain a sward height of 40-60mm, removing all arisings for disposal in a location pre-agreed with the ecologist or landscape architect where this would not conflict with biodiversity objectives and habitat management;
- spot treatment of perennial weeds such as broad-leaved dock (*Rumex obtusifolius*), creeping thistle (*Cirsium arvense*) and spear thistle (*Cirsium vulgare*) with an approved herbicide; and
- a review of requirements for Year 2 at the end of aftercare Year 1, moving into the long-term nature conservation management regime (see below) if appropriate.

5.2.12. After the initial aftercare period of management, the grassland would be maintained through a nature conservation regime. The regime would be specified in the final LBMEP Report with reference to the final layout for the Proposed Development but would allow for:

- mowing of plots on rotation so that in any one year there always remains areas of longer tussocky grassland suitable to provide foraging habitat for barn owl and other birds, and places of refuge for other wildlife, e.g. overwintering invertebrates, when the remainder of the grassland is cut;
- mowing grassland to 50mm height between mid-August and early September, with all arisings removed;
- a second cut, if required (not likely to be necessary given existing substrates but this would be determined later through monitoring) in April to reduce the vigour of grass species and maximise flower production by herb species;
- periodic control of scrub cover if it establishes greater than 10% total cover, and pernicious weeds such as creeping thistle, spear thistle and broadleaved dock where these start to dominate to the exclusion of other flora; and
- all arisings would be deposited in a suitable area in the wider landholding (as agreed with the ecologist or landscape architect) to create habitat piles suitable for use by grass snake for egg laying.

5.2.13. The establishment of species-rich grassland would be monitored by an ecologist and a landscape architect as set out in Section 6.

Main Site and Construction Laydown within the Alternative Electrical Connection Area Adjacent to the National Grid 400kV Substation

5.2.14. It is proposed to create species-rich grassland in these areas (location C16 on **Figure 2**) using an approach consistent with that set out above for the access road verges used for temporary construction laydown.

Land South of Trent Road – Grassland Creation

5.2.15. The proposed approach set out above for the access road is also proposed within the part of this area (C4 on **Figure 2**) that is proposed to be sown as grassland. The sward enhancement technique would be used to enhance the existing species-poor grassland sward, as described above for the grassland by the access road.

5.2.16. Management and monitoring would be undertaken as described above and in Section 6.

Trent Road Verges and Former Agricultural Field – Grassland Creation

5.2.17. The proposed approach set out above for the access road is also proposed within this area (labelled C3 and C7 on **Figure 2**). The sward enhancement technique would be used to enhance the existing species-poor grassland sward, as described above for the grassland by the access road.

5.2.18. Management and monitoring would be undertaken as described above for the access road grassland and in Section 6.

Land by the Existing Access Road off A18 – Scrub Creation

5.2.19. “Mixed scrub” is proposed to be established next to Mabey Bridge and North Pilfrey Bridge (labelled C8 and C15 on **Figure 2**).

5.2.20. The planting mixture would comprise native flower and fruit-bearing species suitable to the location, as indicated by the existing baseline within the Proposed Main Site and on adjacent land. Native species suitable to this location include:

- hawthorn (*Crataegus monogyna*);
- dog-rose (*Rosa canina* agg.);
- sweet-briar (*Rosa rubiginosa*);
- dogwood (*Cornus sanguinea* subsp. *sanguinea*);
- wild privet (*Ligustrum vulgare*);
- spindle (*Euonymus europaeus*); and

- buckthorn (*Rhamnus cathartica*).

5.2.21. All scrub planting would be notch planted at 1.5m and 2.5m spacings and a plastic-free biodegradable tree guard and stake. All new scrub planting would be subject to the maintenance regimes described in **Appendix C**.

5.2.22. The establishment of the scrub would be monitored by an ecologist and a landscape architect as set out in Section 6.

Land to the East of the Proposed Admin/ Control Room Building (by Chapel Lane) – Scrub Creation

5.2.23. It is proposed to plant mixed scrub where a small poor quality plantation will be removed to allow the completion of ground raising works. This area (labelled C6 on **Figure 2**) is not suitable for the reinstatement of trees but is expected to be suitable for scrub. This specification would be the same as that given above for the land adjacent to the access road.

5.2.24. Management and monitoring would be undertaken as described above for the access road grassland and in Section 6.

Land by the Existing Access Road off A18 – Species-rich Native Hedgerow Creation

5.2.25. There is an existing hedgerow (labelled C13 on **Figure 2**) on the eastern margin of the central section of the existing site access road between Mabey Bridge and North Pilfrey Bridge. Additional species-rich native plantings of 500m total length are proposed to extend the existing hedgerow at its northern and southern ends (labelled C12 and C14 on **Figure 2**), and to connect with areas of scrub planting (see above).

5.2.26. The planting mixture would comprise native flower and fruit-bearing species suitable to the location. The final species selection would be made from the list of shrub species provided above for the new scrub habitat, with up to 50% of the planting stock comprising common hawthorn, and all other species contributing no more than 50% in aggregate.

5.2.27. The hedgerow planting method would be as follows:

- plants would be two-year-old transplants at least 450mm to 600mm high;
- species would be planted so that no one species makes up more than 70% of the total;
- planted in a staggered double row 350mm apart with a minimum of seven plants per metre;
- plantings would be kept clear of weeds until they are established; and

- plantings would be fitted with an appropriate timber stake and a plastic-free biodegradable shrub shelter (all fitted as per manufacturer's recommendations).

5.2.28. The newly planted hedgerow would be trimmed in at least the first two years to encourage bushy growth, allowing the hedge to become taller and wider at each cut.

5.2.29. Once established the hedgerow would be managed so it attains a minimum average height and width of 1.5m. To achieve this the hedgerow would be trimmed no more frequently than once a year.

5.2.30. Trimming would be timed for during January and February when the majority of fruit has been taken by local wildlife and carried out according to best practice guidance. Access for this is possible via the existing site access road.

5.2.31. The sides, ends and tops of the hedgerow would be trimmed as far as practicable to achieve an 'A' profile.

5.2.32. Following trimming operations all significant arisings (cuttings) would be removed so as not to impede grassland growth or management.

5.2.33. The establishment of the hedgerow would be monitored by an ecologist and a landscape architect as set out in Section 6.

Land by Stainforth and Keadby Canal – Partial Woodland Reinstatement

5.2.34. Current understanding of permanent land take indicates that it should be possible to reinstate some of the woodland ("other broadleaved woodland" for purposes of the BNG assessment) removed to create a working area for construction of the Canal Water Abstraction. This replanting would be in the area adjacent to the proposed water intake that is not permanently required for this structure (labelled C5 on **Figure 2**). Prior to planting any displaced topsoil would be reinstated and soil compaction would be relieved using appropriate methods.

5.2.35. Planting stock would be bare root whips selected to 900mm. Individual trees would be set in pits 900mm diameter by 900mm depth. The base of the tree pit would be broken up to a depth of 200mm and backfilled with topsoil consolidated in layers to allow the tree to be placed at the correct depth. Each tree would be planted to the nursery line and fitted with an appropriate timber

stake and a plastic-free biodegradable tree/ shrub shelter (all fitted as per manufacturer's recommendations).

5.2.36. The planting stock would reflect the original character of the woodland i.e. willow woodland, but with additional species of benefit for wildlife.

5.2.37. A minimum of three native canopy trees species and three native shrub layer species would be planted within each woodland stand. These species would be selected from the following list of canopy and shrub layer species:

- white willow (*Salix alba*) – canopy;
- crack willow (*Salix x fragilis*) – canopy;
- downy birch (*Betula pubescens*) – canopy;
- hawthorn (*Crataegus monogyna*) – shrub layer;
- dog-rose (*Rosa canina*) – shrub layer;
- guelder-rose (*Viburnum opulus*) – shrub layer; and
- hazel (*Corylus avellana*) – shrub layer.

5.2.38. Establishment maintenance would be based on the following principles and outline prescriptions:

- maintain a 1m weed-free circle around trees and shrubs through mechanical control;
- water new plants to minimise failures in periods of drought;
- remove litter, rubbish, and debris from planted areas throughout the year;
- inspect and adjust guards, ties and stakes in Spring and Autumn and after strong wind events;
- check and record failed or defective plants in September annually; and
- replace failed or defective plants with matching species of the same size during the next planting season after failure.

5.2.39. From year 5 onwards, all intact shelters, ties and stakes would be removed.

5.2.40. Between years 7 and 10, planted areas would be reviewed and thinned out as necessary to remove any poor or weak specimens, which would facilitate other

specimens to flourish and provide space for trees and shrubs to further establish.

5.2.41. Arisings from thinning or other woodland management functions would be retained on site in the form of dedicated brash and wood piles or wind-rows, for the benefit for fungi, lichen, and invertebrates.

5.2.42. The establishment of the woodland would be monitored by an ecologist and a landscape architect as set out in Section 6.

Land South of Trent Road – Woodland Creation

5.2.43. The existing vegetation would be mown to create conditions suitable for planting (area labelled C2 and part of C4 on **Figure 2**). Thistles and other rank ruderal herbs would be treated in advance of mowing/ tree planting with a non-residual herbicide.

5.2.44. Planting stock would be bare root whips selected to 900mm. Individual trees would be set in pits 900mm diameter by 900mm depth. The base of the tree pit would be broken up to a depth of 200mm and backfilled with topsoil consolidated in layers to allow the tree to be placed at the correct depth. Each tree would be planted to the nursery line and fitted with an appropriate timber stake and a plastic-free biodegradable tree/ shrub shelter (all fitted as per manufacturer's recommendations).

5.2.45. A minimum of three native canopy trees species and three native shrub layer species would be planted within each woodland stand ("other broadleaved woodland" for purposes of the BNG assessment), selected to provide both a diverse structure and diverse resources for wildlife. These species would be selected from the following list of canopy and shrub layer species:

- pedunculate oak (*Quercus robur*) – canopy;
- wild cherry (*Prunus avium*) – canopy;
- field maple (*Acer campestre*) – canopy;
- downy birch (*Betula pubescens*) – canopy;
- hawthorn (*Crataegus monogyna*) – shrub layer;
- dogwood (*Cornus sanguinea* subsp. *sanguinea*) – shrub layer;
- wild privet (*Ligustrum vulgare*) – shrub layer;
- hazel (*Corylus avellana*) – shrub layer; and
- blackthorn (*Prunus spinosa*) – shrub layer.

5.2.46. Establishment maintenance would be based on the following principles and outline prescriptions:

- maintain a 1m weed-free circle around trees and shrubs through mechanical control;
- water new plants to minimise failures in periods of drought;

- remove litter, rubbish, and debris from planted areas throughout the year;
- inspect and adjust guards, ties and stakes in Spring and Autumn and after strong wind events;
- check and record failed or defective plants in September annually; and
- replace failed or defective plants with matching species of the same size during the next planting season after failure.

5.2.47. From year 5 onwards, all intact shelters, ties and stakes would be removed.

5.2.48. Between years 7 and 10, planted areas would be reviewed and thinned out as necessary to remove any poor or weak specimens, which would facilitate other specimens to flourish and provide space for trees and shrubs to further establish.

5.2.49. Arisings from thinning or other woodland management functions would be retained on site in the form of dedicated brash and wood piles or wind-rows, for the benefit for fungi, lichen, and invertebrates.

5.2.50. The establishment of the woodland would be monitored by an ecologist and a landscape architect as set out in Section 6.

Land South of Trent Road – Specimen Tree Plantings

5.2.51. Ten native trees (assumed to be small trees for purposes of completion of the BNG metric) are proposed to be planted in association with the grassland creation to the south of Trent Road (labelled C4 on **Figure 2**) and/or in association with the enhanced grassland adjacent to Trent Road (labelled C3 on **Figure 2**). Trees would be planted at a suitable density and spacing to avoid impacts on the grassland as the trees mature, and so that they do not impede effective grassland management.

5.2.52. The native trees would comprise species that provide both flowers and fruit. These would comprise two or more of the following:

- rowan (Sorbus aucuparia);
- bird cherry (*Prunus padus*); and
- wild cherry (*Prunus avium*).

5.2.53. Planting stock would be bare root whips selected to 900mm. Individual trees would be set in pits 900mm diameter by 900mm depth. The base of the tree pit would be broken up to a depth of 200mm and backfilled with topsoil consolidated in layers to allow the tree to be placed at the correct depth. Each tree would be planted to the nursery line and fitted with an appropriate timber

stake and a plastic-free biodegradable tree/ shrub shelter (all fitted as per manufacturer's recommendations).

5.2.54. Establishment maintenance would be as specified above for the woodland areas.

5.2.55. From year 5 onwards, all intact shelters, ties and stakes would be removed.

5.2.56. Formative and maintenance pruning would be undertaken as required/ appropriate with respect to the biodiversity purpose of the tree plantings.

5.2.57. The establishment of the trees would be monitored by a landscape architect as set out in Section 6.

Keadby Common and Trent Road Drains

5.2.58. The final LBMEP Report, secured through a Requirement of the draft DCO (**Application Document Ref. 3.1**), will include details of a programme of field drain enhancement works to re-instate areas of open water more suitable to support a greater range of aquatic biodiversity, including water vole. The target drains are those retained on the southern and western boundaries of Keadby Common (760m) and south of Trent Road (150m).

5.2.59. The programme of enhancement works would commence before the start of the main construction period so that it is completed before the ground raising works. If needed later, this enhanced habitat is likely to be able to accommodate any water voles present at that time within the field drains (Drain 2 (part), 4 and A) to be infilled during construction.

5.2.60. The enhancement works would be planned to avoid any water vole burrows present at that time. Given existing survey data the sub-optimal habitat conditions currently present, water voles are not anticipated to be a significant constraint at the time of these works.

5.2.61. The following specific actions would be specified in more detail in the final LBMEP Report:

- removal of excess silt and emergent (swamp) vegetation to re-instate open water conditions;
- cutting back of overhanging trees to reduce over-shading, in support of the successful establishment of aquatic vegetation suitable to sustain a more diverse faunal assemblage, including water vole; and
- possible tie-in with the surface water drainage scheme for the Proposed Development to improve water supply.

Land by the Existing Access of the A18 – New Ditch Creation

5.2.62. Ditch creation would be undertaken within a suitable area (labelled C11 on **Figure 2**) where there are existing ditches present to connect to and complement, and where Environment Agency mapping indicates surface water flooding. The suitability of this area was previously reviewed and confirmed by a hydrogeologist as part of post-consent work for the Keadby CCS Power Station.

5.2.63. The detailed ditch design would be undertaken post-consent (the current alignment on **Figure 2** is illustrative only). This will allow for:

- sensitive profiling to maximise niches for aquatic and wetland flora;
- planting of a diverse mixture of native and locally appropriate wetland plant species;
- provide stands of common reed as nesting habitat for bird; and
- ensure suitable access to allow the ditches to be maintained long-term.

Species

5.2.64. Additional enhancement measures for species are proposed within the Site and the adjacent former Keadby Ash Tip. The latter is also land within the control of the Applicant. Habitat creation is not appropriate in this area given the existing biodiversity value (see **Appendix 11C**: Preliminary Ecological Appraisal Report, ES Volume II – **Application Document Ref. 6.3**).

5.2.65. The following species features will be provided:

- 3 No. pole mounted barn owl towers – the proposed locations are shown on **Figure 2** and specified in **Appendix B**;
- 5 No. Schwegler 1FD or comparable bat boxes suitable for maternity roosting – to be located on suitable trees within the former Keadby Ash Tip;
- 5 No. Schwegler 2F universal bat boxes, or comparable boxes – to be located on suitable trees within the former Keadby Ash Tip;
- 5 No. tawny owl nesting boxes (suitable also for other bird species requiring larger nesting cavities) – to be located on suitable trees within the former Keadby Ash Tip; and
- ring-barking of suitable trees within the former Keadby Ash Tip to enhance the resource of standing deadwood available to willow tit (a bird species recorded historically during breeding bird surveys within the former Keadby Ash Tip) and other birds needing standing deadwood.

5.2.66. The target species listed above are those that require mature trees or standing deadwood for roosting or nesting, conditions that are currently absent or in

short supply due to the relatively young age of the woodland and scrub present within and adjacent to the Proposed Development Site.

5.2.67. Prior to submission and agreement of final specifications with NLC, an ecologist will undertake a walkover survey to identify suitable locations for the identified interventions. These locations will be marked on a plan to accompany the final specification.

5.2.68. Once installed, the artificial barn owl, bird and bat boxes will be inspected annually in January or February to confirm their ongoing presence and to identify any requirements for remedial action. All artificial boxes that cannot be re-found, that are found to be damaged, or that require other remedial action will be replaced/ rectified before the end of March in the same year, subject to the commercial availability of suitable replacement features to meet this deadline.

5.3. Comparison of Permanent Habitat Losses and Gains

5.3.1. A comparison to the balance between habitat losses and gains is provided within the metric accompanying the BNG assessment (**Appendix D**). Therefore, the purpose of this LBEMP is only to set out the specifications proposed to achieve the intended BNG outcome.

5.3.2. The assessment of the balance between habitat losses and gains has been based on the provision of the identified habitat creation measures in all of the indicative areas shown on **Figure 2** and the indicative LBMEP (**Application Document Ref. 7.13**), although not all of this land would be required to achieve the stated gain.

5.3.3. The location and extent of land for biodiversity enhancement remains under review up until confirmation of the detailed design, which will be produced post-consent during the discharge of Requirements. It will therefore be confirmed in the final LBMEP.

6. Monitoring

6.1.1. A landscape architect and/ or an ecologist will undertake post-intervention habitat monitoring annually in June or July for a period of not less than ten years. This timeframe reflects the advised time period for the establishment of the committed grassland habitats and is also considered appropriate to provide sufficient time to confirm a net gain for biodiversity.

6.1.2. The monitoring approach will be specified in more detail in the final LBMEP Report and will involve a condition assessment walkover survey to complete and collect structured evidence in relation to the following:

- review of the establishment of seed mixtures, wetland plantings, and shrub plantings, and review of any requirements for remedial actions e.g. replacement of failed stock or re-seeding, or identification and rectification of damage;
- review of grassland structure and composition, and associated implications for the agreed management regimes;
- review of any native or non-native weed issues requiring treatment, or requirements for scrub control where the cover exceeds 5% of the total grassland area; and
- review of establishment of vegetation within the ditches and any requirements for management e.g. periodic vegetation clearance.

6.1.3. An ecologist will also make a ground level check of the barn owl, bird and bat boxes in January or February each year to identify any requirements for remedial action.

6.1.4. A brief monitoring report will be prepared in each year and provided to NLC as a record of compliance.

7. Roles and Responsibilities

7.1. The Applicant and/ or the Appointed Main Contractor

7.1.1. The Applicant and/or (during the construction period) their main contractor will be responsible for:

- correct instruction of all parties contributing to delivery of the final approved LBMEP (including but not restricted to the Applicant's staff and their appointed ecologists, landscape architects, CoW, landscape contractors, construction contractors and management organisations);
- compliance with the final approved LBMEP, relevant legislation and any relevant planning commitments. This includes appropriate maintenance of new habitats for a minimum period of 25 years;
- keeping the appointed ecologist/ landscape architect/ arboriculturalist/ CoW informed of work activities that require support and supervision, so that it is clear when attendance on-site is required;
- enacting/ enforcing recommendations made by the ecologist/ landscape architect/ arboriculturalist/ CoW, or otherwise agreeing an appropriate alternative course of action, if it is subsequently determined that previous advice is not practicable or is out of date; and
- keeping a record of measures taken to deliver the requirements of the final approved LBMEP, to provide an auditable record of compliance.

7.2. The Appointed Ecologist

7.2.1. The appointed ecologist (including ecological CoW) will be responsible for:

- advising the Applicant on ecological matters and requirements (including task-specific toolbox talks and briefings) for compliance with relevant legislation and protected species licences, providing support as instructed, and monitoring compliance with the final approved LBMEP;
- monitoring and assessing progress with delivery of biodiversity objectives and target condition of habitats on an annual basis for the first ten years following commencement of operation of the Proposed Development;
- reviewing the final approved LBMEP at appropriate periodic intervals and revising management requirements as necessary at least once every five years thereafter for the duration of the final approved LBMEP (minimum of 25 years); and
- providing the Applicant with survey reports and other written evidence required in accordance with the agreed scope of work and contractual obligations.

7.3. The Appointed Landscape Architect/ Arboriculturalist

7.3.1. The appointed landscape architect/ arboriculturalist (including landscape and arboricultural CoW) will be responsible for:

- monitoring and assessing the landscape related elements of the final approved LBMEP for their effectiveness on an annual basis for the first five years following commencement of operation of the Proposed Development and then for the following five-year period and least once every five years subsequently for the duration of the final approved LBMEP (minimum of 25 years);
- ensuring that the landscape related elements of the final approved LBMEP are reviewed at the end of the five year initial monitoring and assessment stage and amended accordingly for the following five year period and subsequently for the duration of implementation of the final approved LBMEP. The final approved LBMEP shall be amended accordingly to suit any changing landscape conditions and ultimately inform the maintenance operations throughout the operational life of the Proposed Development; and
- ensuring that any reviews associated with landscape related elements of the final approved LBMEP clearly identifies any changes to site conditions and circumstances, whether the aims and objectives of the final approved LBMEP are being met, and where identified changes are needed to existing management practices and timeframes.

8. References

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Keadby Next Generation Power Station

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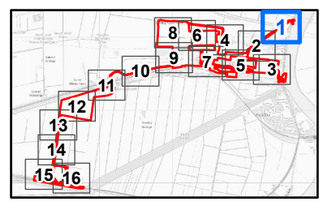
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LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Ditches
- Other rivers and streams
- Cropland - Cereal crops
- Grassland - Modified grassland
- Heathland and shrub - Mixed scrub
- Sparsely vegetated land - Ruderal/ Ephemeral
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint



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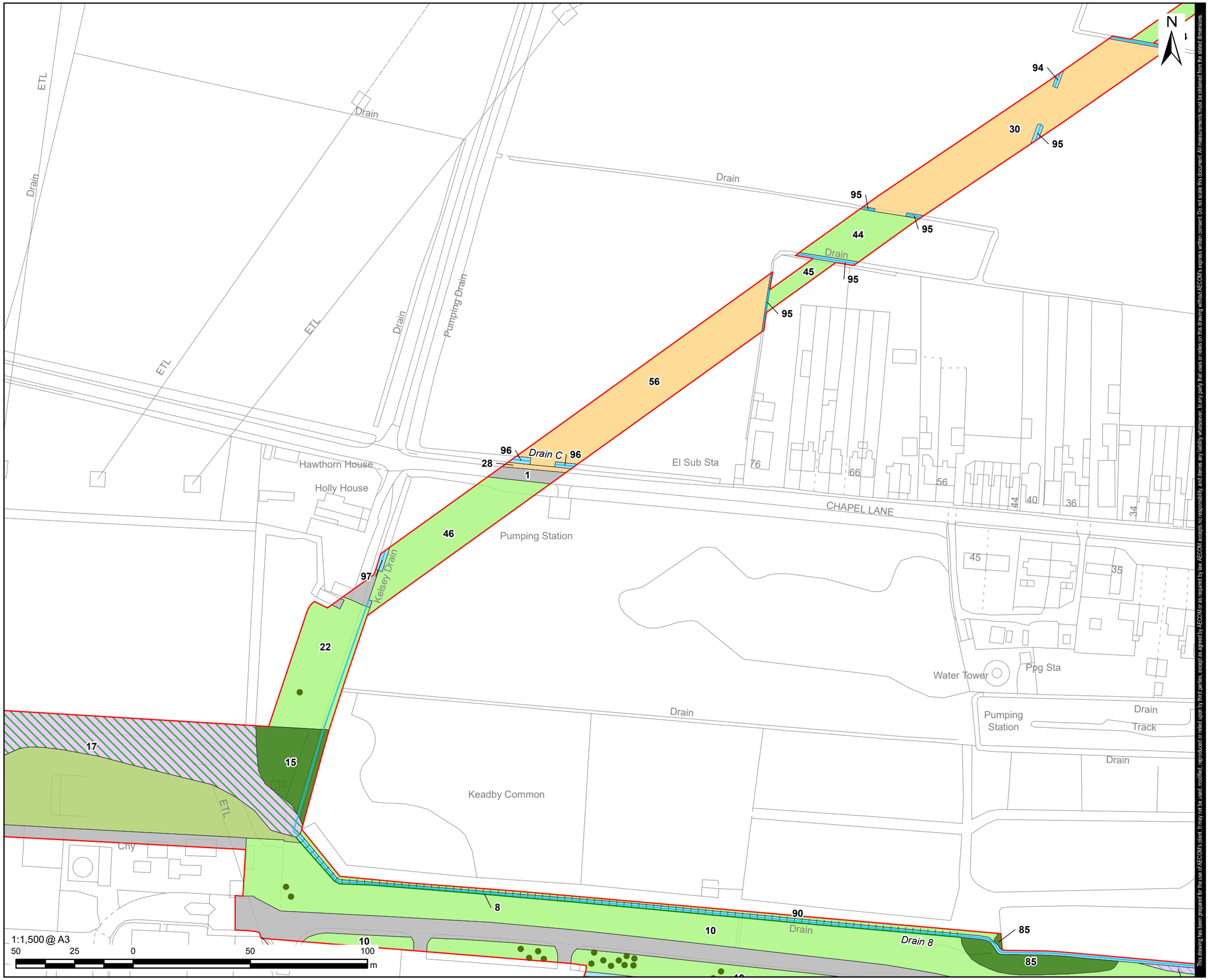
FIGURE TITLE

Biodiversity Net Gain Baseline Habitats (Page 1 of 16)

FIGURE NUMBER

Figure 1

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PROJECT

Keadby Next Generation Power Station

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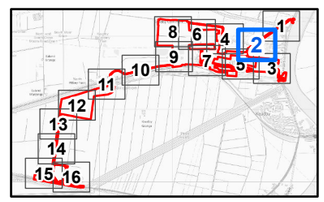
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LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Urban tree
- Native hedgerow
- Native hedgerow with trees
- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Grassland - Other neutral grassland
- Heathland and shrub - Bramble scrub
- Heathland and shrub - Hawthorn scrub
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint
- Woodland and forest - Other woodland; broadleaved



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FIGURE TITLE

Biodiversity Net Gain Baseline Habitats (Page 2 of 16)

FIGURE NUMBER

Figure 1

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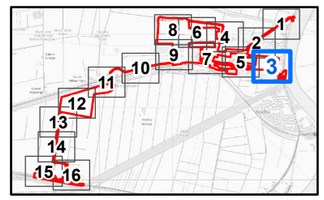
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LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Urban tree
- Native hedgerow
- Native hedgerow with trees
- Species-rich native hedgerow
- Ditches
- Other rivers and streams
- Grassland - Modified grassland
- Heathland and shrub - Hawthorn scrub
- Sparsely vegetated land - Tall forbs
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint
- Woodland and forest - Other woodland; broadleaved



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FIGURE TITLE

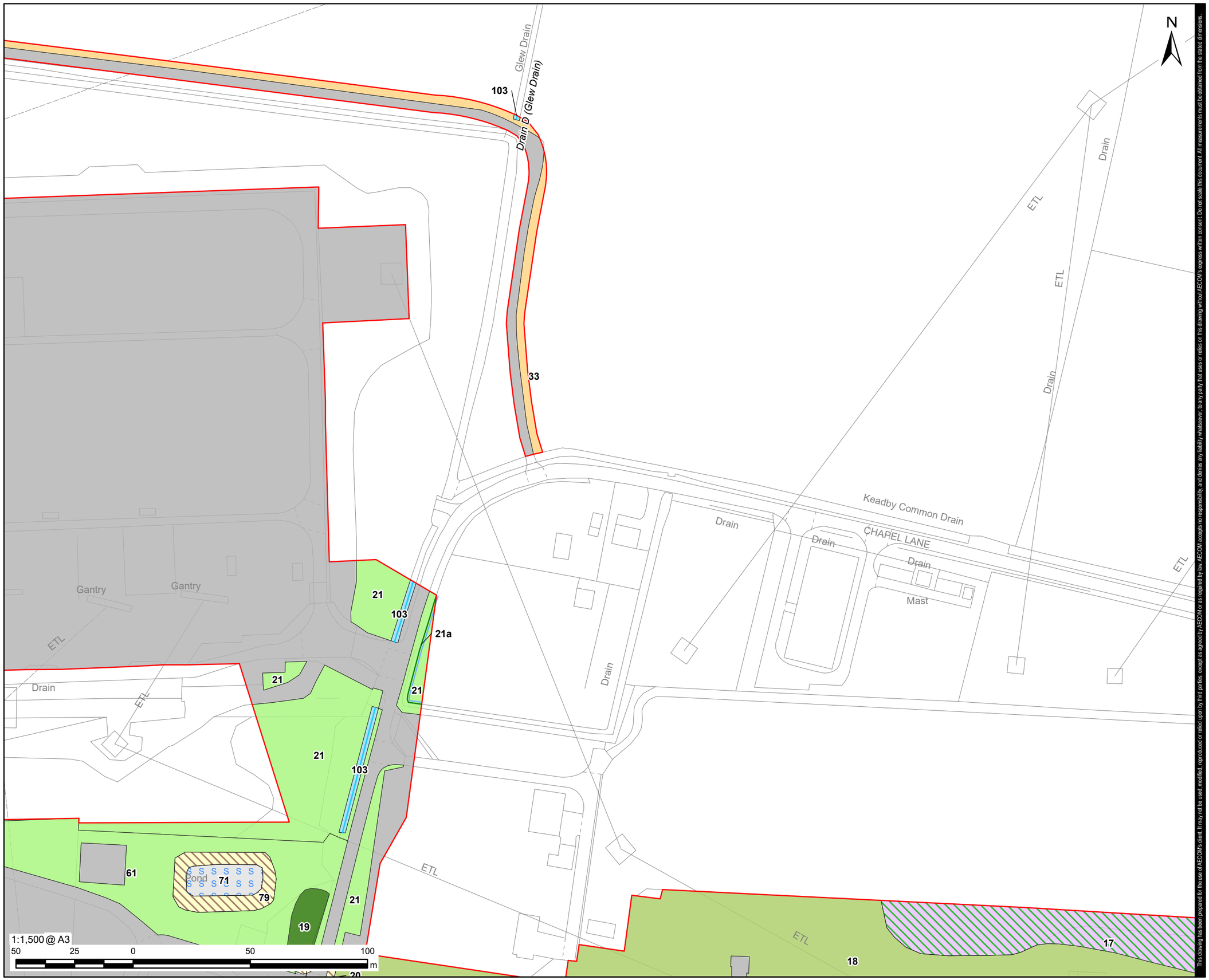
Biodiversity Net Gain Baseline Habitats (Page 3 of 16)

FIGURE NUMBER

Figure 1

Revision: 0 Drawn: MAB Checked: SM Approved: DB Date: 2025-07-04

Filename: I:\5004 - Information Systems\60721867_Keadby_Hydrogen_DCO\02_Maps\LBMEP\KHy_ES_LBMEP_Fig_1_UK_Habitats_A3_R00.aprx



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PROJECT

Keadby Next Generation Power Station

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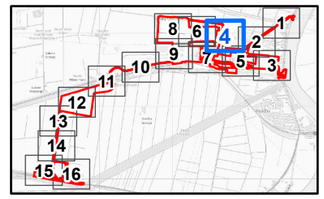
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Alencon Link,
Basingstoke, RG21 7PP
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LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Native hedgerow - associated with bank or ditch
- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Grassland - Other neutral grassland
- Heathland and shrub - Bramble scrub
- Sparsely vegetated land - Ruderal/ Ephemeral
- Urban - Bioswale
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint
- Woodland and forest - Other woodland; broadleaved



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ISSUE PURPOSE

DCO APPLICATION

PROJECT NUMBER

60721867

FIGURE TITLE

Biodiversity Net Gain Baseline Habitats (Page 4 of 16)

FIGURE NUMBER

Figure 1

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PROJECT

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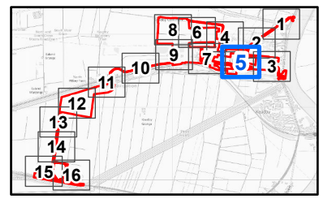
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LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Urban tree
- Native hedgerow
- Native hedgerow with trees
- Ditches
- Other rivers and streams
- Grassland - Modified grassland
- Grassland - Other neutral grassland
- Heathland and shrub - Bramble scrub
- Heathland and shrub - Mixed scrub
- Sparsely vegetated land - Tall forbs
- Urban - Artificial unvegetated, unsealed surface
- Urban - Bare ground
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint
- Woodland and forest - Lowland mixed deciduous woodland
- Woodland and forest - Other woodland; broadleaved



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ISSUE PURPOSE

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PROJECT NUMBER

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FIGURE TITLE

Biodiversity Net Gain Baseline Habitats (Page 5 of 16)

FIGURE NUMBER

Figure 1

Revision: 0 Drawn: MAB Checked: SM Approved: DB Date: 2025-07-04

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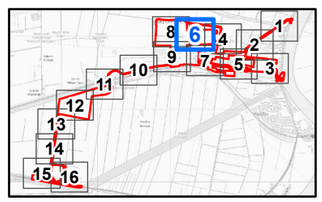
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LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Heathland and shrub - Hawthorn scrub
- Sparsely vegetated land - Ruderal/ Ephemeral
- Urban - Bare ground
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint



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PROJECT NUMBER

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FIGURE TITLE

Biodiversity Net Gain Baseline Habitats (Page 6 of 16)

FIGURE NUMBER

Figure 1

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PROJECT

Keadby Next Generation Power Station

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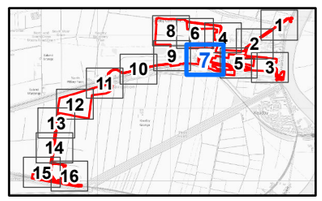
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LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Native hedgerow - associated with bank or ditch
- Ditches
- Grassland - Modified grassland
- Grassland - Other neutral grassland
- Heathland and shrub - Hawthorn scrub
- Sparsely vegetated land - Ruderal/ Ephemeral
- Urban - Artificial unvegetated, unsealed surface
- Urban - Bare ground
- Urban - Bioswale
- Urban - Building
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint
- Woodland and forest - Other woodland; broadleaved
- Woodland and forest - Other woodland; mixed



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PROJECT NUMBER

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FIGURE TITLE

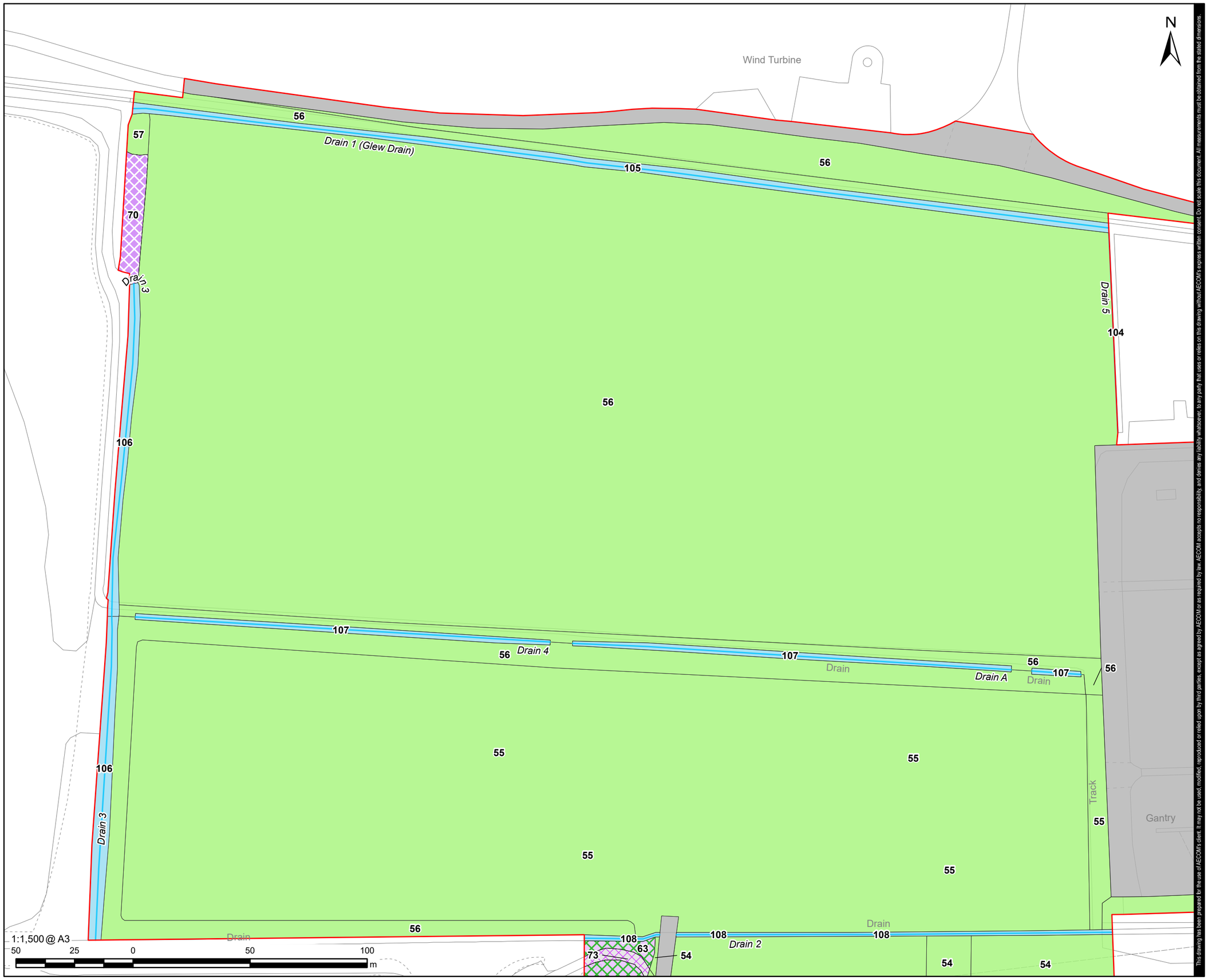
Biodiversity Net Gain Baseline Habitats (Page 7 of 16)

FIGURE NUMBER

Figure 1

Revision: 0 Drawn: MAB Checked: SM Approved: DB Date: 2025-07-04

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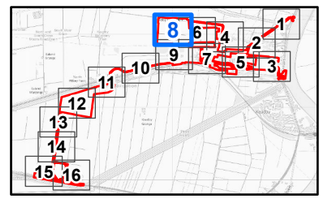
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LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Heathland and shrub - Mixed scrub
- Heathland and shrub - Willow scrub
- Urban - Developed land; sealed surface
- Urban - Open mosaic habitats on previously developed land
- Watercourse footprint - Watercourse footprint



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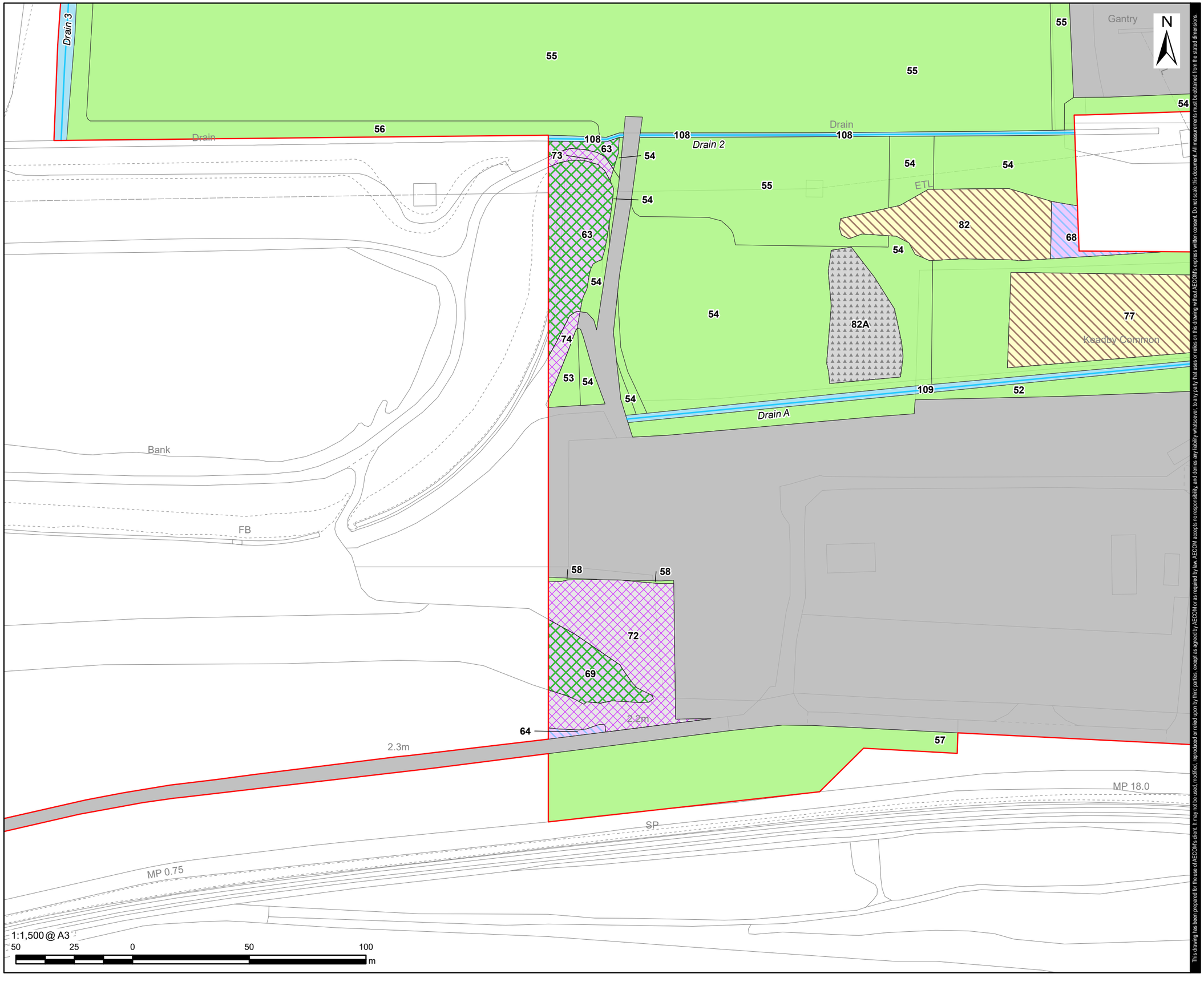
FIGURE TITLE

Biodiversity Net Gain Baseline Habitats (Page 8 of 16)

FIGURE NUMBER

Figure 1

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PROJECT

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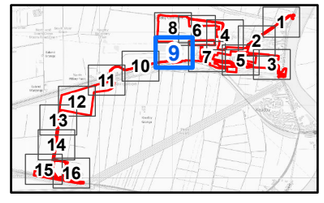
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LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Ditches
- Grassland - Modified grassland
- Heathland and shrub - Hawthorn scrub
- Heathland and shrub - Mixed scrub
- Sparsely vegetated land - Ruderal/ Ephemeral
- Urban - Bare ground
- Urban - Developed land; sealed surface
- Urban - Open mosaic habitats on previously developed land
- Watercourse footprint - Watercourse footprint



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DCO APPLICATION

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FIGURE TITLE

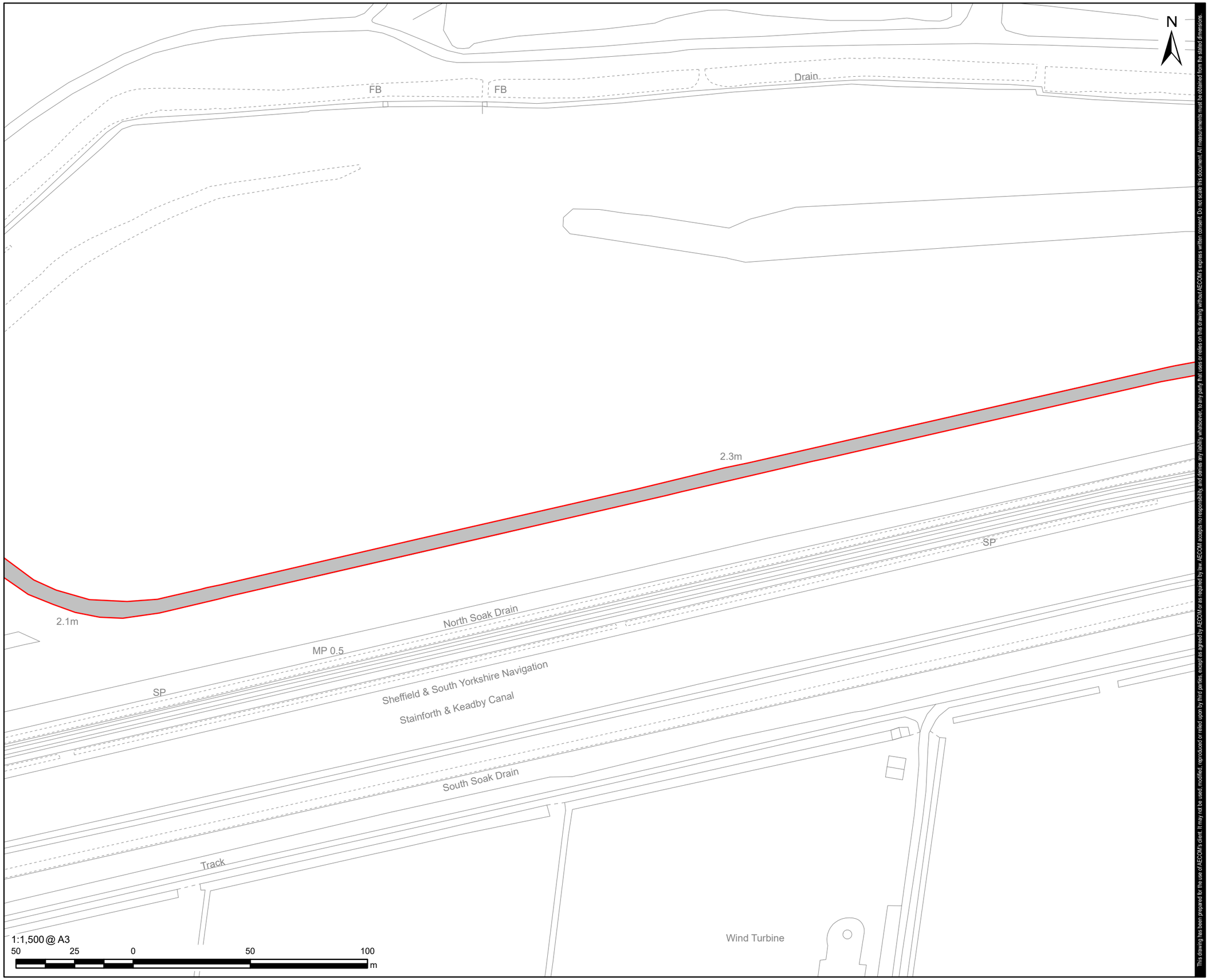
Biodiversity Net Gain Baseline Habitats (Page 9 of 16)

FIGURE NUMBER

Figure 1

Revision: 0 Drawn: MAB Checked: SM Approved: DB Date: 2025-07-04

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PROJECT

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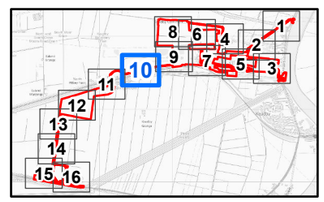
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LEGEND

Proposed Development Site

Baseline UK Habitat Type

Urban - Developed land; sealed surface



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ISSUE PURPOSE

DCO APPLICATION

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FIGURE TITLE

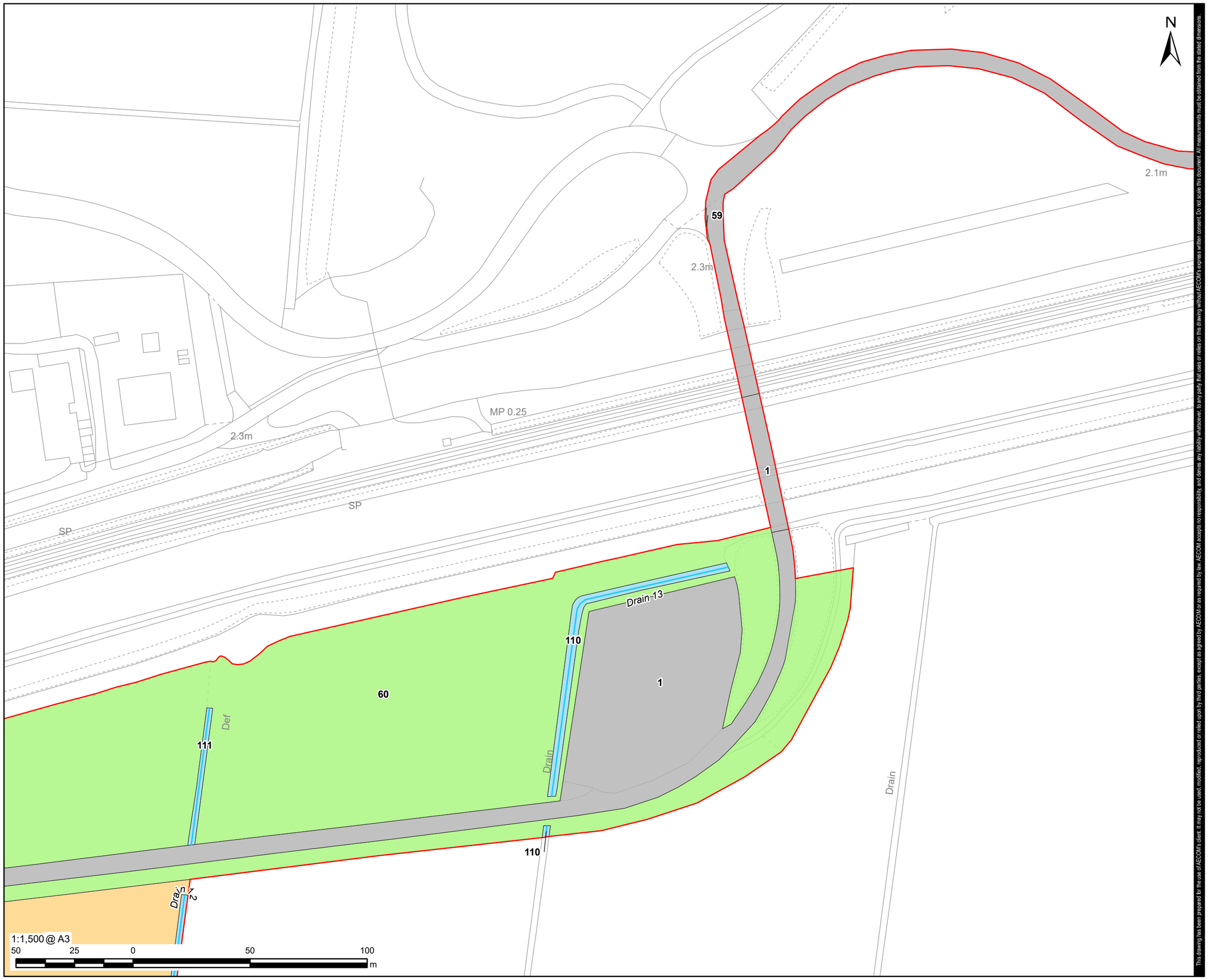
Biodiversity Net Gain Baseline Habitats (Page 10 of 16)

FIGURE NUMBER

Figure 1

Revision: 0 Drawn: MAB Checked: SM Approved: DB Date: 2025-07-04

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PROJECT

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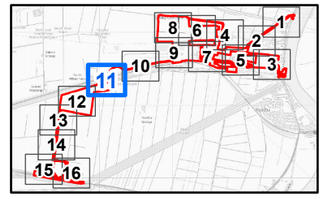
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LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint



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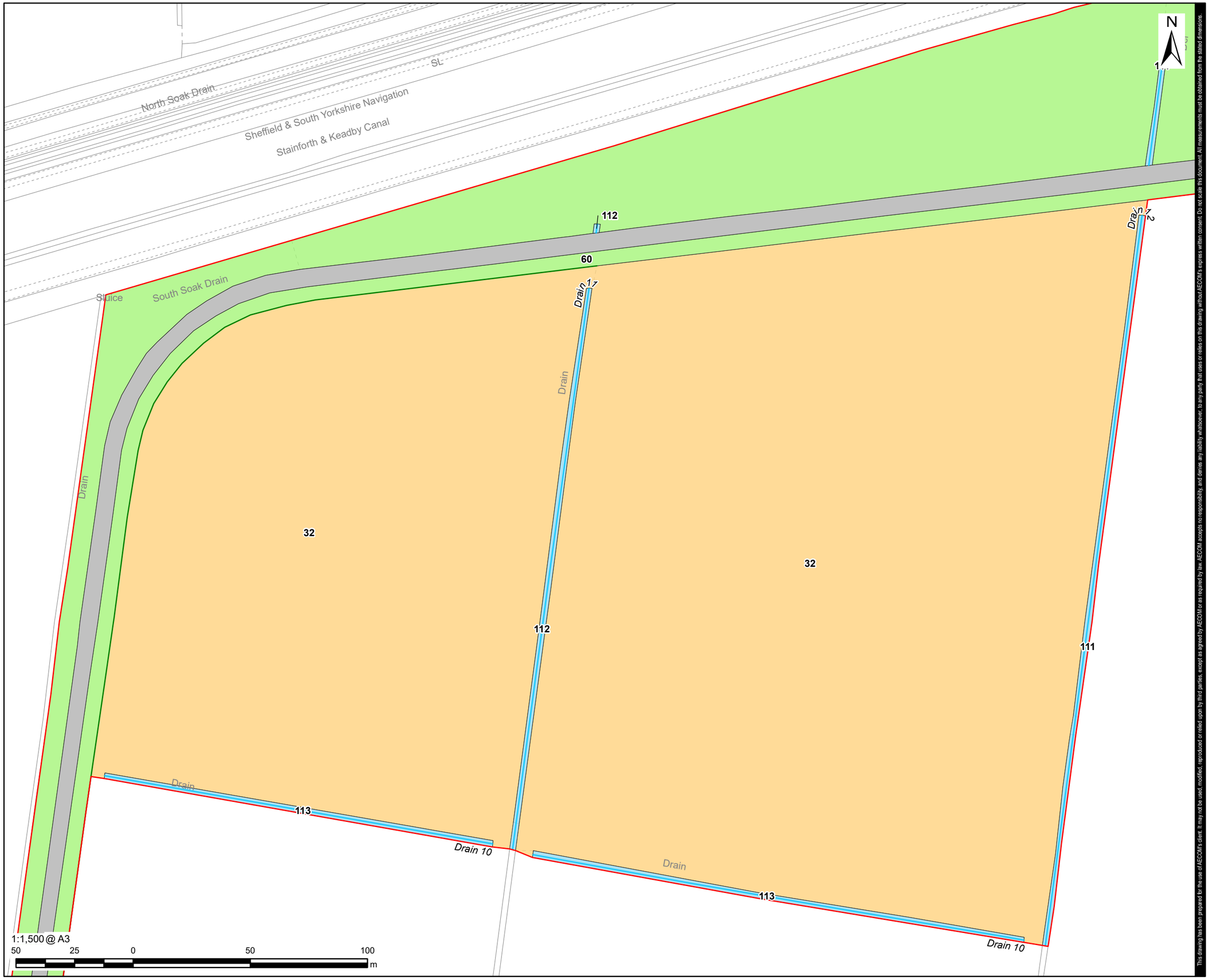
FIGURE TITLE

Biodiversity Net Gain Baseline Habitats (Page 11 of 16)

FIGURE NUMBER

Figure 1

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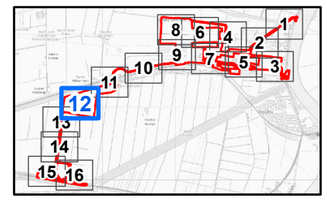
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LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Native hedgerow
- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint



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ISSUE PURPOSE

DCO APPLICATION

PROJECT NUMBER

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FIGURE TITLE

Biodiversity Net Gain Baseline Habitats (Page 12 of 16)

FIGURE NUMBER

Figure 1

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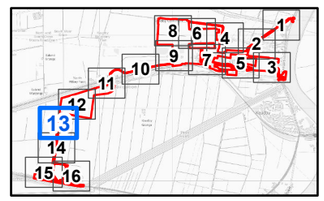
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LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Native hedgerow
- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint



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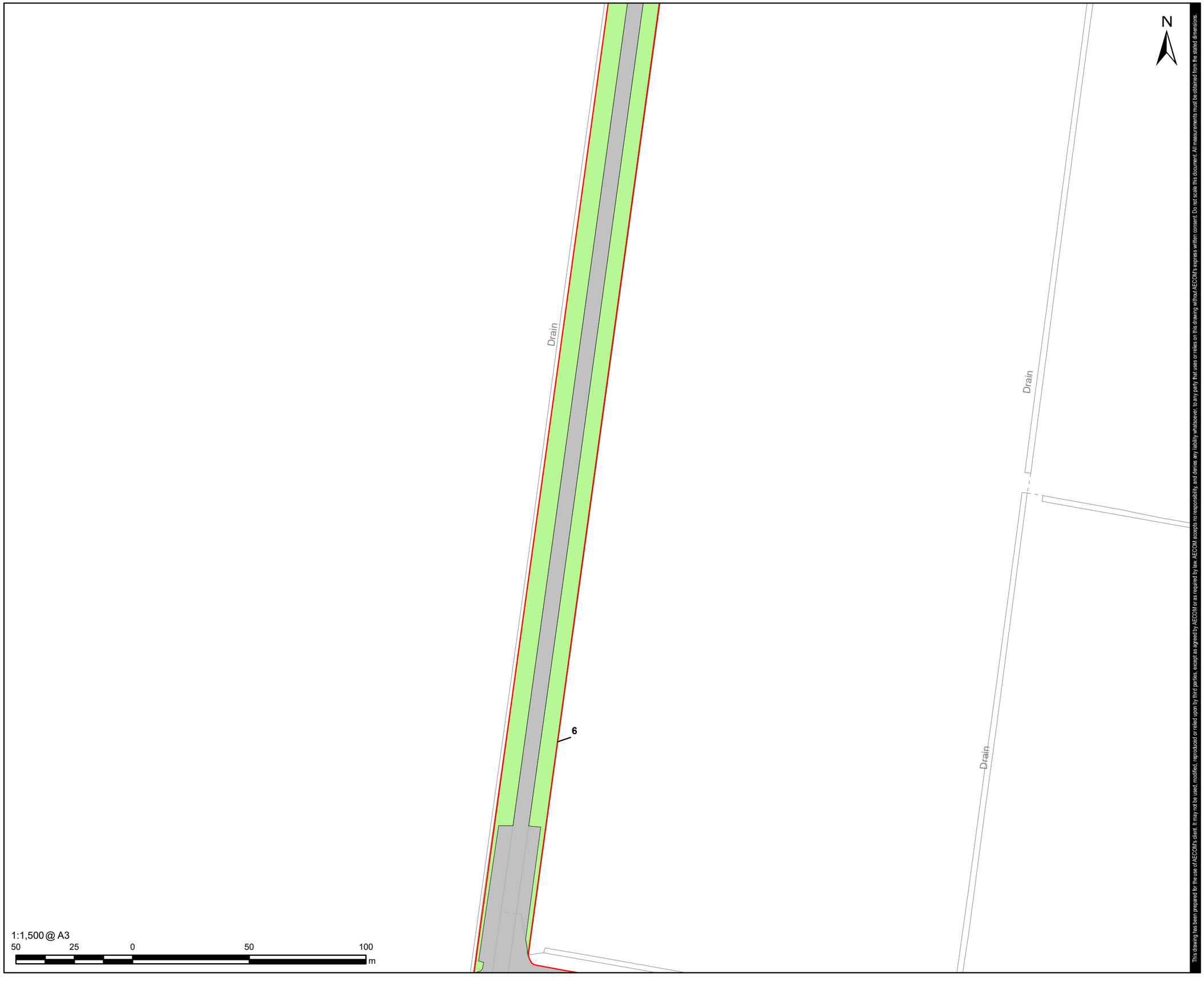
FIGURE TITLE

Biodiversity Net Gain Baseline Habitats (Page 13 of 16)

FIGURE NUMBER

Figure 1

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LEGEND

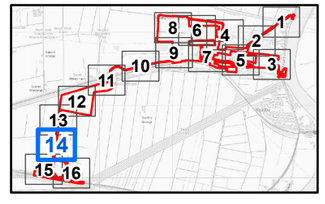
Proposed Development Site

Baseline UK Habitat Type

Native hedgerow

Grassland - Modified grassland

Urban - Developed land; sealed surface



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ISSUE PURPOSE

DCO APPLICATION

PROJECT NUMBER

60721867

FIGURE TITLE

Biodiversity Net Gain Baseline Habitats (Page 14 of 16)

FIGURE NUMBER

Figure 1

Filename: I:\5004 - Information Systems\60721867_Keadby_Hydrogen_DCO\02_Maps\LBMEP\KHy_ES_LBMEP_Fig_1_UK_Habitats_A3_R00.aprx

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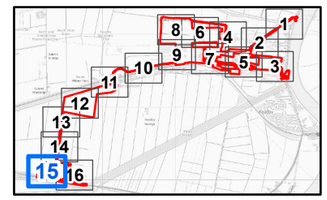
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LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Native hedgerow
- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint



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DCO APPLICATION

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FIGURE TITLE

Biodiversity Net Gain Baseline Habitats (Page 15 of 16)

FIGURE NUMBER

Figure 1

Filename: I:\5004 - Information Systems\60721867_Keadby_Hydrogen_DCO\02_Maps\LBMEP\KHy_ES_LBMEP_Fig_1_UK_Habitats_A3_R00.aprx

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AECOM

PROJECT

Keadby Next Generation Power Station

CONSULTANT

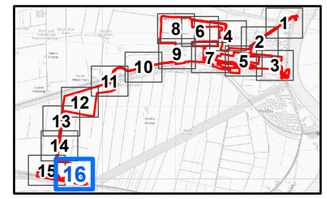
AECOM Limited
Midpoint,
Alencon Link,
Basingstoke, RG21 7PP
www.aecom.com

LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Native hedgerow
- Cropland - Cereal crops
- Grassland - Modified grassland
- Urban - Developed land; sealed surface



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ISSUE PURPOSE

DCO APPLICATION

PROJECT NUMBER

60721867

FIGURE TITLE

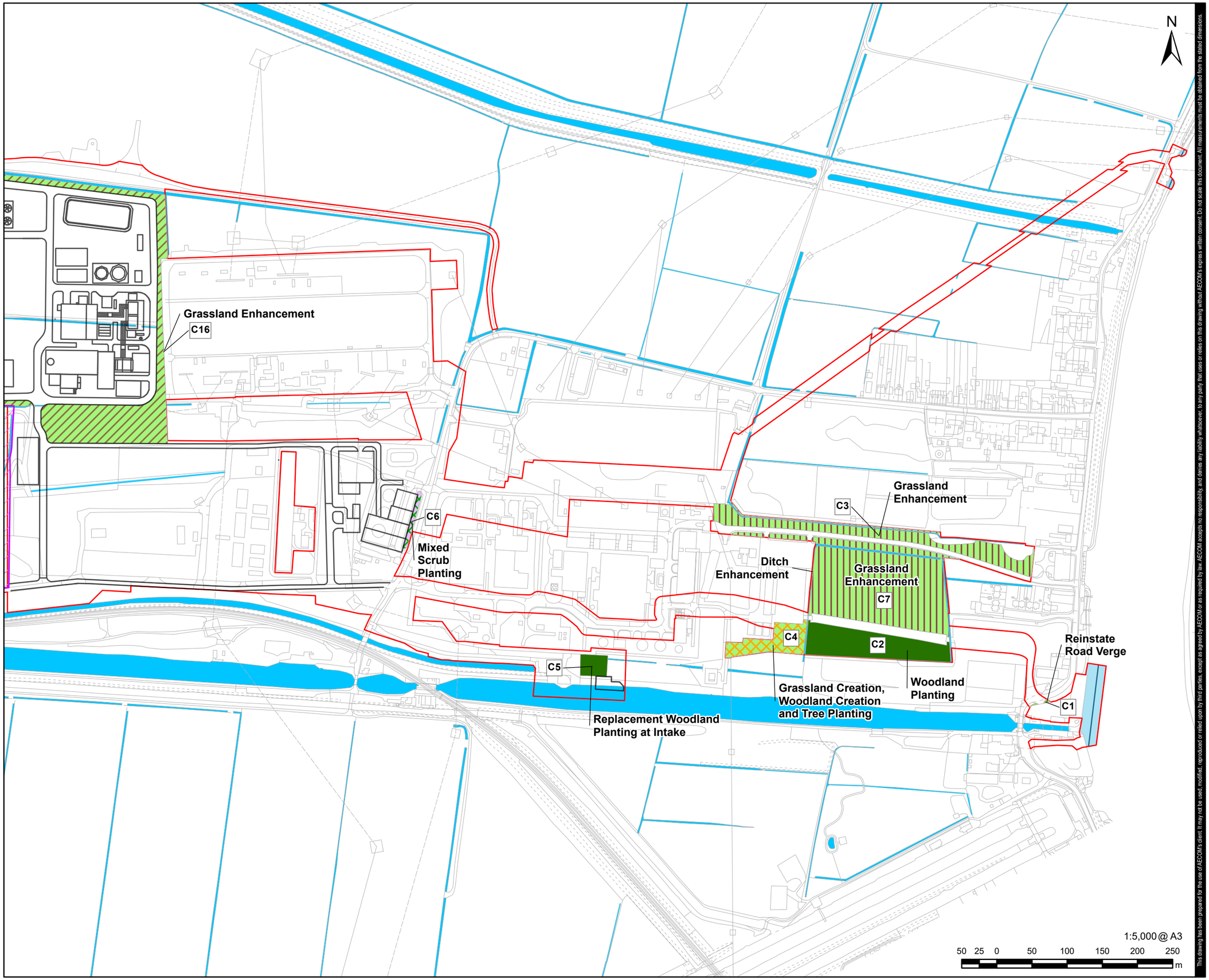
Biodiversity Net Gain Baseline Habitats (Page 16 of 16)

FIGURE NUMBER

Figure 1

Revision: 0 Drawn: MAB Checked: SM Approved: DB Date: 2025-07-18

Filename: I:\5004 - Information Systems\60721867_Keadby_Hydrogen_DCO\02_Maps\LBMEP\KHy_ES_LBMEP_Fig_2_LandscapeAndBiodiversity_A3_R00.aprx



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PROJECT

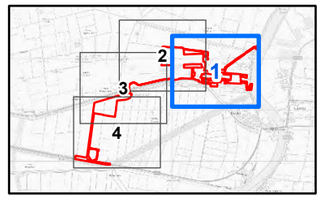
Keadby Next Generation Power Station

CONSULTANT

AECOM Limited
Midpoint,
Alencon Link,
Basingstoke, RG21 7PP
www.aecom.com

LEGEND

- Proposed Development Site
- Indicative Site Layout
- Running Water
- Grassland Creation and Enhancement
- Grassland Creation, Woodland Creation and Tree Planting
- Grassland Enhancement
- Mixed Scrub Planting
- Reinstate Road Verge
- Woodland Planting
- Keadby Ash Tip



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FIGURE NUMBER

Figure 2

ISSUE PURPOSE

DCO APPLICATION

PROJECT NUMBER

60721867

SHEET TITLE

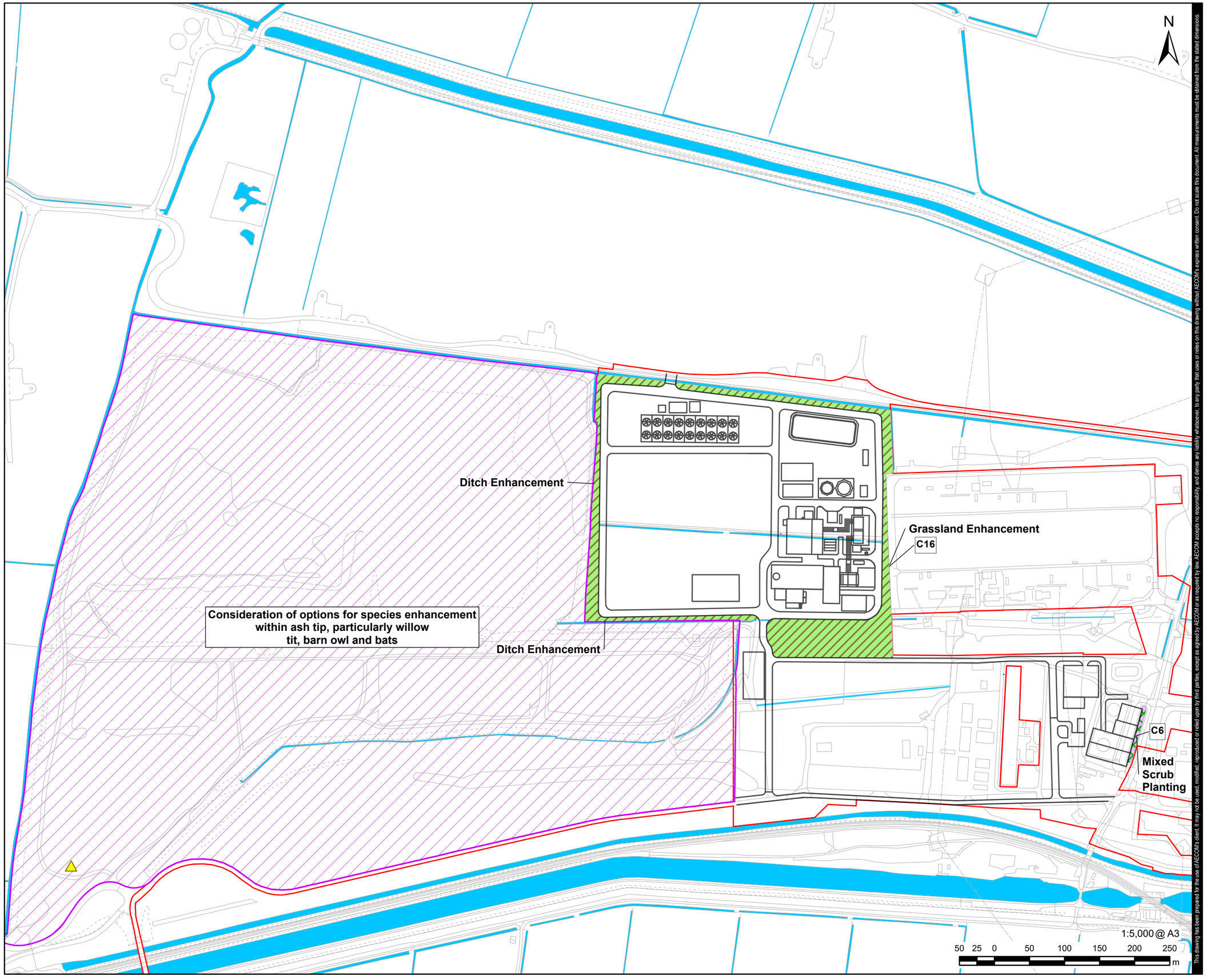
Indicative Landscape and Biodiversity Plan

SHEET NUMBER

Sheet 1 of 4

Revision: 0 Drawn: MAB Checked: SM Approved: DB Date: 2025-07-18

Filename: I:\5004 - Information Systems\60721867_Keadby_Hydrogen_DCO\02_Maps\LBMEP\KHy_ES_LBMEP_Fig_2_LandscapeAndBiodiversity_A3_R00.aprx



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PROJECT

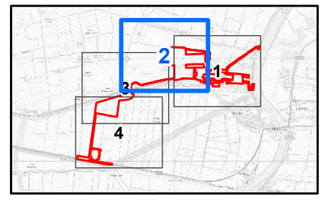
Keadby Next Generation Power Station

CONSULTANT

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Alencon Link,
Basingstoke, RG21 7PP
www.aecom.com

LEGEND

- Proposed Development Site
- Indicative Site Layout
- Running Water
- Grassland Creation and Enhancement
- Mixed Scrub Planting
- Keadby Ash Tip



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FIGURE NUMBER

Figure 2

ISSUE PURPOSE

DCO APPLICATION

PROJECT NUMBER

60721867

SHEET TITLE

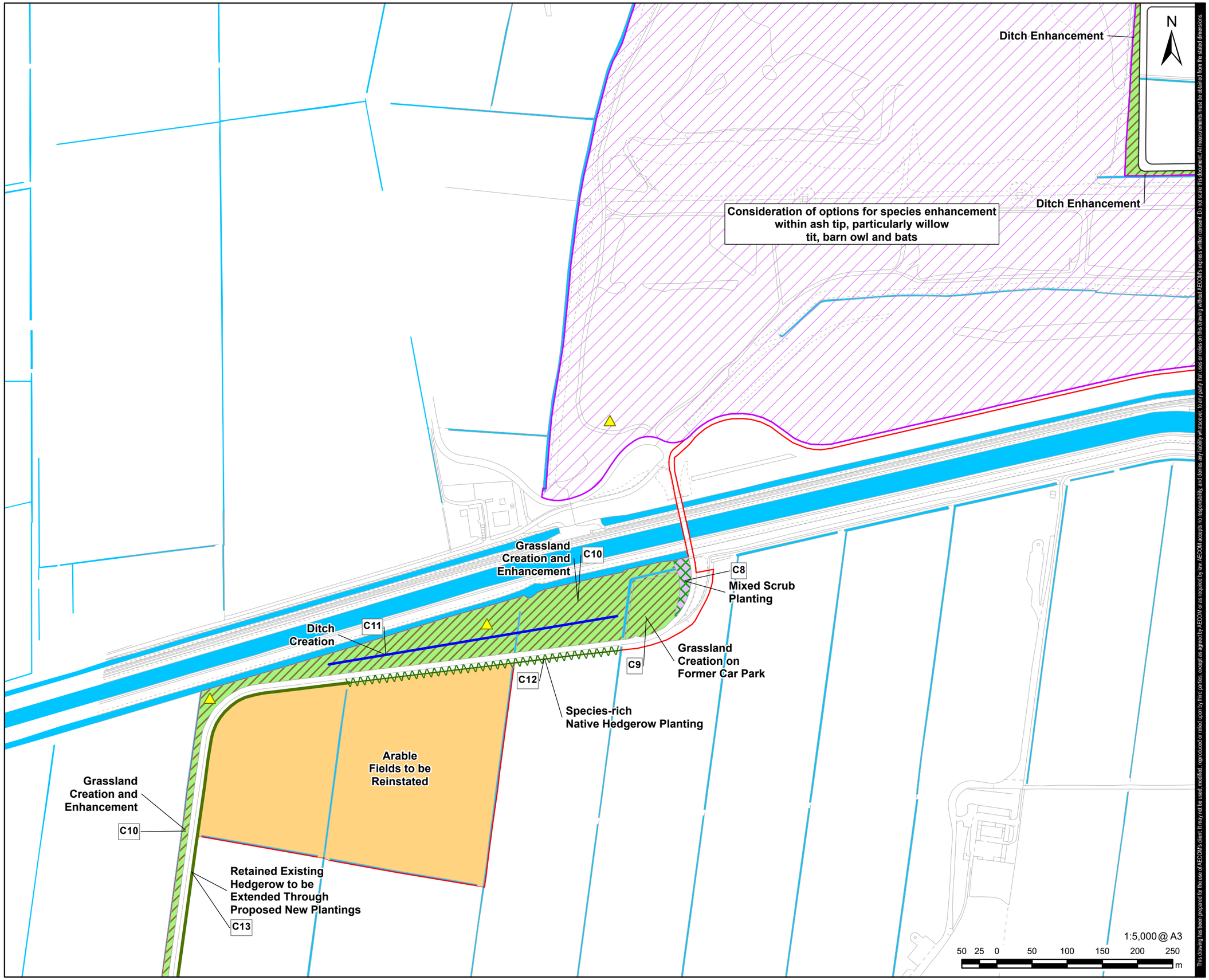
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SHEET NUMBER

Sheet 2 of 4

Revision: 0 Drawn: MAB Checked: SM Approved: DB Date: 2025-07-18

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AECOM

PROJECT

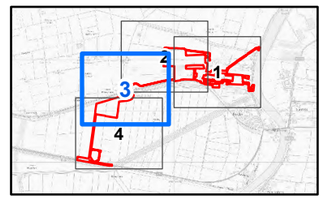
Keadby Next Generation Power Station

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Midpoint,
Alencon Link,
Basingstoke, RG21 7PP
www.aecom.com

LEGEND

- Proposed Development Site
- Indicative Site Layout
- Running Water
- Arable Fields to be Reinstated
- Grassland Creation and Enhancement
- Mixed Scrub Planting
- Keadby Ash Tip
- Ditch Creation
- Retained Existing Hedgerow to be Extended Through Proposed New Plantings
- Species-rich Native Hedgerow Planting



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FIGURE NUMBER

Figure 2

ISSUE PURPOSE

DCO APPLICATION

PROJECT NUMBER

60721867

SHEET TITLE

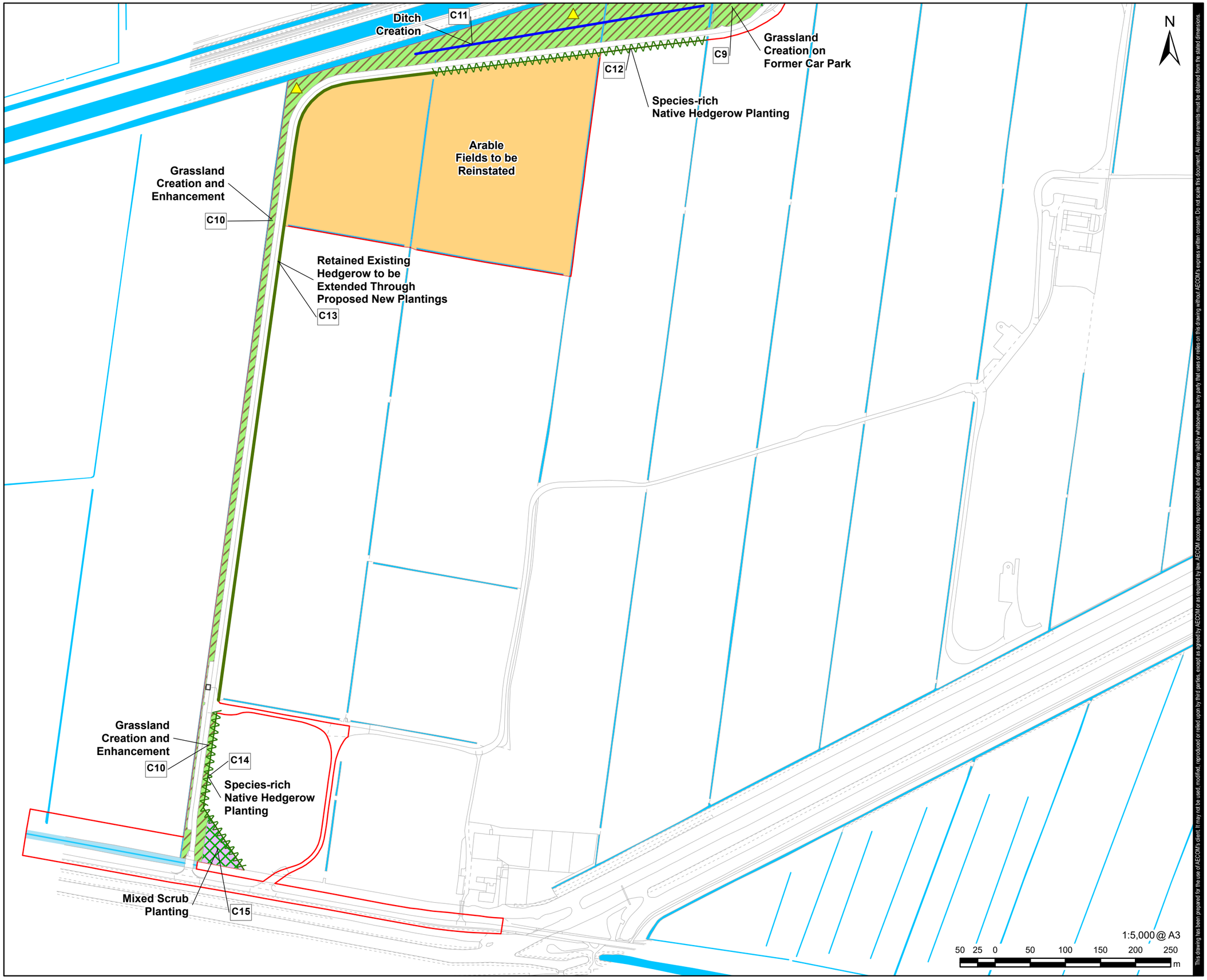
Indicative Landscape and Biodiversity Plan

SHEET NUMBER

Sheet 3 of 4

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PROJECT

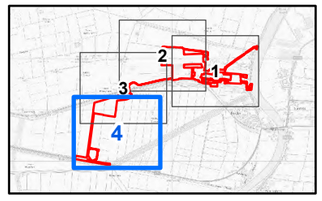
Keadby Next Generation Power Station

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Basingstoke, RG21 7PP
www.aecom.com

LEGEND

- Proposed Development Site
- Indicative Site Layout
- Running Water
- Arable Fields to be Reinstated
- Grassland Creation and Enhancement
- Mixed Scrub Planting
- Ditch Creation
- Retained Existing Hedgerow to be Extended Through Proposed New Plantings
- Species-rich Native Hedgerow Planting



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FIGURE NUMBER

Figure 2

ISSUE PURPOSE

DCO APPLICATION

PROJECT NUMBER

60721867

SHEET TITLE

Indicative Landscape and Biodiversity Plan

SHEET NUMBER

Sheet 4 of 4

Appendix A Seed Mixtures

A.1 Composition of the Proposed EM4 Seed Mixture for Clay Soils

Wild Flowers – 20%

0.8% *Achillea millefolium* – Yarrow

0.6% *Agrimonia eupatoria* – Agrimony

1.0% *Betonica officinalis* – Betony

2.8% *Centaurea nigra* – Common Knapweed

0.6% *Galium verum* – Lady's Bedstraw

0.4% *Geranium pratense* – Meadow Crane's-bill

1.0% *Lathyrus pratensis* – Meadow Vetchling

0.3% *Leontodon hispidus* – Rough Hawkbit

1.8% *Leucanthemum vulgare* – Oxeye Daisy

0.3% *Lotus corniculatus* – Bird's-foot Trefoil

1.4% *Malva moschata* – Musk Mallow

0.7% *Medicago lupulina* – Black Medick

2.8% *Plantago lanceolata* – Ribwort Plantain

0.8% *Primula veris* – Cowslip

1.1% *Prunella vulgaris* – Selfheal

1.1% *Ranunculus acris* – Meadow Buttercup

1.0% *Rhinanthus minor* – Yellow Rattle

0.2% *Sanguisorba officinalis* – Great Burnet

0.1% *Silaum silaus* – Pepper-saxifrage

0.4% *Silene flos-cuculi* – Ragged Robin

0.0% *Vicia cracca* – Tufted Vetch

Grasses – 80%

8.0% *Agrostis capillaris* – Common Bent

2.4% *Anthoxanthum odoratum* – Sweet Vernal-grass

4.0% *Briza media* – Quaking Grass

40.0% *Cynosurus cristatus* – Crested Dogstail

20.0% *Festuca rubra* – Red Fescue

2.8% *Alopecurus pratensis* – Meadow Foxtail (w)

2.8% *Schedonorus pratensis* – Meadow Fescue

Appendix B Barn Owl Tower Design Parameters

Barn Owl Trust
Waterleat, Ashburton
Devon TQ13 7HU
Tel: 01364 653026
Email: info@barnowltrust.org.uk

Pole-box Design

An outdoor Barn Owl nestbox suitable for erection on a large pole

LEAFLET No 50

Reg. Charity No 299 835

This leaflet describes how to make a Barn Owl nestbox suitable for erection on a large telegraph pole. The information includes plans, dimensions, materials, safety advice and erection tips.

Please note:

Nestboxes in buildings are generally the best option, followed by nestboxes in trees. Pole boxes are usually only erected where these options are not available. Nestboxes should never be erected on operational telegraph/electricity poles and erecting your own telegraph pole is expensive. Building and erecting a pole nestbox is a lot of work so before deciding to proceed make sure there is no alternative. See *Nestboxes for use in Barns & Other Buildings* (leaflet no. 3) and *Nestboxes for use on Trees* (leaflet no. 2).

Suitability of the area

The Barn Owl is not a woodland bird. In the UK, Barn Owls hunt mainly by flying over areas of rough grassland, ditch sides, young tree plantations etc. that support a high population of small mammals. In areas with an abundance of food but a shortage of suitable sites, nestboxes can be of great benefit. They should always be placed in areas with some good Barn Owl habitat or they are unlikely to be used. See *Habitat Management* (leaflet no. 1)

Selecting a suitable pole

A pole box is big and heavy and cannot be adequately supported by a thin or flexible pole. A good pole will not only support the box for many years but will also be strong enough to take the weight of someone climbing a ladder leaned against it during inspection or clearing out. Most proper telegraph or electricity poles are suitable and just need to be cut to the right length.

You should be aiming for an erection height over 4 metres above ground level using a substantial pole of not less than 150mm diameter and 6 metres long (1.5m underground and 4.5m in height). In areas where climbing nest-predators are a problem (such as Beech Martens in mainland Europe) position the pole away from buildings or trees and wrap a 1.5m section of the pole with thin aluminium or other very slippery material.

Pole-box construction

The basic box should be built using exterior grade rot-resistant or Tanalith E treated sheet material. The Barn Owl Trust uses 12mm tanalised ($^1/_2$") softwood ply, 25 x 50mm (2" x 1") tanalised batten and 30mm (1¼") rust resistant screws. There's also a small amount of 50 x 50mm timber and a piece of 18mm ply used in this design. Please avoid using hardwood ply, unless it is stamped "FSC Approved".

You may use any type of wood preservative on the box where tanalised (CCA-treated) ply is not available. The preservative should be applied to all component parts before the box is assembled so that all the edges are properly treated. Make sure the treated wood is dry before you assemble the box. During construction a waterproof sealant (such as EVER BUILD – WEATHER MATE) should be applied to all the wood joints to increase weather protection. If you need proof that this is necessary, try leaving your box under a sprinkler for a few hours and then look inside it.



Although tanalised timber is very rot-proof it's not very waterproof so the roof sheets should also be treated with Creosote or some other water-resistant preservative. The apex should be covered with a strip of aluminium or copper. The front, back and sides **MUST** overhang the floor of the box and as an extra precaution a large drainage hole (20mm - ¾" - diameter) should be drilled in each corner of the floor of the box.

All the dimensions are given as a guide and variations of + or - 10% are quite acceptable. The box must have a large access panel to enable nest debris to be cleared out periodically.

You can see a cutting plan and watch a slideshow of a pole-box being constructed on our website www.barnowltrust.org.uk

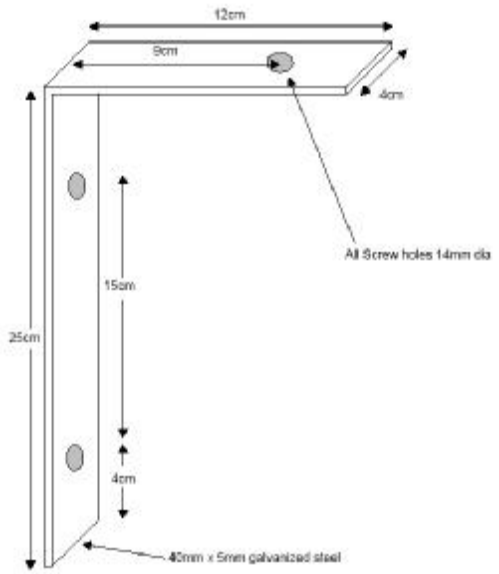
Siting the pole-box

Time spent in reconnaissance is seldom wasted. Please avoid siting your box within 1km (½ mile) of a dual-carriageway, motorway or similar modern road because of the high risk of road mortality. Nestboxes placed in a patch or strip of good (rough grassland) habitat are likely to be discovered more quickly as are boxes placed at existing roost sites. However, neither of these factors is essential.

The box should face open ground so that the main entrance hole is obvious to a passing owl. Don't hide it between big trees or tall buildings – if an entrance can't be seen easily the box is less likely to be discovered. Try to avoid facing the box towards prevailing wind and rain. Generally this means avoiding the west or south-west. The ridge of the roof should lie north-south or northwest-southeast.

The box will need to be cleaned out in future so think about where the ladder could stand and position the box so that this can be done safely.

POLE-BOX BRACKET DIMENSIONS



Erecting the box

By far the simplest and safest option is to attach the box to the pole before the pole is erected. If the pole has already been erected you may consider the use of tower scaffolding or a "cherry-picker" hydraulic platform. It is possible to erect a pole-box (on a pole that's already up) without using any machinery. However, a pole-box is heavy and awkward to lift by hand and the use of ladders is potentially dangerous. The Barn Owl Trust has placed pole-boxes onto previously-erected poles on numerous occasions with a team of three people using three ladders but a detailed description of the method is beyond the scope of this leaflet. Heavy duty galvanised steel brackets, coach bolts, and coach screws are used to secure the box to the pole.

The most important thing when erecting the box is your own safety (for which you are responsible), the safety of your helpers, and the safety of anyone going up to the box in future years. Make sure you carry out a detailed assessment of the risks associated with whatever method you choose and do not attempt to erect a pole-box when working alone!

Each half of the exercise platform should be slid onto the box after erection and retained by screwing through the two outer battens. To facilitate this the box has ladder rests on both sides as well as below the inspection hatch.

Important advantages of this pole-box design

The nestbox described in this leaflet is very deep which makes it almost impossible for the young to emerge prematurely. This reduces the chances of nestlings falling from the box and dying as a result of neglect or predation. By the time a young Barn Owl is big and strong enough to get out of the box it will soon be fully fledged. The design also provides emerging young with a very generous exercise platform enabling them to do lots of wing-flapping before their first flight. They can even get onto the roof of the box and safely back inside before they are able to fly.

The combination of box depth and safe exercise area means that when a young owl leaves the box for the first time it stands a very good chance of being able to fly up and get back inside. This period of returning to the box is important for their survival. Boxes with low entrance holes allow young to leave the box before they are big or strong enough to fly back up again. Young on the ground are generally ignored by the adults and either starve or are predated. Whereas young emerging from a tree-mounted nestbox stand some chance of being able to climb back up, a pole box does not allow the same possibility.

This design has other important features and detailed criteria for the evaluation of Barn Owl nestbox designs may be found at:
www.barnowltrust.org.uk/infopage.html?Id=231

Clearing out the box

As the box fills up with nest debris its effective depth is reduced and so it gradually becomes less safe for emerging young. After four or five broods of young have been produced (normally after about four years) the nest debris should be removed. Boxes used by Jackdaws will fill rapidly with sticks and should be

cleared out every year. When clearing out nest debris it is advisable to wear gloves and a dust mask. It's usually best to clear out nestboxes in November, December or January (but please try to avoid flushing birds out during severe weather conditions). Under the Wildlife and Countryside Act 1981, it is an offence to disturb breeding Barn Owls.

Safety tips

Before erecting your nestbox take time to consider the hazards you might face and what steps you could take to minimise the risks. Hazards might include: an injury at a remote location, falling from a ladder, injury from heavy lifting, dropping a nestbox onto another person, or poor positioning of a box resulting in additional hazards for anyone monitoring the box at a later date. The following are examples of precautions you should take to reduce the risks.

1 Don't work alone. If erecting a nestbox at an isolated site, let someone know where you are going and when you expect to be back before you set off. Carry a mobile phone if you have one.

2 Time spent in reconnaissance and preparation is seldom wasted. Never lift a box up into position until all preparatory work is complete. Double-check your measurements to confirm that the box will fit.

3 Ensure that any ladder you use is secure before climbing it. If possible tie it off at the top and bottom.

4 Avoid over-reaching - never attempt to carry out any task up a ladder if you cannot reach comfortably.

5 When planning how to position, support and fix a nestbox, try to create a situation where the box can rest in position without being held. This will allow you to have both hands free to fix it safely.

6 If carrying a nestbox up a ladder, ensure that it is kept low relative to your body (ideally not above waist height). This will keep your centre of gravity down. Try to keep the box in front of you or to the side - never hold a nestbox behind or above you.

7 You are responsible for your own safety - assess all the risks and be careful.

Please let us know when your box is occupied.

Good Luck!

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The Barn Owl Trust is a registered charity dedicated to the conservation of the Barn Owl and its environment. You can become a **Friend of the Barn Owl Trust** and support our work by making a regular donation. **Friends** receive our bi-annual magazine Feedback, our Annual Report and an enamel pin badge.

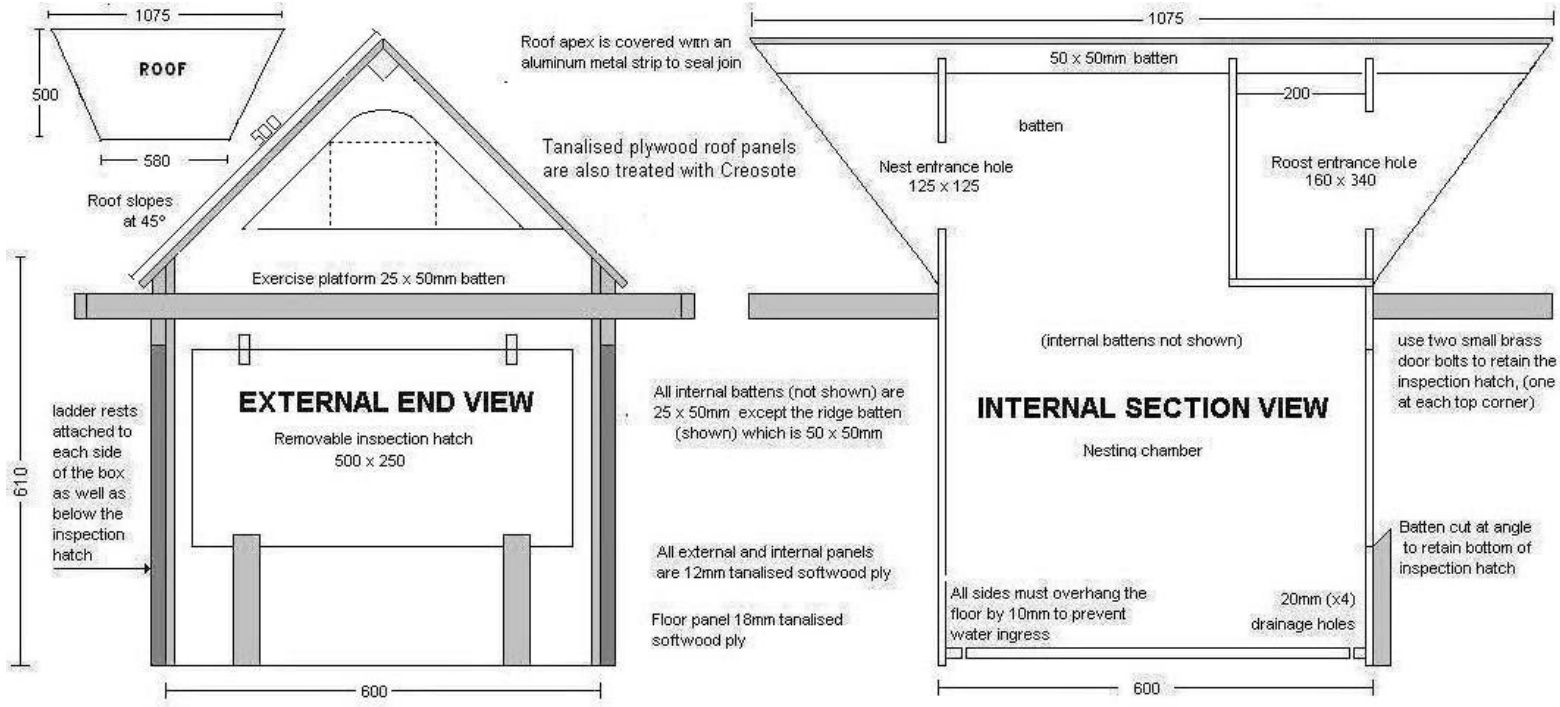
The Trust provides a wide range of free leaflets on Barn Owl related matters. For details of these and further information about the Trust and its work, please write including a large SAE to:

Barn Owl Trust
Waterleat
Ashburton
Devon
TQ13 7HU

Tel: 01364 653026
Email: info@barnowltrust.org.uk
Web: www.barnowltrust.org.uk



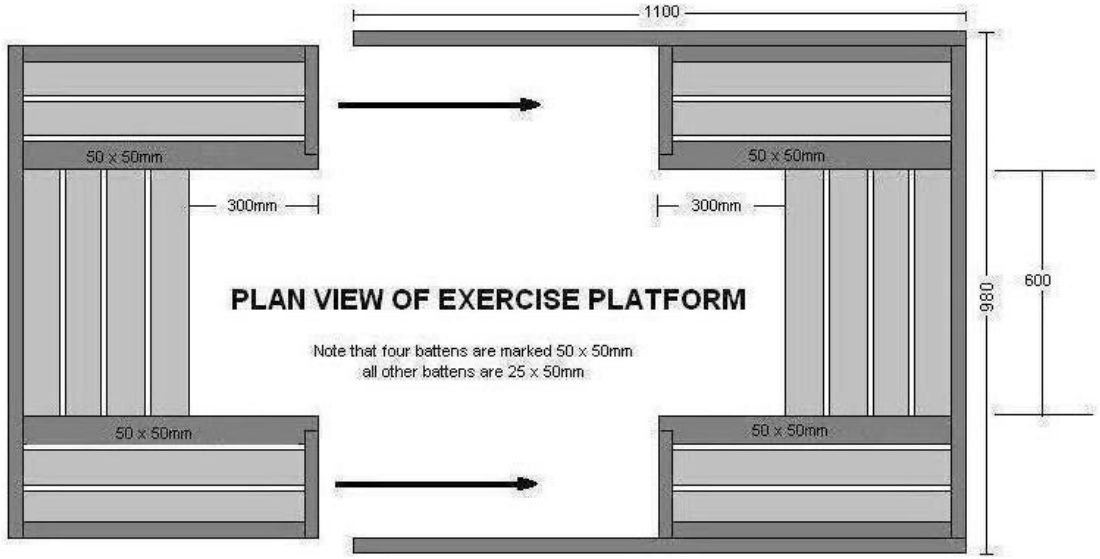
Leaflet No. 50—Pole-box design—an outdoor Barn Owl nestbox suitable for erection on a large pole



BARN OWL TRUST POLE BOX DESIGN.

Photographs of this box under construction may be viewed at www.barnowltrust.org.uk

The platform is made in two parts. After the box has been erected the platform halves simply slide onto the box and the outer extended battens (already attached to one half of the platform) are screwed to the other half. To facilitate this, the box has ladder rests on both sides. Please note that the light grey shaded battens in this diagram are flat and level with the bottom of all the other timbers. This effectively gives the tray an edge that is easy for young birds to grip.



Drawing NOT to scale

all dimensions are millimetres

Appendix C Maintenance Regimes

C.1.1 The landscape and biodiversity management and enhancement area will be managed and maintained for 10 years, with a review after 5 years to potentially integrate the management and maintenance.

Landscape Element Type	Maintenance Year 1												Maintenance Years 2, 3 and 4												Maintenance Year 5 and ongoing (to be reviewed and amended as required)											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Species Rich Grassland																																				
Remove litter, rubbish and debris	■				■				■				■				■				■				■				■				■			
Spot-treat undesirable species				■		■			■							■		■			■							■		■			■			
Establishment cuts (may occur pre-practical completion)					■	■	■																													
Subsequent cuts																■					■							■				■				
Removal of arisings					■	■	■									■					■							■				■				
Control emerging scrub								■												■																
Hedgerow Planting																																				
Spot-treat undesirable species				■		■			■							■		■			■							■		■			■			
Re-firm plants			■			■				■					■			■				■					■									
Inspect and adjust stakes, guards and ties			■							■					■							■					■						■			
Pruning											■												■											■		
Watering (timing as required)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Remove litter, rubbish and debris	■				■				■				■				■				■				■				■				■			
Replacement of failed/ failing plants										■	■	■		■	■	■							■	■	■			■	■	■					■	■	■
Remove guards																																	■			
Woodland/ Scrub Planting																																				

Spot-treat undesirable species	
Re-firm plants	
Inspect and adjust stakes, guards and ties	
Pruning	
Control unwanted emerging scrub within plots	
Watering (timing as required)	
Remove litter, rubbish and debris	
Replacement of failed/ failing plants	
Remove guards	

Monitoring and Inspection	
Weed control inspection	
Annual inspection of all planted areas to record failed or defective plants	
Annual inspection of all bird and bat boxes	
Monitoring of landscaped areas to assess species diversity and establishment	
Annual condition assessment survey of grassland (Year 1, 3 and 5)	

Appendix D Biodiversity Net Gain

D.1 Introduction

D.1.1 Biodiversity Net Gain (BNG) is an approach to development that intends to leave biodiversity in a better state than before. It encourages developers to provide an increase (in extent and/or quality) in appropriate natural habitat over and above that required to compensate for the habitat losses that would arise from the development concerned. In so doing, the BNG approach aims to assess the current loss of biodiversity through development and contribute to the restoration of ecological networks. In the case of NSIPs provision of BNG is encouraged but remains voluntary (refer to paragraph D.2.1).

D.1.2 This appendix presents the results of the voluntary BNG assessment for the Proposed Development. This BNG assessment has been prepared to measure and quantify, in a repeatable manner using an approved method, the impact of the Proposed Development on biodiversity and nature conservation. This assessment therefore complements and directly supports, so it should be read in conjunction with, the main text of the Outline LBMEP Report (which this BNG assessment is appended to).

D.1.3 The Outline LBMEP Report (Application Document **Ref. 5.10**) and this BNG appendix are supported by a standalone drawing – the Indicative Landscape and Biodiversity Plan (**Application Document Ref. 2.18**). A duplicate of this drawing is included within the Outline LBMEP Report as **Figure 2**.

D.1.4 The assessment presents one solution for achieving BNG based on the worst-case habitat losses and impacts of the Proposed Development. The solution remains under review up until confirmation of the detailed design, which will be produced post-consent during the discharge of DCO Requirements.

D.1.5 The final LBMEP Report and Landscape and Biodiversity Plan (as currently indicated by **Application Document Ref. 2.18** and duplicated in this report as **Figure 2**) will be delivered as a Requirement of the **Draft DCO** (**Application Document Ref. 3.1**) and is to be agreed with NLC once the detailed design has been completed. The final LBMEP Report will be accompanied by an update of the BNG assessment to demonstrate that the approach and quantum of BNG, as set out in this Outline LBMEP Report and the related Indicative Landscape and Biodiversity Plan (**Application**

Document Ref. 2.18), remains consistent with that agreed at Examination of the DCO Application.

D.2 Relevant Legislation and Planning Policy

D.2.1 The Environment Act 2021 mandates the need for new development to deliver 10% BNG and to maintain this for a period of at least 30 years. However, this legislation does not currently apply to NSIPs and the Government has advised that it will not apply to NSIPs before May 2026. Projects accepted for Examination before the specified commencement date are not required to deliver mandatory BNG, although they might deliver it in response to policy or voluntary commitments.

D.2.2 In relation to requirements under the Act, a standardised assessment method and calculation tool has been mandated i.e. the Statutory Metric (Natural England, 2024). This method and tool has been used to make the BNG assessment.

D.2.3 The current approved version of Overarching National Policy Statement (NPS) for Energy (EN-1) (Department of Security and Net Zero, 2024) does not compel BNG assessment, and instead applications should "*seek opportunities to contribute to and enhance the natural environment by providing net gains for biodiversity*" (paragraph 4.6.6) and they are "*encouraged to use the latest version of the biodiversity metric to calculate their biodiversity baseline and present planned biodiversity net gain outcomes*" (paragraph 4.6.7).

D.2.4 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2024) addresses BNG in more general terms, encouraging net gains for biodiversity to be sought through planning policies and decisions. For example paragraph 193(d) states "*opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity*."

D.2.5 North Lincolnshire Local Development Framework (LDF) Core Strategy (adopted 2011) (NLC, 2011) also addresses BNG in general terms. Policy CS17 states "*ensuring development seeks to produce a net gain in biodiversity by designing in wildlife, and ensuring any unavoidable impacts are appropriately mitigated for*" and *"… wildlife enhancements that contribute to the habitat restoration targets set out in the North Lincolnshire's Nature Map and in national, regional and local biodiversity action plans*." However, there is no applicable local planning policy that requires either delivery of a

specific quantum of BNG, or the method through which BNG should be quantified and demonstrated.

D.2.6 Other strategic guidance relevant to interpretation of the above requirements and development of the BNG strategy comprises:

- National Pollinator Strategy (Defra, 2014);
- Lincolnshire Local Biodiversity Action Plan (LBAP) (Lincolnshire Biodiversity Partnership, 2011); and
- National Character Area (NCA) Profile 39 Humberhead Levels (Natural England, 2025).

Relevant BNG Assessment Guidance

D.2.7 This report has been prepared with reference to the following good practice guidance:

- The suite of BNG technical guidance and standards published to accompany the Statutory Metric (Defra, 2024 (version dated 21 February 2025));
- British Standard BS 8683: Process for designing and implementing biodiversity net gain – Specification (British Standards Institution, 2021); and
- BNG: Good practice principles for development published by CIEEM, Construction Industry Research and Information Association (CIRIA) & Institute of Environmental Management and Assessment (IEMA) (2016).

D.3 Methods

Overview of the Approach

D.3.1 BNG assessment involves making a comparison between the biodiversity value of habitats present within a defined site boundary (in this case the Site (also referred to as Order Limits) as shown on **Figure 1**) prior to implementation of the Proposed Development (the 'baseline') and the predicted biodiversity value of habitats following completion of the Proposed Development ('post-development') and associated commitments under the Outline LBMEP Report and the Indicative Landscape and Biodiversity Plan (**Application Document Ref. 2.18**).

D.3.2 The comparison is made in terms of 'biodiversity units', with a 'biodiversity metric' providing the mechanism to allow biodiversity values to be calculated and compared.

D.3.3 The Statutory Metric (Defra, 2024), the current iteration of the approved biodiversity metric at the time of preparation of this BNG assessment, calculates the overall loss or gain of biodiversity by assessing the distinctiveness (i.e. type of habitat and its relative value), condition, extent,

and strategic significance of the habitats present pre- and post-development. Distinctiveness is assigned automatically by the metric based on habitat type, but the remaining three parameters need to be entered by the assessor. The approach for defining the baseline, assessing condition and assigning strategic significance is described below from paragraph D.3.7 onwards.

D.3.4 In relation to the post-development baseline, the metric also includes weightings based on the difficulty of the proposed intervention, how long after the original habitat loss the intervention will take place (i.e. the delay), and the time it would take for the proposed interventions to achieve target condition. The first and last of these are again assigned automatically by the metric, but the delay needs to be entered manually based on a realistic precautionary assessment of likely timelines. An indicative construction programmes is provided in **ES Volume I Chapter 5**: Construction Programme and Management (**Application Document Ref. 6.2**) and indicates that construction (including site clearance) will take 3 to 4 years and therefore that most habitat creation and enhancement (i.e. soft landscaping) works are likely to be undertaken 4 years after the original habitat loss to the Proposed Development (a 4-year delay) at a comparable time as commissioning and testing prior to first commercial operation.

D.3.5 To achieve BNG, the biodiversity unit score must have a post-intervention score higher than the baseline score. When calculating the post-intervention biodiversity units, the metric includes a series of standard 'risk multipliers' to account for the inherent risk of creating and restoring habitats, and the time taken to establish habitats. The risk multipliers have the effect of reducing the value of the proposed habitats, which means larger areas, and habitats of higher distinctiveness and/ or condition are required to achieve net gain.

D.3.6 The metric assesses and generates separate outputs for area-based habitats (measured in habitat units) and linear habitats, including hedgerows (measured in hedgerow units) and watercourses (measured in watercourse units).

Baseline Data Gathering

D.3.7 A habitat survey was undertaken in accordance with the standard survey method (UKHab, 2024) as described in **ES Volume II Appendix 11C**: Preliminary Ecological Appraisal Report (**Application Document Ref. 6.3**) to record the area-based and linear habitats present and to collect data to permit the baseline condition of these habitats to be assessed. However, the approach for larger watercourses differed from that for other habitats (including ditches), as explained below. The relevant habitats are shown on the Habitat Baseline Plan (**Figure 1**).

D.3.8 Tree data was also collected through the tree survey provided as **Appendix E** of the Outline LBMEP Report. The associated Tree Protection Plan is the basis for decision-making on which trees and woodland will be lost or retained. It should be noted that the tree survey does not distinguish between

trees and shrubs. Only the former need to be specifically accounted for within the metric, whilst shrubs either form scrub habitat or occur as isolated bushes integral to other habitats.

D.3.9 Each discrete habitat parcel was appraised to determine the baseline habitat condition (which is a proxy for habitat value) for entry into metric, or if this was not possible (e.g. in the case of unaffected ditches located on third party land) a precautionary (realistic best case) condition was applied. This 'Site Condition Assessment' was made within reference to the criteria published with the Statutory Metric (Defra, 2024). Using these criteria each habitat was typically assigned either Poor, Moderate or Good condition, although it is also possible for these scores to be upgraded or downgraded (depending on the starting point) using professional judgement to the categories Fairly Poor or Fairly Good. Where this has been done, the reasons for this are provided in this report or the metric (**Annex D1**).

D.3.10 The baseline site condition scores are the basis for determining whether meaningful habitat enhancement can be achieved, the parameters for that enhancement (i.e. what needs to be achieved to boost the habitat condition to a higher level), and what condition score can reasonably be achieved post-intervention.

River and Ditch Network

D.3.11 Assessment requirements in relation to rivers (including streams and canals but not wet ditches and culverts) diverge from the approach for other habitats (as summarised above).

D.3.12 The river condition assessment was made using data derived from both Modular River Physical (MoRPh) surveys and a River Type desk study, The MoRPh survey and analysis was conducted by an accredited AECOM surveyor in September 2024. For larger watercourses, use of the Fairly Poor or Fairly Good condition categories is acceptable with reference to the data gathered.

D.3.13 The approach for condition assessment of ditches is the same as for area-based habitats. Ditches located outside areas of agreed land access (i.e. within areas unaffected by the Proposed Development, such as ditches crossing over the alignment of the Water Discharge Corridor) were assigned a precautionary (likely best case) condition of 'Moderate'. There was no need to assess the condition of culverts, where these occur, as the heavily modified nature of these means that they assigned poor condition by default.

D.3.14 Impacts on river and ditch habitats are assessed in terms of both habitat loss and 'encroachment' by development. Encroachment is defined as "*a reduction in the quantity/ quality and 'use' of available habitat that forms a specific ecological function for riparian or aquatic specialist species. Whereby, 'use' is defined as the ability of a species to: commute, forage,*

rest/ dwell, or access as part of its life cycle between aquatic and terrestrial phases" (Defra, 2024).

D.3.15 Works within the riparian zone of a river or ditch coinciding with a pre-existing area of hardstanding would not be riparian encroachment, as there would be no impact on quantity or quality of habitat or its suitability for use by species (the baseline is already encroached). For the same reasons given in the definition, encroachment also applies to other forms of intensive land-use. For example, works within an arable field also would not result in encroachment. Conversely, habitat creation within the riparian zone after construction would beneficially reduce the baseline encroachment relative to a baseline setting of hardstanding or arable farmland.

D.3.16 The relevant rivers and ditches are shown on the Habitat Baseline Plan (**Figure 1**).

Trading Rules

D.3.17 The trading rules set minimum habitat creation and enhancement requirements to compensate for specific habitat losses, up to the point of no net loss. They are based on the habitat type and distinctiveness of the lost habitat. Losses of higher distinctiveness habitats require replacement of the same habitat type to satisfy the trading rules while losses of lower distinctiveness can be replaced by similar or better habitat.

D.3.18 Deviation from the trading rules can occur under "Rule 4" of the Statutory Metric "*when there is a clear ecological justification for the habitat intervention which is not being reflected by the biodiversity metric too … Rule 4 can be used to reflect the full ecological benefit provided by these interventions. In all cases, the biodiversity gain objective still needs to be met*" and this is agreed with the relevant planning authority (which in this case would be NLC) as the body that will be responsible for approving the final LBMEP.

D.3.19 In all but one case the trading rules are met. The exception is the loss of 0.27ha of a peripheral area of poor condition OMH. The rationale underpinning this is provided below from paragraph D.6.8 onwards, but it is re-emphasised that the approach being taken is consistent with the approach taken for the consented Keadby CCS Power Station, which had the same impact and for which divergence from the trading rules was agreed with NLC. The Proposed Development is an alternative for the Keadby CCS Power Station,

Irreplaceable Habitats

D.3.20 Irreplaceable habitats are habitats which are very difficult (or take a very significant time) to restore, recreate or replace once destroyed. The relevant

habitats are the likely veteran and likely ancient trees identified in **Appendix E**.

D.3.21 Whilst good practice requires the inclusion of details of irreplaceable habitats within the metric, losses (where applicable) cannot be calculated and therefore no baseline weighting is applied to these habitats.

Post Development Data

D.3.22 The detailed landscape design would be prepared post-consent as part of the detailed design, which will be produced during the discharge of DCO Requirements. Currently it is not possible to commit to landscaping within the Main Site or with the Ancillary Facilities areas, so it has been assumed that all habitat is permanently lost in these areas. This is very worst-case and would be reviewed at detailed design and reduced if practicable.

D.3.23 Given the above, the approach has been to identify (a) those areas where habitat creation and enhancement can definitely be provided, and (b) what could be provided within these areas to achieve BNG. These are the measures set out in the main text of the Outline LBMEP Report and they are also recorded within the metric. Not all of these locations/ proposals may be required later if the final design can achieve less permanent habitat loss. The areas where habitat creation and enhancement can be provided are shown on **Figure 2** which is a duplicate of the standalone Indicative Landscape and Biodiversity Plan (**Application Document Ref. 2.18**).

D.3.24 The post-development habitats proposed have been assigned to the intended UKHab categories. Target condition scores for the proposed habitats are considered to be realistic and therefore suitably precautionary. No new habitats are proposed that require novel approaches, and instead all can be created using well-established techniques and based on a good understanding of typical management requirements and outcomes.

Identification of Habitats of Strategic Significance

D.3.25 All baseline and post-development habitat parcels must be assigned a strategic significance score, and this relates to whether a site as a whole or individual component habitats have been identified as significant for nature. Recognising strategic significance therefore gives extra value to habitats that are in optimal locations, or are of a type, that meet local objectives for biodiversity.

D.3.26 Application of strategic significance requires that a score be assigned to each habitat parcel. The options for scoring each habitat parcel are:

- High - within an area formally identified in a local strategy, plan or policy;
- Medium - location ecologically desirable, but not identified in a local strategy, plan or policy; and

- Low - not identified in a local strategy, plan or policy OR no strategy or plan is in place in the area.

D.3.27 The ‘within an area formally identified in a local strategy’ scoring option should only be selected for those specific habitats identified as being geographically important within relevant local strategies. For example, if the survey site contains a mixture of habitats and is within an area identified as strategically important for lowland calcareous grassland it is only the lowland calcareous grassland that would be recorded as ‘within an area formally identified in a local strategy.’ However, when a local strategy identifies an area as ecologically significant generically, such as a Local Site or strategic ecological corridor, all habitats occurring within that area would be identified as ‘within an area formally identified in a local strategy.’

D.3.28 To determine the strategic significance of sites and habitats, the local plans, strategy and policy documents detailed in Section 2.3. of the Outline LBMEP Report were reviewed. As a Local Nature Recovery Strategy (LNRS) has not been published, the following habitats were assigned high strategic significance:

- priority habitats identified in the Lincolnshire BAP and/or Section 41 of the NERC Act;
- habitats with nature conservation designations;
- habitats covered by green infrastructure and biodiversity opportunity mapping designations as shown on a map produced for the withdrawn North Lincolnshire Local Plan Publication Plan October 2021 (whilst this plan has been withdrawn, this map is still available online and is the only plan identified that maps green infrastructure); and
- other habitats named in Local Plan policies with objectives for retention and creation i.e. woodland.

D.3.29 All other habitats were assigned low strategic significance.

Approach to Identification of Suitable Habitat Interventions

D.3.30 Suitable habitat interventions have been considered with reference to the factors influencing the baseline habitat condition, as determined through application of the prescribed Site Condition Assessment criteria during the baseline habitat surveys.

D.3.31 Good practice guidance (Defra, 2024) emphasises that measures to enhance biodiversity “must provide a significant and demonstrable uplift in distinctiveness and/or condition to record additional biodiversity units.” When investigating options for meaningful habitat enhancement to uplift condition, two types of habitat intervention have been considered. These are:

- measures to improve the condition of existing habitats compared to the baseline state; and

- measures to produce a change to a higher distinctiveness habitat within the same broad habitat group compared to the baseline state e.g. measures to push ‘other neutral grassland’ to a higher distinctiveness priority grassland type.

D.3.32 Where the habitat intervention would involve removing all of a semi-natural habitat to trade up to a higher distinctiveness habitat this would usually be treated as habitat creation rather than habitat enhancement (although there are exceptions to this general rule).

D.3.33 When considering habitat management interventions, due consideration has also been to whether the possible interventions are realistic (in terms of the site conditions and timeframe for delivery of the target condition), practicable (in terms of deliverability by a landscape contractor) and securable. Woodlands are particularly pertinent to these considerations, as the Site Condition Assessment criteria for woodlands strongly link baseline condition with characteristics related to age and naturalness. Therefore, as example, where a woodland is poorly performing against the criteria with reference to a lack of natural regeneration, this cannot be rectified by new plantings. Similarly, a lack of veteran trees or older age classes cannot be rectified through planting or other management. Given this, the maximum condition that can be realistically achieved for new woodland plantings as well as many/most woodland enhancement proposals is moderate.

D.3.34 The Statutory Metric has been constructed to permit some habitat trading options and to prohibit others. This generally relates to the distinctiveness of the baseline habitat relative to that proposed to replace it, with only trading of low and medium distinctiveness habitats permitted. Where habitat trading is permissible, options have again only been put forward where this is realistic, practicable and securable.

D.3.35 An example of a permissible habitat trade would be the conversion of ‘modified grassland’ to ‘other neutral grassland’. This is an option that is realistic and practicable in terms of timeframes for delivery, availability of suitable management techniques (e.g. mowing, reseeding etc), and available information on the likelihood of success (i.e. difficulty). An example of an unacceptable habitat trade would be loss of lowland calcareous grassland (a high distinctiveness habitat) to create a biodiversity pond. Similar trading rules apply in relation to habitat compensation and at times the metric can be a blunt instrument that merits further consideration and review. For example, the metric does not permit creation of species-rich grassland to compensate for losses of OMH, even though the former is a recognised component of OMH. However, the metric does permit consideration of such solutions offline as ‘bespoke mitigation packages’, provided BNG is otherwise achievable. Where bespoke mitigation packages have been relied on, these are clearly identified (refer to paragraph D.6.8 onwards).

D.3.36 Another important consideration relates to the principal of ‘additionality’. Interventions proposed to achieve BNG must make a new contribution to

nature conservation i.e. a conservation outcome that would not have occurred without the intervention. For example, ongoing favourable management of grassland habitats would not offer anything additional if suitable regimes are already in place and these regimes would otherwise have continued.

Limitations, Assumptions and Constraints

D.3.37 There are no limitations to the field surveys completed for this study. The surveys were completed at a suitable time of year for the correct identification of habitats and the appraisal of their relative condition.

D.3.38 All habitats were mapped and measured in ArcGIS using appropriate base mapping (Ordnance Survey Mastermap). Therefore, while all the habitat areas calculated are approximations they are as accurate as practicable.

D.3.39 The assessment is based on the indicative design and this may be subject to further change prior to submission of the final detailed design. However, the assessment demonstrates that BNG is feasible and securable, and the committed level of BNG would need to be achieved later even if there is a need to amend the configuration of the habitats that will be created to achieve this. The assessment will be updated to support approval of the final LBMEP Report the provision of which will be a Requirement of the **Draft DCO** (**Application Document Ref. 3.1**). If the layout of the proposed new habitats needs to be amended at detailed design, then the aim will be to achieve comparable habitat connectiveness/ cohesiveness.

D.3.40 A conservative approach has been used within the calculations to account for uncertainties regarding the final layout for the Proposed Development and also uncertainties over the ability to deliver new habitats of a particular condition. The current assessment is therefore precautionary (i.e. worst-case, both in terms of losses and in the gains achievable) and there are a number of reasons why the land required to achieve the committed gain and its location may change later. Specifically:

- the current assessment takes a worst-case position and assumes that all habitats within the Main Site and Ancillary Facilities area would be permanently lost to buildings and hard landscaping. This is overly precautionary, but it is a necessary assumption until the final site layout is fixed following detailed design.
- the assigned condition is that which can reasonably be considered certain based on the applicable Site Condition Assessment criteria that can be addressed through management. In some cases a higher condition could be realised, but with insufficient confidence that the outcome is reasonably certain.
- realistic precautionary timeframes are set within the metric for the committed habitat creation i.e. up to ten years to achieve target condition of grassland habitats. This represents a typical management period when establishing new habitats. In reality, given the proposed management

regimes, measurable biodiversity gains for wildlife (e.g. invertebrates) from the new grasslands can be expected by Year 5 and before the final target condition is achieved for the habitat itself.

- no claims are made that the new habitats would represent priority habitats. Instead, the only aim is to achieve a genuine enhancement. So, for example, the existing poor quality 'modified grasslands' will be replaced with habitat more typical of favourably managed semi-natural grasslands i.e. 'other neutral grassland'. The management regimes necessary to achieve this are set out in the Outline LBMEP Report, and the standard guidance (Defra, 2024) advises that such habitat has a 'low difficulty of creation'. Given this it is reasonable to assume that the committed habitats can and will be delivered.

D.3.41 The vegetation cleared for construction of the existing AIL Route for Keadby 2 Power Station does not represent a habitat loss attributable to the Proposed Development but there will still need to be reinstatement after construction. The planning permission for the haul road for Keadby 2 Power Station includes conditions relating to the removal of the haul road and reinstatement (planning permission PA/2019/1595 as varied by planning permission PA/2021/188). The Keadby 3 CCS DCO had the effect of extending the lifetime of the temporary haul road permission. Under the draft DCO for the Proposed Development, it is proposed that the permissions will effectively be extended, and the matters controlled by condition will be secured by equivalently worded Requirements in Schedule 2 of the **Draft DCO** (**Application Document Ref. 3.1**). Given the existing requirements, restoration of the land affected by the existing AIL Route cannot contribute to BNG for the Proposed Development as it does not represent additionality. Therefore, the existing haul road has been treated as no change within the metric.

D.3.42 Assumptions and professional judgement were applied for all ditches relevant to the Proposed Development where field surveys were not undertaken (because the relevant land areas whilst in the Order Limits are not required for and would be unaffected by the Proposed Development).

D.3.43 A 'worst-case' scenario has been assessed for the Canal Water Abstraction in relation to the extent of woodland that could be lost at construction. Options to reduce this further would be actively considered at detailed design, which will be produced post-consent.

D.3.44 Consistent with the published guidance (Defra, 2024) it is emphasised that the Statutory Metric uses habitats as a proxy for biodiversity and therefore represents a simplification of the 'real world'. Furthermore, while the scoring of habitats is informed by ecological reasoning and the available evidence, the outputs of biodiversity unit calculations are not scientifically precise or absolute values. The metric and its outputs should therefore be interpreted, alongside ecological expertise and common sense, as an element of the evidence that informs plans and decisions. The metric is not a total solution to biodiversity decisions. The metric, for example, helps determine how much

new or restored habitat is needed to compensate for a loss of habitat, but it does not tell you the appropriate composition of plant species to use. It also doesn't deal well with mosaic habitats, particularly OMH, where the individual component vegetation communities are weighted lower irrespective of their potential biodiversity value.

D.3.45 Strategic significance has not been applied to culverts irrespective of their association with drains identified on green infrastructure maps. This approach is consistent with the wider weighting of culverts in the metric.

D.4 Baseline Conditions

Habitats Requiring Assessment – Permanent Habitat Losses

D.4.1 A Habitat Baseline Plan is provided as **Figure 1**. This codes the relevant habitats based on the modified UKHab classification used in the metric. This data derives from the habitat survey reported in **ES Volume II Appendix 11C**: Preliminary Ecological Appraisal Report (**Application Document Ref. 6.3.11**).

D.4.2 The habitats that would be affected by permanent land-take (i.e. habitat loss that cannot be reinstated back to the baseline condition within two years) for the Proposed Temporary Haul Road comprise:

- modified grasslands located at the Main Site, the Ancillary Facilities, and in construction laydown areas;
- broadleaved woodland (encompassing non-priority semi-natural and plantation types) located at the Canal Water Abstraction and within the land required for the Ancillary facilities;
- hawthorn scrub within the Ancillary Facilities;
- mixed scrub within the Ancillary Facilities;
- willow scrub within the Main Site;
- urban trees at scattered locations in the Site (in some cases losses are worst-case and not certain);
- ruderal/ ephemeral vegetation on previously disturbed ground within the Main Site and Ancillary Facilities;
- ephemeral/ short perennial vegetation incidentally contributing to open mosaic habitat on previously development land (OMH) at the south-west corner of the Ancillary Facilities;
- arable farmland to be used as construction laydown; and
- ditches located at the Main Site and the Ancillary Facilities.

D.4.3 The habitats named above that contribute to the North Lincolnshire green infrastructure network comprise modified grasslands (but not all stands of this grassland), OMH, woodland, trees and ditches. Given the relatively low biodiversity interest of the relevant ditches and the grassland it is reasonable to conclude that the inclusion of these habitats relates to the habitat linkages they provide rather than any specific nature conservation importance of these habitats in isolation. These habitats benefit from additional weighting within

the metric, and once this weighting has been applied green infrastructure requires no additional specific attention by the BNG assessment other than to target habitat creation and enhancement where it would most benefit the green infrastructure network.

D.4.4 Additional areas of on-site land are to be utilised solely for purposes of landscape and biodiversity enhancement. These have been selected to allow the creation of cohesive areas of new habitat that are integral to or complement existing habitats and green infrastructure. These comprise:

- modified grasslands to be converted to, or enhanced to achieve, other neutral grassland. These are located by and south of Trent Road and the access road off the A18;
- modified grassland to be converted to woodland within the area south of Trent Road;
- modified grassland to be converted to mixed scrub adjacent to the access road off the A18;
- a stand of tall ruderal herbs south of Trent Road ("tall forbs" – a large stand of creeping thistle *Cirsium arvense*) to be converted to woodland;
- an existing tarmacadam car park (sealed surface) to be broken out and replaced with other neutral grassland (located adjacent to the permanent access road off the A18); and
- minor ditches on the boundary of the Main Site that will be enhanced through pre-construction scrub pruning to reduce shading, and removal of dominant common reed vegetation to reinstate open water.

Habitats Not Requiring Assessment – Temporary Habitat Losses

D.4.5 Where a habitat is impact is temporary it is not necessary to record the loss within the metric and instead the habitat is recorded as 'retained'.

D.4.6 The metric only considers losses to be temporary when the original baseline habitat will be reinstated/recreated in the same or better condition within two years from the date of the impact occurring. This requires the habitat creation/restoration to be complete, not just that seed has been sown or whips planted. This means that the temporary loss option generally only applies to habitats of relatively simple structure and composition and of relatively poor condition. For example, it could encompass impacts affecting species-poor modified grasslands such as sports pitches and agriculturally improved pasture, but not permanent species-rich grasslands or scrub habitat.

D.4.7 In relation to the Proposed Development, the following temporary habitat losses are identified and are excluded from the metric:

- disturbance of and/or laydown on the modified grassland when the adjacent existing Mabey Bridge is replaced for the Proposed Development;

- disturbances of modified grassland and ruderal habitats during installation of below ground electrical connections and other utilities;
- works within the Stainforth and Keadby canal to install the Canal Water Abstraction. The final water intake structure is of relatively small size (comparable to the existing intake for Keadby 2 Power Station) and will not materially add to or alter the baseline setting (the level of encroachment) or result in the loss of aquatic habitat; and
- replacement of the former gatehouse at the site entrance of the A18 within the previous footprint of the former gatehouse and its associated hardstanding

D.4.8 Consistent with the above, use of existing hardstanding of no inherent biodiversity value for laydown is also considered a temporary loss even if required for a period longer than two years. This is consistent with the 'common sense' principle within the guidance (Defra, 2024), given use of such land is not likely to meaningfully impact upon biodiversity and because it reduces the need for losses of semi-natural habitats elsewhere.

D.4.9 The Proposed Development also coincides with the South Soak Drain and the Hatfield Waste Drain. There would be no works within or habitat losses from these watercourses and good practice stand-offs would be applied to protect the watercourses during construction and by so doing avoid encroachment of their riparian habitats. Post-development the proposed habitat interventions allow for enhancement of the riparian zones of the watercourses through reductions in the baseline level of encroachment.

D.4.10 For purposes of clarity, as explained elsewhere within the Application, it is restated that much of the land within the Order Limits will not be affected by the Proposed Development. For example, the Order Limits encompass locations where existing buried infrastructure would be utilized by the Proposed Development, the existing AIL route and associated bridge structures constructed for Keadby 2 Power Station that will be utilised during construction of the Proposed Development (on land within the Additional AIL Route), and other existing infrastructure to be utilised in manner consistent with its intended purposes e.g. use of existing roads and the port facilities at Keadby

Other Relevant Ecological Features

D.4.11 The following designations (**ES Volume III Figures 11.1 and 11.2** (**Application Document Ref. 6.4.19 and 6.4.20**)) coincide with the land required for the Proposed Development:

- Humber Estuary Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC) and Ramsar site – this designation and its marine habitat do not influence the deliverability of BNG. No likely significant effects are predicted;
- Stainforth and Keadby Canal Corridor Local Wildlife Site (LWS) (at the Canal Water Abstraction) – there is no marginal vegetation at the location

of the water abstraction which coincides with a vertical reinforced bank and the existing water intake structure for Keadby 2 Power Station. Consequently, this designation is not considered to constrain the deliverability of BNG;

- Hatfield Waste Drain LWS (which is adjacent to but is unaffected by the Highway Improvements on the A18) – no habitat loss would occur within the boundary of the LWS, so the LWS has no bearing on the deliverability of BNG; and
- Keadby Warping Drain LWS (which is on the alignment of the existing cooling water discharge corridor) – no habitat loss would occur within the boundary of the LWS, so the LWS has no bearing on the deliverability of BNG.

D.4.12 There is an additional area of notable habitat in the form of the former Keadby Ash Tip. while this is a site of high biodiversity importance (refer to **ES Volume II Appendix 11C**: Preliminary Ecological Appraisal Report (**Application Document Ref. 6.3.11**)), the habitats of greatest nature conservation value are located at distance and would not be affected. The minor land take from a peripheral area would not compromise the biodiversity value of the former Keadby Ash Tip so this is not a substantive constraint to the deliverability of BNG. This point was agreed with the relevant stakeholder (NLC) at determination of the DCO Application for the Keadby CCS Power Station. As the Proposed Development is an alternative to this consented development, it is considered (for reasons of consistency) that this previously agreed position should also apply to the Proposed Development

D.4.13 Other relevant ecological features are identified within Section 3 within the main text of the Outline LBMEP Report. This information is not repeated here.

D.5 Development of the Proposed Design

Application of BNG Good Practice Principles

D.5.1 The metric sets out a series of good practice principles which all BNG assessments should accord with. These are set out below in **Table D.1**, along with explanation for how these principles have been applied to the Proposed Development.

Table D.1: Statutory metric good practice principles for BNG and how they have been applied

Principle	Response
Principle 1: The metric assessment should be completed by a competent person.	The assessment has been undertaken by an experienced ecologist who specialises in habitat and botanical surveys and management, and who has detailed prior project experience undertaking, reviewing and

Principle	Response
	agreeing BNG assessments. This includes undertaking the approved BNG assessment for the consented Keadby CCS Power Station. The watercourse element has been completed by an experienced MoRPh and watercourse BNG assessor.
Principle 2: The use of this biodiversity metric does not override existing biodiversity protections, statutory obligations, policy requirements, ecological mitigation hierarchy or any other requirements. This includes consenting or licensing processes, for example woodlands.	Existing levels of protection afforded to protected species and habitats are not changed by use of this or any other metric. Statutory obligations will still need to be satisfied. The main text of the Outline LBMEP Report details the presence of protected and/or notable species, sites and habitats, and assesses potential impacts and outlines suitable mitigation measures to address these.
Principle 3: The biodiversity metric should be used in accordance with established good practice guidance and professional codes	The mitigation hierarchy has been applied to the design of the Proposed Development which as outlined below in **Table D.2** has been an iterative process and supported by pre-application consultations with relevant stakeholders. The area of permanent habitat loss has been kept to a minimum and carefully sited to make use of land previously used by/ cleared for preceding phases of development. The habitats that will be created and enhanced within the Order Limits will be appropriate, and (with one exception previously agreed with NLC) of the correct distinctiveness, to compensate for the habitats that will be impacted.
Principle 4: The biodiversity metric is not a complex or comprehensive ecological model and is not a substitute for expert ecological advice.	It is acknowledged that the metric has been kept deliberately simple to be of practical use. The calculations are underpinned by robust baseline evidence and ecological knowledge and experience. The proposed divergence from trading rules in relation to OMH are in accordance with this principle. Habitats of comparable biodiversity value (flower-rich grassland) will be created and suitably

Principle	Response
	managed next to the affected area. The biodiversity value is considered to outweigh the existing value of the small area of poor condition OMH that will be lost to the Proposed Development.
Principle 5: Biodiversity units are a proxy for biodiversity and should be treated as relative values.	It is acknowledged that the metric is a tool to be used as a means of assessing changes in biodiversity value (losses or gains) brought about by the Proposed Development and is a habitat-based approach to determining a proxy biodiversity value within the Order Limits and the output does not represent absolute values.
Principle 6: This biodiversity metric is designed to inform decisions in conjunction with locally relevant evidence, expert input, or guidance	Impacts to protected and notable species and habitats have been considered within the main text of the Outline LBMEP Report with a clear distinction made between mitigation and enhancement for biodiversity. Consultations have been undertaken with relevant stakeholders and attention has been given to local policy and biodiversity strategies (e.g. green infrastructure plans). See **Table D.2** for a summary of the latter.
Principle 7: Habitat interventions need to be realistic and deliverable within a relevant project timeframe.	The habitats chosen for creation and enhancement are informed by the baseline on-site conditions and local context, not purely to achieve the greatest possible BNG result using the metric. Any post-development habitats that are created or enhanced will be managed and maintained in accordance with the Outline LEMBP Report and are secured by a Requirement of the **Draft DCO** (**Application Document Ref. 3.1**).
Principle 8: Created and enhanced habitats should be, where practical and reasonable, local to any impact and deliver strategically important outcomes for nature conservation.	The created and enhanced habitats are located within the Order Limits and have been positioned to complement existing green infrastructure assets, including habitat corridors along watercourses.

Principle	Response
Principle 9: The biodiversity metric does not enforce a minimum habitat size ratio for compensation of losses. Proposals should aim to: • maintain habitat extent - supporting more, bigger, better and more joined up ecological networks • ensure that proposed or retained habitat parcels are of sufficient size for ecological function.	The Proposed Development has been developed to ensure the avoidance and retention of existing higher value habitats and avoids severance of habitat corridors. The habitat creation and enhancement is positioned to directly benefit/ complement existing habitats, habitat corridors and habitat cohesiveness. By so doing viable stands of habitat will be created and managed that are suitable to meaningfully benefit biodiversity and the green infrastructure network. Habitat connectivity for wildlife is maintained and improved after construction e.g. though the proposed creation of grassland next to the National Grid substation, and enhancement of riparian zones of watercourses.

Consideration of Planning Policy and Biodiversity Strategies

D.5.2 The proposed design has been developed to respond specifically to relevant local and national biodiversity strategies, as summarised below in **Table D.2**. Further information is provided in the Outline LBMEP Report (which this appendix is part of), where details are of the proposed species specific enhancements are also provided.

Table D.3: Response to relevant biodiversity strategies

Habitat	Response
Lincolnshire LBAP, 3rd Edition	The Proposed Development has sought to avoid impacting the OMH of the former Keadby Ash Tip. Where an impact on a small area of ancillary connected habitat could not be avoided the proposed habitat mitigation remains consistent with the rationale and approach previously agreed with NLC for the alternate consented Keadby CCS Power Station. Suitable comparable habitat (flower-rich grassland) will be created on land adjacent to the former Keadby Ash Tip, extending such habitat beyond the boundaries of the former Keadby Ash Tip. The wider approach to creating and enhancing grassland is consistent with the

Habitat	Response
	objective to "*create 40ha of lowland meadow with priority given to buffering, linking or expanding sites meeting LWS criteria*."
North Lincolnshire LDF Core Strategy June 2011	The BNG approach is consistent with the aim to "*protect, enhance and restore biological diversity*." The proposed habitats include interventions that will improve the biodiversity value of identified green infrastructure e.g. through management to enhance ditches, and the creation of flower-rich grassland next to watercourses.
National Pollinator Strategy	The BNG approach engages with the objectives of the strategy by providing "*new flower-rich habitats" that are "joined-up to existing sites*" of known importance for invertebrates e.g. the former Keadby Ash Tip.
NCA Profile: 39 Humberhead Levels	The proposed enhancement of ditch habitats reflects the objective to bring ditches "*under sound rotational management so that they continue to function while also retaining a proportion of emergent vegetation, thus forming key links between wetland and other seminatural habitats and providing important habitats for species such as water voles and dragonflies." It also contributes to "the introduction of a wider range of habitats within arable areas, such as permanent grassland field margins and buffers alongside watercourses and wetland habitats, and linking them where possible to other seminatural habitats to create more resilient networks and enable species movement …*"

D.6 Results

Overview

D.6.1 The metric used to make the BNG assessment is provided in pdf format within this document (**Annex D1**). The source Excel workbook can be provided to relevant stakeholders on request. The habitat parcels referenced in the metric relate directly to the Habitat Baseline Plan (**Figure 1**) and the Post-Development Plan (**Figure 2**). The Post-Development Plan shows the

locations where the proposed habitat creation and enhancement can be secured but this does not mean that all of the land identified will be required for these interventions at detailed design.

D.6.2 The habitat conditions are derived from the Site Condition Assessment data presented in **ES Volume II Appendix 11C**: Preliminary Ecological Appraisal Report (**Application Document Ref. 6.3.11**).

Habitat Baseline (2025)

D.6.3 The area/ length, ecological condition and strategic significance of each baseline habitat recorded within the Order Limits is presented in **Tables D.3 to D.5** along with their value in habitat units. This data has been transcribed from the metric (see **Annex D1**) which is the primary evidence for the BNG assessment.

Table D.3: Baseline summary - habitats

Habitat	Area (ha)	Condition	Strategic Significance	Baseline units
Cereal crops	11.841	N/A	Low	23.68
Ruderal/ephemeral	0.357	Poor	Low	0.71
	0.831	Poor	High	1.91
Tall forbs	0.736	Poor	Low	1.47
Bramble scrub	0.376	N/A	Low	1.50
	0.017		High	0.08
Hawthorn scrub	0.04	Poor	Low	0.16
	0.007	Poor	High	0.03
Mixed scrub	0.17	Poor	Low	0.68
	0.09	Poor	High	0.41
	0.087	Moderate	Low	0.70
Willow scrub	0.046	Poor	High	0.21
Open mosaic habitats	0.287	Poor	High	1.98
Other woodland; broadleaved	0.711	Moderate	High	6.54
Other woodland; mixed	0.038	Moderate	High	0.35
Other neutral grassland	1.13	Moderate	Low	9.04
Modified grassland	17.197	Poor	Low	34.39

Habitat	Area (ha)	Condition	Strategic Significance	Baseline units
	8.883 1.007 1.293	Poor Moderate Moderate	High Low High	20.43 4.03 5.95
Bioswale	0.041	Moderate	High	0.19
Bare ground	0.143 0.065	Poor Poor	Low High	0.29 0.15
Developed land; sealed surface	25.898	N/A	Low	0
Urban / Rural tree	0.0163 0.341 0.375 (veteran)	Poor Moderate Good	Low High High	0.07 3.14 0
Watercourse footprint	1.947	-	-	0
Total	73.97 73.24 (excluding trees)	-	-	118.09

Table D.4: Baseline summary - hedgerows

Habitat	Length (km)	Condition	Strategic Significance	Baseline units
Species-rich native hedgerow	0.12	Good	High	1.66
Native hedgerow	1.2 0.33	Moderate Good	High High	5.52 2.28
Native hedgerow with trees	0.1	Good	High	1.38
Native hedgerow – associated with bank or ditch	0.053	Good	High	0.73
Total	1.8	-	-	11.56

Table D.5: Baseline summary - watercourses

Habitat	Length (km)	Condition	Strategic Significance	Baseline units
Canal	0.13	Fairly poor	High	0.39
Other rivers and streams	0.956 0.025	Fairly poor Moderate	High High	8.32 0.35
Ditches	3.262 0.879	Poor Moderate	High High	11.27 6.07
Culvert	0.207	Poor	Low	0.29
Total	5.45	-	-	26.67

Post Development

D.6.4 The proposed areas (subject to review prior to submission of the detailed design to discharge DCO Requirements) where habitat creation and enhancement can be provided following the construction of the Proposed Development are shown on **Figure 2**.

D.6.5 The proposed area/ length, ecological condition and strategic significance of each proposed habitat within the Order Limits is presented in **Tables D.6 to D.8** along with their value in habitat units. This data has been transcribed from the metric (see **Annex D1**) which is the primary evidence for the BNG assessment. No off-site habitat interventions are proposed.

Table D.6: Post development summary - habitats

Habitat	Area (ha)	Proposed condition	Strategic significance	Units delivered
Habitat creation				
Cereal crops	10.426	N/A	Low	17.45
Mixed scrub	0.458	Moderate	High	3.06
Other woodland; broadleaved	0.57	Moderate	High	2.66
Other neutral grassland	1.995 2.60	Moderate Moderate	Low High	11.58 17.36
Modified grassland	0.005	Poor	Low	0.01

Habitat	Area (ha)	Proposed condition	Strategic significance	Units delivered
Developed land; sealed surface	14.969	N/A	Low	0
Urban tree	0.0407	Poor	High	0.11
Total	31.06 30.02 (excluding trees)	-	-	52.23
Habitat enhancement				
Other neutral grassland	6.55	Moderate	High	42.95

Table D.7: Post development summary - hedgerows

Habitat	Length (km)	Proposed condition	Strategic significance	Units delivered
Habitat creation				
Species-rich native hedgerow	0.5	Good	High	3.90
Total	0.5	-	-	3.90

Table D.8: Post development summary - watercourses

Habitat	Length (km)	Proposed condition	Strategic significance	Units delivered
Habitat creation				
Ditches	0.49	Moderate	High	2.19
Culvert	0.21	Poor	Low	0.18
Total	0.70	-	-	2.38
Habitat enhancement				
Other rivers and streams (reduce encroachment)	0.956	Fairly poor	High	8.08
Ditch (uplift condition)	0.912	Moderate	High	5.95
Total	1.868	-	-	14.03

Ability to Deliver No Net Loss

D.6.6 The assessment concludes that (with the exception of OMH) the planning policy requirement for No Net Loss can be achieved, either through direct compensation for the habitats lost or through replacement with habitats of higher distinctiveness and/or condition. The habitat trading exception relating to OMH is recorded in the metric (**Annex D1**). However, acknowledging the metric is a simplification of the real world (see paragraph D.3.44), this is not considered to be a material exception, as explained further below.

D.6.7 It is not possible to compensate like for like for the minor loss of OMH to the Proposed Development. However, functionally comparable habitat is delivered with the shortfall in OMH addressed through the proposed native flower-rich other neutral grassland creation and enhancement. The habitat can be expected to benefit pollinators and other terrestrial invertebrates i.e. species groups for which OMH is important.

D.6.8 In specific relation to the OMH, the current approach for assessing the balance between habitat losses and gains requires like for like replacement of OMH regardless of the specific quality and scale of loss i.e. there is no flexibility within the metric to consider context (although offline agreement of bespoke mitigation is otherwise permissible). Creation of new OMH is not possible as suitable ground conditions are not available and, even then, there would be low confidence in the ability to reinstate comparable OMH. The affected OMH is otherwise, as explained in **ES Volume I Chapter 11**: Biodiversity and Nature Conservation (**Application Document Ref. 6.2**), not typical of the wider retained OMH resource within the former Keadby Ash Tip.

D.6.9 Of relevance to options for bespoke mitigation, Natural England has stated in previous iterations of the metric that "*artificially created and planted areas that mimic semi-natural habitats such as species-rich grassland would also be in scope* [of this habitat type]" (Natural England, 2019). Accordingly, it is considered that creation of flower-rich grassland is a valid approach to address the small loss of OMH to the Proposed Development. This approach was previously agreed with NLC in related to the consented Keadby 3 CCS Power Station, for which the Proposed Development is an alternative.

D.6.10 Further, the proposed new grassland habitat will add to the diversity and complexity of existing flower-rich habitats (restoring habitats lost historically to agriculture and previous historic development) associated with the habitat corridor encompassing the former Keadby Ash Tip and the connected Stainforth and Keadby Canal Corridor LWS (extending this into adjacent land). It therefore directly complements and diversifies the mosaic of habitats and habitat quality for the notable terrestrial invertebrate assemblage that is focussed on the former Keadby Ash Tip (as described in **ES Volume II Appendix 11C**: Preliminary Ecological Appraisal Report (**Application Document Ref. 6.3.11**), and the wider biodiversity associated with the LWS.

The proposals also provide habitat linkages with the Hatfield Waste Drain LWS to the south.

D.6.11 This approach was previously agreed with NLC in related to the consented Keadby 3 CCS Power Station, for which the Proposed Development is an alternative. Given this prior history it is considered, for reasons of consistency, that if this approach was acceptable for Keadby 3 CCS Power Station it should remain acceptable for the Proposed Development. In relation to this the substantive increase in flower-rich habitats that would accompany the Proposed Development is emphasised. These and the other habitats proposed are being provided voluntarily by the Applicant given the Proposed Development is not subject to the statutory BNG regime.

Ability to Deliver Biodiversity Net Gain

D.6.12 The assessment concludes that the planning policy requirement for BNG can be met, with the gains estimated as follows:

- increase of 11.90 habitat units (+10.08%);
- increase of 3.49 hedgerow units (+30.16%); and
- increase of 2.68 watercourse units (+10.04%).

D.6.13 While there is currently no planning policy or legal requirement to deliver a specific quantum of BNG (with demonstration of a quantifiable gain being sufficient), the assessment indicates that the increase in habitat, hedgerow and watercourse units is consistent with the 10% minimum BNG threshold to be mandated by the Environment Act 2021 for NSIP developments from May 2026.

D.7 References

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Annex A

Keadby Next Generation Power Station

Headline Results

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On-site baseline	*Habitat units*	118.09	
	Hedgerow units	11.56	
	Watercourse units	26.67	
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	130.00	
	Hedgerow units	15.05	
	Watercourse units	29.35	
On-site net change (units & percentage)	*Habitat units*	11.90	10.08%
	Hedgerow units	3.49	30.16%
	Watercourse units	2.68	10.04%
Off-site baseline	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	*Habitat units*	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	11.90	
	Hedgerow units	3.49	
	Watercourse units	2.68	
Spatial risk multiplier (SRM) deductions	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	

FINAL RESULTS

Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	11.90
	Hedgerow units	3.49
	Watercourse units	2.68
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	10.08%
	Hedgerow units	30.16%
	Watercourse units	10.04%
Trading rules satisfied?		No - Check Trading Summaries ▲

Unit Type	Target	Baseline Units	Units Required	Unit Deficit	
Habitat units	10.00%	118.09	129.90	0.00	No additional area habitat units required to meet target ✓
Hedgerow units	10.00%	11.56	12.72	0.00	No additional hedgerow units required to meet target ✓
Watercourse units	10.00%	26.67	29.34	0.00	No additional watercourse units required to meet target ✓

Input errors/rule breaks present in metric ▲

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Trading summary hedgerows

Trading summary watercourses

Trading Summary

Distinctiveness Group	Trading Rule	Trading Satisfied?
Very High	Same habitat required - bespoke compensation option ⚠	Yes ✓
High	Same habitat required =	No ▲
Medium	Same broad habitat or a higher distinctiveness habitat required (≥)	Yes ✓
Low	Same distinctiveness or better habitat required ≥	Yes ✓

Very High Distinctiveness

Habitat group	Group	On-site unit change	Off-site unit change	Project-wide unit change	Unit losses
Grassland - Lowland dry acid grassland	Grassland	0.00	0.00	0.00	
Grassland - Lowland meadows	Grassland	0.00	0.00	0.00	
Grassland - Upland hay meadows	Grassland	0.00	0.00	0.00	
Heathland and shrub - Mountain heaths and willow scrub	Heathland and shrub	0.00	0.00	0.00	
Lakes - Aquifer fed naturally fluctuating water bodies	Lakes	0.00	0.00	0.00	
Sparsely vegetated land - Calaminarian grasslands	Sparsely vegetated land	0.00	0.00	0.00	
Sparsely vegetated land - Limestone pavement	Sparsely vegetated land	0.00	0.00	0.00	
Wetland - Blanket bog	Wetland	0.00	0.00	0.00	
Wetland - Depressions on peat substrates (H7150)	Wetland	0.00	0.00	0.00	
Wetland - Fens (upland and lowland)	Wetland	0.00	0.00	0.00	
Wetland - Lowland raised bog	Wetland	0.00	0.00	0.00	
Wetland - Oceanic valley mire(1) (D2.1)	Wetland	0.00	0.00	0.00	
Wetland - Purple moor grass and rush pastures	Wetland	0.00	0.00	0.00	
Wetland - Transition mires and quaking bogs (H7140)	Wetland	0.00	0.00	0.00	
Woodland and forest - Wood-pasture and parkland	Woodland and forest	0.00	0.00	0.00	
Rocky shore - High energy littoral rock - on peat, clay or chalk	Rocky shore	0.00	0.00	0.00	
Rocky shore - Moderate energy littoral rock - on peat, clay or chalk	Rocky shore	0.00	0.00	0.00	
Rocky shore - Low energy littoral rock - on peat, clay or chalk	Rocky shore	0.00	0.00	0.00	
Rocky shore - Features of littoral rock - on peat, clay or chalk	Rocky shore	0.00	0.00	0.00	
Intertidal sediment - Littoral seagrass on peat, clay or chalk	Intertidal sediment	0.00	0.00	0.00	
		0.00	**0.00**	**0.00**	**0.00**

Very High Distinctiveness Summary

Very High Distinctiveness Units available to offset lower distinctiveness deficit	0.00
Remaining losses: Like for like not satisfied	0.00

High Distinctiveness

Habitat group	Group	On-site unit change	Off-site unit change	Project-wide unit change	Losses not yet accounted for
Grassland - Traditional orchards	Grassland	0.00	0.00	0.00	
Grassland - Floodplain wetland mosaic and CFGM	Grassland	0.00	0.00	0.00	
Grassland - Lowland calcareous grassland	Grassland	0.00	0.00	0.00	
Grassland - Tall herb communities (H6430)	Grassland	0.00	0.00	0.00	
Grassland - Upland calcareous grassland	Grassland	0.00	0.00	0.00	
Heathland and shrub - Lowland Heathland	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Dunes with sea buckthorn (H2160)	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Upland heathland	Heathland and shrub	0.00	0.00	0.00	
Lakes - High alkalinity lakes	Lakes	0.00	0.00	0.00	
Lakes - Low alkalinity lakes	Lakes	0.00	0.00	0.00	
Lakes - Marl lakes	Lakes	0.00	0.00	0.00	
Lakes - Moderate alkalinity lakes	Lakes	0.00	0.00	0.00	
Lakes - Peat lakes	Lakes	0.00	0.00	0.00	
Lakes - Ponds (priority habitat)	Lakes	0.00	0.00	0.00	
Lakes - Temporary lakes ponds and pools (H3170)	Lakes	0.00	0.00	0.00	
Sparsely vegetated land - Coastal sand dunes	Sparsely vegetated land	0.00	0.00	0.00	
Sparsely vegetated land - Coastal vegetated shingle	Sparsely vegetated land	0.00	0.00	0.00	
Sparsely vegetated land - Inland rock outcrop and scree habitats	Sparsely vegetated land	0.00	0.00	0.00	
Sparsely vegetated land - Maritime cliff and slopes	Sparsely vegetated land	0.00	0.00	0.00	
Urban - Open mosaic habitats on previously developed land	Urban	-1.98	0.00	-1.98	-1.98 ▲
Wetland - Reedbeds	Wetland	0.00	0.00	0.00	
Woodland and forest - Felled/Replacement for felled woodland	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Lowland beech and yew woodland	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Lowland mixed deciduous woodland	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Native pine woodlands	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Upland birchwoods	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Upland mixed ashwoods	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Upland oakwood	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Wet woodland	Woodland and forest	0.00	0.00	0.00	
Coastal lagoons - Coastal lagoons	Coastal lagoons	0.00	0.00	0.00	
Rocky shore - High energy littoral rock	Rocky shore	0.00	0.00	0.00	
Rocky shore - Moderate energy littoral rock	Rocky shore	0.00	0.00	0.00	
Rocky shore - Low energy littoral rock	Rocky shore	0.00	0.00	0.00	
Rocky shore - Features of littoral rock	Rocky shore	0.00	0.00	0.00	
Intertidal sediment - Littoral mud	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Littoral mixed sediments	Intertidal sediment	0.00	0.00	0.00	
Coastal saltmarsh - Saltmarshes and saline reedbeds	Coastal saltmarsh	0.00	0.00	0.00	
Intertidal sediment - Littoral biogenic reefs - Mussels	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Littoral biogenic reefs - Sabellaria	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Features of littoral sediment	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Littoral muddy sand	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Littoral seagrass	Intertidal sediment	0.00	0.00	0.00	
		-1.98	**0.00**	**-1.98**	**-1.98**

High Distinctiveness Summary

High Distinctiveness Units available to offset lower distinctiveness deficit	0.00
Remaining losses: Like for like not satisfied	-1.98 ▲

Medium Distinctiveness

Habitat group	Group	On-site unit change	Off-site unit change	Project wide unit change	Cumulative broad habitat change
Cropland - Arable field margins cultivated annually	Cropland	0.00	0.00	0.00	
Cropland - Arable field margins game bird mix	Cropland	0.00	0.00	0.00	0.00
Cropland - Arable field margins pollen and nectar	Cropland	0.00	0.00	0.00	
Cropland - Arable field margins tussocky	Cropland	0.00	0.00	0.00	
Grassland - Other lowland acid grassland	Grassland	0.00	0.00	0.00	
Grassland - Other neutral grassland	Grassland	71.89	0.00	71.89	71.89 ✓
Grassland - Upland acid grassland	Grassland	0.00	0.00	0.00	
Heathland and shrub - Blackthorn scrub	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Bramble scrub	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Gorse scrub	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Hawthorn scrub	Heathland and shrub	-0.16	0.00	-0.16	1.31 ✓
Heathland and shrub - Willow scrub	Heathland and shrub	-0.21	0.00	-0.21	
Heathland and shrub - Hazel scrub	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Mixed scrub	Heathland and shrub	1.68	0.00	1.68	
Lakes - Ponds (non-priority habitat)	Lakes	0.00	0.00	0.00	0.00
Lakes - Reservoirs	Lakes	0.00	0.00	0.00	
Sparsely vegetated land - Other inland rock and scree	Sparsely vegetated land	0.00	0.00	0.00	0.00
Urban - Cemeteries and churchyards	Urban	0.00	0.00	0.00	0.00
Urban - Biodiverse green roof	Urban	0.00	0.00	0.00	
Individual trees - Urban tree	Individual trees	0.01	0.00	0.01	0.01 ✓
Individual trees - Rural tree	Individual trees	0.00	0.00	0.00	
Woodland and forest - Other Scot's pine woodland	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Other woodland: broadleaved	Woodland and forest	0.15	0.00	0.15	0.15 ✓
Woodland and forest - Other woodland: mixed	Woodland and forest	0.00	0.00	0.00	
Intertidal sediment - Littoral coarse sediment	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Littoral sand	Intertidal sediment	0.00	0.00	0.00	0.00
Intertidal hard structures - Artificial hard structures with integrated greening of grey infrastructure (IGGI)	Intertidal hard structures	0.00	0.00	0.00	
		73.37	**0.00**	**73.37**	

Medium Distinctiveness Summary

Medium Distinctiveness Units available to offset Lower Distinctiveness Deficit	73.37 ✓
Medium Distinctiveness Broad Habitat Losses to be offset by trading up	0.00
Higher Distinctiveness Surplus Units minus Medium Distinctiveness Broad Habitat Deficit	0.00
Cumulative surplus of units	73.37 ✓

Low Distinctiveness

Habitat group	Group	On-site unit change	Off-site unit change	Project wide unit change
Cropland - Cereal crops	Cropland	-3.40	0.00	-3.40 ⚠
Cropland - Horticulture	Cropland	0.00	0.00	0.00
Cropland - Intensive orchards	Cropland	0.00	0.00	0.00
Cropland - Non-cereal crops	Cropland	0.00	0.00	0.00
Cropland - Temporary grass and clover leys	Cropland	0.00	0.00	0.00
Cropland - Winter stubble	Cropland	0.00	0.00	0.00
Grassland - Modified grassland	Grassland	-53.81	0.00	-53.81 ⚠
Grassland - Bracken	Grassland	0.00	0.00	0.00
Heathland and shrub - Rhododendron scrub	Heathland and shrub	0.00	0.00	0.00
Lakes - Ornamental lake or pond	Lakes	0.00	0.00	0.00
Sparsely vegetated land - Ruderal/ephemeral	Sparsely vegetated land	-1.31	0.00	-1.31 ⚠
Sparsely vegetated land - Tall forbs	Sparsely vegetated land	-0.86	0.00	-0.86 ⚠
Urban - Bioswale	Urban	0.00	0.00	0.00
Urban - Bare ground	Urban	-0.29	0.00	-0.29 ⚠
Urban - Allotments	Urban	0.00	0.00	0.00
Urban - Facade-bound green wall	Urban	0.00	0.00	0.00
Urban - Ground based green wall	Urban	0.00	0.00	0.00
Urban - Ground level planters	Urban	0.00	0.00	0.00
Urban - Other green roof	Urban	0.00	0.00	0.00
Urban - Intensive green roof	Urban	0.00	0.00	0.00
Urban - Introduced shrub	Urban	0.00	0.00	0.00
Urban - Rain garden	Urban	0.00	0.00	0.00
Urban - Actively worked sand pit quarry or open cast mine	Urban	0.00	0.00	0.00
Urban - Sustainable drainage system	Urban	0.00	0.00	0.00
Urban - Vacant or derelict land	Urban	0.00	0.00	0.00
Urban - Vegetated garden	Urban	0.00	0.00	0.00
Woodland and forest - Other coniferous woodland	Woodland and forest	0.00	0.00	0.00
Coastal saltmarsh - Artificial saltmarshes and saline reedbeds	Coastal saltmarsh	0.00	0.00	0.00
Intertidal sediment - Artificial littoral coarse sediment	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral mud	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral sand	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral muddy sand	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral mixed sediments	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral seagrass	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral biogenic reefs	Intertidal sediment	0.00	0.00	0.00
Intertidal hard structures - Artificial hard structures	Intertidal hard structures	0.00	0.00	0.00
Intertidal hard structures - Artificial features of hard structures	Intertidal hard structures	0.00	0.00	0.00
Heathland and shrub - Other sea buckthorn scrub	Heathland and shrub	0.00	0.00	0.00
		-59.48	**0.00**	**-59.48**

Low Distinctiveness Summary

Low Distinctiveness net change in units	-59.48 ⚠
Cumulative surplus of units	13.88 ✓

Return to results menu

Trading summary area habitats

Trading summary hedgerows

Trading Summary

Distinctiveness Group	Trading Rule	Trading Satisfied?
Very High	Same habitat required – bespoke compensation option ⚠	Yes ✓
High	Same habitat required =	Yes ✓
Medium	Same habitat required =	Yes ✓
Low	Better distinctiveness habitat required	Yes ✓

Very High Distinctiveness

Habitat group	On-site unit change	Off-site unit change	Project-wide unit change
Priority habitat	0.00	0.00	0.00
	0.00	0.00	0.00

Very High Distinctiveness Summary

Very High Distinctiveness Units available to offset lower distinctiveness deficit	0.00
Remaining losses: Like for like not satisfied	0.00

High Distinctiveness

Habitat group	On-site unit change	Off-site unit change	Project-wide unit change
Other rivers and streams	1.06	0.00	1.06 ✓
	1.06	0.00	1.06

High Distinctiveness Summary

High Distinctiveness Units available to offset lower distinctiveness deficit	1.06 ✓
Remaining losses: Like for like not satisfied	0.00

Medium Distinctiveness

Habitat group	On-site unit change	Off-site unit change	Project wide unit change
Ditches	1.48	0.00	1.48 ✓
Canals	0.00	0.00	0.00
	1.48	0.00	1.48

Medium Distinctiveness Summary

Medium Distinctiveness Units available to offset Lower Distinctiveness Deficit	1.48 ✓
Remaining losses: Like for like not satisfied	0.00

Low Distinctiveness

Habitat group	On-site unit change	Off-site unit change	Project wide unit change
Culvert	0.15	0.00	0.15 ✓
	0.15	0.00	0.15

Low Distinctiveness Summary

Low Distinctiveness net change in units	0.15 ✓
Cumulative availability of units	2.68 ✓

Project Name: Keadby Next Generation Power Station **Map Reference:**

A-1 On-Site Habitat Baseline

Condense / Show Columns | Condense / Show Rows | Main Menu

Area habitat summary

Total Pre Dist Change	**11.86**
Total Post % Change	**17.05%**
Trading Rules Satisfied	**No - check trading parameter A**

Please ensure the watercourse details for any watercourse footprints recorded are included in the watercourse tabs A

Ref	Existing area habitats: Broad Habitat	Habitat Type	Irreplaceable habitat	Area (hectares)	Distinctiveness: Distinctiveness	Condition: Condition	Strategic significance: Strategic significance	Required Action to Meet Trading Rules	Biodigital baseline: Total habitat units	Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area habitat lost	Units lost	Bespoke compensation agreed for losses of VH,H or irreplaceable habitat	Comments: User comments	Comments: Planning authority comments	Habitat reference number
1	Cropland	Cereal crops	No	11.861	Low	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required 1	23.68	1.14		2.01	0.00	10.43	20.66		Parcel 32 to be used for construction lay down (10.428ha). Rest retained.		46, 30-34, 107
2	Grassland	Other neutral grassland	No	1.13	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	9.04	1.13		9.04	0.00	0.00	0.00		Potential disturbance for connection to existing cooling water discharge pipeline but restorable within 2 years. No permanent habitat loss		18
3	Heathland and shrub	Bramble scrub	No	0.376	Medium	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	1.50	0.376		1.50	0.00	0.00	0.00		Potential disturbance for connection to existing cooling water discharge pipeline but restorable within 2 years. No permanent habitat loss		17
4	Heathland and shrub	Bramble scrub	No	0.017	Medium	Condition Assessment N/A	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.08	0.017		0.08	0.00	0.00	0.00		Retained habitat by canal		34
5	Heathland and shrub	Hawthorn scrub	No	0.04	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.16			0.00	0.00	0.04	0.16		Removed for Main Site		64, 66
6	Heathland and shrub	Hawthorn scrub	No	0.007	Medium	Poor	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.03	0.007		0.03	0.00	0.00	0.00		Retained habitat on Trent Road		62
7	Heathland and shrub	Mixed scrub	No	0.17	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.68			0.00	0.00	0.17	0.68		Removed for Main Site		63
8	Heathland and shrub	Mixed scrub	No	0.09	Medium	Poor	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.41	0.05		0.41	0.00	0.00	0.00		Retained habitat at cooling water outfall and by existing temporary haul road.		68
9	Heathland and shrub	Mixed scrub	No	0.087	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.70			0.00	0.00	0.09	0.70		Removed for Main Site		69
10	Heathland and shrub	Willow scrub	No	0.046	Medium	Poor	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.21			0.00	0.00	0.05	0.21		Habitat on boundary of former Keadby Ash Tip that is assumed to be lost pending detailed design.		70
11	Urban	Biomass	No	0.041	Low	Moderate	Formally identified in local strategy	Same distinctiveness or better habitat required 2	0.19	0.041		0.19	0.00	0.00	0.00		Retained Keadby 2 attenuation pond		71
12	Grassy vegetated land	Ruderal/Ephemeral	No	0.387	Low	Poor	Formally identified in local strategy	Same distinctiveness or better habitat required 2	1.09			0.00	0.00	0.39	0.89		Removed for Main Site		57
13	Grassy vegetated land	Ruderal/Ephemeral	No	0.208	Low	Poor	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required 2	0.42			0.00	0.00	0.21	0.42		Removed for Main Site		58
14	Grassy vegetated land	Ruderal/Ephemeral	No	0.444	Low	Poor	Formally identified in local strategy	Same distinctiveness or better habitat required 2	1.32	0.444		1.32	0.00	0.00	0.00		Retained or temporary disturbance only for services		59, 60, 80, 81, 82, 116
15	Grassy vegetated land	Ruderal/Ephemeral	No	0.011	Low	Poor	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required 2	0.02	0.011		0.02	0.00	0.00	0.00		Retained habitat by Chapel Lane		65
16	Grassy vegetated land	Tall forbs	No	0.726	Low	Poor	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required 2	1.47	0.286		0.58	0.00	0.44	0.88		Land available for habitat creation. Use in part for woodland planting (0.44ha)		2
17	Grassy vegetated land	Ruderal/Ephemeral	No	0.188	Low	Poor	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required 2	0.38	0.188		0.38	0.00	0.00	0.00		Removed or temporary disturbance only for services		3A
18	Urban	Bare ground	No	0.145	Low	Poor	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required 2	0.29			0.00	0.00	0.14	0.29		Removed for Main Site		83A
19	Urban	Bare ground	No	0.065	Low	Poor	Formally identified in local strategy	Same distinctiveness or better habitat required 2	0.13	0.065		0.13	0.00	0.00	0.00		Retained or temporary disturbance only for services		81A
20	Urban	Developed land; sealed surface	No	25.956	V Low	N/A - Other	Area/compensation not in local strategy/ no local strategy	Compensation Not Required	0.00	25.956	0.02	0.00	0.00	0.00	0.00		All buildings and hardstanding. Retained or no functional change. Cut pasts by North Fibrey Bridge, to be broken out and reseeded at end of construction (0.02ha).		N/A
21	Urban	Open mosaic habitats on previously developed land	No	0.387	High	Poor	Formally identified in local strategy	Same habitat required +	1.98			0.00	0.00	0.39	1.98		Removed for Main Site		72-74
22	Watercourse footprint	Watercourse footprint	No	1.947	V.low	N/A - Other	Formally identified in local strategy	Compensation Not Required	0.00	1.947		0.00	0.00	0.00	0.00		All watercourses that are assessed in watercourse tabs, plus River Trent which is marine habitat (estuary), retained, and not in the scope of the current metric.		N/A
23	Woodland and forest	Other woodland; broadleaved	No	0.272	Medium	Moderate	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	2.50	0.088		0.88	0.00	0.18	1.64		Worst-case clearance for construction access and footprint for cooling water intake structure. Some habitat can be reinstated after construction		86
24	Woodland and forest	Other woodland; broadleaved	No	0.458	Medium	Moderate	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	3.94	0.231		2.06	0.00	0.23	0.87		Parcel 19 to be felled.Other parcels retained.		19, 19, 90, 97
25	Woodland and forest	Other woodland; broadleaved	No	0.011	Medium	Moderate	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.10	0.011		0.10	0.00	0.00	0.00		Woodland retained		88
26	Woodland and forest	Other woodland; mixed	No	0.038	Medium	Moderate	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.35	0.038		0.35	0.00	0.00	0.00		Woodland retained		78
27	Grassland	Modified grassland	No	0.214	Low	Moderate	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required 2	0.86	0.214		0.86	0.00	0.00	0.00		Retained habitats on alignment of existing cooling water discharge pipeline. Not accessed so assumed to be moderate condition.		44-46, 59
28	Grassland	Modified grassland	No	0.139	Low	Poor	Formally identified in local strategy	Same distinctiveness or better habitat required 2	0.35	0.139		0.32	0.00	0.00	0.00		Retained habitats on alignment of existing cooling water discharge pipeline		42
29	Grassland	Modified grassland	No	0.179	Low	Moderate	Formally identified in local strategy	Same distinctiveness or better habitat required 2	0.82	0.179		0.82	0.00	0.00	0.00		Retained habitats on alignment of existing cooling water discharge pipeline. Not accessed so assumed to be moderate condition.		38, 40, 43
30	Grassland	Modified grassland	No	1.009	Low	Moderate	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required 2	4.64		1.009	0.00	4.64	0.00	0.00		Land available for habitat enhancement. Some land retained		10
31	Grassland	Modified grassland	No	1.60	Low	Poor	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required 2	2.88		1.92	0.00	2.88	0.00	0.00		Land available for habitat enhancement		2
32	Grassland	Modified grassland	No	0.168	Low	Poor	Formally identified in local strategy	Same distinctiveness or better habitat required 2	0.75		0.279	0.00	0.84	0.00	0.10		Land available for habitat creation/enhancement.		35
33	Grassland	Modified grassland	No	0.468	Low	Poor	Formally identified in local strategy	Same distinctiveness or better habitat required 2	1.06	0.468		0.89	0.00	0.16	0.36		Grassland at K1 -K2. Some of the area in K2 (0.1) will be lost for the temporary car park required.		36, 61
34	Grassland	Modified grassland	No	0.793	Low	Moderate	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required 2	3.17	0.159		3.17	0.00	0.00	0.00		Retained or temporary disturbance only for services. Chapel Lane and National Grid substation		91
35	Grassland	Modified grassland	No	0.773	Low	Poor	Formally identified in local strategy	Same distinctiveness or better habitat required 2	13.29		2.813	0.00	6.43	2.96	6.81		2.96ha required for temporary construction laydown; 0.36ha required for scrub planting. Land available for reinstatement and enhancement after construction. Verges of existing permanent access road (M A1), inspected and confirmed as species poor.		60
36																			
37	Grassland	Modified grassland	No	0.005	Low	Poor	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required 2	0.01			0.00	0.00	0.01	0.01		Section of road verge in Keadby removed for access. Reinstate after construction.		5A
38	Grassland	Modified grassland	No	0.839	Low	Poor	Formally identified in local strategy	Same distinctiveness or better habitat required 2	1.93	0.839		1.93	0.00	0.00	0.00		Retained or temporary disturbance only for services		50, 51
39	Grassland	Modified grassland	No	0.733	Low	Poor	Formally identified in local strategy	Same distinctiveness or better habitat required 2	1.69	0.733		1.69	0.00	0.00	0.00		A18 verges. Retained.		116, 116
40	Grassland	Modified grassland	No	0.198	Low	Moderate	Formally identified in local strategy	Same distinctiveness or better habitat required 2	0.46	0.198		0.46	0.00	0.00	0.00		Retained habitats on alignment of existing cooling water discharge pipeline		41
41	Grassland	Modified grassland	No	0.614	Low	Poor	Formally identified in local strategy	Same distinctiveness or better habitat required 2	1.41			0.00	0.00	0.61	1.43		Keadby Common - assumed that all grassland will be removed.		84-87
42	Grassland	Modified grassland	No	15.262	Low	Poor	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required 2	35.10	0.21		1.32	0.00	14.65	33.70		Keadby Common - all grassland will be removed from Main Site, area north of Cleve Drain is retained		52-56, 58
43	Individual trees	Urban tree	No	0.0143	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.07			0.00	0.00	0.02	0.07		Four small non-native silver maple regular cut to base to restrict growth. Located within grassland parcel 21. May be removed.		G63
44	Individual trees	Urban tree	No	0.0266	Medium	Moderate	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.24	0.026		0.24	0.00	0.00	0.00		One large heavily pruned ash tree, removed. Habitat ID 16, located within grassland parcel 10.		Tree 14 of tree survey
45	Individual trees	Urban tree	No	0.0488	Medium	Moderate	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.45	0.0488		0.45	0.00	0.00	0.00		2 medium sized non-native alder trees and one hard pruned ash tree, retained. Habitat IDs 16 and 17, located within grassland parcel 10.		Trees 13, 22 & 24 of the tree survey
46	Individual trees	Urban tree	No	0.0528	Medium	Moderate	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.48	0.0528		0.48	0.00	0.00	0.00		13 small tree (in 3 discrete stands) by Trent Road, retained. Habitat IDs 11, 12, 18, located within grassland parcel 10.		Trees 26-30, 35, 36, 38, 39, 71 & 72 of the tree survey
47	Individual trees	Urban tree	No	0.0703	Medium	Moderate	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.70	0.0703		0.70	0.00	0.00	0.00		1 x very large poplar tree on alignment of existing cooling water pipeline, retained. Habitat ID 26 within grassland parcel 10		Tree 31 of tree survey
48																			
49	Individual trees	Rural tree	Yes	0.0143	Medium	Good	Formally identified in local strategy	Bespoke compensation likely to be required	0.00	0.0143		Replacement habitat no units calculated	0.00	0.00	0.00		Trees removed as no longer need to treat as veteran following site meeting with HLC Tree Officers. Hedge is in woodland parcel 80.		T100 of tree survey
50																			
51	Individual trees	Rural tree	Yes	0.0143	Medium	Good	Formally identified in local strategy	Bespoke compensation likely to be required	0.00	0.0143		Replacement habitat no units calculated	0.00	0.00	0.00		One medium willow in parcel 60, T99 of the tree survey. Retained, no change in baseline setting.		T99 of tree survey
52	Individual trees	Rural tree	Yes	0.0366	Medium	Good	Formally identified in local strategy	Bespoke compensation likely to be required	0.00	0.0366		Replacement habitat no units calculated	0.00	0.00	0.00		One large willow within woodland parcel 15. T48 of the tree survey. Retained, no change in baseline setting.		T48 of tree survey
53	Individual trees	Rural tree	Yes	0.2058	Medium	Good	Formally identified in local strategy	Bespoke compensation likely to be required	0.00	0.2058		Replacement habitat no units calculated	0.00	0.00	0.00		Four very large willows in boundary hedgerow. T15, 16, 40 and 41 of the tree survey. Retained, no change to baseline setting.		T15, T16, T40, T41 of tree survey
54	Individual trees	Urban tree	No	0.0977	Medium	Moderate	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.90	0.0977		0.90	0.00	0.00	0.00		6 medium sized trees picked up by Tree survey following red line extension along Trent Road.		T88, 101-105 of tree survey
55	Individual trees	Urban tree	No	0.0265	Medium	Moderate	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.26	0.0243		0.22	0.00	0.00	0.04		4 small trees picked up by Tree survey following red line extension along Trent Road. Plus one additional sapling by Chapel Lane (T112). Seven trees in total. T213 may be removed. Rest retained.		G213, G110, T111, T113 of tree survey
56																			
57																			
58																			
59																			
		Total habitat area	**70.57**						**113.00**	**25.50**	**0.02**	**54.61**	**18.91**	**81.04**	**97.07**				
		Rio Area (Excluding area of individual trees, areas walls, intertidal hard structures)	**70.59**																

Total area lost (excluding area of individual trees, green walls and intertidal hard structures) **81.02**

Project Name: Keadby Next Generation Power Station Map Reference:

A-2 On-Site Habitat Creation

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Area habitat summary	
Total Net Unit Change	11.90
Total Net % Change	10.08%
Trading Rules Satisfied	No - check trading summaries ▲
Area Check	Area Acceptable ✓

	Post intervention habitats												
				Distinctiveness	Condition	Strategic significance	Temporal multiplier		Difficulty			Comments	
Ref	Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition (years)	Final difficulty of creation	Habitat units delivered	User comments	Planning authority comments	Habitat reference number
1	Cropland	Cereal crops	10.426	Low	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	Check details- Delay in starting habitat in required condition? ⚠	5	Low	17.45	Reinstatement of Parcel 32 after use as construction laydown.		32
2	Woodland and forest	Other woodland; broadleaved	0.49	Medium	Moderate	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	19	Low	2.29	Use of part of parcels 3 (0.44ha) and 25 (0.05ha) for woodland plantings		C2, C4
3	Grassland	Modified grassland	0.005	Low	Poor	Area/compensation not in local strategy/ no local strategy	Check details- Delay in starting habitat in required condition? ⚠	5	Low	0.01	Reinstatement of road verge in Keadby village		C1
4	Grassland	Other neutral grassland	2.6	Medium	Moderate	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	9	Low	17.36	Grassland used for temporary laydown, reinstated and enhanced.		C10
5	Heathland and shrub	Mixed scrub	0.093	Medium	Moderate	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	9	Low	0.62	0.093ha of scrub creation on land previously modified grassland		C15
6	Woodland and forest	Other woodland; broadleaved	0.08	Medium	Moderate	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	19	Low	0.37	Reinstatement of 0.08ha part of parcel 86. Assume worst case permanent footprint of water intake of 0.1ha to account for the structure and access for maintenance. Remainder to be planted. At detailed design the balance of hard and soft landscaping would be refined.		C5
7	Urban	Developed land; sealed surface	14.969	V.Low	N/A - Other	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	0	Low	0.00	All new areas of hard landscaping at the Main Site, Ancillary Facilities and water intake (worstcase pending detailed design)		N/A
8	Individual trees	Urban tree	0.0407	Medium	Poor	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	14	Low	0.11	Minimum of 10 small trees, poor condition. Located within parcels 10 and 25 or elsewhere on land within SSE land holding. Options for tree planting at locations of interest to the local (Keadby) community could also be explored.		C4 and/or C3
9													
10	Heathland and shrub	Mixed scrub	0.27	Medium	Moderate	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	9	Low	1.80	Conversion of modified grassland to scrub at Fiftey Bridge.		C8
11	Heathland and shrub	Mixed scrub	0.095	Medium	Moderate	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	9	Low	0.63	Woody planting to replace non-viable plantation removed at construction.		C6
12	Grassland	Other neutral grassland	1.995	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Check details- Delay in starting habitat in required condition? ⚠	9	Low	11.58	Outer faces of the platform for the main site and land under the electricity pylons to be sown as grassland. This will need to be seeded at point of creation to stabilise the slopes, but it is assumed that there could be a delay.		C16
13													
14													
15													
16													
17													
		Total habitat area	31.06							52.23			

Site Area (Excluding area of individual trees, green walls, intertidal hard structures)	31.02

M² to hectares conversion tool:	Select a unit	Hectares	M²

Name: Keadby Next Generation Power Station Map Refe

A-3 On-Site Habitat Enhancement

Condense / Show Columns | Condense / Show Rows

Main Menu

Area habitat summary	
Total Net Unit Change	11.90
Total Net % Change	10.58%
Trading Rules Satisfied	No - check trading summaries ⚠

Change in broad habitat type detected. Check compliance with guidance ⚠

	Baseline habitats	Post intervention habitats												Comments		
		Proposed Habitat (Broad habitat pre-populated but can be overridden)		Change in distinctiveness and condition					Strategic significance	Temporal risk multiplier		Difficulty risk multipliers				
Baseline ref	Baseline habitat	Proposed Broad Habitat	Proposed habitat	Distinctiveness change	Condition change	Area (hectares)	Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition (years)	Final difficulty of enhancement	Habitat units delivered	User comments	Planning authority comments	Habitat relevance number
20	Urban - Developed land: sealed surface	Grassland	Other neutral grassland	V.Low - Medium	Lower Distinctiveness Habitat - Moderate	0.52	Medium	Moderate	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	14	Low	2.91	Break out Pillwy Bridge car park and replace with grassland. Location within green infrastructure network and this weighting can now be applied due to creation of semi-natural habitat		C9
30	Grassland - Modified grassland	Grassland	Other neutral grassland	Low - Medium	Lower Distinctiveness Habitat - Moderate	1.009	Medium	Moderate	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	14	Low	7.46	Enhance existing managed grassland on Trent Road - diversify sward and relax management from current regime.		C3
31	Grassland - Modified grassland	Grassland	Other neutral grassland	Low - Medium	Lower Distinctiveness Habitat - Moderate	1.93	Medium	Moderate	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	14	Low	12.53	Enhance existing meadow south of Trent Road.		C2
32	Grassland - Modified grassland	Grassland	Other neutral grassland	Low - Medium	Lower Distinctiveness Habitat - Moderate	0.278	Medium	Moderate	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	14	Low	1.80	Enhance existing grassland south of Trent Road.		C4
35	Grassland - Modified grassland	Grassland	Other neutral grassland	Low - Medium	Lower Distinctiveness Habitat - Moderate	2.813	Medium	Moderate	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	14	Low	18.26	Enhance existing managed grassland by access off A18 - diversify sward and relax management from current regime.		C10
					Total habitat area	6.58							43.98			

Project Name: Keadby Next Generation Power Station Map Reference:

B-1 On-Site Hedge Baseline

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Main Menu

Hedgerow summary	
Total Net Unit Change	3.49
Total Net % Change	30.18%
Trading Rules Satisfied	Yes ✓

	Existing hedgerow habitats			Distinctiveness	Condition	Strategic significance	Required Action to Meet Trading Rules	Ecological baseline							Comments		
Ref	Hedge number	Habitat type	Length (km)	Distinctiveness	Condition	Strategic significance		Total hedgerow units	Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost	User comments	Planning authority comments	Habitat reference number
1	4	Species-rich native hedgerow	0.12	Medium	Good	Formally identified in local strategy	Same distinctiveness band or better	1.66	0.1		1.38	0.00	0.02	0.28	Assume 20m loss within footprint of temporary ditch crossing and oversail. In reality more likely to be coppice and re-growth after construction use.		4
2	5a	Native hedgerow	0.15	Low	Good	Formally identified in local strategy	Same distinctiveness band or better	1.04	0.13		0.90	0.00	0.02	0.14	Assume 20m loss to create oversail around temporary ditch crossing. In reality more likely to be coppice and re-growth after construction use.		5a
3	6a	Native hedgerow	1.02	Low	Moderate	Formally identified in local strategy	Same distinctiveness band or better	4.69	1.02		4.69	0.00	0.00	0.00	Hedge by access road, retained.		6a
4	6b	Native hedgerow	0.18	Low	Moderate	Formally identified in local strategy	Same distinctiveness band or better	0.83	0.18		0.83	0.00	0.00	0.00	Hedge south of Trent Road, retained.		6b
5	8(part)	Native hedgerow with trees	0.1	Medium	Good	Formally identified in local strategy	Same distinctiveness band or better	1.38	0.1		1.38	0.00	0.00	0.00	Section of 8 with sufficient trees to qualify as this type, north of Trent Road. Retained.		8(part)
6	8(part)	Native hedgerow	0.18	Low	Good	Formally identified in local strategy	Same distinctiveness band or better	1.24	0.18		1.24	0.00	0.00	0.00	Section of 8 without trees north of Trent Road. Rertained.		8(part)
7	21a	Native hedgerow - associated with bank or ditch	0.053	Medium	Good	Formally identified in local strategy	Same distinctiveness band or better	0.73	0.053		0.73	0.00	0.00	0.00	Retained hedge by Chapel Lane		21a
8																	
9																	
10																	
11																	
12																	
			1.80					11.88	1.78	0.00	11.15	0.00	0.04	0.41			

Project Name: Keadby Next Generation Power Station Map Reference:

B-2 On-Site Hedge Creation

Condense / Show Columns Condense / Show Rows

Main Menu

Hedgerow summary	
Total Net Unit Change	3.40
Total Net % Change	30.16%
Trading Rules Satisfied	Yes ✓

		Proposed habitats		Distinctiveness	Condition	Strategic significance	Temporal multiplier		Difficulty risk multipliers	Hedge units delivered	Comments		
Ref	New hedge number	Habitat type	Length (km)	Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition (years)	Final difficulty of creation		User comments	Planning authority comments	Habitat reference number
1	1	Species-rich native hedgerow	0.5	Medium	Good	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	16	Low	3.90	Hedgerow by access off A18. No loss of hedgerow, so no delay in provision.		C12 & C14
2													
3													
4													
5													
6													
			0.50							3.90			

Project Name: Keadby Next Generation Power Station

C-1 On-Site WaterC¹ Baseline

Condense / Show Columns | Condense / Show Rows

Main Menu

Watercourse summary	
Total Net Unit Change	2.69
Total Net % Change	10.04%
Trading Rules Satisfied	Yes ✓

Existing watercourse type			Distinctiveness		Condition		Strategic significance			Watercourse encroachment		Riparian encroachment		Required Action to Meet Trading Rules	Ecological baseline						Bespoke compensation agreed for losses of Y/N/M	Comments		
Ref	Watercourse type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic significance multiplier	Extent of encroachment	Multiplier	Extent of encroachment for both banks	Multiplier		Total watercourse units	Length retained	Length enhanced	Units retained	Units enhanced	Length Lost	Units Lost		User Comments	Planning authority comments	Habitat reference number
1	Canals	0.13	Medium	4	Fairly Poor	1.5	Formally identified in local strategy	High strategic significance	1.15	Major	0.5	Major/No Encroachment	0.87	Same habitat required =	0.39	0.13	0	0.39	0.00	0.00	0.00		No loss of habitat or change from existing encroachment.		89 - Stainforth and Keadby Canal
2	Other rivers and streams	0.236	High	6	Fairly Poor	1.5	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/Major	0.75	Same habitat required =	1.83	0.166	0.07	1.29	0.54	0.00	0.00		Not meaningfully affected. Location of replacement of existing Mabey Bridge. Any bank disturbance temporary (recoverable within <2 years).		114 - Hatfield Waste Drain
3	Other rivers and streams	0.025	High	6	Moderate	2	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	No Encroachment/ No Encroachment	1	Same habitat required =	0.35	0.025	0	0.35	0.00	0.00	0.00		Not affected. On alignment of existing cooling water discharge pipeline.		93 - Keadby Warmine Drain
4	Other rivers and streams	0.72	High	6	Fairly Poor	1.5	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/No Encroachment	0.87	Same habitat required =	6.48	0	0.72	0.00	6.48	0.00	0.00		Included as there is scope for enhancement of riparian zone after construction. Coincides with the existing Pillwy Bridge crossing but not affected. No encroachment by the Proposed Development into the riparian zone. 10m stand-off to be applied for construction laydown adjacent to the watercourse.		South Soak Drain
5	Other rivers and streams	0	High	6	Fairly Poor	1.5	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/Major	0.75	Same habitat required =	0.00	0	0	0.00	0.00	0.00	0.00		Included for transparency only, not affected. Coincides with the existing Pillwy Bridge crossing. No encroachment by the Proposed Development into the riparian zone.		North Soak Drain
6	Ditches	0.42	Medium	4	Moderate	2	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/Major	0.75	Same habitat required =	2.90	0.42	0	2.90	0.00	0.00	0.00		Drain 1. Riparian habitat trivially affected by emergency access bridge. No loss of water course.		105
7	Ditches	0.085	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/No Encroachment	0.87	Same habitat required =	0.34	0.085	0	0.34	0.00	0.00	0.00		Drain 5. No encroachment.		104
8	Ditches	0.342	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/No Encroachment	0.87	Same habitat required =	1.37	0	0.342	0.00	1.37	0.00	0.00		Drain 3. No loss of water course. Riparian zone maintained.		106
9	Ditches	0.387	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/Major	0.75	Same habitat required =	1.34	0	0	0.00	0.00	0.39	1.34		Drain 4. Lost to Main Site.		107
10	Culvert	0.028	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	N/A - Culvert	0.68	N/A - Culvert	1	Better distinctiveness habitat required	0.04	0	0	0.00	0.00	0.03	0.04		Drain 4 culvert. Lost to Main Site		107
11	Ditches	0.42	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/Major	0.75	Same habitat required =	1.45	0	0.22	0.00	0.78	0.20	0.69		Drain 2 to be put in culvert		108
12	Culvert	0.007	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	N/A - Culvert	0.68	N/A - Culvert	1	Better distinctiveness habitat required	0.01	0.007	0	0.01	0.00	0.00	0.00		Drain 2 culvert		108
13	Ditches	0.277	Medium	4	Moderate	2	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/Major	0.75	Same habitat required =	1.91	0	0	0.00	0.00	0.28	1.91		Drain A. To be infilled.		109
14	Ditches	0.128	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	No Encroachment/ No Encroachment	1	Same habitat required =	0.59	0.128	0	0.59	0.00	0.00	0.00		Drain 7. No change, Trent Road area		5
15	Ditches	0.15	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/No Encroachment	0.87	Same habitat required =	0.60	0	0.15	0.00	0.60	0.00	0.00		Drain 6. No change, Trent Road area		5b
16	Ditches	0.179	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/No Encroachment	0.87	Same habitat required =	0.72	0.179	0	0.72	0.00	0.00	0.00		No change, Trent Road area		7
17	Ditches	0.538	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/Major	0.75	Same habitat required =	1.86	0.538	0	1.86	0.00	0.00	0.00		Drain 8. No change, Trent Road area		90
18	Ditches	0.182	Medium	4	Moderate	2	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/Major	0.75	Same habitat required =	1.26	0.182	0	1.26	0.00	0.00	0.00		Off-site ditches on cooling water pipeline corridor. No change.		92, 94, 95, 96, 97
19	Ditches	0.002	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/Major	0.75	Same habitat required =	0.01	0.002	0	0.01	0.00	0.00	0.00		Drain D, Glew Drain. No change.		103
20	Ditches	0.082	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	Major/No Encroachment	0.87	Same habitat required =	0.33	0.082	0	0.33	0.00	0.00	0.00		Drain B, Chapel Lane. No Change.		101
21	Culvert	0.025	Low	2	Poor	1	Formally identified in local strategy	High strategic significance	1.15	N/A - Culvert	0.68	N/A - Culvert	1	Better distinctiveness habitat required	0.04	0.025	0	0.04	0.00	0.00	0.00		Drain B culvert.		101
22	Ditches	0.033	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	No Encroachment	1	No Encroachment/ No Encroachment	1	Same habitat required =	0.15	0.033	0	0.15	0.00	0.00	0.00		Retained.		98
23	Ditches	0.916	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	Minor	0.8	Major/Major	0.75	Same habitat required =	2.53	0.916	0	2.53	0.00	0.00	0.00		Drains 10, 11, 12B, 13. Retained ditches by access off A18. Sec stand-offs to be observed.		110, 111, 112, 113, 117
24	Culvert	0.147	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	N/A - Culvert	0.68	N/A - Culvert	1	Better distinctiveness habitat required	0.20	0.147	0	0.20	0.00	0.00	0.00		Retained culverts of Drains 110-113		
25																									
26																									
27																									
28																									
29																									
		8.46													38.57	3.07	1.80	12.94	9.75	0.80	5.07				

Project Name: Keadby Next Generation Power Station Map Reference:

C-2 On-Site WaterC' Creation

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Watercourse summary	
Total Net Unit Change	2.68
Total Net % Change	10.04%
Trading Rules Satisfied	Yes ✓

	Proposed habitats		Distinctiveness	Condition	Strategic significance	Temporal multiplier		Difficulty multipliers	Watercourse encroachment	Riparian encroachment	Watercourse units delivered	Comments		
Ref	Watercourse type	Length (km)	Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition (years)	Final difficulty of creation	Extent of encroachment	Extent of encroachment for both banks		User comments	Planning authority comments	Habitat reference number
1	Culvert	0.21	Low	Poor	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	1	Medium	N/A - Culvert	N/A - Culvert	0.18	Drain 2. Section converted to culvert at Main Site		108
2	Ditches	0.49	Medium	Moderate	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	9	Medium	No Encroachment	No Encroachment/ No Encroachment	2.19	Ditch creation in grassland parcel 60. Part of GI network.		C11
3														
4														
5														
6														
7														
		0.70									2.38			

e: Keadby Next Generation Power Station Map

C-3 On-Site WaterC' Enhancement

Condense / Show Columns | Condense

Main Menu

Watercourse summary	
Total Net Unit Change	2.00
Total Net % Change	10.04%
Trading Rules Satisfied	Yes ✓

Baseline habitats		Post intervention habitats														Comments		
			Change in distinctiveness and condition			Habitat distinctiveness	Habitat condition	Strategic significance	Temporal multiplier		Difficulty multipliers	Watercourse encroachment	Riparian encroachment					
Baseline ref	Baseline habitat	Proposed habitat	Distinctiveness movement	Condition movement	Length (km)	Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition (years)	Final difficulty of enhancement	Extent of encroachment	Extent of encroachment for both banks	Watercourse units delivered	User comments	Planning authority comments	Habitat reference number
2	Other rivers and streams	Other rivers and streams	High - High	Fairly Poor - Fairly Poor	0.07	High	Fairly Poor	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	5	Medium	No Encroachment	Major/No Encroachment	0.63	Grassland enhancement/ scrub planting on part of north bank of Hatfield Waste Drain (grassland parcel 60/C10 & C15) reduces encroachment in riparian zone		114 (Hatfield Waste Drain)
4	Other rivers and streams	Other rivers and streams	High - High	Fairly Poor - Fairly Poor	0.72	High	Fairly Poor	Formally identified in local strategy	Check details- Delay in starting habitat in required condition? ⚠	5	Medium	No Encroachment	No Encroachment/ No Encroachment	7.45	Grassland enhancement on south bank of South Soak Drain (grassland parcel 60/C11) reduces encroachment in riparian zone		South Soak Drain
8	Ditches	Ditches	Medium - Medium	Poor - Moderate	0.342	Medium	Moderate	Formally identified in local strategy	Standard time to target condition applied	4	Low	No Encroachment	No Encroachment/ No Encroachment	2.94	Drain 3. Retained section next to Main Site to be enhanced prior to construction		106
11	Ditches	Ditches	Medium - Medium	Poor - Moderate	0.22	Medium	Moderate	Formally identified in local strategy	Standard time to target condition applied	4	Low	No Encroachment	No Encroachment/ No Encroachment	1.89	Drain 2. Retained section next to Main Site to be enhanced prior to construction		108
15	Ditches	Ditches	Medium - Medium	Poor - Moderate	0.15	Medium	Moderate	Formally identified in local strategy	Standard time to target condition applied	4	Low	No Encroachment	Major/No Encroachment	1.12	Drain 6, south of Tvert Road. Enhance prior to construction.		Sb
					1.80									14.03			

Appendix E Arboricultural Assessment

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E.1 Introduction

Overview

E.1.1 A Tree Survey has been undertaken in accordance with BS5837:2012 Trees in relation to design, demolition and construction – Recommendations (BS5837:2012) to cover trees with the potential to be affected by the construction, operation and maintenance of the Keadby Next Generation Power Station Project ('the Proposed Development').

E.1.2 This Arboricultural Assessment Report has been prepared by AECOM on behalf of Keadby Next Generation Limited ('the Applicant'). This report identifies preliminary information in relation to the nature and level of constraints posed by existing trees and considers the likely direct and indirect impacts of the Proposed Development on trees and vice versa, including consideration of mitigation as appropriate.

E.1.3 The Applicant is seeking development consent for the construction, operation and maintenance of a new combined cycle gas turbine ('CCGT') electricity generating station on land at, and in the vicinity of, the existing Keadby Power Station, Trentside, Keadby, Scunthorpe DN17 3EF ('the Site').

E.1.4 The Site is located within and near to the existing Keadby Power Station site near Scunthorpe, Lincolnshire and lies within the administrative boundary of North Lincolnshire Council (NLC). The majority of land is within the ownership or control of the Applicant (or SSE associated companies) and is centred on national grid reference 482351, 411796.

E.1.5 The Site encompasses an area of approximately 77.1 hectares (ha).

E.1.6 The Site is divided into the following areas of permanent and temporary land use (the proposed use is described in more detail in Environmental Statement (**ES) Volume I Chapter 3**: Site and Surrounding Area (**Application Document Ref. 6.4**)):

- Main Site;
- Ancillary Facilities;
- Water Connections;
- Electricity Connections;
- Waterborne Transport Off-loading Area;
- Construction Laydown Areas;
- Access Routes (emergency, permanent and construction);

- Connections to Keadby 1 and Keadby 2 power stations; and
- Additional areas for landscaping and biodiversity provision.

E.2 Standards and Guidance

National Policy

E.2.1 National Planning Policy relevant to arboriculture is detailed in the following excerpts.

E.2.2 The Department for Energy Security and Net Zero (DESNZ, 2024a) Overarching National Policy Statement (NPS) for Energy (EN-1) includes specific references to trees. These include the following extracts in relation to ancient woodland, veteran trees and other irreplaceable tree habitats:

"*5.4.14 Irreplaceable habitats are habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity."*

"5.4.15 Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland.... Ancient and veteran trees found outside ancient woodland are also particularly valuable. Other types of irreplaceable habitats include blanket bog, limestone pavement, coastal sand dunes, spartina salt marsh swards, mediterranean saltmarsh scrub and lowland fen."

"5.4.32 Applicants should include measures to mitigate fully the direct and indirect effects of development on ancient woodland, ancient and veteran trees or other irreplaceable habitats during both construction and operational phases."

"5.4.53 The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of any irreplaceable habitats, including ancient woodland, and ancient and veteran trees unless there are wholly exceptional reasons (Footnote 192 - For example where the public benefits (including need) of the nationally significant energy infrastructure would clearly outweigh the loss or deterioration of the habitat) and a suitable compensation strategy exists."

"5.4.55 The Secretary of State should refuse consent where harm to a protected species and relevant habitat would result, unless there is an overriding public interest and the other relevant legal tests are met. In *this context the Secretary of State should give substantial weight to any such harm to the detriment of biodiversity features of national or regional*

importance or the climate resilience and the capacity of habitats to store carbon, which they consider may result from a proposed development."

E.2.3 In relation to the Applicant's assessment the overarching NPS states:

"*5.11.27 Existing trees and woodlands should be retained wherever possible. In the EIP [Environmental Improvement Plan], the Government committed to increase the tree canopy and woodland cover to 16.5% of total land area of England by 2050. The applicant should assess the impacts on, and loss of, all trees and woodlands within the project boundary and develop mitigation measures to minimise adverse impacts and any risk of net deforestation as a result of the scheme. Mitigation may include, but is not limited to, the use of buffers to enhance resilience, improvements to connectivity, and improved woodland management. Where woodland loss is unavoidable, compensation schemes will be required, and the long-term management and maintenance of newly planted trees should be secured."*

E.2.4 In April 2025 the Department for Energy Security and Net Zero issued an updated draft version of EN-1 for consultation. The updates in relation to arboriculture are generally limited to minor changes such as to paragraph numbers but also include a reference to Keepers of Time, the government's policy for ancient and native trees and woodlands in England. This includes commitments to maintain and enhance existing known ancient and veteran trees and to increase the percentage of actively managed ancient woodlands.

E.2.5 In relation to the Applicant's assessment, the draft NPS includes a reference to the government's Environmental Improvement Plan which recognises the need to protect and increase tree and woodland cover and also refers to the use of sustainable materials including reused/recycled materials (such as timber) where possible

E.2.6 The NPS for Natural Gas Electricity Generating Infrastructure (EN-2) (DESNZ, 2024b) does not contain any specific references to arboriculture or existing trees. New tree planting is referred to in relation to potential mitigation for landscape and visual impacts in section 2.5.8 which states:

"*Earth bunds and mounds, tree planting, or both may be used for softening the visual intrusion and may also help to attenuate noise from site activities*".

E.2.7 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2024) seeks to ensure that new

development is sustainable and underlines the importance of Green Infrastructure, of which trees form an integral part. This encompasses a recognition of the importance of trees in relation to the management of air, soil and water quality along with other associated ecosystem services and climate change adaption. The NPPF also seeks to achieve the protection and enhancement of landscapes and a net gain in biodiversity. Finally, it specifically identifies veteran and ancient trees and woodland as a highly valuable and irreplaceable habitat.

E.2.8 The NPPF (2024) includes the following statements in relation to trees:

- *"136. Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users".*
- *"193. When determining planning applications, local planning authorities should apply the following principles:*
- *…c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists".*

E.2.9 'BS5837:2012 Trees in relation to design demolition and construction – Recommendations (British Standards Institution (BSI), 2012)' provides a framework which sets out how trees should be considered in this context and also explicitly applies to development where planning consent is not required.

E.2.10 BS5837:2012 recommends that a tree survey is undertaken to identify the quality and benefits of trees and the spatial constraints associated with them. This is then used to produce a Tree Constraints Plan showing the above and below ground constraints associated with trees. This drawing

is used to inform the design process and to allow the retention of good quality trees where appropriate.

E.2.11 An Arboricultural Impact Assessment is then developed to identify the likely direct and indirect impacts of the Proposed Development, and a Tree Protection Plan is prepared to identify trees to be removed or retained and to illustrate how retained trees are to be protected. An Arboricultural Method Statement is often required as a condition of planning consent or as a requirement of DCO consent to detail how sensitive operations are to be achieved in proximity to retained trees. These elements are the minimum normally required for a planning application and are intended to ensure both a sustainable and harmonious relationship between trees and new development.

E.2.12 'BS 3998:2010 Tree work – Recommendations (BSI 2010)' sets out the principles required where tree works such as pruning are required. 'BS8545:2014 Trees: from the nursery to independence in the landscape – Recommendations (BSI 2014)' provides guidance on tree planting and aftercare requirements.

E.2.13 The Environment Act 2021 sets out the requirement for developments to achieve a minimum Biodiversity Net Gain (BNG) of 10%. This was made mandatory for developments submitted pursant to the Town and Country Planning Act 1990 in February 2024. BNG requirements are expected to apply to NSIP developments submitted for examination from November 2025. Irreplaceable habitats (including ancient woodland and ancient or veteran trees) are exempt from BNG consideration as their loss cannot be mitigated. Impacts to irreplaceable habitats must be addressed via separately agreed compensation measures. A standalone BNG assessment has been developed for the Proposed Development which is included as Appendix D of the **Outline Landscape and Biodiversity Mitigation and Enhancement Plan (LBMEP) Report (Application Document Ref 5.10).**

Local Policy

E.2.14 Local Planning Authorities (LPA) in the UK have a statutory duty to consider when granting planning permission for development that adequate provision is made, by the imposition of conditions, for the protection and planting of trees. The potential impact of development on all trees (including those not protected by a Tree Preservation Order (TPO) or other statutory designation) is therefore a material consideration.

E.2.15 The Site is within the boundary of NLC. A desktop review of NLC's planning policies relating to trees was undertaken on 25th October 2024,

including The North Lincolnshire Council Core Strategy, adopted in June 2011.

E.2.16 The following excerpts identify the importance of tree retention, protection and where this is not feasible, mitigation for tree loss in relation to any new development.

E.2.17 Policy CS16 North Lincolnshire's Landscape, Greenspace and Waterscape identifies a requirement for appropriate tree feature retention, section 11.35 states:

"The council will protect, enhance and support a diverse and multi-functional network of landscape, greenspace and waterscape through:

…4. Requiring the protection of trees, hedgerows and historic landscape to be specified where appropriate."

E.2.18 This is furthered in section 11.37, stating:

"Smaller scale greenspace features which include individual trees and hedgerows are also important to quality of life and the environment. The council will be proactive in protecting such features through Tree Preservation Orders or other applications of its powers. Development proposals should also bring forward landscaping schemes that protect existing landscape features and deliver environmental improvements appropriate to the location of the scheme and the function and scale of development."

E.3 Methodology

E.3.1 Topographical information has been provided showing some tree positions; where no topographical information is available trees have been plotted indicatively with reference to site features, GPS and publicly available aerial photography and these features are marked with a *. Tree positions should be confirmed on Site at the detailed design stage as required.

E.3.2 The tree survey was conducted in accordance with the requirements of BS5837:2012.

E.3.3 The fieldwork informing this report has comprised a preliminary, non-intrusive, visual walkover survey undertaken from ground level with the specific intention of evaluating the quality and benefits of trees on the Site. The initial fieldwork was undertaken on the 29th and 30th October 2024, during which dimensional data and observational information were collected. A diameter tape measure was used to measure stem diameters where feasible.

E.3.4 A small number of small trees/shrubs were not included within the tree survey (they are located outside of the tree survey study area but now fall within the revised Site boundary) and have been plotted indicatively following a review of aerial imagery and site photographs.

E.3.5 Where further inspection is deemed appropriate to ascertain the condition of the tree or other arboreal features, this has been identified within the preliminary management recommendations. Average dimensions or dimensional ranges have occasionally been used, where appropriate, to best describe features.

E.3.6 The Root Protection Area (RPA) is the notional extent of what is considered to be the key rooting area for tree health and function. This is generally depicted as a circle but can be amended to a polygon with an equivalent area in accordance with Section 4.6.2 of BS5837:2012 where the RPA is likely to have developed asymmetrically. The RPA of all surveyed trees is depicted as a circle and no RPAs are considered to have developed asymmetrically. However, T15, T16, T40, T41, T48 and T89 are all considered likely veteran trees, and T100 a likely ancient hawthorn. As such these trees subsequently have buffer zones (hereafter

referred to as RPAs) as 15 times the stem diameter or five metres beyond the crown spread, whichever is greater.

E.3.7 General arboricultural principles are included as Annex 6.

E.3.8 A Tree Constraints Plan showing the position of trees and the spatial constraints associated with them is included as Annex 1 of this report, which corresponds with the Tree Survey Schedule presented in Annex 2.

E.3.9 The tree categorisation process recommended by BS5837:2012 is summarised in Table E.1 below and corresponds with the tree canopy outline shown on the Tree Constraints Plan (Annex 1) and the information in the Tree Survey Schedule (Annex 2).

Table E.1: BS5837:2012 Tree Categorisation process

Category	Definition
A	High quality, minimum of 40+ years remaining contribution
B	Moderate quality, minimum of 20+ years remaining contribution
C	Low quality, minimum of 10+ years remaining contribution
U	Unsuitable for retention, <10 years remaining contribution
1	Arboricultural value
2	Landscape value
3	Conservation or cultural value

E.4 Baseline Conditions

Fieldwork Observations

The Site

E.4.1 The Site is shown on the Tree Constraints Plan included within Annex 1 of this report.

E.4.2 The Site is located at the Keadby Power Station at Trentside, Keadby, Scunthorpe, DN17 3EF.

E.4.3 The existing use is an active power station, formed of an industrial complex with associated infrastructure including access roads, parking areas, utilities and landscaping. Topography is generally level within the power station complex, with minor undulation around built features and paths.

E.4.4 The British Geological Survey's Geology Viewer identifies bedrock geology on the Site as Mercia Mudstone Group – mudstone with superficial deposits of Warp - clay and silt.

E.4.5 Following a review of LandIS's Soilscapes mapping[1], on 25th October 2024, soils are described as loamy and clayey soils of coastal flats with naturally high groundwater.

The Trees

E.4.6 In total, 238 tree features were identified during the survey, formed of 143 individual trees, 82 tree groups, nine hedgerows and four woodlands.

E.4.7 Of these identified tree features, 16 features are of high quality (category A); 85 of moderate quality (category B); 121 of low quality (category C);

[1] https://www.landis.org.uk/soilscapes/

and 16 identified as unsuitable for retention as living trees for more than ten years in the context of the current land use (category U).

E.4.8 Table E.2 below summarises the number of trees in each quality category recorded within or adjacent to the Site.

Table E.2 Summary of tree features in each quality category.

Quality Category	A	B	C	U
Number of tree features	16	85	121	16

E.4.9 The trees on the Site range between young and ancient life stages, showing a predominantly semi-mature distribution dominance, where surveyed individually, (with an approximate life stage distribution for individual trees shown as Plate E.1 below) and are generally in a good physiological and structural condition.

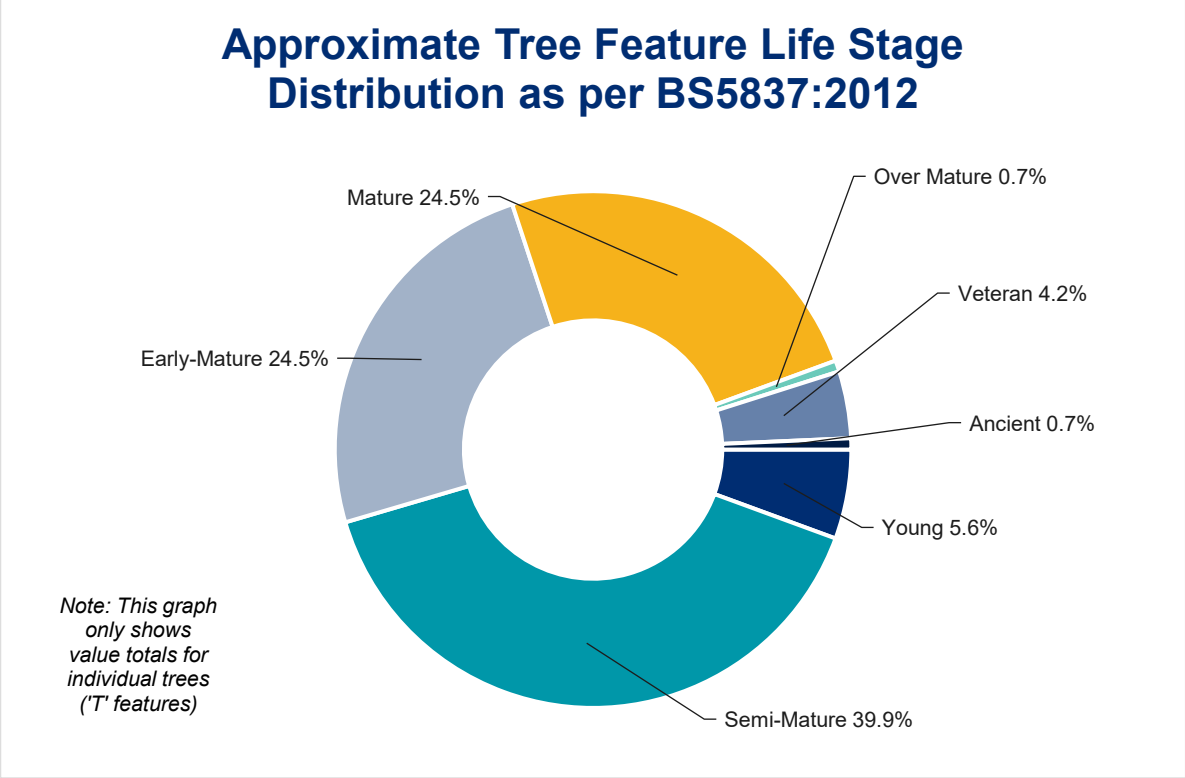


Plate E.1 Approximate tree feature age range distribution on the Site.

E.4.10 Tree species identified on and immediately adjacent to the Site are shown in Table E.3.

Table E.3 Genera and species identified on and immediately adjacent to the Site.

Species Common Name (*Scientific Name*)
Field maple (*Acer campestre*)
Cappadocian maple (*Acer cappadocicum*)
Norway maple (*Acer platanoides*)
Sycamore (*Acer pseudoplatanus*)
Italian alder *(Alnus cordata)*
Common alder *(Alnus glutinosa)*
Grey alder (*Alnus incana*)
Silver birch (*Betula pendula*)

Species Common Name (*Scientific Name*)
Downy birch (*Betula pubescens*)
Butterfly bush *(Buddleja davidii)*
Lawson cypress (*Chamaecyparis lawsoniana*)
Leyland cypress (*X Cupressocyparis leylandii*)
Hazel (*Corylus avellana*)
Hawthorn (*Crataegus monogyna*)
Dogwood (*Cornus sanguinea*)
Common ash (*Fraxinus excelsior*)

Species Common Name (*Scientific Name)*
Holly (*Ilex aquifolium)*
Common walnut *(Juglans regia)*
Common privet (*Ligustrum vulgare)*
Apple (*Malus spp.)*
Norway spruce (*Picea abies)*
Pine *(Pinus sp.)*
Lodgepole pine (*Pinus cordata)*
Austrian pine (*Pinus nigra)*
Scots pine (*Pinus sylvestris)*
London plane (*Platanus x acerifolia)*
White poplar *(Populus alba)*
Hybrid black poplar (*Populus x canadensis)*
Aspen (*Populus tremula)*
Western balsam poplar (*Populus trichocarpa*)
Wild cherry (*Prunus avium)*
Cherry plum (*Prunus cerasifera)*
Purple leaved plum (*Prunus cerasifera* 'Pissardii')
Damson (*Prunus domestica)*
Portugal laurel *(Prunus lusitanica)*
Blackthorn (*Prunus spinosa)*
Pin oak (*Quercus palustris)*
Sessile oak (*Quercus petraea)*
Common oak (*Quercus robur)*
Common lime (*Tilia x europaea)*
Lime *(Tilia sp.)*
Willow (*Salix sp*.).
White willow (*Salix alba)*
Crack willow *(Salix fragilis)*

Species Common Name (*Scientific Name)*
Goat willow (*Salix caprea)*
Weeping willow (*Salix x chrysocoma)*
Grey willow (*Salix cinerea)*
Elder (*Sambucus nigra)*
Whitebeam (*Sorbus aria)*
Rowan *(Sorbus aucuparia)*
Swedish whitebeam *(Sorbus intermedia)*
Elm (*Ulmus sp.)*
Guelder rose (*Viburnum opulus)*

E.4.11 The most significant trees identified during the survey are T15, T16, T40, T41, T48 and T89 which are all considered likely veteran trees, and T100 which is a likely ancient hawthorn.

E.4.12 Plate E.2 below shows the distribution of individually surveyed tree species on and immediately adjacent to the Site. The species distribution highlights the dominance of ash, goat willow, poplar, maple and hawthorn. Due to relatively poor species diversity and the associated risks of species specific pests and diseases such as ash dieback the Site is therefore at risk from a loss of canopy cover. It is generally accepted that a single species should form no more than 10% of an urban forest population, due to the potential risk to canopy cover should that species be lost (due to climate change, pests and diseases etc). The Proposed Development therefore represents an opportunity to increase the tree species diversity on the Site through new and replacement planting.

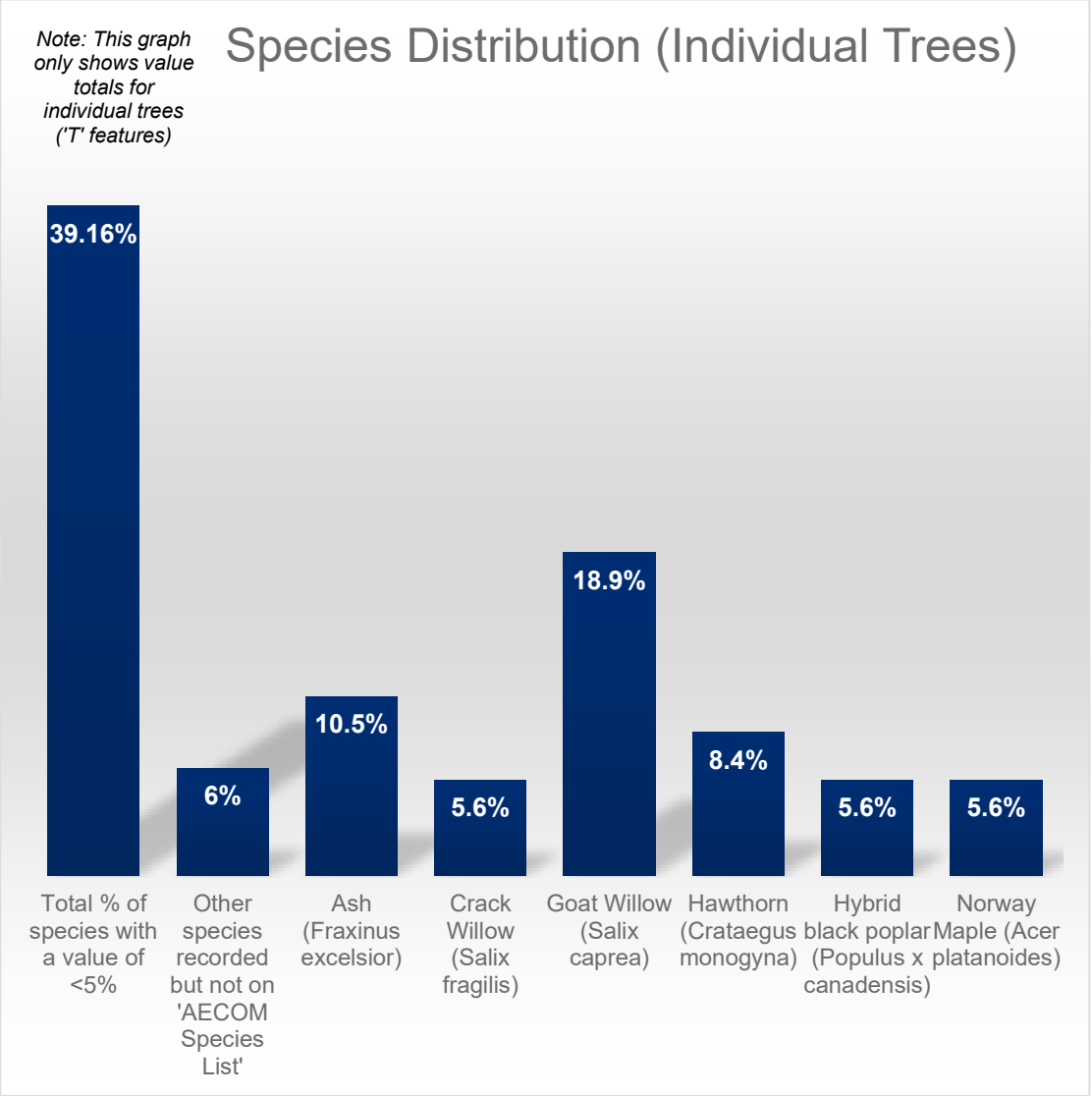


Plate E.2 Individual tree species distribution of trees on and immediately adjacent to the Site.

E.4.13 Multiple trees on the Site are identified as native ash with signs and symptoms of ash dieback. Across Britain, native ash is in significant decline due to the fungus *Hymenoscyphus fraxineus* (ash dieback). Ash trees may have natural immunity to ash dieback however, the majority of the ash population is susceptible (around 80 to >90% of trees). Once infected, ash trees initially showing minor symptoms may decline rapidly over a few years.

E.4.14 Consideration must therefore be made for the monitoring of ash trees on and immediately adjacent to the Site and their removal where appropriate

(e.g. where they pose an unacceptable risk to people or property). It is recommended that monitoring is undertaken annually in summer during full leaf flush.

E.4.15 Ash trees showing late-stage symptoms of ash dieback may become embrittled, either due to degradation/ dysfunction of the wood substrate from ash dieback or from secondary pathogens. The subsequent removal of trees in the late stages of ash dieback may become hazardous to contractors undertaking tree removal. Removal of ash trees prior to this stage is therefore recommended[2] where unacceptable risks to an identified target (e.g. people or property) have been observed.

E.4.16 Elm species are not extensively represented across the Site but where they are present, they are often in poor condition. Native and naturalised elm trees are susceptible to the non-native fungus *Ophiostoma ulmi* and *O. novo-ulmi*, Dutch elm disease (DED). The fungus is spread by a vector, the elm bark beetle *Scolytus spp*. Dutch elm disease has eliminated the majority of mature elm trees in Britain, with few exceptions.

E.4.17 Where present, this disease is likely to affect the existing elm population, most notably the species of English elm. As such, elm trees should be monitored for signs and symptoms of DED. Where appropriate, trees in decline are recommended for removal where an unacceptable risk to a target is present.

E.4.18 Where risks are acceptable the retention of dead and dying trees can provide important habitat for biodiversity. Where trees are to be removed, retaining arisings in situ as deadwood habitat is recommended where feasible. The UK Forest Standard (2023) recommends a target of 20-30m^3 of deadwood per hectare as a deadwood target for woodland management.

Statutory and Non-Statutory Designations

Statutory Designations

E.4.19 NLC's online statutory designation mapping[3] was accessed on 22nd April 2025 to confirm the presence or absence of TPOs and Conservation

[2] https://www.trees.org.uk/Trees.org.uk/media/Trees-org.uk/Documents/eBooks/AshDieback-GuidanceNote-web.pdf

[3] https://map.northlincs.gov.uk/mycouncil.aspx?tab=maps

Areas (CAs) on and immediately adjacent to the Site and none were identified.

E.4.20 Magic Map was accessed on 22nd April 2025 to identify the presence or absence of any Sites of Special Scientific Interest (SSSI). The Humber Estuary SSSI is located to the east of the Site. This is likely to afford protection to T236. No works are permitted to this tree without the prior approval of Natural England.

E.4.21 The Hedgerow Regulations 1997 protect agricultural or countryside hedgerows which meet the requirements of an 'important hedgerow'. These include hedgerows which are a minimum age of 30 years or more and meet one of the other significance criteria listed in the regulations, which include a wide range of other ecological and archaeological/heritage features. The Heritage and Ecological assessments (see **ES Volume I Chapter 11**: Biodiversity and Nature Conservation and **Chapter 15**: Cultural Heritage (**Application Doc. Ref. 6.2**)) have not identified any important hedgerows within the Order Limits.

E.4.22 A felling licence may be required by the Forestry Commission to fell more than 5m^3 in any calendar quarter (subject to relevant exceptions such as 'necessary' works by statutory undertakers, works required to fulfil an act of parliament, works to trees in gardens, designated public open spaces or churchyards).

E.4.23 The Management of Hedgerows (England) Regulations 2024 prevents the cutting or trimming of (or the permitting of another person to cut or trim) an important agricultural hedgerow that is covered by the legislation from 1st March to 31st August, subject to the relevant exemptions. Any trees growing in a hedgerow are treated as part of the hedgerow.

E.4.24 Full planning consent is an exemption from the need to apply for consent for works to trees protected by a TPO, the need to give notice of the intention to undertake works within a Conservation Area and the need to apply for a Felling Licence with the Forestry Commission.

E.4.25 A new TPO can be made by the LPA at any time. Prior to any tree works the status of trees to be removed or pruned must be verified with NLC and the Forestry Commission as appropriate.

Non-Statutory Designations/Priority Habitats

E.4.26 Following a review of Magic Map[4] on 22nd April 2025 it was determined that the Site includes no ancient semi natural woodland or replanted ancient woodland.

E.4.27 A small number of priority habitat inventory – deciduous woodland (England) priority habitats are identified within or adjacent to the Site (as shown on the Tree Constraints Plan included as Annex 1). This correlates with surveyed tree features W83 and G84 to the north of the canal (south of the proposed construction haul road) and W186 at Keadby Common (to the west of the Main Site). These features have been recorded by the ecological surveys as lowland mixed deciduous woodlands.

[4] https://magic.defra.gov.uk/MagicMap.aspx

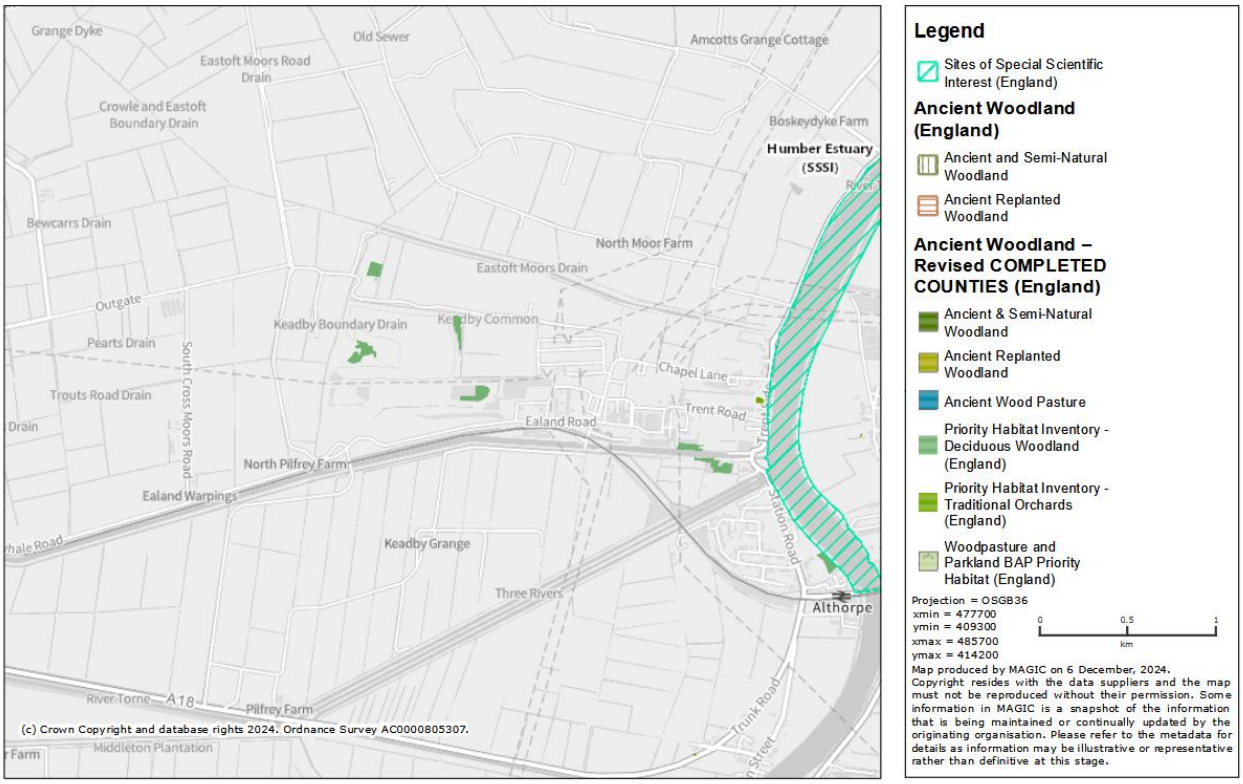


Plate E.3 Non-statutory designations relating to trees on Site.

E.4.28 Following a review of the Woodland Trust's Ancient Tree Inventory on 22nd April 2025, no recorded ancient, veteran or notable trees are identified within or adjacent to the Site.

E.4.29 However, the Ancient Tree inventory is populated with volunteer entries (which are reviewed by the Woodland Trust's team of verifiers) and is therefore not considered a complete record. Ancient or veteran trees identified by the tree survey are detailed in the Tree Survey Schedule in Annex 2.

E.5 Arboricultural Impact Assessment

Purpose

E.5.1 This impact assessment sets out the likely principal direct and indirect impacts of the Proposed Development on the trees on or immediately adjacent to the Order Limits and suitable mitigation measures to allow for the successful retention of significant trees or to compensate for trees to be removed, where appropriate.

E.5.2 The following assumptions have been utilised for this assessment:

- A 9.5m wide haul route was installed for the construction of Keadby 2 Power Station (which began commercial operation in 2023) and an equivalent corridor will be required for the Proposed Development in the same location. Vehicle wheelbases will utilise the existing hard surfaced access road only.
- The water supply pipeline route will be largely above ground and can be achieved within a 3.4m wide corridor which will follow the northern edge of the Order Limits boundary (as shown indicatively on the Tree Protection Plan in Annex 3)
- No new works are required to the immediate south and to the north of Trent Road (to the east of the Order Limits) and no new works are required to the existing outfall or pipework which will facilitate the discharge of effluent into the River Trent to the north west of the Order Limits.

E.5.3 A brief summary of trees to be removed, tree works and incursions related to the Proposed Development are detailed within Table E.4.

Table E.4: Summary of Removals, Incursions and Pruning to Facilitate the Proposed Development

Impact	Category A	Category B	Category C	Category U
Trees to be removed to facilitate the Proposed Development	T145, T149, T152, T154	T3, G65, T136, T137, T138, T141, T142, T143, T146, T147, T148, T150, T153, W185 (part), W186 (part), W238 (part)	G1, G2, G4, G22 (part), G23 (part), G63, G64, G68 (part), G69, G70 (part), T79, G85 (part), H134 (part), T144, T151, G155 (part), G182 (part), T183, G184 (part), T193, G194, G195, G198, T199, T202, T210, G213, T215, G237, G239 (part)	G24, G67 (part), G77, T78, T139, G200, G201
Total	**4 individual trees**	**12 individual trees, 1 group, 3 part woodlands**	**9 individual trees, 11 groups, 9 part groups, 1 part hedgerows**	**2 individual trees, 4 groups, 1 part group**
Trees which may require an incursion to allow the Proposed Development.	T89	0	0	0
Total	**1 individual tree**	**0**	**0**	**0**
Trees to be pruned to facilitate the Proposed Development	0	T90	0	0
Total	**0**	**1 Individual tree**	**0**	**0**

Trees to be Removed

E.5.4 In total, 27 individual trees, 26 groups, three woodlands and one hedgerow are to be removed or part removed to facilitate the Proposed Development. This includes:

- four individual trees classed as high quality (Category A);
- 12 individual trees, one group and three part woodlands classed as moderate quality (Category B);
- 9 individual trees, 11 groups, nine part groups and one part hedgerow classed as low quality (Category C); and
- the remaining two individual trees, four groups and one part group classified as unsuitable for retention (Category U) as living trees for more than 10 years in the context of the current land use.

E.5.5 A summary of removals of surveyed tree features by canopy area is shown in Table E.5 below.

Table E.5: Summary Tree Features Removals for Surveyed Tree Features by Area

Surveyed Tree Feature Canopy Cover Area (m^2)	Total Removed Canopy Cover Area (m^2)	Percentage (%) of Surveyed Tree Population Removed by Area
71,687m^2	9,677 m^2	13%

E.5.6 One un-surveyed small tree/shrub is also to be removed (as shown on the Tree Protection Plan in Annex 3). This feature was located outside of the scope of the tree survey and due to its low stature additional surveys were not considered to be justified.

E.5.7 The development of tree groups and woodlands facilitates shelter to individuals as the group/ woodland collectively acts to reduce dynamic loading (e.g., wind) within. As such, partial removal of groups and woodlands, notably at windward edges (south/ southwest) may increase exposure to trees which were previously sheltered (companion shelter). Sudden increases in exposure by partial removals to trees otherwise un-adapted to the change may result in an increased likelihood for tree failure. This

likelihood is determined by numerous factors including but not limited to the stand density, total tree height, soils, climate, aspect and topography.

E.5.8 Where part of a group of trees is to be removed, the final extent of tree loss is to be determined on the Site by an arboriculturist who will assess the suitability and stability of retained trees.

E.5.9 No veteran or ancient trees are to be removed**.**

E.5.10 No impacts to trees protected by TPOs are anticipated (based on TPO information available at the time of writing).

E.5.11 The design has been developed to minimise loss or impacts to trees, especially those of the greater quality and value. Tree loss is assessed as a reasonable worst case (Rochdale Envelope) to allow flexibility in the final alignment of the Proposed Development within the Order Limits. However, where there is a high degree of confidence that trees of value can be avoided and protected these have been shown as retained. Where possible the detailed design will be developed to further avoid or minimise impacts to trees and in practice this is likely to reduce the level of reported arboricultural impacts.

E.5.12 All of the trees to be removed are within the Order Limits with the exception of T136 which is located just beyond the Order Limits. All of the remaining recorded trees can be retained and protected.

E.5.13 The impacts of tree removals will be mitigated with a high-quality scheme of new tree planting and associated landscaping works as detailed and secured in the **Landscape and Biodiversity Management and Enhancement Plan Report (Application Document Ref: 5.10)** which will represent an opportunity to enhance the quality, benefits and resilience of trees within the Order Limits.

Tree Works

E.5.14 Tree removals to facilitate the Proposed Development are detailed in the Tree Survey Schedule included as Annex 2 of this report.

E.5.15 A single moderate quality tree (T90) is to be lightly pruned to facilitate the construction haul road access. No additional pruning has been identified at this stage. The final requirement for any pruning will be reviewed and confirmed at the detailed design stage.

E.5.16 All tree work is to follow the principles of BS3998: 2010 Treework – Recommendations and must be carried out by suitably qualified contractors.

The Arboricultural Association provides a list of contractors who meet these requirements.

E.5.17 Should the requirement for additional tree works be identified, this will be discussed with an arboriculturist and no additional tree works will be undertaken without the consent of NLC.

Veteran and Ancient Tree RPA or Canopy Spread Incursions

E.5.18 Development impacts to retained ancient and veteran tree features are summarised in Table E.6.

E.5.19 There are no substantive incursions within the RPA of veteran or ancient tree features.

E.5.20 The proposed construction haul road will utilise the existing construction haul road used during construction of Keadby 2 Power Station to the south of T89. All vehicles and plant will operate from the existing road surface which will protect roots and soil structure, however an oversail of the existing kerb line will be required which will have no impact on the tree.

E.5.21 The total required width is 9.5m and this is equivalent to that applied for the construction of Keadby 2 Power Station which utilised the same access route in 2018-2022 so on this basis the existing clearance is likely to be sufficient. Should any additional pruning be required, this will be determined at the detailed design stage and would be limited to the outer canopy and would not have a negative impact on the health or amenity value of the tree.

Table E.6: Veteran and Ancient Tree Development Impacts Summary.

Tree Feature ID	Species	Direct Development Impact
T15	Willow *(Salix* sp)	No change from existing land use
T16	Willow (*Salix* sp)	No change from existing land use
T40	White Willow (*Salix alba*)	No change from existing land use
T41	White Willow (*Salix alba*)	No change from existing land use
T48	Ash (*Fraxinus excelsior*)	No change from existing land use

Tree Feature ID	Species	Direct Development Impact
T89	Crack Willow (*Salix fragilis*)	Haul road within the RPA will be achieved within the footprint of the existing access road (also utilised for the Keadby 2 Power Station construction). Oversail requires a total width of 9.5m
T100	Hawthorn (*Crataegus monogyna*)	No change from existing land use

E.5.22 Retained ancient and veteran trees will be protected from indirect impacts (such as dust) via careful management of materials (including dust suppressant measures and the use of screens where appropriate) as set out in the **Outline CEMP (Application Document Ref 7.4)**.

E.5.23 An Arboricultural Method Statement will be developed to manage any potential direct and indirect impacts. This will be developed post consent and is secured via a Requirement of the **Draft DCO (Application Document Ref 3.1.**

Incursions within the RPA or Canopy Spread of Other Trees

E.5.24 No other trees will be subject to an RPA or canopy spread incursion to facilitate the Proposed Development. Tree constraints and any potential impacts will be reviewed as part of the detailed design process.

E.5.25 An Arboricultural Method Statement will be developed to address incursions and tree protection measures. This will be developed post consent and is secured via a Requirement of the **Draft DCO (Application Document Ref 3.1).**

Tree Protection

E.5.26 Retained trees are vulnerable to damage from construction activities which can include physical damage to stems and branches following impacts with plant root severance following trenching, root death or dysfunction following damage to soil structure (caused by the movement of people or machinery on unsurfaced ground) or via the spillage of materials toxic to tree health. The default position is that the RPA and canopy spread of trees to be

retained will form an effective Construction Exclusion Zone, secured with robust fencing where no access will be permitted. Where access is necessary within this area special measures such as the use of ground protection and arboricultural supervision are generally required.

E.5.27 Outline tree protection measures are considered in Annex 4 of this report. An Arboricultural Method Statement will be developed to address the detailed design, to set out the phasing of site operations, the finalised tree protection measures for the Proposed Development, and to provide detail on how sensitive elements of work are to be achieved in proximity to retained trees. This will be developed post consent and is secured via a Requirement of the **Draft DCO (Application Document Ref 3.1).**

E.5.28 Issues to be addressed by the Method Statement are listed in the Conclusion of this report.

Site Organisation, Storage and Use of Materials, Plant and Machinery.

E.5.29 All construction site facilities including compounds and areas for storage will be located outside of the RPA or crown spread of retained trees, including those not specifically covered in this report. Space is likely to be constrained on the Site and will need to be carefully considered.

E.5.30 The proposed construction and laydown areas are shown on the **Indicative Proposed Power Station Layout, Elevations and Sections Plans (Application Document Ref: 2.6).** The Construction Exclusion Zones identified on the Tree Protection Plan (Annex 3) must be fully respected and their location and significance is to be highlighted to all site staff and contractors during the formal site briefings.

E.5.31 The use, mixing and washing of materials can lead to run off or inadvertent spillage into tree root zones. Many substances often used on construction sites can be toxic to tree roots (such as concrete, fuels, salts, builders' sand and herbicides) and can result in the death of tree roots and beneficial soil organisms and can have a significant impact on the future health and appearance of the tree.

E.5.32 The storage of materials and arisings can result in an effective raised soil level. This buries tree roots at depths where air and water are less available and can lead to the decline or death of the tree.

E.5.33 For these reasons the storage of materials and any washing, mixing or refuelling will take place in agreed allocated areas at least 5 m from the edge

of the RPA of retained trees (unless otherwise agreed with the project arboriculturist).

E.5.34 Any slope effect must be taken into account and where there is a potential for run off, heavy duty polythene sheeting and sandbags must be in place as bunding to prevent toxic materials reaching RPAs.

E.5.35 Particular care is required where high sided vehicles, long reach machinery and plant with jibs, booms and counterweights are to operate within proximity of retained trees. A banksman will be used where the movement of plant or long reach machinery occurs within 5 m of any part of a retained tree to ensure no damage is sustained.

Tree Planting

E.5.36 Existing areas of unsurfaced ground must be protected during the construction phase if they are to be re-used for new plantings. Protection can be achieved using fit for purpose ground protection measures as set out in BS5837:2012 Section 6.2.3 or by creating a fenced exclusion zone. Where protection is not feasible, soil amelioration or replacement works will be required to ensure suitable growing conditions for new trees to fully establish.

E.5.37 Where new trees are to be planted, the minimum planting distances detailed in Table A.1 of BS5837:2012 must be adhered to along with project specific offsets to prevent direct damage to services and structures from future tree growth.

E.5.38 New tree planting should be implemented in accordance with the guidance set out in BS8545:2014 Trees: from nursery to establishment in the landscape – Recommendations.

Services

E.5.39 No detailed information in relation to services has been made available at this stage however following tree clearance there is likely to be sufficient space for any service installation or diversions avoiding the RPA of retained trees. The following general principles outlined below will apply to new or diverted existing services.

- Where existing services become redundant within the RPA of a retained tree, the default position must be that they be decommissioned and left in situ. Where this is not feasible the following principles are to be observed.
- Existing services are to be removed by winching out from an access/ inspection chamber located outside of an RPA. It may be acceptable to

fill redundant pipe work with an inert material or undertake pipe bursting where necessary within the RPA of retained trees.

E.5.40 Excavation to install services has the potential to result in unacceptable root severance which could result in instability, dysfunction or the death of trees. Repeated incursions are particularly damaging and must be avoided by bundling services wherever possible. The default position will therefore be that all services be routed outside of the RPA of retained trees.

E.5.41 The following general principles will apply and where services must be routed within the RPA of a retained tree this process will be subject to a detailed method statement with approval from the LPA. The principles of the National Joint Utilities Group (NJUG) Volume 4 guidance must be adhered to.

- All services must be bundled as far as possible and installed within RPAs using hand/compressed air excavation (e.g., for shallow service runs where all roots >25 mm diameter can be retained and worked around) or trenchless techniques such as Horizontal Directional Drilling (HDD) or impact moling (thrust boring) with all access pits and inspection chambers being located outside of the RPA.
- The route must run as far from the main stem of a retained tree as possible and must be at a minimum depth so that the upper 2 m of the soil profile is undisturbed. The depth of the run may need to be adjusted to account for soil type and species variation and this must be determined subject to the advice of an arboriculturist.
- Services must be constructed so as to be resistant to ingress by tree roots (both existing trees, and newly planted trees) which could include the use of root barriers where appropriate.

E.5.42 This operation must take place as specified in an Arboricultural Method Statement. This will be developed post consent and is secured via a Requirement of the **Draft DCO (Application Document Ref 3.1).**

The Future Impact of Retained Trees

E.5.43 The future impact of retained trees in conjunction with the Proposed Development and future use of the Site has been considered.

E.5.44 Retained trees will require periodic inspection to assess their structural condition and safety. Occasional removal of dead wood or other remedial works to address significant defects may be required in areas of frequent

access. This is unlikely to be overly onerous and will be the responsibility of the tree owner.

E.5.45 All tree works recommended in the Tree Survey Schedule (Annex 2) as a result of the preliminary tree surveys considered trees in the context of the present use of the Site (i.e., prior to development proposals). Where these works are not superseded by proposed tree removal, they should be actioned.

E.5.46 Tree clearance to facilitate access for the Proposed Development will provide a reasonable clearance for construction and this will form the framework for a clearance during operation which can be maintained on an ad hoc basis. This will not be overly onerous and will not result in future pressure to remove retained trees.

E.6 Summary and Conclusions

E.6.1 In total, 27 individual trees, 26 groups, three woodlands and one hedgerow are to be removed to facilitate the Proposed Development. This includes:

- four individual trees classed as high quality (Category A);
- 12 individual trees, one group and three part woodlands classed as moderate quality (Category B);
- 9 individual trees, 11 groups, nine part groups and one part hedgerow classed as low quality (Category C); and
- the remaining two individual trees, four groups and one part group classified as unsuitable for retention (Category U) as living trees for more than 10 years in the context of the current land use.

E.6.2 Where part of a group of trees is to be removed the final extent of tree loss is to be determined on the Site by an arboriculturist who will assess the suitability and stability of retained trees. This must take place as specified in an Arboricultural Method Statement as part of and secured by a Requirement of the **Draft DCO (Application Document Ref 3.1)**

E.6.3 Tree feature loss (including hedgerows) to facilitate the Proposed Development represents circa 9,676.846m^2 or 13.49% of the total tree canopy cover surveyed with 86.51% (62,010.154m^2) of surveyed canopy cover retained. All tree features to be removed are within the Order Limits with the exception of a single tree.

E.6.4 No veteran and ancient trees or trees subject to a TPO are to be removed to facilitate the Proposed Development (based on TPO information available at the time of writing).

E.6.5 Tree loss is assessed as a worst case to allow flexibility in the final alignment of the Proposed Development within the Order Limits. The design has been reviewed with the project team to ensure where tree retention is proposed that this is achievable, taking into account the likely alignment, working space and methodology.

E.6.6 Where possible the detailed design will be developed to avoid or minimise impacts to trees and in practice this may reduce the level of arboricultural impacts reported. The final level of arboricultural impacts will be confirmed

as part of an Arboricultural Method Statement as part of and secured by a Requirement of the **Draft DCO (Application Document Ref 3.1).**

E.6.7 A single moderate quality tree will require light pruning to facilitate construction access. No other trees have been identified for pruning at this stage. The final requirement for pruning will be reviewed and identified at the detailed design stage and will be confirmed in an Arboricultural Method Statement as part of and secured by a Requirement of the **Draft DCO (Application Document Ref 3.1).**

E.6.8 One likely veteran tree is subject to a negligible incursion where the oversail requirement of the proposed haul road will incur within the RPA. All plant and machinery will operate from the existing hard surfaced road and no loading will be applied to unsurfaced ground within the RPA of this tree. No other incursions into the canopy or RPA of retained trees are likely to be required.

E.6.9 Tree loss will be mitigated with a robust and high quality scheme of new tree planting as detailed in the **Outline LBMEP Report (Application Document Ref: 5.10)** which represents an opportunity to increase the quality, impact, diversity and resilience of the local tree stock.

E.6.10 The current and future growth of trees has been considered, no significant current or future conflict or pressure to remove or prune trees is anticipated.

E.6.11 Soil structure for areas of new tree planting (including translocated trees) where the ground is currently unsurfaced will either be protected using ground protection or fenced exclusion zones; or the soil structure will be ameliorated or replaced following the completion of construction works on the Site.

Issues to be Addressed by the Arboricultural Method Statement

E.6.12 The issues to be addressed by the Arboricultural Method Statement which is secured by Requirement in the **Draft DCO** (**Application Doc. Ref. 3.1**), are:

- Pre commencement meeting and site briefing;
- Order and phasing of operations;
- Tree works;
- Tree protection fencing;
- Ground protection;
- Site storage and facilities;
- Movement of people, plant and materials;
- Enabling works;

- Construction;
- Installation of new services and/or diversion of existing services;
- Hard landscaping;
- Soft Landscaping; and
- Removal of tree protection measures.

E.7 References

- British Standards Institution (BSI) (2010). BS3998:2010. Tree work – Recommendations.
- British Standards Institution (BSI) (2012). BS5837:2012. Trees in relation to design, demolition and construction – Recommendations.
- British Standards Institution (BSI), (2014). BS8545: 2014 Trees: from the nursery to independence in the landscape – Recommendations
- Department for Energy Security and Net Zero (2024) Natural Gas Electricity Generating Infrastructure (EN-2)
- Department for Energy Security and Net Zero (2024) Overarching National Policy Statement for Energy (EN-1)
- Department for Energy Security and Net Zero (2025) Draft Overarching National Policy Statement for Energy (EN-1)
- Ministry of Housing, Communities and Local Government (2024). National Planning Policy Framework (NPPF).
- Lonsdale, D. (2013). Ancient and other veteran trees: further guidance on good management.
- National House Building Council (NHBC) Standards Chapter 4.2: Building Near Trees (2024)
- National Joint Utilities Group (NJUG) Volume 4, Issue 2, (2007). NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.
- Natural England and Forestry Commission. (2022). Ancient woodland, ancient trees and veteran trees: advice for making planning decisions (standing advice)
- National Tree Safety Group (2024) Common Sense Risk Management of Trees. 2nd ed. Forest Research and the Arboricultural Association.

Annex 1: Tree Constraints Plan

Author: JRGA Designer: JB Checked: AW Approved: AW



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KEY PLAN



KEY

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- PRIORITY HABITAT - TRADITIONAL ORCHARD
- RED LINE BOUNDARY

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P05	27.11.25	AMENDED TREE DETAILS
P04	20.05.25	AMENDED RLB
P03	16.04.25	AMENDED RLB
P02	26.03.25	AMENDED RLB
P01	23.01.25	FIRST ISSUE

DRAWING STATUS

ISSUE

PROJECT NUMBER

60721867

SHEET TITLE

TREE CONSTRAINTS PLAN (SHEET 01)

SHEET NUMBER / REV.

60721867-ACM-XX-XX-AB-TCP-01 P05



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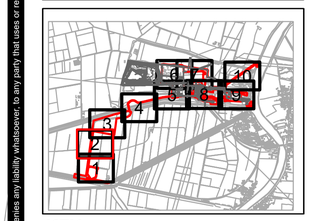
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P05	27.11.25	AMENDED TREE DETAILS
P04	20.05.25	AMENDED RLB
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P02	26.03.25	AMENDED RLB
P01	23.01.25	FIRST ISSUE

DRAWING STATUS

ISSUE

PROJECT NUMBER

60721867

SHEET TITLE

TREE CONSTRAINTS PLAN (SHEET 02)

SHEET NUMBER / REV.

60721867-ACM-XX-XX-AB-TCP-02 P05

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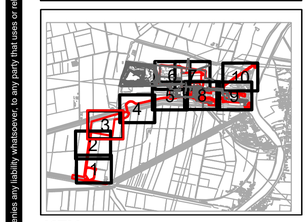
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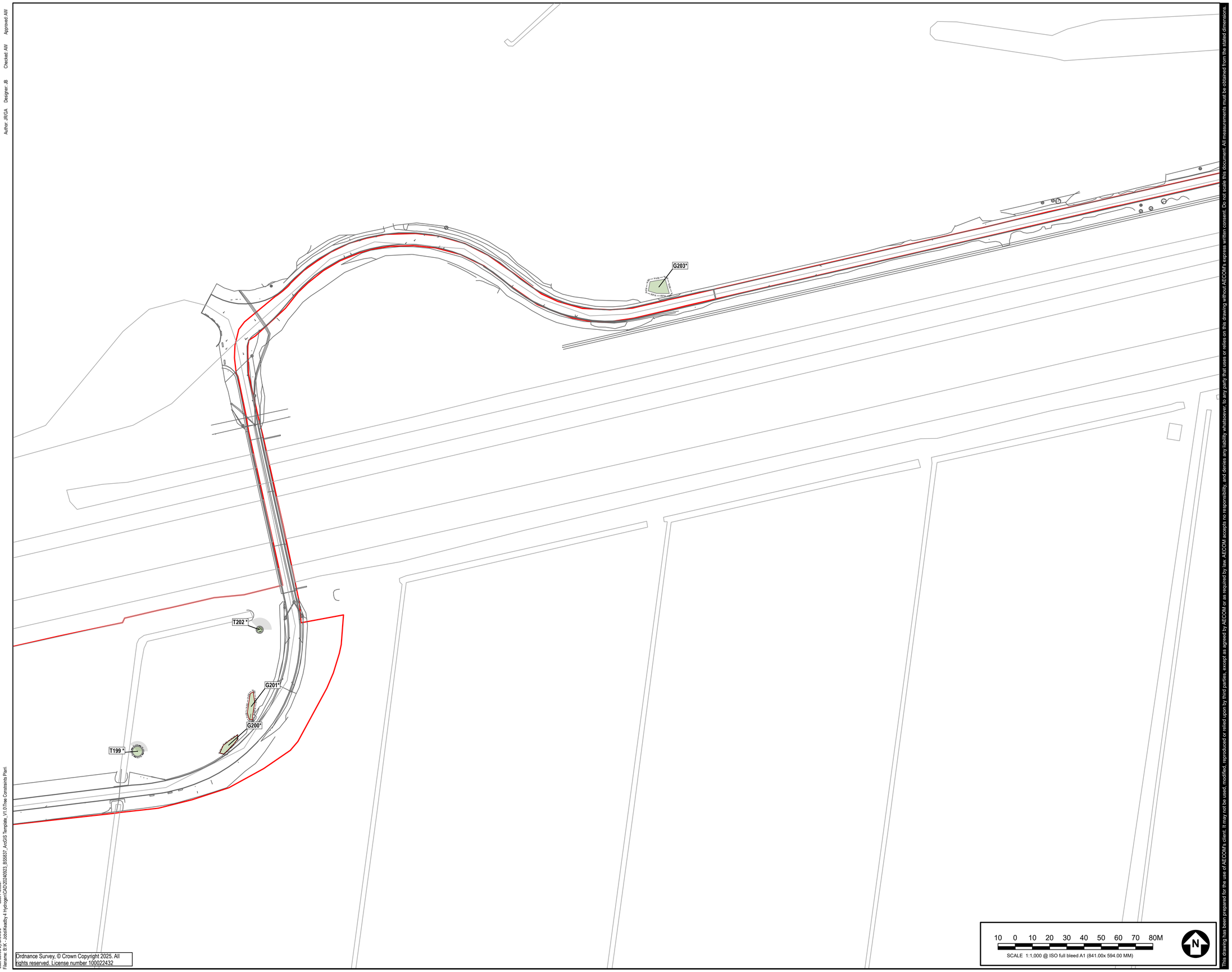
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TREE CONSTRAINTS PLAN (SHEET 03)

SHEET NUMBER / REV.

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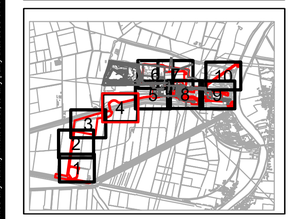
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ISSUE/REVISION

I/R	DATE	DESCRIPTION
P05	27.11.25	AMENDED TREE DETAILS
P04	20.05.25	AMENDED RLB
P03	16.04.25	AMENDED RLB
P02	26.03.25	AMENDED RLB
P01	23.01.25	FIRST ISSUE

DRAWING STATUS

ISSUE

PROJECT NUMBER

60721867

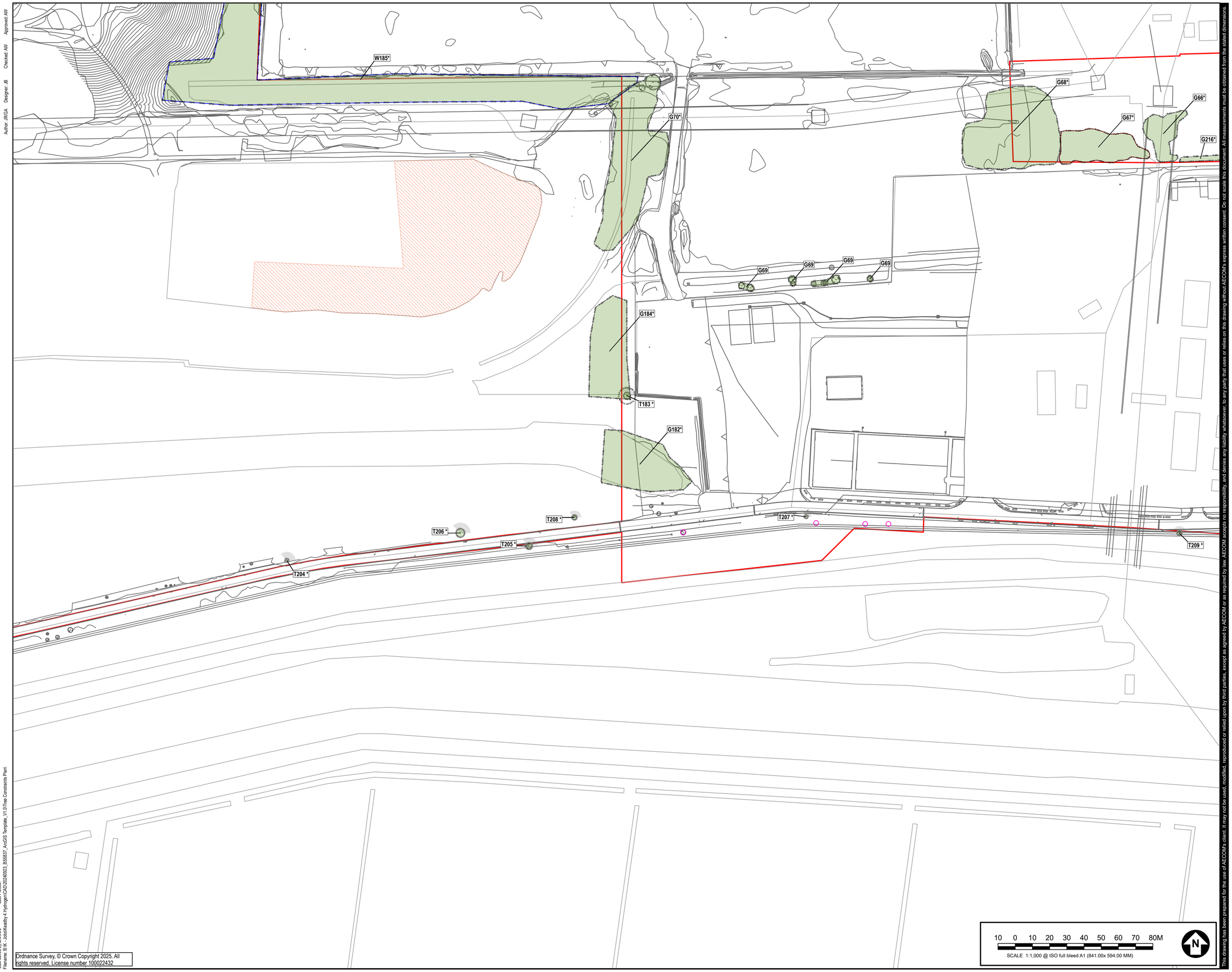
SHEET TITLE

TREE CONSTRAINTS PLAN (SHEET 04)

SHEET NUMBER / REV.

60721867-ACM-XX-XX-AB-TCP-04 P05

Author: JRGA Designer: JB Checked: AW Approved: AW



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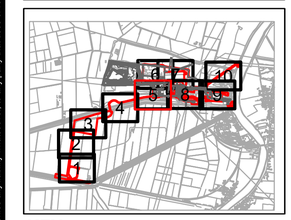
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KEY PLAN



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- SITES OF SPECIAL SCIENTIFIC INTEREST (SSSI)
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- PRIORITY HABITAT - TRADITIONAL ORCHARD
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DRAWING STATUS

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PROJECT NUMBER

60721867

SHEET TITLE

TREE CONSTRAINTS PLAN (SHEET 05)

SHEET NUMBER / REV.

60721867-ACM-XX-XX-AB-TCP-05 P05

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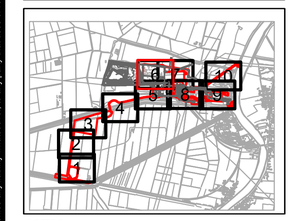
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P01	23.01.25	FIRST ISSUE

DRAWING STATUS

ISSUE

PROJECT NUMBER

60721867

SHEET TITLE

TREE CONSTRAINTS PLAN (SHEET 06)

SHEET NUMBER / REV.

60721867-ACM-XX-XX-AB-TCP-06 P05

Author: JRGA Designer: JB Checked: AW Approved: AW



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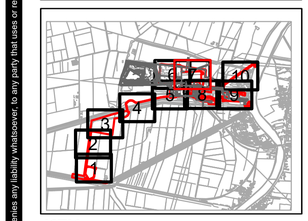
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P02	26.03.25	AMENDED RLB
P01	23.01.25	FIRST ISSUE

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PROJECT NUMBER

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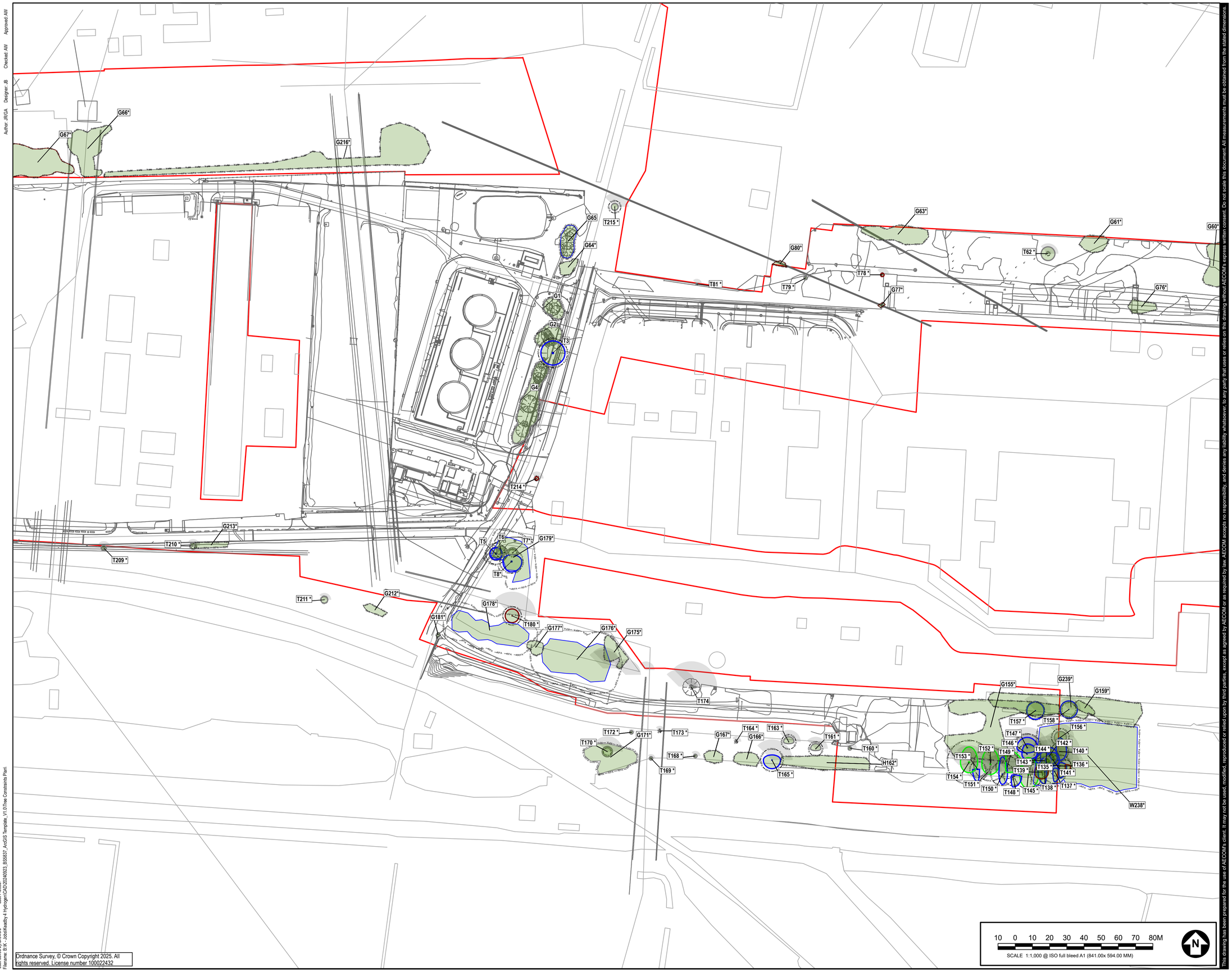
SHEET TITLE

TREE CONSTRAINTS PLAN (SHEET 07)

SHEET NUMBER / REV.

60721867-ACM-XX-XX-AB-TCP-07 P05

Author: JRGA Designer: JB Checked: AW Approved: AW



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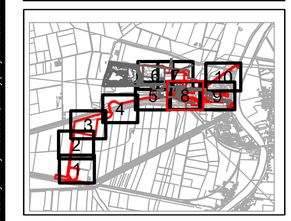
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P02	26.03.25	AMENDED RLB
P01	23.01.25	FIRST ISSUE

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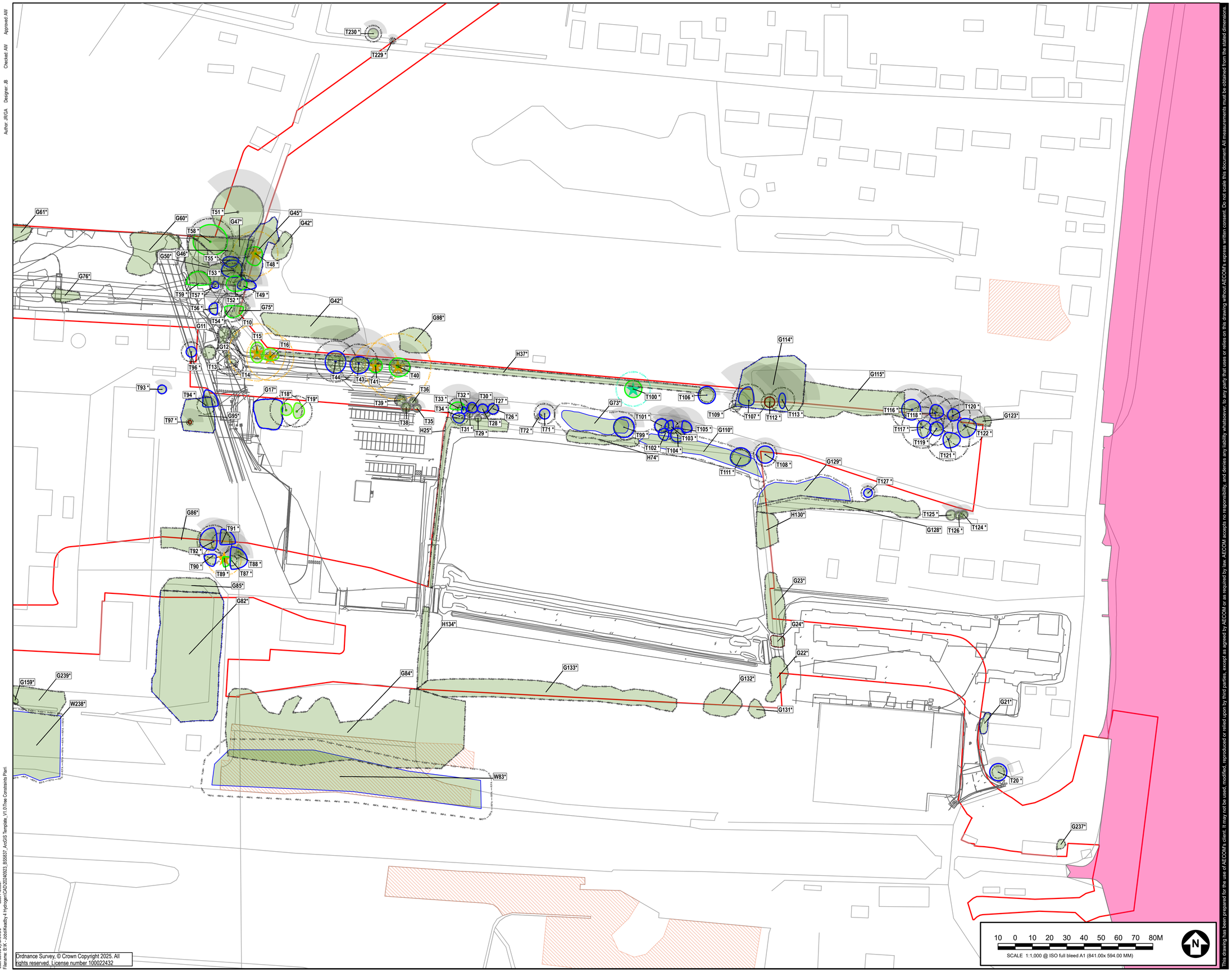
SHEET TITLE

TREE CONSTRAINTS PLAN (SHEET 08)

SHEET NUMBER / REV.

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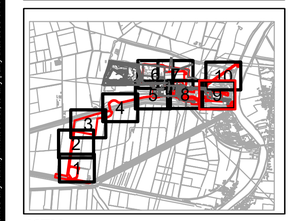
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I/R	DATE	DESCRIPTION
P05	27.11.25	AMENDED TREE DETAILS
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PROJECT NUMBER

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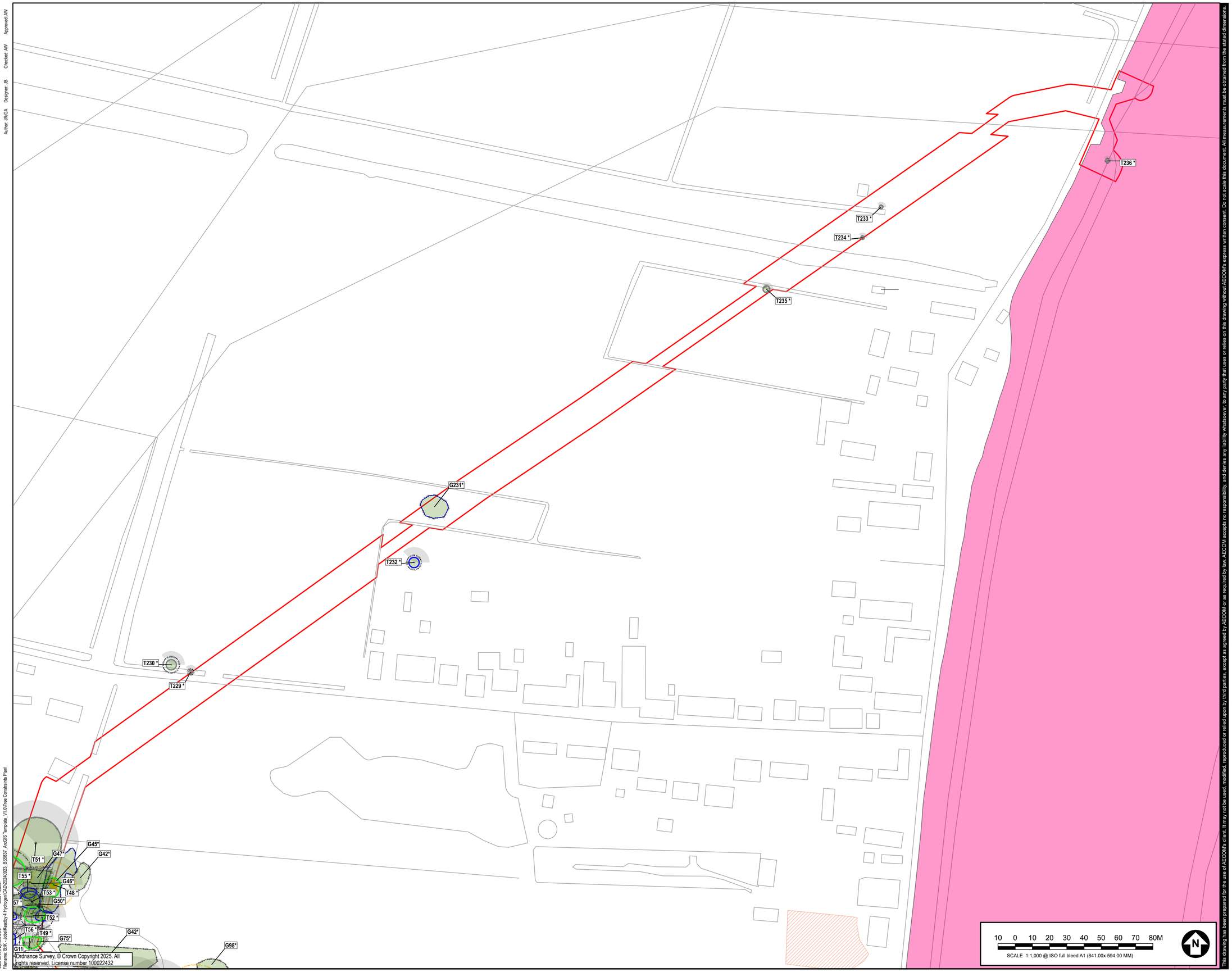
SHEET TITLE

TREE CONSTRAINTS PLAN (SHEET 09)

SHEET NUMBER / REV.

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Author: JRGA Designer: JB Checked: AW Approved: AW



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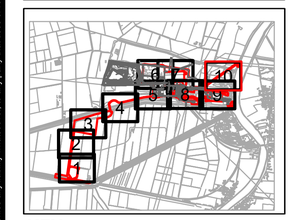
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ISSUE

PROJECT NUMBER
60721867

SHEET TITLE
TREE CONSTRAINTS PLAN (SHEET 010)

SHEET NUMBER / REV.
60721867-ACM-XX-XX-AB-TCP-010 P05

Annex 2: Tree Survey Schedule

Tree ID	Species Common Name *(Scientific name)*	Est Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Recommendations	Tree Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
G1	Pin Oak *(Quercus palustris)*, Pine *(Pinus sp)*, Aspen *(Populus tremula)*	18	<300#	3	3	3	3	n/a	n/a	Good	SM	Good	A small group of closely packed trees. Easily replaced but have good future potential. Mound of soil at bases. No access to trees, surveyed from distance.		Fell	10+	C1,2
G2	Cherry *(Prunus sp)*, Field Maple *(Acer campestre)*	15	<280#	3	3	3	3	n/a	n/a	Good	SM	Good	A small line of trees with good forms. Good screening value. Northern cherry has minor wound at base. No access to trees, surveyed from a distance. Northern cherry is dominant tree in group.		Fell	10+	C2
T3	Common Oak *(Quercus robur)*	16	710	7	7	7	7	7.0/NE	8	Good	EM	Good	Growing immediately adjacent to boundary fence. High crown clearance. Minor deadwood within crown. Overall good form. Barbed wire around stem at circa 2.5m.		Fell	20+	B1,2
G4	Ash *(Fraxinus excelsior)*, Common Oak *(Quercus robur)*, Pin Oak *(Quercus palustris)*, Cherry *(Prunus sp)*	8	<280#	3	3	3	3	n/a	n/a	Good - Dead	Y-SM	Good - Dead	Multiple standing dead stems in group with decay fungi present. Trees all previously topped at circa 8m. Very poor forms and poor future potential. Fair screening value. No access to trees.		Fell	10+	C2,3
T5	Scots Pine *(Pinus sylvestris)*	16	510	3.5	3.5	3.5	3.5	6.0/NW	5	Good	SM	Good	Previous pruning in lower crown leaving many dead branch stubs. Overall good form and good future potential.			20+	B1,2
T6	Norway Maple *(Acer platanoides)*	8	220	4	1	3	2	4.0/S	4	Good	SM	Good	Minor northern stem lean. Overshadowed by larger adjacent pine.			10+	C1
T7*	Ash *(Fraxinus excelsior)*	8	200	3	1	3	3	4.0/N	4	Good	SM	Good	Minor northern stem lean. Minor tree with good future potential. Suppressed by adjacent tree to south.			10+	C1
T8*	Norway Maple *(Acer platanoides)*	13	570	4	6	6	5	3.0/SE	3	Good	EM	Fair	Dominant tree in group. Previously lost northern leading stem, losing significant amount of crown. Minor regrowth at point of failure.			20+	B1
T10	Ash *(Fraxinus excelsior)*	8	320	3	4	4	1	3.0/E	3	Good	SM	Fair	Western crown suppressed and tree presents an eastern stem lean. Minor included union at circa 2m. No natural bracing.			10+	C1
G11	Hawthorn *(Crataegus monogyna)*	6	<200	2.5	2.5	2.5	2.5	n/a	n/a	Good	SM	Good	A compact group of hawthorn. Minor deadwood.			10+	C2

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G12	Lawson Cypress *(Chamaecyparis lawsoniana)*	6	<220	3	3	3	3	n/a	n/a	Good	SM	Fair	Previously topped in center of group. Provides screening value.			10+	C2
T13	Ash *(Fraxinus excelsior)*	9	600	2	2	2	2	5.0/N	6	Fair	EM	Poor	Tree previously topped and limbs largely reduced. Previous pruning on stem. Tree presents very poor form and has limited future potential.			10+	C2
T14	Ash *(Fraxinus excelsior)*	9	650	2	1	3	3	7.0/NW	6	Fair	EM	Poor	Tree previously topped and limbs largely reduced. Previous pruning on stem. Tree presents very poor form and has limited future potential.			10+	C2
T15*	Willow *(Salix sp)*	10	1340	6	6	4	4	1.0/S	2	Good	V	Poor	Previous second order limb union failure or removal north at circa 2m, with helical decay pattern to ground level east. Width of 500mm, probe depth exceeds 600mm, unable to probe deeper due to dead/dysfunctional retained inner wood creating barrier. Columnar woundwood north, peripheral woundwood south. Expansion seams visible under bark. Hammer test to stem south, west and north, density audibly normal. Significant second order stem removal south at circa 2.5m, stub approx. 500mm x 600mm, decay, likely confined to branch protection zone, no change in wood density audible on stem. Extensive decay into stem with good crown vitality considered to warrant likely veteran status. Both willows (T15 and T16) previously significantly reduced, wounds circa 400mm in diameter, both with prolific crown regrowth.			40+	A3
T16*	Willow *(Salix sp)*	10	940	5	2	5	5	4.0/E	2	Good	V	Fair	Wound north to ground level, 1.5mx400mm.800mm depth of cavity. Good peripheral woundwood. Wood density change around stem audible, bark with spongy consistency, likely species normal. Wound north is likely the result of second order flush-cut 400mm diameter with likely resupinate saprobic wood decay fungi. Decay column likely dysfunction of previous functional unit. Extensive decay into stem with good crown vitality considered to warrant likely veteran status.			40+	A3
G17*	Common Alder *(Alnus glutinosa)*, Ash *(Fraxinus excelsior)*, Field Maple *(Acer campestre)*, Wild Privet *(Ligustrum vulgare)*	10	<210	3	3	3	3	n/a	n/a	Good	SM	Good	A small, clustered group of trees. Good landscape value and future potential. Some previous pruning in lower crowns. Minor included cup union on one alder, but no major visible defects.			10+	C2

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T18*	London plane *(Platanus x acerifolia)*	11	780	4	3	3.5	3	3.0/SW	2.5	Good	M	Fair	Previously topped at circa 10m. Poor pruning cuts around crown with vigorous growth at points of pruning.			20+	B2
T19*	London plane *(Platanus x acerifolia)*	11	750	5	4	4.5	2	3.0/NE	3	Good	M	Fair	Previously topped at circa 10m. Poor pruning cuts around crown. Vigorous growth at points of pruning. Western crown suppressed by adjacent tree.			20+	B2
T20*	Flowering Cherry *(Prunus sp.)*	9	300#	5	5	5	5	2.5/SE	2	Good	EM	Good	No access. Branching pattern and bud density normal.			20+	B1,2
G21*	Leyland Cypress *(X Cupressocyparis leylandii)*	10	250#	3	3	3	3	n/a	3	Good	SM	Good	No access. Branching pattern and leaf density normal.			20+	B2
G22*	English Elm *(Ulmus procera)*, Hawthorn *(Crataegus monogyna)*	7	<100	2	2	2	2	n/a	0	Good - Dead	Y-SM	Good - Poor	Mixed scrub. Circa 50% formed of dead and dying elm. Basal regeneration of elm.		Fell in part as per Tree Protection Plan	10+	C2
G23*	Hawthorn *(Crataegus monogyna)*, Goat Willow *(Salix caprea)*, English Elm *(Ulmus procera)*, Cherry Plum *(Prunus cerasifera)*, Whitebeam *(Sorbus aria)*, Apple *(Malus sp,)*	6	<200#	4	4	4	4	n/a	0	Good	Y-SM	Good - Fair	Scrub boundary. Likely planted. No access.		Fell in part as per Tree Protection Plan	10+	C2
G24*	English Elm *(Ulmus procera)*	4	<90	1	1	1	1	n/a	0	Dead	Y-SM	Poor	Prolific elm death, likely DED. Basal regeneration.		Fell	<10	U1
G25*	Hawthorn *(Crataegus monogyna)*, Goat Willow *(Salix caprea)*, Elder *(Sambucus nigra)*	4	<90	3	3	3	3	n/a	0	Good	Y-SM	Good	Scrub boundary. Rose and brambles throughout.			10+	C2
T26*	Whitebeam *(Sorbus aria)*	10	280	3	3	3	3	2.0/S	2	Good	SM	Good	Likely fastigiate cultivar. Locally dominant.			20+	B1,2
T27*	Rowan *(Sorbus aucuparia)*	6	150	0.5	2	2	2	2.0/N	2	Good	SM	Poor	Wound to base, circa 300mm x 200mm, circa 1/3 stem circumference. Unlikely to occlude.			10+	C1

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T28*	Whitebeam *(Sorbus aria)*	10	260	3	2	3	3	2.5/SW	3	Good	SM	Good	Likely fastigiate cultivar.			20+	B2
T29*	Rowan *(Sorbus aucuparia)*	6	170	1	2	2	2	2.5/S	2	Good	SM	Good	Subdominant.			10+	C1,2
T30*	Whitebeam *(Sorbus aria)*	10	240	4	2	3	3	2.0/SW	3	Good	SM	Good	Likely fastigiate cultivar.			20+	B2
T31*	Rowan *(Sorbus aucuparia)*	7	170	1	2	2	2	2.0/S	2	Good	SM	Good	Subdominant.			10+	C1
T32*	Grey Alder *(Alnus incana)*	10	280	2	2	2	1	3.5/N	3	Good	SM	Good	Codominant U-shaped union at circa 3.5m.			20+	B2
T33*	Italian Alder *(Alnus cordata)*	14	500	3.5	1	3.5	5	2.5/NW	3	Good	EM	Good	Locally dominant.			40+	A1
T34*	Grey Alder *(Alnus incana)*	11	430	2	4	3	4	2.5/E	2	Good	EM	Fair	Codominant. Contact wounding to base, peripheral woundwood formation. Previous pruning wounds partially occluded. Wound to base northwest, likely previous limb union, visual decay of branch attachment zone, almost fully occluded.			20+	B1,2
T35	Rowan *(Sorbus aucuparia)*	5	170	2	2	2	2	2.5/NW	2	Good	SM	Good	Locally dominant, good future potential. Crown in contact with security fencing south.	Prune to clear fencing south, pruning points back to nearest branch or branch collar. (When funds allow)		10+	C1,2
T36	Rowan *(Sorbus aucuparia)*	4	150	3	1	3	2	2.0/E	1	Good	SM	Fair	Minor adaptive swelling to main stem at 1m, likely previous branch junction. Minor bark inclusions of second order limbs within crown.			10+	C1
H37*	Hazel *(Corylus avellana)*, Elder *(Sambucus nigra)*, Cherry Plum *(Prunus cerasifera)*, Holly *(Ilex aquifolium)*, Blackthorn *(Prunus spinosa)*. Guelder Rose *(Viburnum opulus)*	2	<50	0.5	0.5	0.5	0.5	n/a	0	Good	Y-SM	Good	Managed hedgerow.			10+	C2
T38	Whitebeam *(Sorbus aria)*	4	220	3	3	3	3	2.0/S	1	Good	SM	Fair	Main stem with circa 50 degree lean east with right-angled corrective growth of crown. Bark loss to stem west, circa 1mx300mm, poor woundwood formation.			10+	C1

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T39*	Whitebeam *(Sorbus aria)*	5	260	4	3	4	2	2.0/E	1	Good	SM	Fair	Lean of main stem east with corrective growth of crown scaffold.			10+	C1,2
T40	White Willow *(Salix alba)*	15	1280	5	6	7	5	1.0/NW	2	Good	V	Fair	Cavity west at ground level: 250mmx300mm. Significant columnar woundwood and adaptive growth with expansion seams. Probed, insertion east to 600mm. Unable to probe vertical. Depth of 600mm. Sounding test, wood density normal with audible change in immediate periphery of cavity. Dead bark northwest from ground level to 1.1m, width of 400mm. Four small white fruiting bodies emanating in a largely vertical line at approx., 150mm intervals. Likely Ganoderma sp. Expansion seams visible at dead bark periphery. Small patch of black staining at approx., 1m northwest. Cavity southeast at 1.3m to 1.6m, 150mm opening. Probed, vertical ascent of 300mm, no internal depth, side entry of 100mm. Good peripheral woundwood and adaptive growth. Sounding test, minor density change audible. Previously reduced, high crown density. High leaf density, normal leaf quality, normal branching pattern. Extensive decay into stem with good crown vitality considered to warrant likely veteran status.			40+	A3
T41	White Willow *(Salix alba)*	11	1140	4	4	4	4	n/a	3	Good	V	Poor	Multiple *Ganoderma sp.* Likely *australe* species, brackets west, three fruiting bodies at 200mm to 300mm above ground level over a metre width. Density sounds poor in this area from ground level to bole height of around 1.5m. Very northern stem with visual functional unit to ground level, density normal with expansion seams. Width of approx., 600mm. Strip of dysfunction immediately east from ground level to 1.8m, 200mm width, multiple small white FFBs (fungal fruiting bodies) emanating. FFB northeast, at ground level, wood density in periphery sounds normal. FFBs likely *Ganoderma sp.* Patches of dead bark around periphery. FFB southwest, immediate periphery sounds poor with an irregular distribution of audible density change. Central stems with significant dieback, death likely to bole with dysfunction of previous functional units to ground level and below likely. Dead stems with longitudinal cracking. Dense lower crown epicormic regeneration notable south and north with likely active functional units. Dense young epicormic growth at circa 500mm south (sign of retrenchment). Active functional units showing expansion seams. Extensive decay into stem with good crown vitality considered to warrant veteran status.	Maintain exclusion zone outside of target area.		40+	A3
G42*	Goat Willow *(Salix caprea)*	9	<100	2	2	2	2	n/a	0	Good	Y-SM	Fair	Dense coppice regrowth.			10+	C1,2

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T43	White Willow *(Salix alba)*	21	1300	4	6	6	5	0.5/SW	3	Fair	M	Fair	Crack in bark east, length of 400mm, very narrow gap just wide enough for probe, depth of 300mm. Audible wood density change around wound periphery only. Desiccated ffb (fungal fruiting body) at 600mm from ground level east, likely *Ganoderma sp.* East at 1.1m, mass of twigs with desiccated ffbs, likely Ganoderma sp. Immediately above, previous third order limb union failure, from 1.6m to approx., 2.5m, desiccated Ffb, unidentified due to degradation of fruiting body. Cavity depth of circa 200mm, good woundwood and adaptive growth with expansion seams, partially occluded. Wood density sounds normal. Hammer test north and south, density sounds normal. Branching pattern, leaf density and leaf quality normal. No clear indication of extensive decay/dysfunction within the stem. All trees in avenue have been previously reduced, visibility of wounds limited.			20+	B3
T44*	White Willow *(Salix alba)*	21	1480	6	7	6	6	1.0/E	3	Good	M	Fair	Sounding test, density overall normal, patches of dead bark likely randomly distributed, minor. Three small unidentified ffbs (fungal fruiting bodies) northwest at circa 600mm between buttressing, adaptive swelling visible adjacent. Dead bark in immediate periphery of ffbs, unable to probe into sapwood. West at base, ffbs in area of 400mmx300mm, likely Ganoderma sp. Sounding test, dead bark with audible change in density although considered to be superficial (i.e., no audible cavitation), dead bark over an area of 1.1mx700mm, inner wood below with normal audible wood density. No evidence of extensiveness. Second order limbs on bole from circa 2m, multiple wounds exposing inner wood - one west from circa 2m to 3.5m, approx., 1.5mx150mm, cavitation, significant woundwood and adaptive growth, likely to occlude. One south, cavity facing north with dimensions circa 2.5mx190mm, good woundwood, almost fully occluded. Neither wounds to limbs considered extensive.			20+	B2,3
G45*	Ash *(Fraxinus excelsior)*, Elder *(Sambucus nigra)*	18	<500#	6	6	6	6	n/a	2	Good - Fair	Y-EM	Good - Fair	No access. Limited visibility due to canopy. Feature established outside of boundary fencing.			20+	B1,2
G46*	Elder *(Sambucus nigra)*	4	< 100	2	2	2	2	n/a	0	Good - Fair	Y-SM	Good - Fair	Lower story stratum establishment.			10+	C2
G47*	Austrian Pine *(Pinus nigra)*	14	< 330	3	3	3	3	n/a	4	Poor	SM	Fair	Two pines within the fence-line boundary. significantly suppressed.			10+	C2

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T48*	Ash *(Fraxinus excelsior)*	17	870	4	7	4	6	4.0/N	6	Good	V	Poor	Basal cavity north, opening with columnar peripheral woundwood. Significant second order limb union failure above at circa 6m likely cause of dysfunctional column. Poor wood density flanking. Woundwood and expansion seams visible likely as edges to functional units east, south and west. Good leaf density with normal branching pattern on functional units. Crown codominant. Internal decay and provision of inner wood substrate considered extensive. Likely Veteran status on this basis.			40+	A3
T49*	Ash *(Fraxinus excelsior)*	14	530	4	2	7	4	2.0/E	7	Good	EM	Fair	Recent overhead line clearance has removed circa 50% live crown. Pruning wounds back to collars.			20+	B2
G50	Ash *(Fraxinus excelsior)*, Elder *(Sambucus nigra)*, Hawthorn *(Crataegus monogyna)*	11	<250	3	3	3	3	n/a	0	Good – Fair	Y-SM	Good – Fair	Dense elder, frequent hawthorn with rare semi mature establishing ash in the middle canopy strata.			10+	C1,2
T51*	Hybrid black poplar *(Populus x canadensis)*	25	1500#	15	15	15	15	1.0/SE	2	Good	OM	Fair – Poor	No access. Significant tree. Likely nearing end of SULE (safe, useful life expectancy) for species. Major second order limb failure south, leaving stub circa 5m x 800mm. Previous, likely recent failure into Site of second order limb/stem.			10+	C1,2
T52*	Ash *(Fraxinus excelsior)*	16	600	5	4	7	5	0.5/W	3	Good	M	Fair	Limited access to base – fenceline crossing stem with gap cut for tree. Recent line clearance works south. Internodal, epicormic regrowth from cut points. Resilient species.			40+	A2
T53*	Common Lime *(Tilia X europaea)*	15	560	6	4	5	7	2.0/W	2	Good	EM	Fair	No visibility of stem or mid to upper crown. Bark inclusion of second order limb west at circa 2m. Adaptive swelling, expansion seams. Structurally durable species.			20+	B1,2
T54*	Common Lime *(Tilia X europaea)*	14	700	1	6	7	4	2.0/S	1	Good	EM	Fair	Recent overhead line clearance has removed circa 50% live crown. Pruning wounds back to collars.			40+	A2
T55*	Common Lime *(Tilia X europaea)*	15	450	2	4	5	4	2.0/NE	1	Good	SM	Good	Codominant in canopy. Limited visibility – only lower stem and crown visible due to canopy.			20+	B1,2
T56*	Ash *(Fraxinus excelsior)*	10	300	3	4	1	4	2.0/N	1	Good	SM	Good	Apical sub-dominance to lime east. No obvious signs or symptoms of Ash Die Back (ADB).			20+	B1,2
T57*	Ash *(Fraxinus excelsior)*	15	270	3	1	2	2	6.0/NE	10	Good	SM	Fair	Recent overhead line clearance has removed circa 50% live crown. Pruning wounds back to collars. Poor stem taper.			20+	B2

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T58*	Weeping Willow *(Salix X chrysocoma)*	15	1130	10	8	10	10	2.5/W	0	Good	M	Good	Significant tree – dead stub south from ground level to circa 2.5m, 600mm in diameter. Hollowing and cracks, one likely woodpecker hole. Decay ceases visually in cone formation at main stem, likely confined to branch reaction zone, not considered extensive on this basis. Major deadwood in crown, normal volume, branching pattern normal. Previous limb union failure visible at circa 9m north, good woundwood, partially occluded. Multiple partially occluded union failures in crown. Identified features not considered extensive			40+	A1
T59*	Common Lime *(Tilia X europaea)*	16	630	7	1	7	7	3.0/N	1	Good	EM	Fair	Recent overhead line clearance has removed circa 50% live crown. Pruning wounds back to collars.			40+	A2
G60*	Hawthorn *(Crataegus monogyna)*, Elder *(Sambucus nigra)*, Privet *(Ligustrum vulgare)*	5	<100	3	3	3	3	n/a	0	Good - Dead	Y-SM	Good - Poor	Scrub. One dead hawthorn.			10+	C2
G61*	Sycamore *(Acer pseudoplatanus)*, Elder *(Sambucus nigra)*	8	<100	3	3	3	3	n/a	1	Good	SM	Poor	Three sycamore previously coppiced. Dense young regrowth.			10+	C2
T62*	Silver Maple *(Acer saccharinum)*	6	100	4	4	4	4	0.5/N	0	Good	SM	Poor	Circa 24 stems arising from stool. Elder and rose in crown.			10+	C2
G63*	Silver Maple *(Acer saccharinum)*	8	<150	5	5	5	5	n/a	0	Good	Y-SM	Fair - Poor	Four maple, previously coppiced, mass regrowth from stools. Will require cyclical coppicing to prevent structural failure of unions.		Fell	10+	C1,2
G64*	Norway Maple *(Acer platanoides)*, Elder *(Sambucus nigra)*, Field Maple *(Acer campestre)*	4	<100#	3	3	3	3	n/a	0	Good	Y	Fair	No access - cluster of young stems on berm.		Fell	10+	C2
G65	Norway Maple *(Acer platanoides)*, Elder *(Sambucus nigra)*, Field Maple *(Acer campestre)*, Common Alder *(Alnus glutinosa)*	12	<300#	3	3	3	3	n/a	0	Good	Y-SM	Good - Fair	No access. Small copse on berm. Current landscape contribution. Individuals of low quality.		Fell	20+	B2

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G66*	Hawthorn *(Crataegus monogyna)*, Silver Birch *(Betula pendula)*	4	<80#	2	2	2	2	n/a	0	Good	Y	Good	Young scrub regeneration. Dense brambles. No access.			10+	C2
G67*	Hawthorn *(Crataegus monogyna)*	4	<90	2	2	2	2	n/a	0	Dead	Y	Poor	Dead group, mass tree death likely due to soil conditions e.g., waterlogging or similar.		Fell in part as per Tree Protection Plan	<10	U2
G68*	Hawthorn *(Crataegus monogyna)*	4	<90#	2	2	2	2	n/a	0	Good	Y	Good	Hawthorn group adjacent to haul road. Viewed from west.		Fell in part as per Tree Protection Plan	10+	C2
G69	Hawthorn *(Crataegus monogyna)*	3	<90#	2	2	2	2	n/a	0	Good	Y	Good	Intermittent young tree development		Fell	10+	C2
G70*	Hawthorn *(Crataegus monogyna)*, Elder *(Sambucus nigra)*, Goat Willow *(Salix caprea)*	8	<200#	3	3	3	3	n/a	0	Good	Y-EM	Good	Scrub regeneration under overhead lines. High density, likely good inherent contribution to area, e.g., habitat and forage.		Fell in part as per Tree Protection Plan	10+	C1,2
T71*	Lime *(Tilia sp)*	8	500#	3	3	3	3	n/a	1	Good	SM	Good				20+	B2
T72*	Rowan *(Sorbus aucuparia)*	4	150#	1	1	1	1	1.0/W	2	Good	SM	Good				10+	C2
G73*	Lime *(Tilia sp)*, Cappadocian Maple *(Acer cappadocicum)*, Rowan *(Sorbus aucuparia)*	6	<350#	0	0	0	0	n/a	1	Good	SM	Good				20+	B1,2
H74*	Hawthorn *(Crataegus monogyna)*	0	79	1	0	1	1	n/a	0	Good	SM	Good				10+	C2
G75*	Elder *(Sambucus nigra)*	5	<130#	1	1	1	1	n/a	0	Good	Y-M	Good - Fair	Likely self sown.			10+	C1,2

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G76*	Sycamore *(Acer pseudoplatanus)*, Elder *(Sambucus nigra)*, Hawthorn *(Crataegus monogyna)*	3	<80#	1	1	1	1	n/a	n/a	Good - Fair	Y-SM	Good - Fair	Multi-stemmed. Encroachment onto concrete area.			10+	C2
G77*	Elder *(Sambucus nigra)*	3	<20#	1	1	1	1	n/a	0	Good	Y	Good - Fair	Likely self sown on fence line.	Fell and poison stump (When funds allow)	Fell	<10	U1
T78*	Grey willow *(Salix cinerea)*	4	80#	1	1	1	1		0	Good	Y	Fair	Mass proliferation of stems, aggregate estimated. In contact with concrete structure, likely self sown.	Fell and poison stump (When funds allow)	Fell	<10	U1
T79*	Hawthorn *(Crataegus monogyna)*	3	80#	1	1	1	1		0	Good	SM	Fair	No access, brambles and rose at base.		Fell	10+	C1
G80*	Elder *(Sambucus nigra)*	3	<20#	0.5	0.5	0.5	0.5	n/a	0	Good	Y	Fair	Likely self sown, in contact with railing. Native rose present.	Fell and poison stump (When funds allow)		<10	U2
T81*	Field Maple *(Acer campestre)*	3	20#	0.5	0.5	0.5	0.5	n/a	0.5	Good	Y	Good	Likely self sown, approximately 0.5m from fence line.			10+	C1
G82*	Grey Alder *(Alnus incana)*, Common Alder *(Alnus glutinosa)*, Field Maple *(Acer campestre)*, Common Oak *(Quercus robur)*, Hawthorn *(Crataegus monogyna)*, Ash *(Fraxinus excelsior)*, Crack Willow *(Salix fragilis)*, Norway Maple *(Acer platanoides)*	12	<300#	4	4	4	4	n/a	0	Good	Y-SM	Good - Fair	Regular structure riparian woodland block.			20+	B2

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W83*	Silver Birch *(Betula pendula)*, Common Oak *(Quercus robur)*, Goat Willow *(Salix caprea)*, Grey willow *(Salix cinerea)*, Ash *(Fraxinus excelsior)*	15	<600#	1	1	1	1	n/a		Good - Fair	SM-EM	Good - Fair	No access. Linear group with canal to the south.			20+	B2
G84*	Hawthorn *(Crataegus monogyna)*, Grey willow *(Salix cinerea)*, Elder *(Sambucus nigra)*, Field Maple *(Acer campestre)*, Grey Alder *(Alnus incana)*, Common Alder *(Alnus glutinosa)*	6	<100#	3	3	3	3	n/a	0	Good	Y-M	Good - Fair	No access, wetland scrub.			10+	C1,2
G85*	Common Alder *(Alnus glutinosa)*, Elder *(Sambucus nigra)*	6	<70#	1	1	1	1	n/a	4	Good	Y	Good - Fair	Edge to woodland block, previously pruned back.		Fell in part as per Tree Protection Plan	10+	C2
G86*	Portugal Laurel *(Prunus lusitanica)*, Common Alder *(Alnus glutinosa)*, Silver Birch *(Betula pendula)*, Hawthorn *(Crataegus monogyna)*	4	<100#	1	1	1	1	n/a	n/a	Good	SM	Good	No access. Dense group of predominantly Portuguese laurel. Self-sets. Rose.			10+	C2
T87*	Crack Willow *(Salix fragilis)*	9	250#	8	5	9	1	0.5/S	0	Good	M	Fair	Circa 10 stems. Subdominant in canopy. Likely previously topped at circa 1m, full regrowth. Few stubs present, no obvious woundwood development.			20+	B1,2
T88*	Ash *(Fraxinus excelsior)*	7	160	6	0	3	1	3.0/N	2	Good	SM	Fair	Structurally suppressed.			10+	C1,2

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T89*	Crack Willow *(Salix fragilis)*	17	350, 300, 350, 160#	1	5	4	1	1.5/W	1	Good	V	Fair	Previous stem north failed/removed to circa 1.5m. Retained decay stub to base. Lapsed pollard at circa 1.5m. Small cavity at circa 0.5m south, depth of approx.,150mm. Cavity north obscured by stub, saprotrophic fungal brackets present. Depth of around 200mm. Considered extensive stem decay. Crown previously reduced east. Circa 5m from footpath edge.			40+	A3
T90*	Crack Willow *(Salix fragilis)*	14	400,100	1	6	2	5	1.0/S	1	Good	M	Fair	Subdominant in canopy. Previously pollarded at circa 1.5m, full regrowth. Previously pruned back from road south, epicormic regrowth circa 10mm in diameter with little to no peripheral woundwood formation.		Prune back to clear oversail alignment to south.	20+	B1,2
T91*	Crack Willow *(Salix fragilis)*	14	500#	8	1	8	1	0.5/N	1.5	Good	M	Fair	Previously pollarded at circa 1.7m, full regrowth			20+	B1,2
T92*	Crack Willow *(Salix fragilis)*	14	520, 600	8	5	2	8	1.0/S	0	Good	M	Fair				20+	B1,2
T93*	Downy Birch *(Betula pubescens)*	6	220	2.5	2.5	2.5	2.5	2.5/N	2.5	Good	SM	Fair	Previously large pruning wounds, occluding. Previously reduced. Crown in close proximity to building.			20+	B1
T94*	Cherry *(Prunus sp)*	7	440,100	9	1	7	2	2.5/N	2	Good	M	Fair	Codominant included union at circa 1.5m. Topped small diameter epicormic regrowth.			20+	B1,2
G95*	Cherry *(Prunus sp)*, Sessile Oak *(Quercus petraea)*, Dogwood *(Cornus sanguinea Dogwood)*, Field Maple *(Acer campestre)*, Ash *(Fraxinus excelsior)*, Hawthorn *(Crataegus monogyna)*	12	<400#	5	5	5	5	n/a	0	Good	Y-M	Good - Fair	Cherry to the north of group previously topped under overhead lines. Cherry with included codominant unions.			20+	B1,2
T96*	Wild Cherry *(Prunus avium)*	8	480#	3	3	3	3	3.0/N	2.5	Fair	EM	Good	Previously topped, overhead power lines above. Exposed roots.			20+	B1
T97*	Ash *(Fraxinus excelsior)*	8	160#	1	1	1	1		0	Poor - Dead	SM	Poor	Dead primary crown, basal epicormic regeneration.			<10	U1
G98*	Goat Willow *(Salix caprea)*, Grey willow *(Salix cinerea)*	6	<80#	3	3	3	3	n/a	0	Good	Y-SM	Good - Fair	No access, grove of willow.			10+	C2

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T99*	Norway Maple *(Acer platanoides)*	12	470	6	6	6	6	2.0/E	3	Good	EM	Good	Encircling roots at base, typical of species. Contact wounding, peripheral woundwood.			20+	B1,2
T100*	Hawthorn *(Crataegus monogyna)*	6	520	5	5	5	5	n/a	n/a	Good	A	Good	Stems at 1.5m estimated at: 200, 220, 180, 130, 120, 240, 220. Lower crown Previously reduced south at circa 1.5m, stubs retained with epicormic regrowth, little to no peripheral woundwood. Numerous natural braces in lower crown.			40+	A3
T101*	Norway Maple *(Acer platanoides)*	12	360	4	4	4	4	2.0/W	3	Good	EM	Good	Circa 2.5m from footpath edge.			20+	B1,2
T102*	Norway Maple *(Acer platanoides)*	12	340	3	4	2	4	2.5/S	3	Good	EM	Good	Circa 6m from footpath edge. Contact wounding to surface roots, peripheral woundwood.			20+	B1,2
T103*	Norway Maple *(Acer platanoides)*	12	330	4	2	1	4	2.0/N	2	Good	EM	Fair	Circa 2.5m from footpath edge. Contact wounding to lower stem west, peripheral wound wood, likely to occlude. Codominant included union at circa 2.5m.			20+	B1,2
T104*	Norway Maple *(Acer platanoides)*	12	400	4	4	4	4	2.0/W	2	Good	EM	Good	Circa 4.5m from footpath edge.			20+	B1,2
T105*	Common Lime *(Tilia X europaea)*	13	400	5	2	5	1	2.0/W	2	Good	EM	Fair	Circa 2.5m from footway. Included unions throughout, structurally durable species.			20+	B1,2
T106*	Ash *(Fraxinus excelsior)*	8	340#	5	5	5	5	1.0/S	1	Good	EM	Good	Limited access to base. North of wire fence. Dense ivy to circa 4m.			20+	B1,2
T107*	Western Balsam Poplar *(Populus trichocarpa)*	23	800#	8	3	3	6	1.0/S	10	Fair	M	Fair	No access to base. Locally dominant. Few burrs on stem, young leaves visible with taper to petiole. Mature leaves with no taper. Cankering in crown, few stems with dieback. Limited lower stem regeneration, likely due to dysphotic conditions of surrounding tree group.			20+	B1,2
T108*	Norway Maple *(Acer platanoides)*	10	300, 240, 230, 290, 180#	5	5	5	5	2.0/E	2.5	Good	EM	Fair	Multi-stemmed. Compression forks. Mass proliferation of stems from circa 0.5m.			20+	B1
T109*	Western Balsam Poplar *(Populus trichocarpa)*	10	280#	1	2	4	2	2.0/W	1	Fair	SM	Fair	Limited access to base. Cankering in crown. Small diameter dead stem west.			10+	C1,2
G110*	Norway Maple *(Acer platanoides)*, Hawthorn *(Crataegus monogyna)*, Aspen *(Populus tremula)*	8	<300#	1	1	1	1	n/a	1	Good	SM	Good	Predominantly Norway Maple.			20+	B2

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T111 *	Common Oak *(Quercus robur)*	12	300, 130, 260, 80, 70, 70, 250#	6	4.5	6	6	n/a	2	Good	SM	Good	Multi-stemmed.			20+	B2
T112 *	Western Balsam Poplar *(Populus trichocarpa)*	22	400	3	3	3	3	7.0/W	7	Fair	EM	Poor	No access to base. Two significant dead limbs east over boundary. Cankering in crown. Cavity visible to lower stem northeast at circa 0.5m, significant cavity formation, limited adaptive growth and no peripheral woundwood visible. Species with poor structural durability	Fell (< 3 months)		<10	U1
T113 *	Western Balsam Poplar *(Populus trichocarpa)*	22	600	4	5	2	2	0.5/W	7	Fair	EM	Good - Fair	No access to base. Two significant dead limbs east over boundary. Cankering in crown.			20+	B1,2
G114*	Ash *(Fraxinus excelsior)*, Damson *(Prunus domestica)*, Western Balsam Poplar *(Populus trichocarpa)*, Hawthorn *(Crataegus monogyna)*, Elder *(Sambucus nigra)*, Field Maple *(Acer campestre)*	14	<400#	5	5	5	5	n/a	0	Good - Fair	Y-EM	Good - Fair	No access.			20+	B1,2
G115*	Ash *(Fraxinus excelsior)*, Aspen *(Populus tremula)*, Norway Maple *(Acer platanoides)*, Hawthorn *(Crataegus monogyna)*, Willow *(Salix sp)*, Damson *(Prunus domestica)*	8	<150#	3	3	3	3	n/a	0	Good	Y-EM	Good - Fair	Scrub, no access. Salix viminalis present.			10+	C1,2
T116 *	Hybrid black poplar *(Populus x canadensis)*	15	1000	6	6	5	6	3.0/W	1.5	Good	M	Fair	Previously topped at circa 7m. Wounds likely around 400mm. Pole regrowth circa 100mm in diameter.			20+	B1,2

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T117 *	Hybrid black poplar *(Populus x canadensis)*	15	1000	4	6	5	3	3.0/S	0	Good	M	Fair	Previously topped at circa 7m. Wounds likely around 400mm. Pole regrowth circa 100mm in diameter.			20+	B1,2
T118 *	Hybrid black poplar *(Populus x canadensis)*	15	860	5	3	5	3	4.0/N	1	Good	M	Fair	Previously topped at circa 7m. Wounds likely around 400mm. Pole regrowth circa 100mm in diameter.			20+	B1,2
T119 *	Hybrid black poplar *(Populus x canadensis)*	15	790	4	4	4	4	3.0/S	1.5	Good	M	Fair	Previously topped at circa 7m. Wounds likely around 400mm. Pole regrowth circa 100mm in diameter.			20+	B1,2
T120 *	Hybrid black poplar *(Populus x canadensis)*	15	840	4	3	4	3	2.0/E	2	Good	M	Fair	Previously topped at circa 7m. Wounds likely around 400mm. Pole regrowth circa 100mm in diameter.			20+	B1,2
T121 *	Hybrid black poplar *(Populus x canadensis)*	15	1040	4	5	7	3	2.0/E	1	Good	M	Fair	Previously topped at circa 7m. Wounds likely around 400mm. Pole regrowth circa 100mm in diameter.			20+	B1,2
T122 *	Hybrid black poplar *(Populus x canadensis)*	15	1030	4	7	7	4	2.0/S	1	Good	M	Fair	Previously topped at circa 7m. Wounds likely around 400mm. Pole regrowth circa 100mm in diameter.			20+	B1,2
G123*	Ash *(Fraxinus excelsior)*, Elder *(Sambucus nigra)*	4	<130#	2	2	2	2	n/a	0.5	Good	Y-SM	Good - Fair	Boundary trees, no access. Ash previously topped. Likely self sown group.			10+	C2
T124 *	Wild Cherry *(Prunus avium)*	6	180	2.5	2.5	2.5	2.5		2	Fair	SM	Fair	No access. In residential garden.			10+	C1
T125 *	Hawthorn *(Crataegus monogyna)*	8	130, 130, 130#	3	3	3	3		1.5	Good	EM	Good	No access. Third party tree.			10+	C1
T126 *	Lilac *(Syringa vulgaris)*	5	150#	2.5	2.5	2.5	2.5		2	Fair	SM	Fair	No access. In residential garden.			10+	C1
T127 *	Hawthorn *(Crataegus monogyna)*	6	330	2.5	2.5	2.5	2.5	3.0/E	2	Fair	EM	Good				20+	B1
G128*	Hawthorn *(Crataegus monogyna)*, Elder *(Sambucus nigra)*, Field Maple *(Acer campestre)*, Norway Maple *(Acer platanoides)*	5	<150#	3	3	3	3	n/a	n/a	Good - Fair	Y-EM	Good - Fair	No access, third party scrub.			10+	C1,2

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G129*	Norway Maple *(Acer platanoides)*, Rowan *(Sorbus aucuparia)*, Lime *(Tilia sp)*	9	<450#	4	4	4	4	n/a	1	Good	SM-EM	Good - Fair	Boundary tree group.			20+	B1,2
H130*	Hawthorn *(Crataegus monogyna)*, Whitebeam *(Sorbus aria)*, Rowan *(Sorbus aucuparia)*	6	<100#	1	1	1	1	n/a	0	Good	Y-SM	Good - Fair	Boundary group, forming scrubby hedgerow.			10+	C1,2
G131*	Grey willow *(Salix cinerea)*, Hawthorn *(Crataegus monogyna)*	6	<150#	3	3	3	3	n/a	0	Good	Y-SM	Good - Fair	No access. Viewed north.			10+	C1,2
G132*	Grey willow *(Salix cinerea)*, Hawthorn *(Crataegus monogyna)*	7	<150#	3	3	3	3	n/a	0	Good	Y-SM	Good - Fair	No access. Viewed north.			10+	C1,2
G133*	Grey willow *(Salix cinerea)*, Hawthorn *(Crataegus monogyna)*, Common Oak *(Quercus robur)*, Ash *(Fraxinus excelsior)*	7	<150#	3	3	3	3	n/a	0	Good	Y-SM	Good - Fair	No access. Viewed north.			10+	C1,2
H134*	Hawthorn *(Crataegus monogyna)*, Grey willow *(Salix cinerea)*	4	<80#	1	1	1	1	n/a	0	Good	Y-SM	Good - Fair	No access.		Fell in part as per Tree Protection Plan	10+	C2
T135*	Goat Willow *(Salix caprea)*	11	160, 160, 150, 140	1	5	3	0	n/a	n/a	Dead	SM	Poor	Multi-stemmed. Dead.			<10	U1
T136*	Goat Willow *(Salix caprea)*	12	150, 180, 220, 160, 120, 300, 180, 210	2	7	4	1	n/a	n/a	Good	M	Fair	Multi-stemmed. Part of riparian wood.		Fell	20+	B2
T137*	Goat Willow *(Salix caprea)*	12	290, 280, 180, 240, 200, 220	2	6	3	1	n/a	n/a	Good	M	Fair	Multi-stemmed. Part of riparian wood.		Fell	20+	B2

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T138 *	Goat Willow *(Salix caprea)*	12	230, 320, 110, 180, 350, 170, 210, 350, 210, 150	8	7	1	4	n/a	n/a	Good	M	Fair	Multi-stemmed. Part of riparian wood. Additional stems 340, 140.		Fell	20+	B2
T139 *	Goat Willow *(Salix caprea)*	10	150, 180, 100, 100, 80	4	4	4	4	n/a	n/a	Dead	EM	Poor	Multi-stemmed. Part of riparian wood. Root plate failure.		Fell	<10	U1
T140 *	Goat Willow *(Salix caprea)*	12	360, 230	8	5	4	2	n/a	n/a	Good	EM	Good	X2 stems considered part of same tree. Part of riparian wood.			20+	B2
T141 *	Goat Willow *(Salix caprea)*	12	230	4	4	4	4	n/a	n/a	Good	EM	Good	Part of riparian wood.		Fell	20+	B2
T142 *	Goat Willow *(Salix caprea)*	12	190, 200, 360	5	5	5	5	n/a	n/a	Good	EM	Fair	Part of riparian wood. Included union.		Fell	20+	B2
T143 *	Goat Willow *(Salix caprea)*	12	350, 300	5	2	4	5	n/a	n/a	Good	M	Fair	Part of riparian wood. Included union.		Fell	20+	B2
T144 *	Goat Willow *(Salix caprea)*	10	200, 140	4	1	3	2	n/a	n/a	Good	SM	Fair	X2 stem considered part of same tree. Part of riparian wood.		Fell	10+	C2
T145 *	Goat Willow *(Salix caprea)*	12	340, 160, 190, 120, 310, 120, 80, 280, 430	10	8	6	5	n/a	n/a	Good	M	Poor	Part of riparian wood. Basal decay. 1.7m diameter stool. Partial failure of stems from stool, layering. Aerial rooting. Significant deadwood, circa 4 units.		Fell	40+	A2,3
T146 *	Goat Willow *(Salix caprea)*	12	250, 210, 250, 250	6	3	6	3	n/a	n/a	Good	M	Good	Muti-stemmed. Part of riparian wood.		Fell	20+	B2
T147 *	Goat Willow *(Salix caprea)*	12	220, 300, 280, 280, 180, 220, 300	6	3	6	6	n/a	n/a	Good	M	Good	Multi-stemmed. Part of riparian wood.		Fell	20+	B2
T148 *	Goat Willow *(Salix caprea)*	12	250, 140, 130, 150, 100, 300	1	6	5	1	n/a	n/a	Good	M	Fair	Multi-stemmed. Part of riparian wood.		Fell	20+	B2
T149 *	Goat Willow *(Salix caprea)*	12	250, 200, 130, 150, 180, 180, 200, 250	10	3	9	1	n/a	n/a	Good	M	Poor	Previous included union failure at base. Failed stem on ground level with harping. Included union above at circa 3m with adaptive swelling and expansion seams. Part of riparian wood. Extensive deadwood.		Fell	40+	A2,3
T150 *	Goat Willow *(Salix caprea)*	12	130, 190, 150, 180, 250, 190, 170, 200, 150, 160	10	6	3	2	n/a	n/a	Good	M	Fair	Additional stems 160, 280, 240. Multi-stemmed. Part of riparian wood.		Fell	20+	B2
T151 *	Goat Willow *(Salix caprea)*	8	120	1	1	1	1	n/a	n/a	Good	SM	Good	Part of riparian wood.		Fell	10+	C2

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T152 *	Goat Willow *(Salix caprea)*	10	360, 110, 260, 330, 230, 260, 390, 160, 270, 190	9	6	5	5	n/a	n/a	Good	M	Good	Additional stems 150, 180, 210, 390, 180. Part of riparian wood. Multi-stemmed. Multiple cankers.		Fell	40+	A2,3
T153 *	Sessile Oak *(Quercus petraea)*	11	390	0	7	1	3	n/a	n/a	Good	SM	Fair	Asymmetrical growth towards canal. Stem angle circa 45 degrees from 2.5m.		Fell	20+	B2
T154 *	Goat Willow *(Salix caprea)*	10	328, 310, 210, 270, 480, 290, 170, 260, 550, 500	9	6	5	5	n/a	n/a	Good	M	Good	Additional stems 320, 200. Part of riparian wood. Multi-stemmed. Multiple cankers.		Fell	40+	A2,3
G155*	Common Oak *(Quercus robur)*, Hawthorn *(Crataegus monogyna)*, Elder *(Sambucus nigra)*, Ash *(Fraxinus excelsior)*, Goat Willow *(Salix caprea)*	7	<200#	3	3	3	3	n/a	0	Good	Y-SM	Good - Fair	Scrub - hawthorn and elder dominant with rare presence of high forest species.		Fell in part as per Tree Protection Plan	10+	C1,2
T156 *	Crack Willow *(Salix fragilis)*	8	360, 230	3.5	3.5	3.5	3.5	n/a	n/a	Poor	EM	Poor	Multiple fungal brackets on main stem (Daedaleopsis confragosa). Crown dieback. Stem decay.			10+	C2
T157 *	Goat Willow *(Salix caprea)*	9	450#	5	5	5	5	1.5/S	1	Good	M	Good - Fair	No access due to water course. Mass proliferation of stems at circa 1.5m, most obscured, stem diameter at circa 1m estimated			20+	B1,2
T158 *	Goat Willow *(Salix caprea)*	7	350#	5	5	5	5	n/a	1	Good	M	Good - Fair	No access due to watercourse. Obscured by head-high nettles. Stem aggregate estimated.			20+	B2
G159*	Elder *(Sambucus nigra)*	4	100	1	1	1	1	n/a	0	Good	Y-SM	Good - Fair	Scrub.			10+	C2
T160 *	Common Oak *(Quercus robur)*	4	80	1	1	1	1	n/a	4	Good	Y	Good				10+	C1
T161 *	Sessile Oak *(Quercus petraea)*	7	340	3	1	3	3	n/a	n/a	Fair	SM	Good	Previously reduced back from track, pruning wounds. Asymmetrical crown.			10+	C1

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H162*	Common Oak *(Quercus robur)*, Grey willow *(Salix cinerea)*, Hawthorn *(Crataegus monogyna)*	5	<100#	1	1	1	1	n/a	0	Good	Y-SM	Good - Fair	Predominantly hawthorn.			10+	C2
T163*	Swedish Whitebeam *(Sorbus intermedia)*	7	350#	3	1	3	3	n/a	n/a	Fair	SM	Good	Multi-stemmed. Previously reduced back from track, pruning wounds. Asymmetrical crown.			10+	C1
T164*	Hawthorn *(Crataegus monogyna)*	3	80#	0.5	0.5	0.5	0.5	n/a	n/a	Fair	SM	Fair	Brambles at base.			10+	C1
T165*	Common Oak *(Quercus robur)*	12	350, 280, 300, 150, 170, 100, 100#	3	5	5	5	0.5/S	1	Good	EM	Fair	Limited access to base. Multistemmed, numerous included unions. Previously crown raised north over haul road			20+	B2
G166*	Hawthorn *(Crataegus monogyna)*	5	<100#	1	1	1	1	n/a	0	Good	SM	Good - Fair				10+	C2
G167*	Hawthorn *(Crataegus monogyna)*	4	<100#	1	1	1	1	n/a	0	Good	SM	Good - Fair				10+	C2
T168*	Hawthorn *(Crataegus monogyna)*	3	70#	1	1	1	1	n/a	1	Good	Y	Good				10+	C1
T169*	Hawthorn *(Crataegus monogyna)*	2	70#	1	1	1	1	n/a	1	Good	Y	Good				10+	C1
T170*	Silver Birch *(Betula pendula)*	9	120, 150	3	3	3	3	n/a	n/a	Good	SM	Good	Twin-stem.			10+	C2
G171*	Grey willow *(Salix cinerea)*, Butterfly bush *(Buddleja sp.)*, Hawthorn *(Crataegus monogyna)*, Silver Birch *(Betula pendula)*	5	<220#	2	2	2	2	n/a	0	Good	Y-EM	Good - Fair				10+	C2
T172*	Ash *(Fraxinus excelsior)*	2	10	1	1	1	1	n/a	0	Good	Y	Poor	Regenerating stump, no access to base.			10+	C1
T173*	Hawthorn *(Crataegus monogyna)*	3	80#	0.5	0.5	0.5	0.5	n/a	n/a	Fair	SM	Fair	Brambles at base.			10+	C1

Tree ID	Species Common Name *(Scientific name)*	Est Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Recommendations	Tree Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
T174	Elder *(Sambucus nigra)*	4	100#	0.5	0.5	3	0.5		1.5	Fair	SM	Fair - Poor				10+	C1
G175*	Elder *(Sambucus nigra)*	2	<70#	1	1	1	1	n/a	0	Good	Y-EM	Good - Fair	Elder scrub.			10+	C2
G176*	White Poplar *(Populus alba)*, Common Oak *(Quercus robur)*, Elder *(Sambucus nigra)*, Hawthorn *(Crataegus monogyna)*	15	<650#	1	1	1	1	n/a	n/a	Good - Fair	EM	Good - Fair	Predominantly white polar, with understory of elder. Branch tear-outs.			20+	B2
G177*	Elder *(Sambucus nigra)*	2	<70#	1	1	1	1	n/a	0	Good	Y-EM	Good - Fair	Elder scrub.			10+	C2
G178*	Common Oak *(Quercus robur)*, Elder *(Sambucus nigra)*, Field Maple *(Acer campestre)*, Hawthorn *(Crataegus monogyna)*, Common Alder *(Alnus glutinosa)*, Norway Maple *(Acer platanoides)*, Sessile Oak *(Quercus petraea)*	13	<500#	1	1	1	1	n/a	n/a	Good - Fair	EM	Good - Fair	Understory of elder. Recent group removal to north. Tear-outs within group.			20+	B2
G179*	Austrian Pine *(Pinus nigra)*, Norway Maple *(Acer platanoides)*, Ash *(Fraxinus excelsior)*, Field Maple *(Acer campestre)*, Cherry *(Prunus sp)*	15	580	3	3	3	3	n/a	1	Good - Fair	SM-M	Good - Fair	Retained section of partial group felling			20+	B1,2
T180*	Common Oak *(Quercus robur)*	14	450	4	4	4	4	4.0/N	3	Good	SM	Poor	Longitudinal split to main stem. Liable to failure, if land use changes consider removal.	Fell if land use changes or if risk exceeds risk tolerance.		<10	U1

Tree ID	Species Common Name *(Scientific name)*	Est Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Recommendations	Tree Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
G181*	Elder *(Sambucus nigra)*	4	<70#	1	1	1	1	n/a	0	Good	SM	Good - Fair	Likely self sown on fence line.			10+	C2
G182*	Goat Willow *(Salix caprea)*, Hawthorn *(Crataegus monogyna)*, Elder *(Sambucus nigra)*, Common Walnut *(Juglans regia)*	6	<150#	3	3	3	3	n/a	0	Good	Y-EM	Good - Fair	No access, sparse scrub.		Fell in part as per Tree Protection Plan	10+	C1,2
T183*	Goat Willow *(Salix caprea)*	5	400	2	2	2	2	n/a		Fair	EM	Fair	Previously pollarded, rip wounds. Excavation at base within root plate, likely rabbit holes.		Fell	10+	C1
G184*	Grey willow *(Salix cinerea)*, Hawthorn *(Crataegus monogyna)*, Silver Birch *(Betula pendula)*	5	<100#	2	2	2	2	n/a	0	Good	Y-SM	Good - Fair	Scrub, hawthorn dominant.		Fell in part as per Tree Protection Plan	10+	C2
W185*	Grey willow *(Salix cinerea)*, Silver Birch *(Betula pendula)*, Willow *(Salix sp)*	6	<200#	3	3	3	3	n/a	0	Good	Y-SM	Good - Fair	No access. Regular structure. Likely riparian woodland. Collective value.		Fell in part as per Tree Protection Plan	20+	B2
W186*	Grey willow *(Salix cinerea)*, Silver Birch *(Betula pendula)*, Crack Willow *(Salix fragilis)*, White Willow *(Salix alba)*, Willow *(Salix sp)*	15	<350#	5	5	5	5	n/a	0	Good	Y-EM	Good - Fair	No access. Regular structure. Likely riparian woodland. Collective value.		Fell in part as per Tree Protection Plan	20+	B1,2

Tree ID	Species Common Name *(Scientific name)*	Est Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Recommendations	Tree Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
H187 *	Hawthorn *(Crataegus monogyna)*, Blackthorn *(Prunus spinosa)*, Hazel *(Corylus avellana)*, Common Alder *(Alnus glutinosa)*, Apple *(Malus sp)*, Elder *(Sambucus nigra)*	2	<50#	0.5	0.5	0.5	0.5	n/a	0	Good	Y-SM	Good	Managed hedgerow. Guelder rose and dog rose.			10+	C2
T188 *	Goat Willow *(Salix caprea)*	9	450#	4	3	3	3	2.0/W	3	Good	EM	Fair	Multi-stemmed.			20+	B1
H189 *	Hawthorn *(Crataegus monogyna)*	3	<100#	1	1	1	1	n/a	0	Good - Fair	EM	Good - Fair	Gaps within hedgerow.			10+	C2
H190 *	Hawthorn *(Crataegus monogyna)*	3	<100#	1	1	1	1	n/a	0	Good - Fair	EM	Good - Fair	Gaps within hedgerow.			10+	C2
T191 *	Ash *(Fraxinus excelsior)*	9	170, 170, 300, 300, 350#	7	5	5	3	0.5/E	1	Fair - Poor	M	Fair	Significant crown gaps, minor to moderate deviation in branching pattern. Moderate deadwood in crown. Small cavity at base east circa 100mm in depth.			10+	C1,2
H192 *	Hawthorn *(Crataegus monogyna)*	4	<90#	1	1	1	1	n/a	0	Good	Y-SM	Good	Mix of newly planted and out of management hawthorn.			10+	C2
T193	Elm *(Ulmus sp)*	5	350#	2	2	2	2	0.5/E	1.5	Fair	EM	Fair	Multi-stemmed. Crown dieback, deadwood.		Fell	10+	C1
G194*	Hawthorn *(Crataegus monogyna)*, Willow *(Salix sp)*	5	<100#	3	3	3	3	n/a	0	Good	Y-SM	Good	Salix viminalis. likely self sown		Fell	10+	C2
G195*	Hawthorn *(Crataegus monogyna)*, Grey willow *(Salix cinerea)*	3	<80#	1	1	1	1	n/a	n/a	Good	SM	Good	Gaps within group. x3 Hawthorn, x3 willow.		Fell	10+	C2
T196 *	Goat Willow *(Salix caprea)*	7	140, 220, 200, 270, 260, 170, 90, 100	5	5	5	5	n/a	0.5	Good	M	Fair	Numerous included unions typical of species.			20+	B1
T197 *	Goat Willow *(Salix caprea)*	7	100, 80, 150	2	1	2	2	1.0/W	0.5	Good	SM	Fair	Multi-stemmed.			10+	C1

Tree ID	Species Common Name *(Scientific name)*	Est Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Recommendations	Tree Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
G198*	Hawthorn *(Crataegus monogyna)*	4	70	1	1	1	1	n/a	0	Good	Y-SM	Good	Scrub, heterogeneous distribution amongst brambles.		Fell	10+	C2
T199*	Goat Willow *(Salix caprea)*	6	300#	3	3	3	3	n/a	0.5	Good	SM	Good	Multi-stemmed. No access.		Fell	10+	C1
G200*	Grey willow *(Salix cinerea)*, White Poplar *(Populus alba)*	5	<60#	0.5	0.5	0.5	0.5	n/a	0	Good	Y	Good - Fair	Likely self sown along railing. Future growth likely to cause direct damage to fence line.		Fell	<10	U2
G201*	Goat Willow *(Salix caprea)*, Grey willow *(Salix cinerea)*	5	<150#	1	1	1	1	n/a	n/a	Good - Fair	SM	Good - Fair	Multi-stemmed. Growing in contact with fence, consider removal as may cause damage to fence with incremental growth.		Fell	<10	U1
T202*	White Poplar *(Populus alba)*	7	100#	2	2	2	2	n/a	n/a	Good	SM	Good	No access. Close proximity to fence.		Fell	10+	C1
G203*	Hawthorn *(Crataegus monogyna)*	5	<200#	1	1	1	1	n/a	0	Good	EM	Good	Multi-stemmed. Minor encroachment onto access track.			10+	C2
T204*	Grey willow *(Salix cinerea)*	5	100#	1	1	1	1	n/a	0	Good	SM	Good	At road edge, crown overhangs by circa 0.5m. Stem aggregate estimated.			10+	C1
T205*	Hawthorn *(Crataegus monogyna)*	5	130#	2	2	2	2	n/a	0	Good	SM	Good				10+	C1
T206*	Wild Cherry *(Prunus avium)*	6	210#	2.5	2.5	2.5	2.5	n/a	1	Good	SM	Fair	Self-sets surrounding tree.			10+	C1
T207*	Elder *(Sambucus nigra)*	3	100#	1	1	1	1	n/a	0	Good	Y	Fair	No access. Stem aggregate estimated.			10+	C1
T208*	Field Maple *(Acer campestre)*	4	100#	1.5	1.5	1.5	1.5	n/a	n/a	Fair	SM	Fair	Encroachment onto access track.			10+	C1
T209*	Field Maple *(Acer campestre)*	4	100#	1.5	1.5	1.5	1.5	n/a	n/a	Fair	SM	Fair	Encroachment onto access track. Multi-stemmed.			10+	C1
T210*	Hawthorn *(Crataegus monogyna)*	4	80, 70, 70#	2	2	2	2	n/a	0	Good	SM	Good - Fair	No access. Likely self sown.		Fell	10+	C1
T211*	Hawthorn *(Crataegus monogyna)*	4	100, 100, 100#	2	2	2	2	n/a	1	Good	SM	Good - Fair	No access. Likely self sown.			10+	C1
G212*	Hawthorn *(Crataegus monogyna)*	2	<70#	1	1	1	1	n/a	0	Good	Y	Good - Fair	No access. Likely self sown. Two trees.			10+	C2

Tree ID	Species Common Name *(Scientific name)*	Est Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Recommendations	Tree Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
G213*	Hawthorn *(Crataegus monogyna)*	2	<70#	1	1	1	1	n/a	n/a	Good	SM	Good	Gappy group.		Fell	10+	C2
T214*	Elder *(Sambucus nigra)*	4	120#	1	1	1	1	n/a	n/a	Fair	SM	Fair	In contact with fence, consider removal.			<10	U1
T215*	Ash *(Fraxinus excelsior)*	8	230, 190	2	2	2	2	3.0/N	2	Good	SM	Fair	Codominant stem from circa 0.5m with bark inclusion.		Fell	10+	C1
G216*	Hawthorn *(Crataegus monogyna)*, Elder *(Sambucus nigra)*, Blackthorn *(Prunus spinosa)*	4	<100#	1	1	1	1	n/a	n/a	Good	SM	Good	No access. Viewed from road. Dense group.			10+	C2
G217*	Elder *(Sambucus nigra)*	3	<100#	1	1	1	1	n/a	0	Good	SM	Fair	No access. South of ditch.			10+	C2
G218*	Common Alder *(Alnus glutinosa)*	10	<350#	3	3	3	3	n/a	0	Good	SM-M	Good - Fair	No access. South of ditch.			20+	B1,2
G219*	Norway Spruce *(Picea abies)*	10	<380#	1	1	1	1	n/a	n/a	Good - Fair	EM	Good	No access.			20+	B2
T220*	Elm *(Ulmus sp)*	7	250#	2	2	2	2	n/a	0	Poor - Dead	SM	Poor	No access. South of ditch. Moribund. Likely Dutch elm disease.			<10	U1
G221*	Norway Spruce *(Picea abies)*	10	<380#	1	1	1	1	n/a	n/a	Good - Fair	EM	Good	No access.			20+	B2
G222*	Norway Spruce *(Picea abies)*	10	<380#	1	1	1	1	n/a	n/a	Good - Fair	EM	Good	No access.			20+	B2
G223*	Willow *(Salix sp)*	8	<300#	1	1	1	1	n/a	n/a	Good - Fair	EM	Good - Fair	No access.			10+	C2
G224*	Elm *(Ulmus sp)*	5	<250#	1	1	1	1	n/a	0	Dead	SM	Poor	Established west of ditch. Likely Dutch elm disease. Partial collapse.			<10	U2
G225*	Willow *(Salix sp)*, Hawthorn *(Crataegus monogyna)*, Elder *(Sambucus nigra)*	6	<300#	1	1	1	1	n/a	n/a	Good - Fair	EM	Good - Fair	No access.			10+	C2
G226*	Elm *(Ulmus sp)*	7	<250#	2	2	2	2	n/a	0	Poor - Dead	SM	Poor	Established west of ditch. Likely Dutch elm disease.			<10	U2

Tree ID	Species Common Name *(Scientific name)*	Est Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Recommendations	Tree Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
G227*	Field Maple *(Acer campestre)*, Rowan *(Sorbus aucuparia)*, Hawthorn *(Crataegus monogyna)*, Silver Birch *(Betula pendula)*, Elder *(Sambucus nigra)*	10	<300#	3	3	3	3	n/a	0	Good	Y-EM	Good	West of ditch.			20+	B1,2
G228*	Hawthorn *(Crataegus monogyna)*	2	<70#	1	1	1	1	n/a	0	Good	Y	Good - Fair	Predominantly hawthorn saplings.			10+	C2
T229*	Hawthorn *(Crataegus monogyna)*	4	150#	1	1	1	1	n/a	1	Good	SM	Good	Multi-stemmed. Stem aggregate estimated.			10+	C1
T230*	Crack Willow *(Salix fragilis)*	8	400#	3	3	3	3	n/a	n/a	Fair	EM	Fair	Multi-stemmed. Stem aggregate estimated.			10+	C1
G231*	Goat Willow *(Salix caprea)*	8	<350#	4	4	4	4	n/a	0	Good	SM-EM	Good - Fair	No access. Viewed from the public highway south.			20+	B2
T232*	Crack Willow *(Salix fragilis)*	9	350#	3	3	3	3	n/a	n/a	Fair	EM	Fair	Viewed from public highway.			20+	B1
T233*	Elder *(Sambucus nigra)*	3	100#	1	1	1	1	n/a	0	Good	SM	Good				10+	C1
T234*	Wild Cherry *(Prunus avium)*	3	90#	1	1	1	1	n/a	0	Good	Y	Good				10+	C1
T235*	Goat Willow *(Salix caprea)*	4	150	2	2	2	2	n/a	0	Good	SM	Fair				10+	C1,2
T236*	Elder *(Sambucus nigra)*	3	110#	1	1	1	1	n/a	n/a	Good	SM	Good	Viewed from public highway. No access.			10+	C1
G237*	Silver Birch *(Betula pendula)*, Goat Willow *(Salix caprea)*	8	<150#	2	2	2	2	n/a	0	Good	SM	Good - Fair			Fell	10+	C2

Tree ID	Species Common Name *(Scientific name)*	Est Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Recommendations	Tree Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
W238*	Goat Willow *(Salix caprea)*, Elder *(Sambucus nigra)*, Hawthorn *(Crataegus monogyna)*	12	<360	3	3	3	3	n/a	0	Good	Y-M	Good - Poor	Wet woodland. Canopy monoculture of willow. Understory predominantly elder. Largely single age cohort. Willow regenerating from collapsed coppice, either phoenix or harping.		Fell in part as per Tree Protection Plan	20+	B3
G239*	Hawthorn *(Crataegus monogyna)*, Elder *(Sambucus nigra)*	6	<200	3	3	3	3	n/a	0	Good	Y-SM	Good - Fair	No access - scrub edge to wet woodland.		Fell in part as per Tree Protection Plan	10+	C2

Annex 3: Key to Abbreviations & Terms Used in the Survey

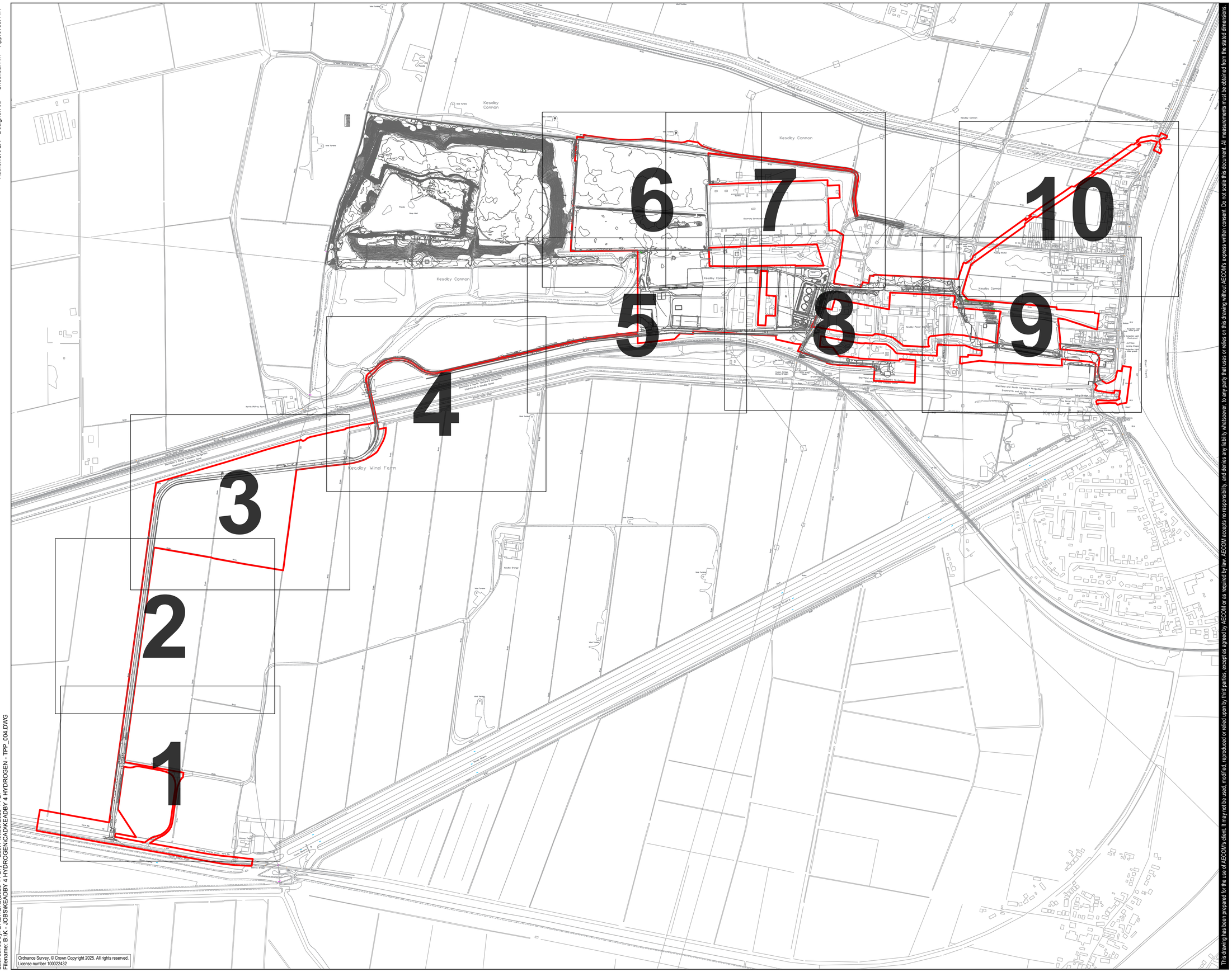
Ref No	Specific identification number given to each tree or group. T=Tree/H=Hedge/G=Group/W=Woodland.
Species	Common name followed by scientific name.
RPA	Root Protection Area (As defined by BS5837:2012)
Stem diameter	Diameter of main stem, measured in millimetres at 1.5 m above ground level. (MS = Multi-stem tree measured in accordance with BS5837:2012 Annex 3).
Spread	The width and breadth of the crown. Estimated on the four compass points in metres.
Crown clearance	The estimated height (in metres) above ground level of the lowest significant branch attachments.
#	Estimated dimensions.
*	Indicates estimated position of tree (not indicated on topographical survey).
Av	Indicates an average representative measured dimension for the feature.
Category	Categorisation of the quality and benefits of trees on Site as per Table 1 and 2 of BS5837:2012. 1=Arboricultural quality/value 2=Landscape quality/value 3=Cultural quality/value (including conservation)
	A=High quality/value 40yrs+ (light green). B=Moderate quality/value 20yrs+ (mid blue)

	C=Low quality/value min 10yrs/stem diameter less than 150mm (grey). U=Unsuitable for retention (dark red).
Life stage	**Young (Y):** Newly planted tree 0-10 years. **Semi-Mature (SM):** Tree in the first third of its normal life expectancy for the species (significant potential for future growth in size). **Early Mature (EM):** Tree in the second third of its normal life expectancy for the species (some potential for future growth in size) **Mature (M):** Tree in the final third of its normal life expectancy for the species (having typically reached its approximate ultimate size). **Over Mature (OM):** Tree beyond the normal life expectancy for the species. **Veteran (V):** Tree of maturity which is of exceptional biodiversity, cultural or heritage value due to its age, size and condition. **Ancient (A):** Tree which is beyond maturity and is of great age for the species (typically showing ancient crown and stem form/architecture).
Structural condition	**Good:** No significant structural defects **Fair:** Structural defects which can be resolved via remedial works. **Poor:** Structural defects which cannot be resolved via remedial works. **Dead:** Dead.
Physiological condition	**Good:** Normal vitality including leaf size, bud growth, density of crown and wound wood development. **Fair:** Lower than normal vitality, reduced bud development, reduced crown density, reduced response to wounds.

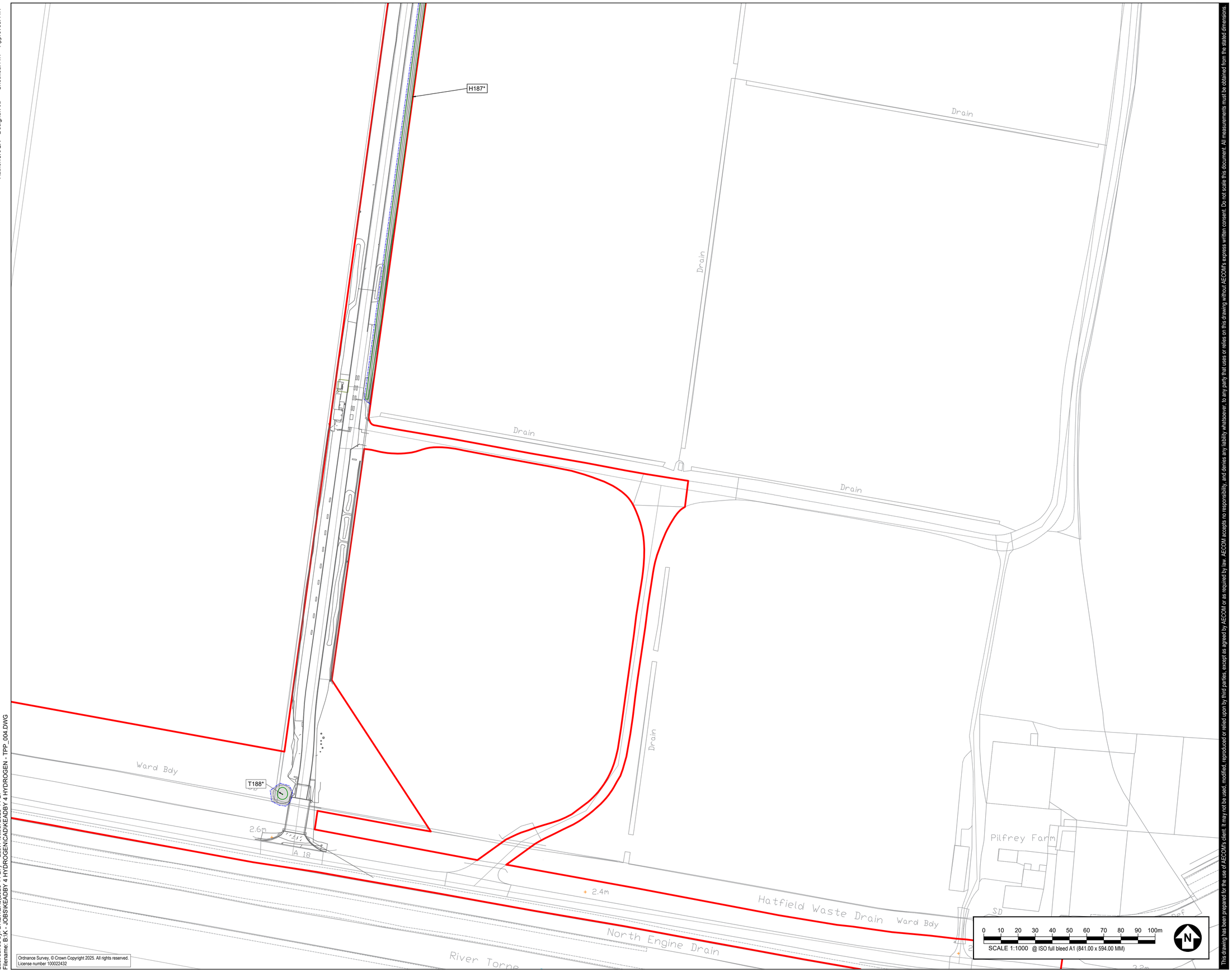
	Poor: Low vitality, low development and distribution of buds, discoloured leaves, low crown density, little extension growth for the species. **Dead:** Dead **Fair/Good** = Indicates an intermediate condition **Fair – Good** = Indicates a range of conditions (e.g. within a group)
Preliminary management recommendations	Works identified during the tree survey as part of sound arboricultural management, based on the current context of the Site (where relevant reference has been made to tree management based on the potential future context of the site).
FFB	Fungal fruiting body.
ADB	Ash dieback (*Hymenoscyphus fraxineus)*
AGL	Above ground level

Annex 4: Tree Protection Plan

Author: JR/GA Designer: JB Checked: AW Approved: AW



Author: JR/GA Designer: JB Checked: AW Approved: AW



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PROJECT

KEADBY NEXT GENERATION POWER STATION PROJECT

CLIENT

KEADBY NEXT GENERATION LTD

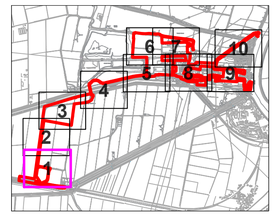
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GENERAL NOTES

1. TREE CATEGORIES AS DEFINED BY BS 5837:2012
2. TREE LOCATIONS ARE BASED ON THE TOPOGRAPHICAL SURVEY, AERIAL IMAGERY, AND GPS CO-ORDINATES FROM ON SITE WALKOVER.
3. * INDICATES A TREE / GROUP WHOSE POSITION IS APPROXIMATE AS BASED UPON AERIAL PHOTOGRAPHY AND ON SITE OBSERVATIONS.
4. PLANS SHOULD BE READ IN CONJUNCTION WITH THE AECOM ARBORICULTURAL REPORT.
5. THE ORIGINAL OF THIS DRAWING WAS PRODUCED IN COLOUR - A MONOCHROME COPY SHOULD NOT BE RELIED UPON.
6. DRAWING REFERENCES:
   - 108300 - SSE - Keadby - Topographical & GPR and Utility Mapping Survey.dwg
   - 3d Topo survey May'23.dwg
   - 60721867-KH-OR-120 KHPS-N - Work Plans CAD (Aligned RLB) - SHP Export.dwg
   - FreeLocalOSMap.dwg
   - 20250331_Designations.dwg
   - OS_MasterMap_Topography_Layer_532581_1185624_OS_Mastermap.dwg
   - 20250520 Water abstraction CAD.dwg

KEY PLAN



KEY

- **RED LINE BOUNDARY**
- **EXISTING TREE, GROUP, WOODLAND, OR HEDGE TO BE RETAINED**
- **EXISTING TREE, GROUP, WOODLAND, OR HEDGE TO BE REMOVED**
- **ROOT PROTECTION AREA OF RETAINED TREES** *(AS DEFINED BY BS 5837:2012)*
- **LIKELY VETERAN TREE** *(INDICATES POSITION OF TREE OF VETERAN STATUS)*
- **LIKELY ANCIENT TREE** *(INDICATES POSITION OF TREE OF ANCIENT STATUS)*
- **TREE PROTECTION FENCING**
- **CONSTRUCTION EXCLUSION ZONE** *(TRACKING OF PLANT, MATERIALS STORAGE, EXCAVATION AND ALL OTHER CONSTRUCTION ACTIVITIES ARE EXCLUDED WITHIN THESE AREAS FOR THE PURPOSES OF PROTECTING TREE HEALTH)*
- **CONSTRUCTION WORKING ZONE** *(MANAGED CONSTRUCTION PROCESSES PERMITTED IN ACCORDANCE WITH THE PRINCIPLES SET OUT WITHIN THE ARBORICULTURAL IMPACT ASSESSMENT)*
- **PROPOSED DEVELOPMENT LAYOUT** *(BASED UPON DRAWING REFERENCES LISTED IN THE GENERAL NOTES SECTION)*
- **PRIORITY HABITAT** *(CONSIDERED AN AREA OF PRIORITY HABITAT)*
- **SSSI AREA** *(AREA CONTAINING SITE OF SPECIAL SCIENTIFIC INTEREST)*

ISSUE/REVISION

P03	27.11.25	TREE DATA AMENDMENTS
P02	20.05.25	SECOND ISSUE
P01	23.04.25	FIRST ISSUE
I/R	DATE	DESCRIPTION

DRAWING STATUS

ISSUE

PROJECT NUMBER

60721867

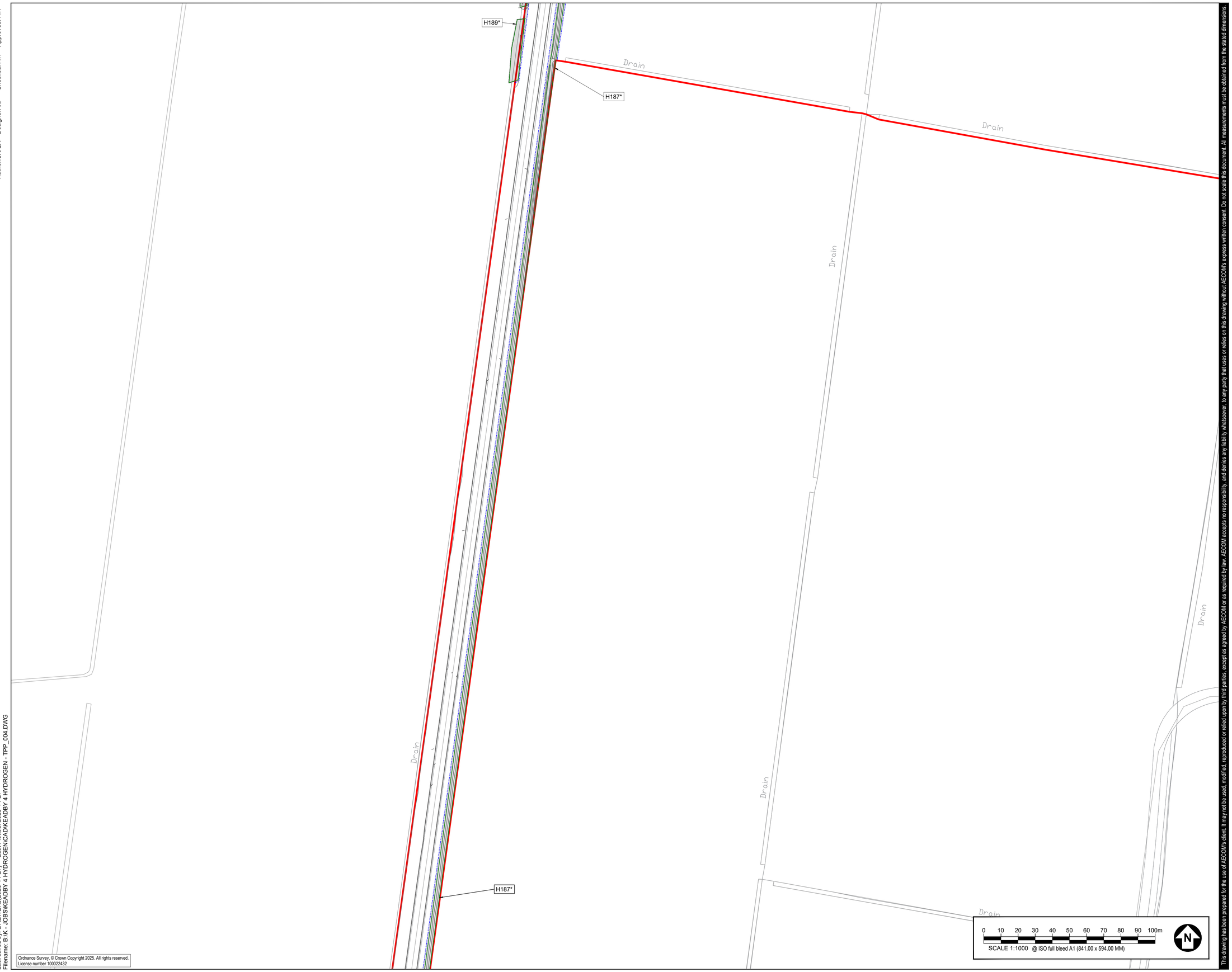
SHEET TITLE

TREE PROTECTION PLAN (SHEET 01)

SHEET NUMBER / REV.

60721867-ACM-XX-XX-AB-TPP-001 P03

Author: JR/GA Designer: JB Checked: AW Approved: AW



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AECOM

PROJECT

KEADBY NEXT GENERATION POWER STATION PROJECT

CLIENT

KEADBY NEXT GENERATION LTD

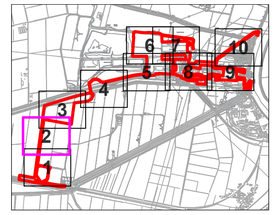
CONSULTANT

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GENERAL NOTES

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   - 3d Topo survey May'23.dwg
   - 60721867-KH-OR-120 KHPS-N - Work Plans CAD (Aligned RLB) - SHP Export.dwg
   - FreeLocalOSMap.dwg
   - 20250331_Designations.dwg
   - OS_MasterMap_Topography_Layer_532581_1185624_OS_Mastermap.dwg
   - 20250520 Water abstraction CAD.dwg

KEY PLAN



KEY

- RED LINE BOUNDARY
- EXISTING TREE, GROUP, WOODLAND, OR HEDGE TO BE RETAINED
- EXISTING TREE, GROUP, WOODLAND, OR HEDGE TO BE REMOVED
- ROOT PROTECTION AREA OF RETAINED TREES *(AS DEFINED BY BS 5837:2012)*
- LIKELY VETERAN TREE *(INDICATES POSITION OF TREE OF VETERAN STATUS)*
- LIKELY ANCIENT TREE *(INDICATES POSITION OF TREE OF ANCIENT STATUS)*
- TREE PROTECTION FENCING
- CONSTRUCTION EXCLUSION ZONE *(TRACKING OF PLANT, MATERIALS STORAGE, EXCAVATION AND ALL OTHER CONSTRUCTION ACTIVITIES ARE EXCLUDED WITHIN THESE AREAS FOR THE PURPOSES OF PROTECTING TREE HEALTH)*
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- PROPOSED DEVELOPMENT LAYOUT *(BASED UPON DRAWING REFERENCES LISTED IN THE GENERAL NOTES SECTION)*
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- SSSI AREA *(AREA CONTAINING SITE OF SPECIAL SCIENTIFIC INTEREST)*

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P03	27.11.25	TREE DATA AMENDMENTS
P02	20.05.25	SECOND ISSUE
P01	23.04.25	FIRST ISSUE

DRAWING STATUS

ISSUE

PROJECT NUMBER

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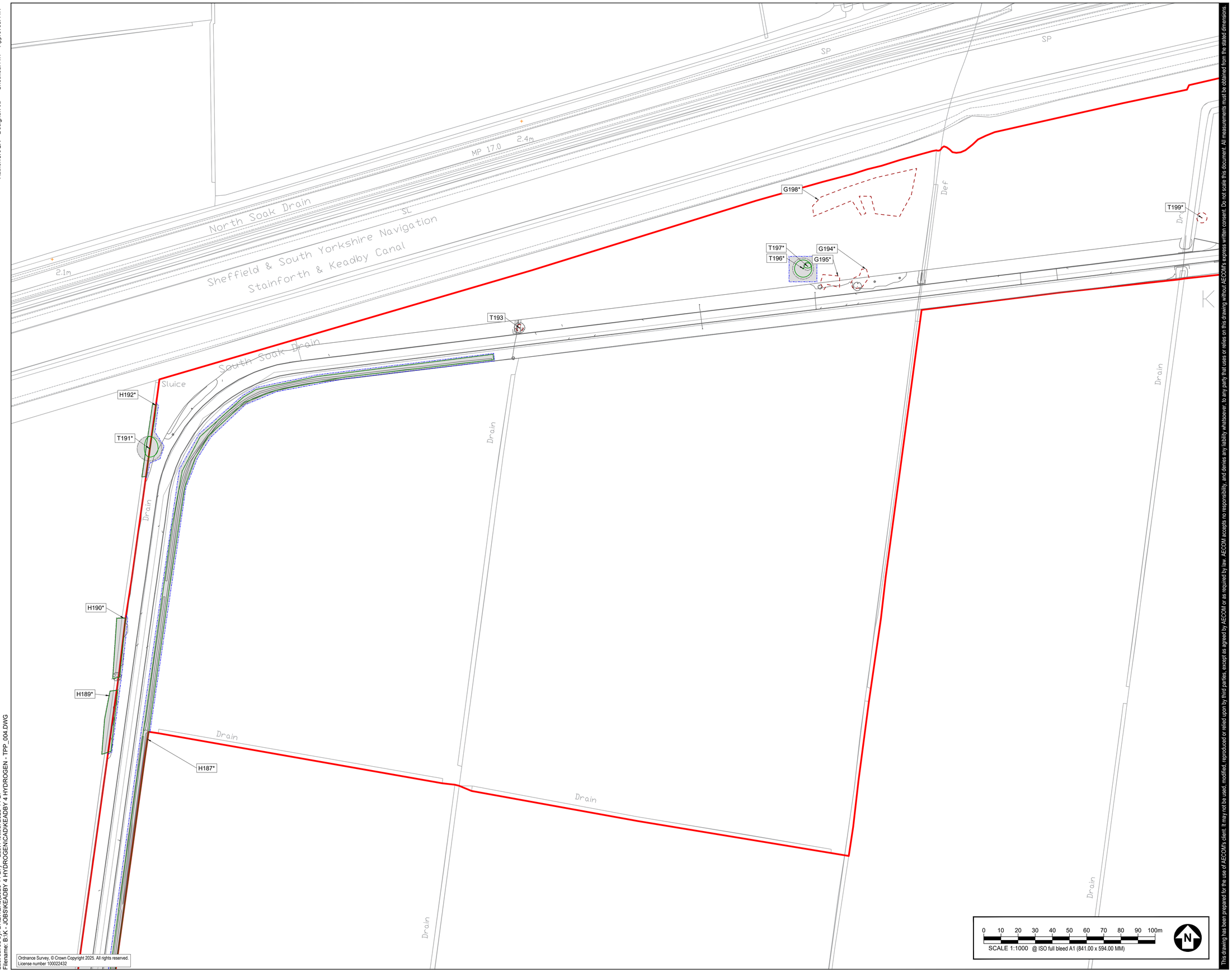
SHEET TITLE

TREE PROTECTION PLAN (SHEET 02)

SHEET NUMBER / REV.

60721867-ACM-XX-XX-AB-TPP-002 P03

Author: JR/GA Designer: JB Checked: AW Approved: AW



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PROJECT

KEADBY NEXT GENERATION POWER STATION PROJECT

CLIENT

KEADBY NEXT GENERATION LTD

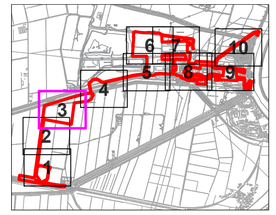
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   - 3d Topo survey May'23.dwg
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   - FreeLookOSMap.dwg
   - 20250331_Designations.dwg
   - OS_MasterMap_Topography_Layer_532581_1185624_OS_Mastermap.dwg
   - 20250520 Water abstraction CAD.dwg

KEY PLAN



KEY

- **RED LINE BOUNDARY**
- **EXISTING TREE, GROUP, WOODLAND, OR HEDGE TO BE RETAINED**
- **EXISTING TREE, GROUP, WOODLAND, OR HEDGE TO BE REMOVED**
- **ROOT PROTECTION AREA OF RETAINED TREES** *(AS DEFINED BY BS 5837:2012)*
- **LIKELY VETERAN TREE** *(INDICATES POSITION OF TREE OF VETERAN STATUS)*
- **LIKELY ANCIENT TREE** *(INDICATES POSITION OF TREE OF ANCIENT STATUS)*
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P03	27.11.25	TREE DATA AMENDMENTS
P02	20.05.25	SECOND ISSUE
P01	23.04.25	FIRST ISSUE

DRAWING STATUS

ISSUE

PROJECT NUMBER

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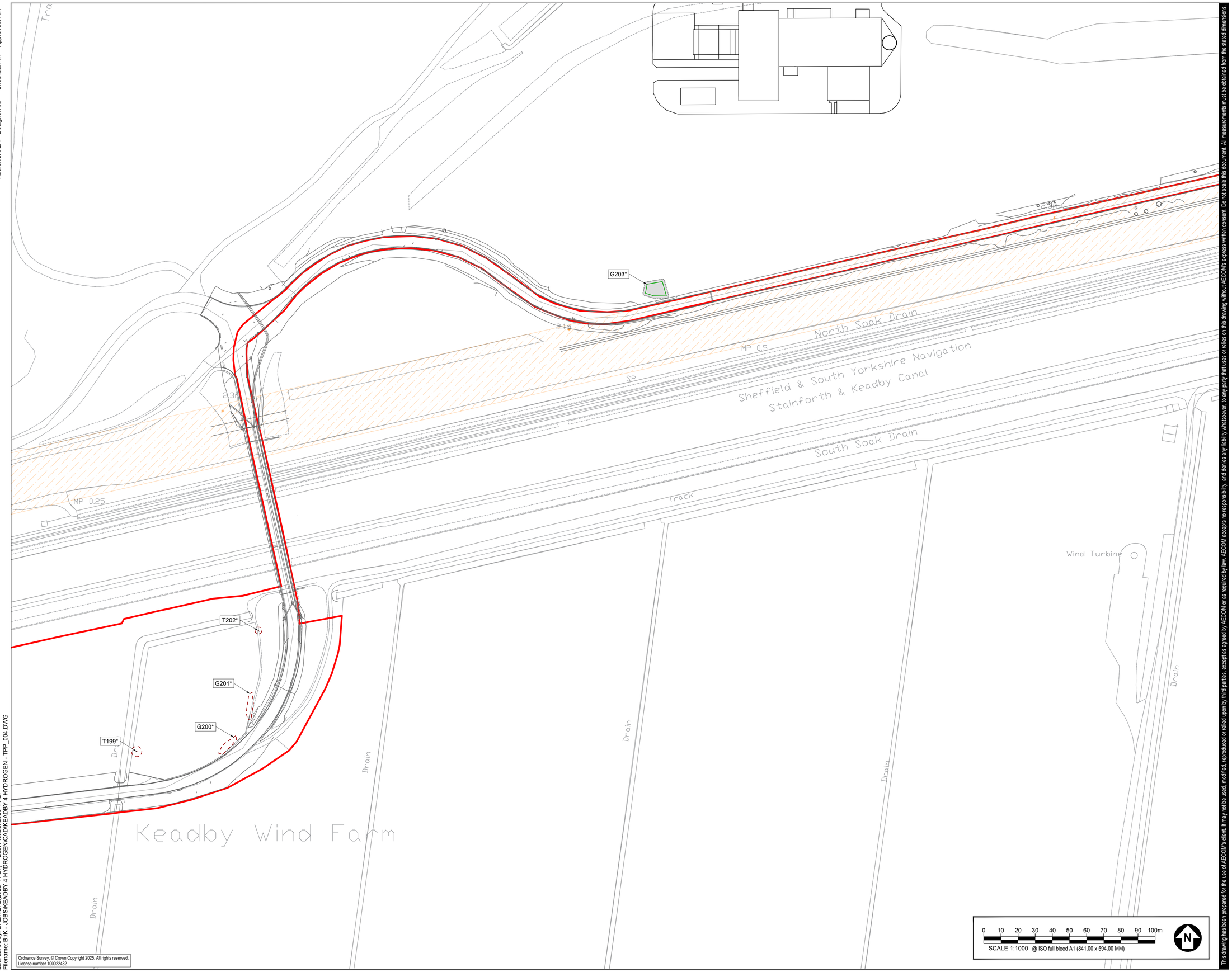
SHEET TITLE

TREE PROTECTION PLAN (SHEET 03)

SHEET NUMBER / REV.

60721867-ACM-XX-XX-AB-TPP-003 P03

Author: JR/GA Designer: JB Checked: AW Approved: AW



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PROJECT

KEADBY NEXT GENERATION POWER STATION PROJECT

CLIENT

KEADBY NEXT GENERATION LTD

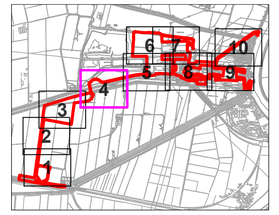
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6. DRAWING REFERENCES:
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   - FreeLookOSMap.dwg
   - 20250331_Designations.dwg
   - OS_MasterMap_Topography_Layer_532581_1185624_OS_Mastermap.dwg
   - 20250520 Water abstraction CAD.dwg

KEY PLAN



KEY

- **RED LINE BOUNDARY**
- **EXISTING TREE, GROUP, WOODLAND, OR HEDGE TO BE RETAINED**
- **EXISTING TREE, GROUP, WOODLAND, OR HEDGE TO BE REMOVED**
- **ROOT PROTECTION AREA OF RETAINED TREES** *(AS DEFINED BY BS 5837:2012)*
- **LIKELY VETERAN TREE** *(INDICATES POSITION OF TREE OF VETERAN STATUS)*
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ISSUE/REVISION

I/R	DATE	DESCRIPTION
P03	27.11.25	TREE DATA AMENDMENTS
P02	20.05.25	SECOND ISSUE
P01	23.04.25	FIRST ISSUE

DRAWING STATUS

ISSUE

PROJECT NUMBER

60721867

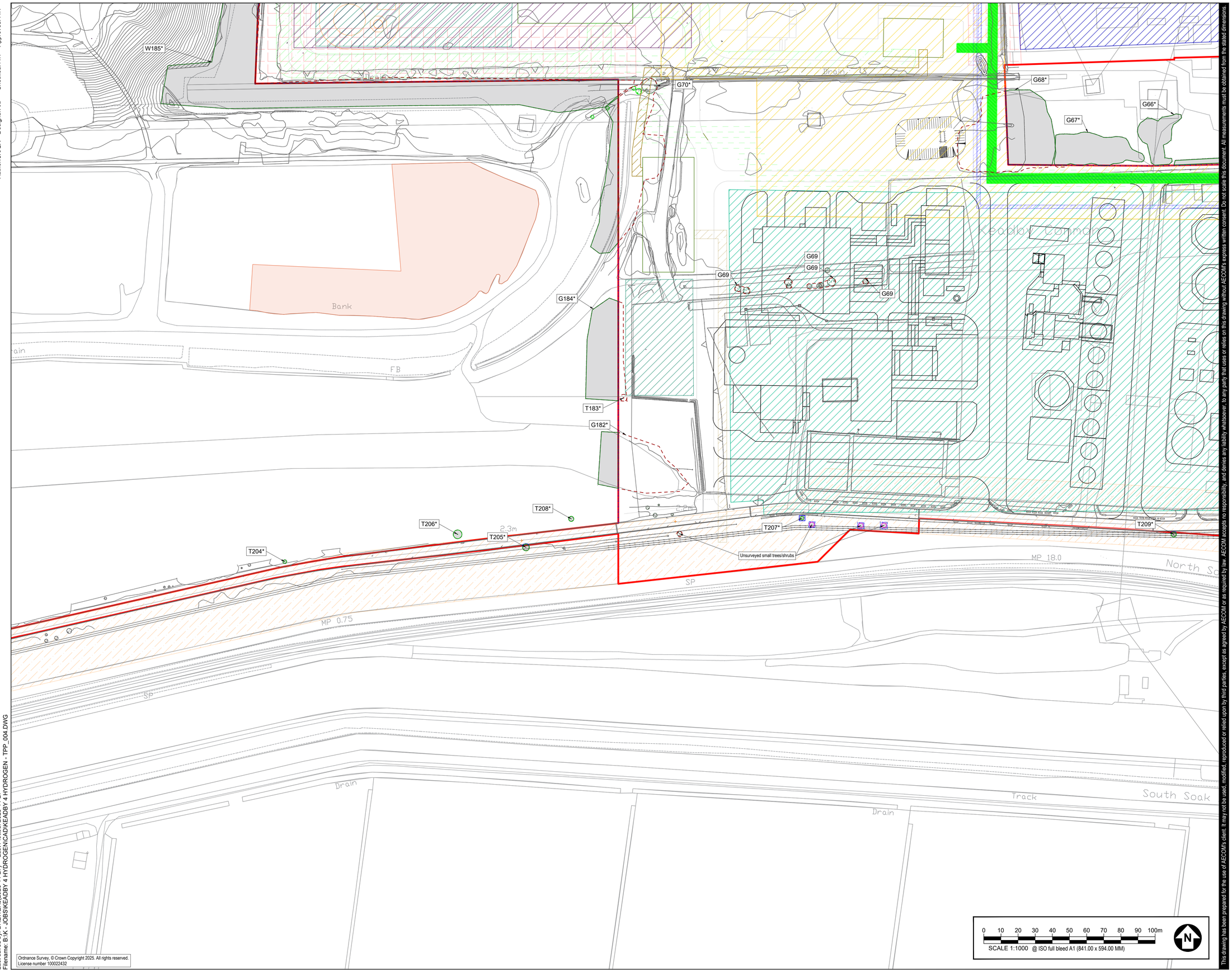
SHEET TITLE

TREE PROTECTION PLAN (SHEET 04)

SHEET NUMBER / REV.

60721867-ACM-XX-XX-AB-TPP-004 P03

Author: JR/GA Designer: JB Checked: AW Approved: AW



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PROJECT

KEADBY NEXT GENERATION POWER STATION PROJECT

CLIENT

KEADBY NEXT GENERATION LTD

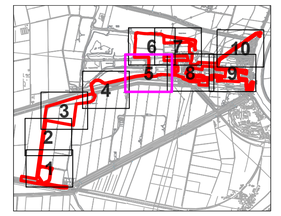
CONSULTANT

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GENERAL NOTES

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6. DRAWING REFERENCES:
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   - 20250520 Water abstraction CAD.dwg

KEY PLAN



KEY

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- **EXISTING TREE, GROUP, WOODLAND, OR HEDGE TO BE REMOVED**
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ISSUE/REVISION

P03	27.11.25	TREE DATA AMENDMENTS
P02	20.05.25	SECOND ISSUE
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DRAWING STATUS

ISSUE

PROJECT NUMBER

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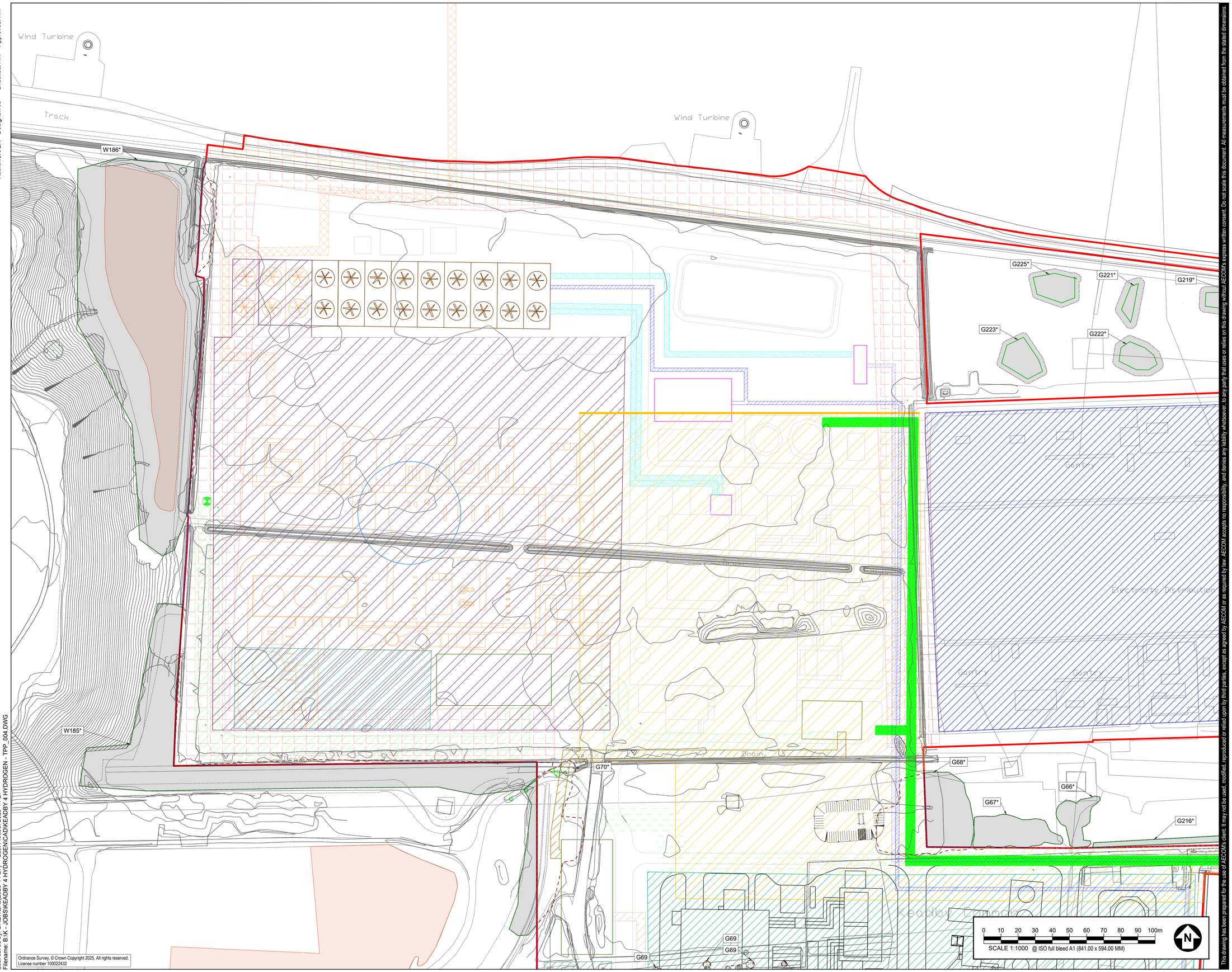
SHEET TITLE

TREE PROTECTION PLAN (SHEET 05)

SHEET NUMBER **REV.**

60721867-ACM-XX-XX-AB-TPP-005 P03

Author: JR/GA Designer: JB Checked: AW Approved: AW



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PROJECT

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CLIENT

KEADBY NEXT GENERATION LTD

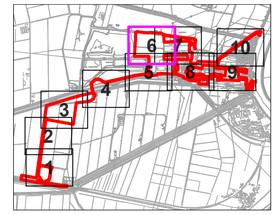
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KEY PLAN



KEY

- RED LINE BOUNDARY
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- EXISTING TREE, GROUP, WOODLAND, OR HEDGE TO BE REMOVED
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DRAWING STATUS

ISSUE

PROJECT NUMBER

60721867

SHEET TITLE

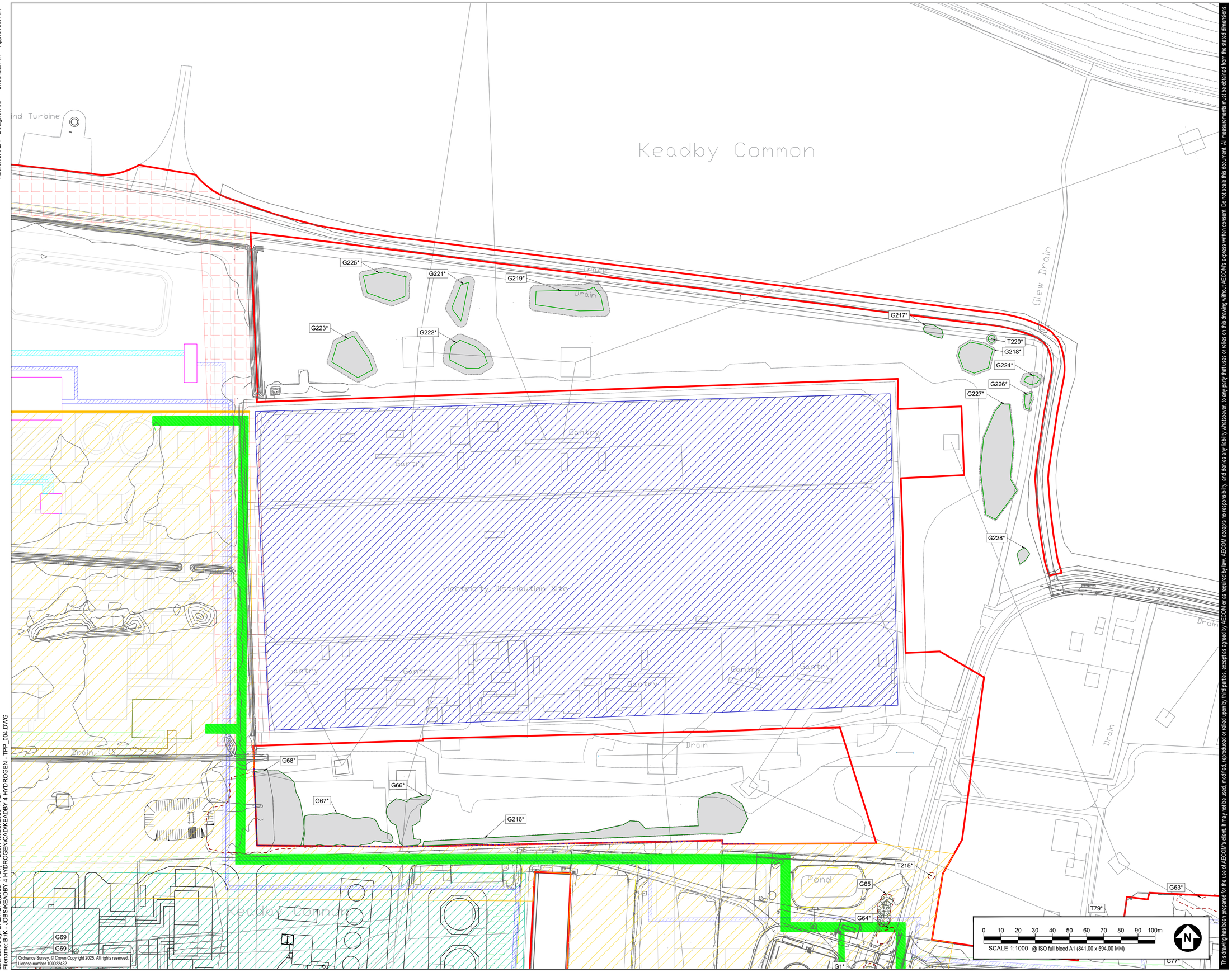
TREE PROTECTION PLAN (SHEET 06)

SHEET NUMBER 60721867-ACM-XX-XX-AB-TPP-006

REV. P03

Author: JR/GA Designer: JB Checked: AW Approved: AW

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PROJECT

KEADBY NEXT GENERATION POWER STATION PROJECT

CLIENT

KEADBY NEXT GENERATION LTD

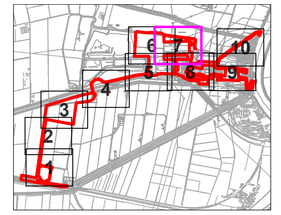
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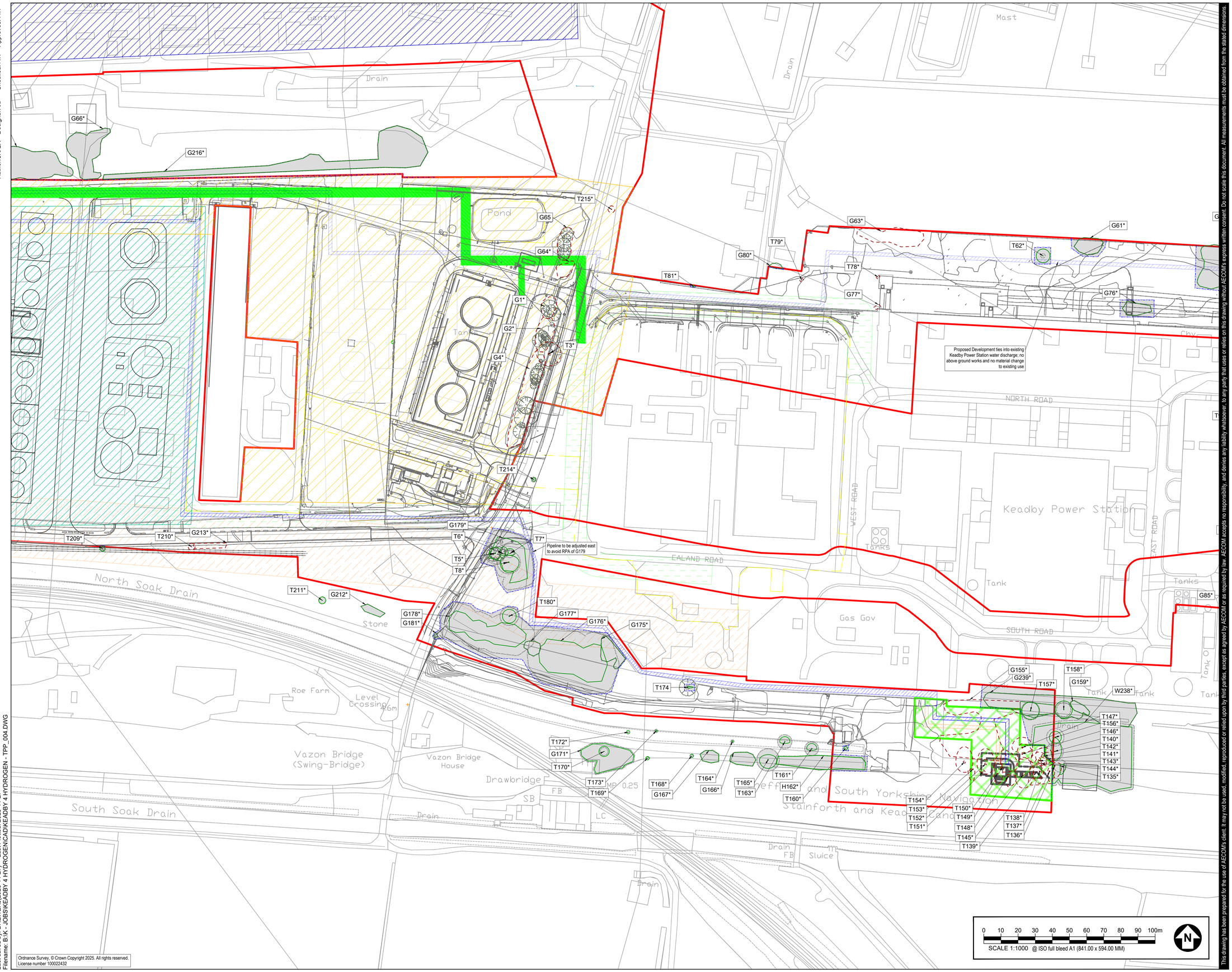
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TREE PROTECTION PLAN (SHEET 07)

SHEET NUMBER / REV.

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Author: JR/GA Designer: JB Checked: AW Approved: AW



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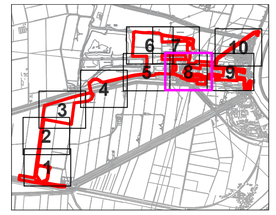
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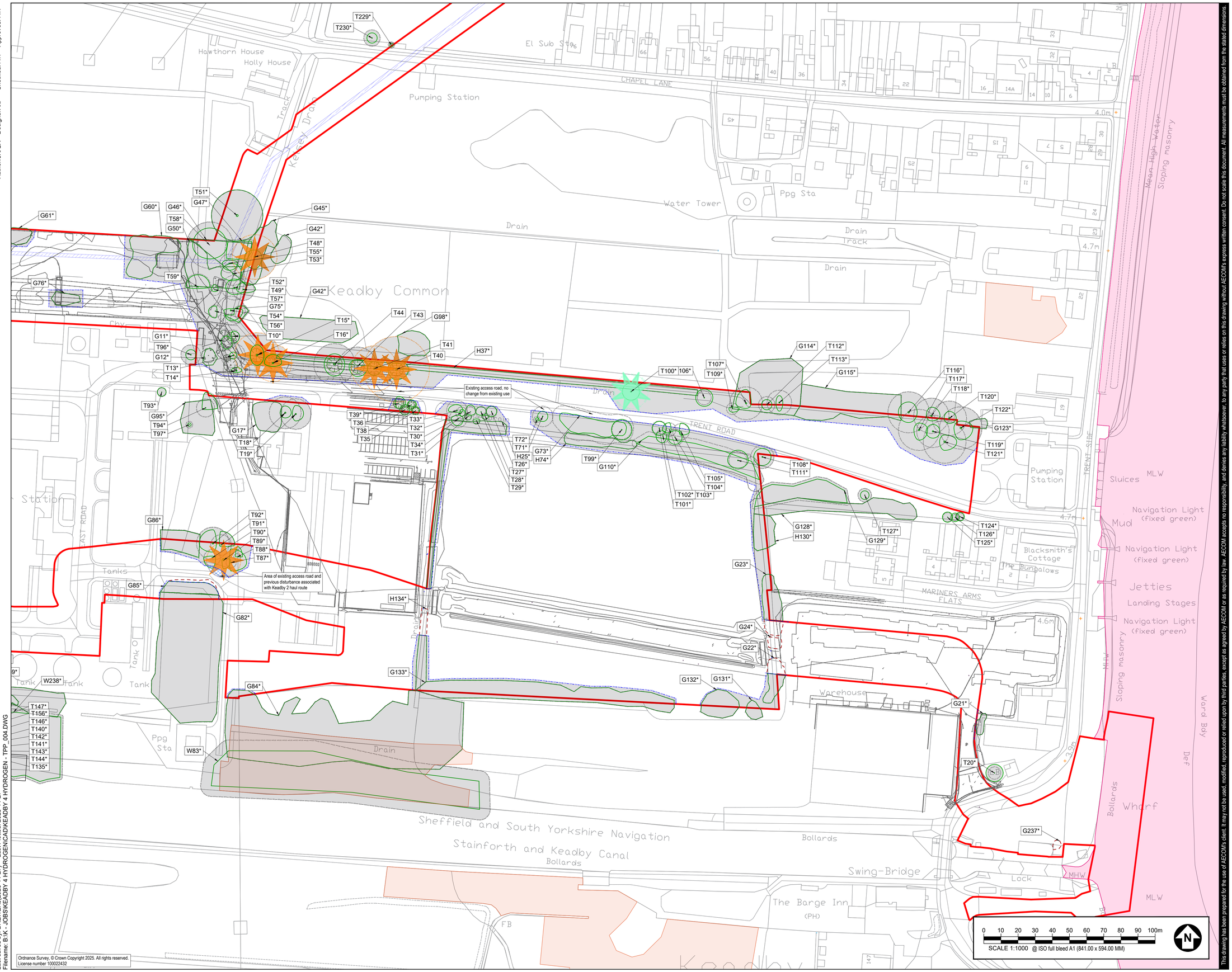
SHEET TITLE

TREE PROTECTION PLAN (SHEET 08)

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Author: JR/GA Designer: JB Checked: AW Approved: AW



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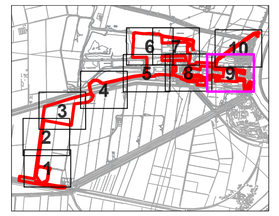
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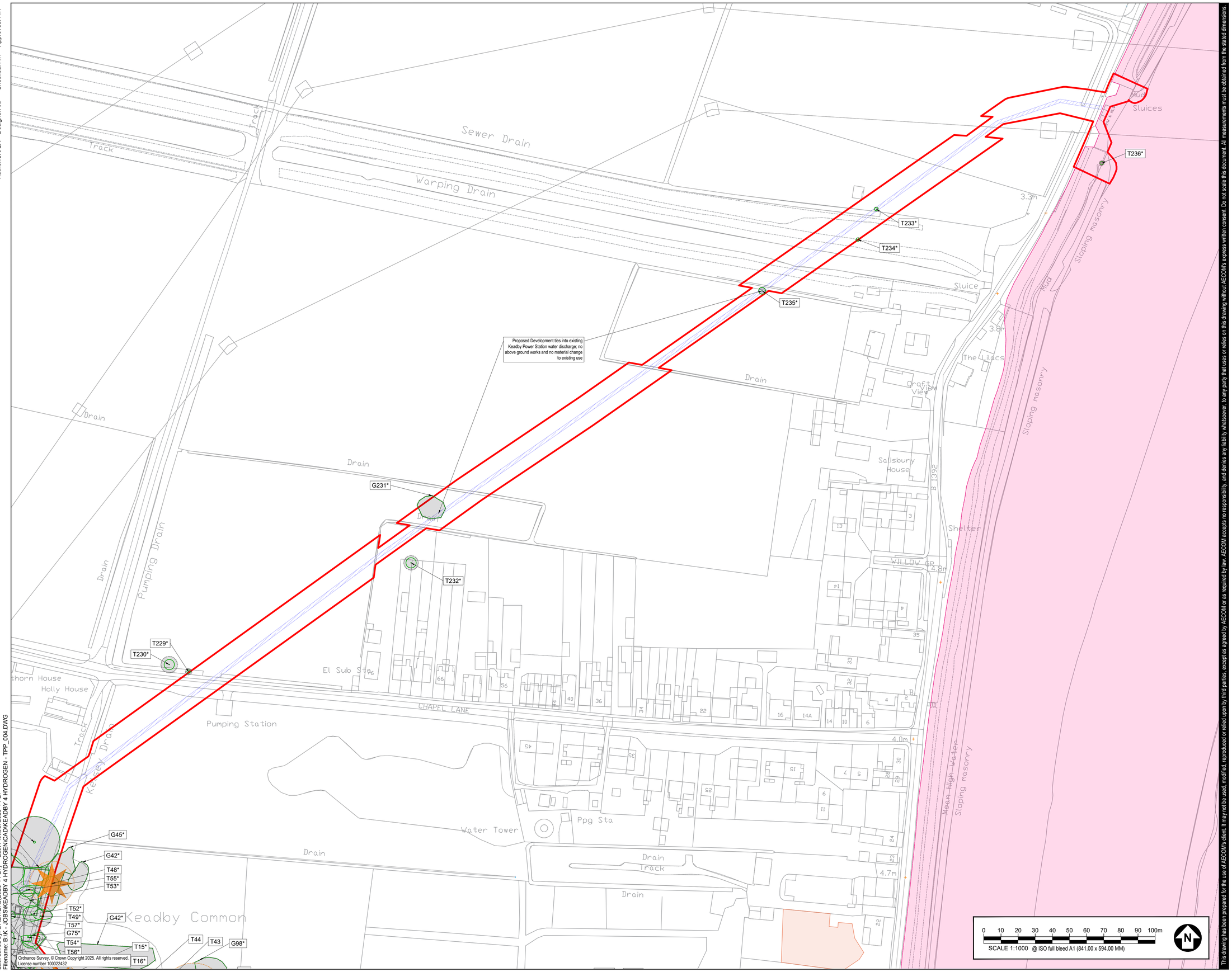
SHEET TITLE

TREE PROTECTION PLAN (SHEET 09)

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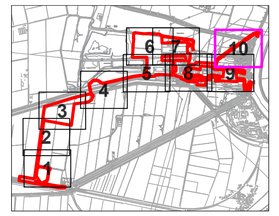
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TREE PROTECTION PLAN (SHEET 10)

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Annex 5: Outline Tree Protection Measures

A5.1. Outline Tree Protection Measures

A5.1.1. Outline Tree Protection Measures

A5.1.1.1. Below ground tree roots and the soil environment in which they grow need to be protected if the tree is to be retained. Trees grow in association with fungi and other soil organisms which are of key importance to tree health. Roots are essential for anchorage, the uptake of water and nutrients, and the storage of energy (carbohydrates) for the future growth and function of the tree.

A5.1.1.2. The default position as set out by BS 5837:2012 is that retained trees must be protected from construction operations with the erection of robust protective fencing positioned on the outer edge of the RPA or crown spread (whichever is greatest). All site operations will be restricted to the area outside of tree protection fencing and this area will form a Construction Exclusion Zone (CEZ) unless agreed otherwise. Protection measures will be installed as set out in the Tree Protection Plan included as Annex 3 of this report.

A5.1.1.3. The area inside the fence and any additional tree protection measures will be sacrosanct and must not be removed or altered without the prior approval of the LPA Tree Officer. Any damage to tree protection measures must be reported immediately.

A5.1.1.4. Fencing shall be constructed with robust vertical and horizontal scaffold framework with weldmesh panels firmly attached as per BS 5837:2012 Figure 2 (included below as Figure 1). Vertical support poles and bracing

poles must be located with care to avoid underground utility services and will be sited to avoid the structural roots of retained trees.

A5.1.1.5. Alternative equivalent robust and immovable fencing specification including site hoarding will also be appropriate.

A5.1.1.6. Suitable all weather signage will be fixed to fencing to notify site staff and visitors of the construction exclusion zone and its purpose (example included as Annex 5).

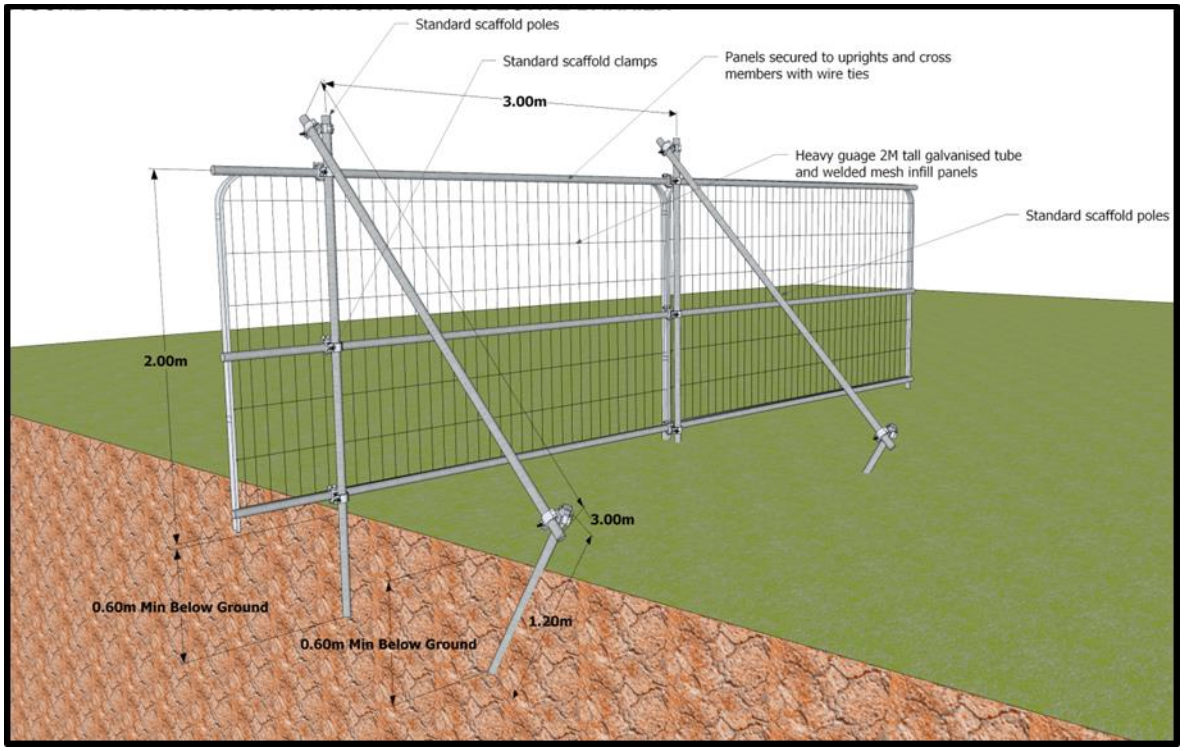


Plate A5.1 Default specification for protective barrier

A5.1.1.7. When entering and exiting the Site the fencing contractor must avoid the production of ruts on the unprotected surface of the ground.

A5.1.1.8. Protective fencing and ground protection shall stay in place until all development operations have been completed and the prior consent of the LPA Tree Officer and/or an arboriculturist has been obtained.

A5.1.2. Ground Protection

A5.1.2.1. Should access be unavoidable within the RPA of a retained tree, fit for purpose ground protection must be in place which is sufficient to protect

the structure of the soil from damage based on the heaviest anticipated load.

A5.1.2.2. As set out in section 6.2.3.3 of BS5837:2012 the following ground protection measures will be appropriate:

- Suitable ground protection for pedestrian only access will comprise a single thickness of scaffold boards set on a compressible layer of 100mm of woodchip on a geotextile separation layer.
- Pedestrian operated plant up to two tonnes in weight would require the use of a proprietary ground protection system (such as Ground Guards or Eve Trakway or equivalent) set on a minimum depth of 150mm woodchip or sharp sand.
- Heavier loads will require ground protection to an engineering specification in conjunction with arboricultural advice.

A5.1.2.3. As a guide the threshold beyond which root development is significantly affected is a bulk density ranging from 1.4g per cm^3 for clay soils, to 1.75g per cm^3 for sandy soils.

A5.1.2.4. Tree protective measures shall stay in place until all construction operations are completed and removal is agreed with the Site arboriculturist and/or the Local Authority Tree Officer as appropriate.

A5.1.3. General Guidance for the Management of Exposed Roots

A5.1.3.1. Excavation must only take place within the RPA of a retained tree with the prior agreement of an arboriculturist and the Local Authority Tree Officer. All excavation must be undertaken using hand tools or compressed air (such as an air spade).

A5.1.3.2. The following general principles will apply:

- Individual or small groups of roots less than 25mm in diameter will be retained where possible but can be severed with a sharp tool such as secateurs or pruning saws to leave a clean cut end (ideally 100mm back from the face of the excavation to account for future regrowth) where they pose an obstruction.
- Where roots are encountered which are larger than 25mm in diameter or where significant groups of smaller roots are found, the advice of an arboriculturist must be sought to decide an appropriate course of action (following consultation with the Local Authority Tree Officer where appropriate).

A5.1.3.3. Roots must only be exposed for the minimum period possible. In the interim period any exposed roots must be completely covered with dampened hessian sacking (which may require ongoing re wetting) to avoid drying out and exposure to light (which can result in the death of roots). Backfill for excavations should utilise the parent material and must not be significantly compacted.

A5.1.4. Storage, Use and Mixing of Materials

A5.1.4.1. The use, mixing and washing of materials can lead to run off or inadvertent spillage into tree root zones. Many substances often used on construction sites can be toxic to tree roots (such as concrete, fuels, salts, builders sand and herbicides), can result in the death of tree roots and beneficial soil organisms; and have a significant impact on the future health and appearance of trees.

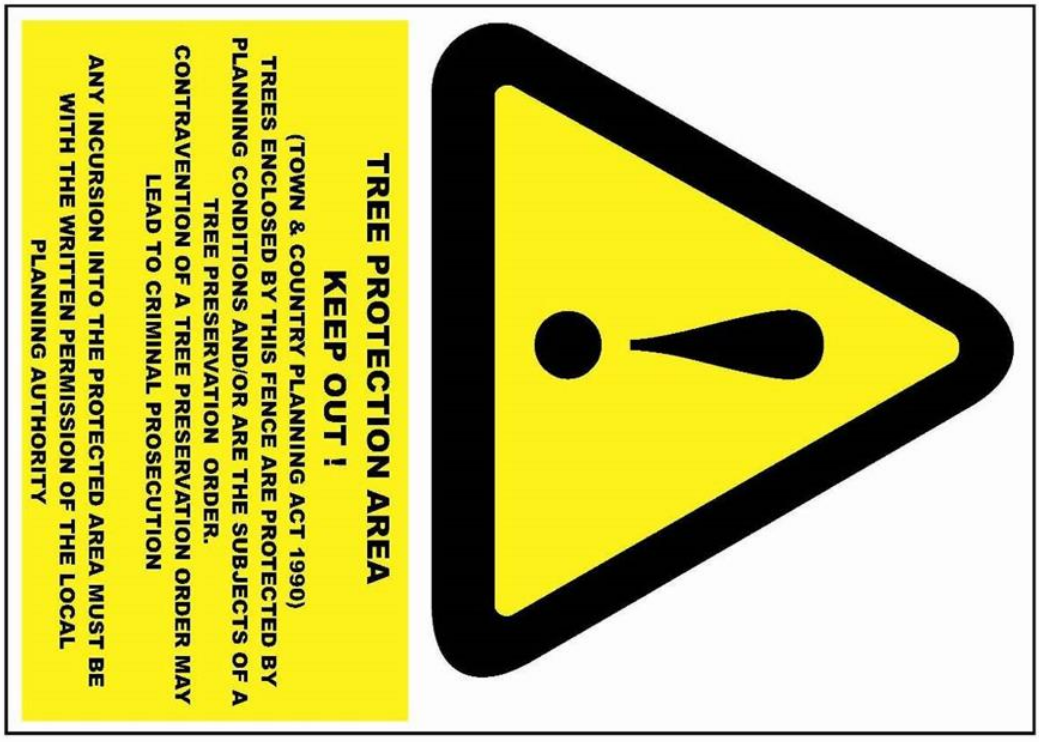
A5.1.4.2. The storage of materials can result in an effective raised soil level. This buries tree roots at depths where air and water are less available and can lead to the decline or death of the tree.

A5.1.4.3. For these reasons the storage of materials and any washing, mixing or refuelling must take place in agreed allocated areas at least 5m from the edge of the RPA of retained trees.

A5.1.4.4. Any slope effect must be taken into account and where there is a potential for run off, heavy duty polythene sheeting and sandbags must be in place as bunding to prevent toxic materials reaching RPAs.

Annex 6: Tree Protection Signage





Annex 7: General Arboricultural Principles

A7.1. General Arboricultural Principles

A7.1.1. General Principles

A7.1.1.1. Trees are dynamic living organisms which provide essential benefits to society and the wider environment. Any Proposed Development with the potential to impact on trees must take into consideration the value of trees on the Site; the impact of any proposed activity along with any potential future conflicts on the Site. Suitable measures to safeguard retained trees or mitigate the loss of trees (to be removed) will need to be fully considered and may be subject to a condition of planning consent.

A7.1.1.2. Tree branches and roots frequently grow across site boundaries and off-site trees can pose a significant constraint and should be carefully considered when assessing the developable space within a site.

A7.1.2. Below Ground Constraints

A7.1.2.1. Below ground tree roots and the soil environment in which they grow need to be protected if the tree is to be retained. Trees grow in association with fungi and other soil organisms which are of key importance to tree health. Roots are essential for anchorage, the uptake of water and nutrients, and the storage of energy (carbohydrates) for the future growth and function of the tree.

A7.1.2.2. Roots can be damaged by physical severance or wounding (e.g. following excavation of the soil) which can lead to the development of decay and a decline in vitality and/or instability. Raising the soil level can bury tree roots at a depth where suitable conditions for growth are less available. Toxic materials discharged into the soil (such as cement-based aggregates, fuel and chemicals) can lead to root death and dysfunction. Soils can be compacted to levels inhospitable to tree growth with even a single pass of machinery, regular pedestrian traffic or the storage of plant and materials. Relieving compaction can be problematic and may require costly remedial works. Changes in drainage/water levels can also have significant long-term impacts for tree health.

A7.1.2.3. The effects of these incursions may take many years to manifest, with a resulting decline in amenity value and potentially the death or failure of the

tree. It should be noted that older trees are particularly sensitive to damage and changes in conditions.

A7.1.2.4. The RPA is a notional area considered to be the minimum zone that must be protected to avoid any adverse impacts on retained trees. This area is deemed to be particularly important for tree stability, growth, function and health. However, roots may extend far greater distances, with the distribution of the root system relating directly to the availability of suitable conditions for growth (namely oxygen, water and nutrients). It is generally accepted that tree roots are predominantly located in the upper 1000mm of soil; however, roots may develop at deeper levels where conditions allow.

A7.1.2.5. Root Protection Areas are calculated as per BS5837:2012 Annex C, D and Section 4.6.

A7.1.2.6. The RPA of the existing tree stock is an important material consideration when considering site constraints and planning development activities. The RPA of significant trees on the Site are shown on the Tree Constraints Plan (Annex 1).

A7.1.2.7. The default position must be that all development, including any associated services will occur outside the RPAs of retained trees. Where this is unavoidable, it may be appropriate to use special measures to install structures, services or surfacing within RPAs which allow the protection of roots and soil structure which are essential for tree growth and keep any incursion to a minimum.

A7.1.2.8. Further steps to improve or increase the useable rooting area available to the tree may also be required.

A7.1.3. Soils

A7.1.3.1. On shrinkable clay soil, tree growth can lead to the differential movement of structures as moisture is removed from the soil during the growing season. Soils must be carefully assessed, and any foundations must be installed following the recommendations of National House Building Council (NHBC) Standards Chapter 4.2: Building Near Trees (2024) to avoid potential future damage. Where trees which predate existing

structures are to be removed, this can result in heave as the soils are re-wet.

A7.1.3.2. The advice of a suitably qualified engineer must be obtained to inform any potential issue of heave. Specific advice in relation to this issue is beyond the scope of this report.

A7.1.4. Above Ground Constraints

A7.1.4.1. Tree stems and branches can restrict available space on a site. Damage or wounding (including excessive pruning) can significantly reduce the amenity contribution of the tree and may lead to the development of dysfunction and decay, with significant long term implications for tree health. The future impact of existing trees should be carefully considered, including individual species characteristics (such as potential future size, fruit fall, shade etc.) and how the tree will interact with any proposed development and future land use. Annual tree growth can lead to direct damage if stems/branches (or roots) come into physical contact with structures and this must also be taken into consideration.

A7.1.5. Trees and Risk in the Context of Development

A7.1.5.1. Tree owners/managers have a legal duty to prevent foreseeable harm. It is generally accepted that this duty can be fulfilled by undertaking proactive inspections of significant trees to identify obvious defects and by taking appropriate remedial action or gaining further advice as appropriate.

A7.1.5.2. Further guidance is available from the National Tree Safety Group.

A7.1.5.3. The tree survey carried out as the basis of this report is primarily for planning purposes, focusing on the quality and benefits of the trees and is not specifically designed to assess the safety of trees on the Site. However, when obvious issues have been identified, recommendations have been included in the Tree Survey Schedule.

A7.1.5.4. The Construction (Design and Management) Regulations (2015) states that developers and contractors have responsibilities for health and safety as a result of their actions. Should trees be left in an unstable or hazardous condition the Health and Safety Executive (HSE) could seek to

prosecute those responsible along with the potential for further Civil claims for damages.

A7.1.6. Trees and Wildlife

A7.1.6.1. Full consideration must be given to the presence of species protected under the Wildlife and Countryside Act (1981 - as amended), the Countryside Rights of Way Act (2000) and the Conservation of Habitats and Species Regulations (2017), in particular the presence of bats and nesting birds. It is recommended that wherever possible, significant tree/hedge works take place outside of the typical bird nesting season of March to September. The advice of a suitably qualified Ecologist is recommended in relation to any potential impacts on protected species.

A7.1.7. Tree Works

A7.1.7.1. Any tree surgery recommendations contained within this report are to be undertaken in accordance with BS3998:2010 Tree work – Recommendations (BS3998:2010) by suitably qualified and insured contractors. Significant pruning works are best undertaken when trees are dormant or outside periods of high functional activity to reduce the overall impact on energy available to the tree for growth and processes. In general, the optimum period for works is between November to February and July to August (subject to the presence of protected species) when the tree is less active and better placed to respond to wounding and a reduction in leaf area.